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NY Residential Existing Homes Program Contact List
Home Performance with ENERGY STAR® and EmPower New York

Primary Contacts

Contractor Support
1-800-284-9069

http://hpwescontractorsupport.com/

General Inquiries: support.residential@nyserda.ny.gov
Application Inquiries: applications.residential@nyserda.ny.gov

Customer Support
1-877-NYSMART

https://www.nyserda.ny.gov/All-Programs/Programs/Home-Energy-Efficiency-Upgrades

support.residential@nyserda.ny.gov

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518-862-1090

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Administrative Services Contractor

CLEAResult

Questions related to audit applications, EmPower applications, EmPower project assignments, and HPwES and EmPower payments.

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Technical Services Contractor

CLEAResult

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Certifications and BPI GoldStar Contractor Program

Questions related to certification, accreditation requirements, technical support and standards. Saratoga Technology + Energy Park.

Building Performance Institute (BPI)

107 Hermes Road Suite 210
Malta, New York 12020

Toll Free: 877-274-1274
Fax: 866-777-1274
www.bpi.org
http://www.bpi.org/about-us/contact-us

Consumer Financing

Process loan applications and provide contractors with the status of the loan.

Energy Finance Solutions (EFS)

431 Charmany Drive
Madison, WI 53719
PHONE: 1-800-361-5663
FAX: 608-249-5788
Website: http://www.energyfinancesolutions.com
All inquiries to:efs@energyfinancesolutions.com

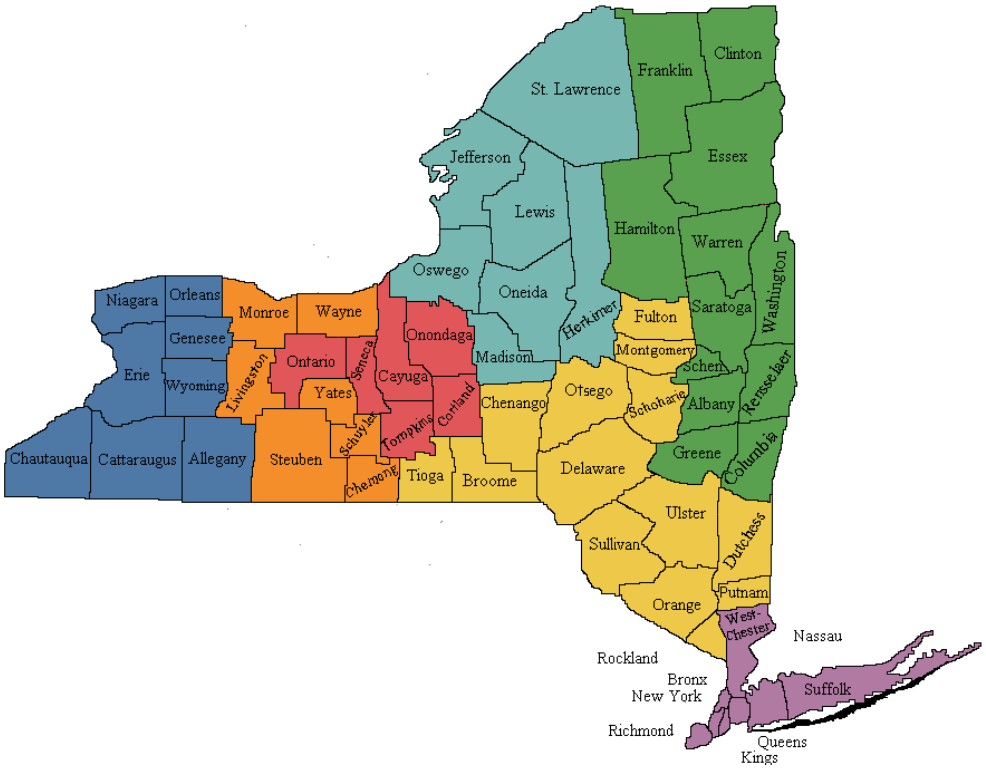
Consumer Loan Servicing

Service NYSERDA's Residential Energy Efficiency loans and provide borrowers with pertinent loan information.

Concord Servicing Corporation

4150 North Drinkwater Boulevard, Suite 200
Scottsdale, AZ 85251
Toll Free: 866-493-6393
FAX: 480-951-8879
Website: http://www.powerofconcord.com
All inquiries to: cs@concordservicing.com

NYSERDA HPwES & EmPower
ACCOUNT MANAGER
TERRITORY MAP



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Revised April 2020

Benefits of Home Performance with ENERGY STAR Contractor Participation

Grow Your Business

As a Home Performance with ENERGY STAR contractor, you will be growing your business along with marketplace demands. You gain stature among your competitors, and you can offer expanded services to a larger customer base.

New Yorkers spend $5-$7 million *a month* on Home Performance with ENERGY STAR contracting work. Participating contractors tap directly into a large and rapidly expanding market. They bring in more jobs. They generate more revenue. They have a competitive advantage. And they have the credibility it takes to earn homeowners' trust and become a central energy efficiency resources in the long term.

Most people are seeking ways to reduce waste and save money on their energy bills, and many are interested in energy-efficiency upgrades that help the planet, too. Recent research shows that more than half (56%) of homeowners in New York State plan to make home energy efficiency improvements—most within the next three years. And 70% say they would hire a contractor to do at least part of the work.

If your business currently handles only one area of energy efficiency—such as HVAC, for example—you can subcontract additional aspects of the work you don't specialize in. This way, you can provide a complete, integrated solution to your customers or refer the work to another participating contractor.

Marketing and Promotional Opportunities

NYSERDA invests in marketing outreach throughout New York to promote Home Performance with ENERGY STAR. This helps generate customer awareness on the value of energy efficiency and nurtures leads for participating contractors—which come through listings on NYSERDA's website and hotline referral database. All participating contractors are listed on NYSERDA's contractor listing website.

Participating contractors have access to programmatic and promotional materials developed by NYSERDA to help promote your business. Participating contractors can also use the Environmental Protection Agency's ENERGY STAR logo. Homeowners trust ENERGY STAR, and NYSERDA's program offers recognition and promotes contractors' commitments to energy efficiency.

Ability to Provide Incentives and Financing Options to Customers

By becoming a participating Home Performance with ENERGY STAR contractor, you will be able to provide your customers with no-cost/low-cost comprehensive home energy assessments, cashback incentives for income-qualified customers, and access to financing through NYSERDA.

Financial Incentives for your Company

Participating Home Performance with ENERGY STAR contractors receive an incentive of 5-10% of the cost of eligible work for each job completed and reported to NYSERDA. Contractors can use this to help with general business expenses or can help to lower the cost for your customers, making the sale easier. It's your choice on how you use these funds.

Third Party Quality Assurance

NYSERDA offers third-party quality assurance to participating contractors, which means homeowners can trust the home improvement work is making their houses more efficient, comfortable, and aimed at saving homeowners money on their energy bills.

Training and Business Development Opportunities

Participating contractors receive newsletters and can participate in free webinars from NYSERDA and the Department of Energy. Participating Contractors receive ongoing programmatic training and support from the program implementer.

Under the Clean Energy Fund, NYSERDA will offer pilot opportunities for contractors to participate in new initiatives to help expand your business and grow demand.

How to Become a Participating Contractor

NYSERDA's Single Family Residential Programs provide incentives for energy efficiency work based on household income. Households identified as Tier 1, are considered low-income households and are eligible to receive incentives through EmPower New York. Tier 3 households are considered moderate income households and are eligible to receive incentives through Assisted Home Performance with ENERGY STAR®.

Program Participation Requirements

Contractors interested in providing energy efficiency services to Tier 1 and Tier 3 families, must be approved by NYSERDA for Program participation. Interested contractors should review the current Participation Agreement and the Contractor Resource Manual. Prior to applying, contractors should review Article II and Article III of the Participation Agreement to ensure they meet the certification and application requirements for Program participation. It is expected that businesses/organizations applying to become a participating contractor are well established with the equipment and knowledge necessary to deliver high quality home performance services.

NYSERDA's EmPower New York and Assisted Home Performance with ENERGY STAR programs are supported by CLEAResult, who serves as NYSERDA's Program implementor. CLEAResult maintains a network of regional account managers who provide support to Participating Contractors. Contractors interested in joining the Program should send an email to support.residential@nyserda.ny.gov with their company name, primary contact, address, and a request for an account manager to reach out regarding Program participation. CLEAResult will assign an account manager based on the location provided in the email submission.

Once an account manager has been assigned, they will provide an overview of how the program works, requirements to join, and will answer any questions you have about the Program or the application process.

Application Process

Contractors meeting the participation requirements as outlined in the participation agreement can complete and submit a Participation Agreement Signature Form along with all of the supporting document identified in Article III, Section 3.01 of the Participation Agreement.

A. Program review of Application and required supporting documents.

1. Once all the required paperwork has been submitted, NYSERDA will confirm all paperwork is complete, and review provided references, website (if provided), and crowd-sourcing websites.
2. Upon satisfactory review and submission of all required documents, a contractor on-boarding interview will be scheduled between NYSERDA, CLEAResult, and the contractor.
    i. Contractor will be expected to provide an overview of their services and experience and answer any questions Program staff or CLEAResult has.

ii. Contractor will be provided with the opportunity to ask questions about the Program.

B. Contractor Review

1. Following on-boarding interview, the Program will decide if the contractor is accepted for participation in the Program. Key evaluation criteria include but are not limited to:
    i. Review of the on-boarding interview;
    ii. The applicant's commitment to fair and ethical business practices as demonstrated through the on-boarding interview and the review of references and crowd-sourcing websites;
    iii. Documented experience with advanced building science methods;
    iv. Documented prior relevant experience, such as references for completed projects, or participation in other NYSERDA programs;
    v. A minimum of six months of experience with energy efficiency work is required.

C. Contractor Notification

1. Following the contractor review, NYSERDA program staff will determine if the contractor is accepted in the Program and communicate this decision to the contractor and CLEAResult. The notification will be provided via email and will outline next steps and any additional information needed to set up the contractor for program participation.

For additional questions about the Program please reach out to support.residential@nyserda.ny.gov. Additional Program information, including access to webinars and Program announcements can be found at https://hpwescontractorsupport.com/ and information on all NYSERDA offerings can be found at https://www.nyserda.ny.gov/All-Programs

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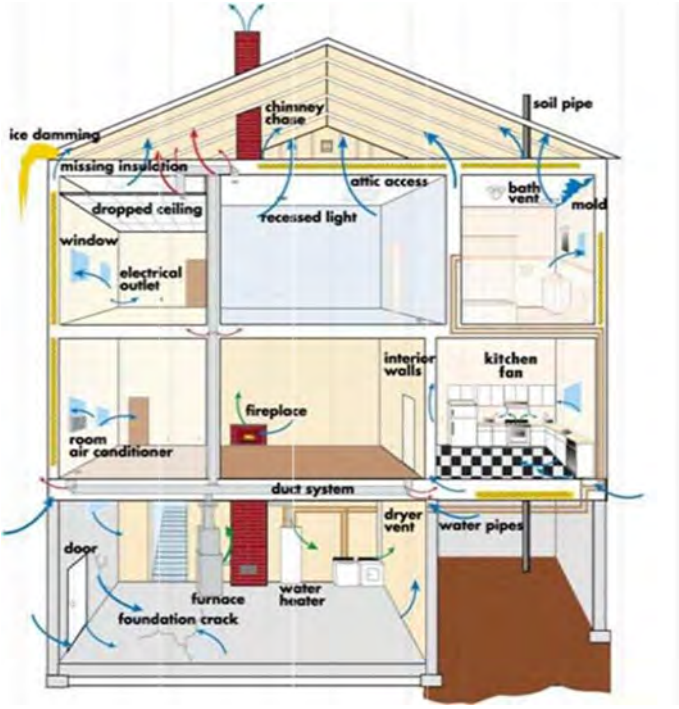
NEW YORK STATE OF OPPORTUNITY. | NYSERDA

2019-2021
NY Residential Existing Homes Program
Contractor Participation Agreement



Effective

January 01, 2020 – December 31, 2021

HOME PERFORMANCE WITH ENERGY STAR

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Article I. General Program Information

The New York State Energy Research and Development Authority (NYSERDA) administers the NY Residential Existing Homes Program, which includes Assisted Home Performance with ENERGY STAR®, a moderate-income component (for households earning 80% or less than Area Median Income), and EmPower New York, a low-income component (for households earning 60% or less than the State Median Income). These two components are referred to as the "Program" and assist New Yorkers in improving the energy performance, durability, comfort and safety of existing one-to-four-family homes throughout New York State. The Program meets the criteria of U.S. Department of Energy's (DOE's) Home Performance with ENERGY STAR program.

This Participation Agreement also allows for participants to serve market rate customers (for households earning more than 80% of the Area Median Income / State Median Income) through the Residential Energy Audit program and financing programs.

The objectives of the Program are to enhance the delivery of building performance services by using state-of-the-art diagnostic tools and building science principles to cost-effectively achieve goals which include decreasing energy consumption and costs, reducing greenhouse gas emissions, and enhancing building stock resiliency while simultaneously addressing health and safety issues pertaining to indoor air quality.

NYSERDA relies upon the following implementation and external contractors to provide program support services:

Implementation Contractors:

- Technical Services
- Shared Services
- Loan Origination
- Quality Assurance

External Contractors:

- Loan Servicing
- Community Energy Advisors

Participating Contractors are independent contractors delivering building performance services to Program participants. NYSERDA provides assistance to both Program participants and Participating Contractors designed to increase awareness of, and demand for, building performance contracting while simultaneously establishing an infrastructure of trained and certified technicians and accredited contractors to deliver such services.

This Participation Agreement ("Agreement") establishes the terms and conditions for Participating Contractors to complete work through the Program.

A contractor is considered and referred to as a "Participating Contractor" hereinafter, only when this Agreement is fully executed by NYSERDA.

Article II. Participation Requirements

Section 2.01 Contractor Participation Levels

The Participating Contractor shall maintain the minimum certifications outlined for at least one of the participation levels listed below. By entering into this Agreement, the Participating Contractor authorizes NYSERDA to share and obtain information with and from the Building Performance Institute (BPI) and other certifying bodies for the purpose of verifying employee certifications and work quality. As a minimum requirement to perform audits or Home Performance work through the Program, the Participating Contractor must employ staff with the required certifications outlined below. NYSERDA may modify or update these requirements at any time, Per Section 4.04 of this Agreement.

(a) **Audit Contractor-** Reserved for Participating Contractors performing audits and/or electric reduction direct install projects only. Audit Contractors must maintain a minimum of one full time staff member with one of the following certifications.

- **(i)** BPI Building Analyst
- **(ii)** BPI Energy Auditor
- **(iii)** BPI Multifamily Building Analyst
- **(iv)** AEE Certified Energy Auditor
- **(v)** ASHRAE- Building Energy Assessment Professional
- **(vi)** HERS Rater
- **(vii)** LEED Rater
- **(viii)** ICP Quality Assurance (QA) Assessor

(b) **Home Performance Contractor-** Reserved for Participating Contractors performing audits and maintaining the certification requirements for one or more of the home performance installation services outlined below. In order to install home performance measures through the Program, the Home Performance Contractor must be an Audit Contractor in accordance with (a) above and have the certification required for that specific measure and provide the Program with a minimum of 6 months experience in installing that measure type as outlined in Section 3.01(b). In addition to measure certification, it is highly recommended the Participating Contractor pursue any manufacture's training/certifications for any equipment they are installing as part of a Program project. Home performance measures must meet all Program installation and health and safety requirements as outlined in the Contractor Resource Manual. Home Performance Contractors must maintain one or more of the specialty certifications listed below:

1) Shell/Envelope

- **(i)** BPI Envelope Professional

NYSERDA will consider the following BPI advanced certifications in lieu of BPI Envelope Professional, provided the Participating Contractor can meet Program requirements, as outlined in Section 3.01(b) of this Agreement:

- **(i)** BPI Crew Leader or
- **(ii)** BPI Energy Auditor or
- **(iii)** BPI Quality Control Inspector or

(iv) BPI Retrofit Installer Technician

2) **Central Air Conditioning**
   - **(i)** BPI AC/Heat Pump or
   - **(ii)** NATE AC or
   - **(iii)** NATE Heat Pump

3) **Air Source Heat Pump**
   - **(i)** BPI AC/Heat Pump or
   - **(ii)** NATE Heat Pump or
   - **(iii)** Approved Installer in NYS Clean Heat

4) **Heat Pump Water Heater/Electric Water Heater**
   - **(i)** BPI AC/Heat Pump or
   - **(ii)** Manufacturer's training or
   - **(iii)** Company is licensed plumber and/or electrician in the locality where the work will be performed or
   - **(iv)** Approved installer in NYS Clean Heat

5) **Oil Heat Work**
   - **(i)** BPI Heating Professional or
   - **(ii)** NATE Oil Heating or
   - **(iii)** NORA Oil Heat Silver or
   - **(iv)** NORA Oil Heat Gold

6) **Manufactured Homes (Mobile Homes)**
   - **(i)** BPI Manufactured Housing Professional Certification
   - **(ii)** Provide documentation of your company's detailed procedures for serving manufactured homes. Detail provided must be enough to demonstrate to Program staff that the applicant exhibits proficiency with installing energy efficiency measures in manufactured housing stock. NYSERDA reserves the right to request additional supporting information as necessary to establish a contractor's experience. Acceptable documentation should include:
     a. Type of work performed (Insulation/mechanicals)
     b. Materials used
     c. Number of manufactured homes served in last 6 months
     d. Installation methods
     e. Any manufactured home-specific training received in the past 36 months

7) **Gas Heat Work/Domestic Hot Water Heaters**
   - **(i)** BPI Heating Professional or
   - **(ii)** NATE Gas Heating

8) **Pellet Stove**
   - **(i)** BPI Heating Professional or
   - **(ii)** Chimney Safety Institute of America (CSIA) – Certified Chimney Sweep®
   - **(iii)** National Fireplace Institute (NFI) – Pellet Stove Specialist

(c) Change in Participation Level

NYSERDA will review Participating Contractor's Program status periodically. In the event a contractor no longer maintains the minimum credentials type, they will be classified to the previous qualifying level, providing they still meet the minimum requirements for Program participation. For example, if a **Home Performance Contractor** loses their specialty certification but retains BPI Building Analyst, they will be considered an **Audit Contractor**.

Section 2.02 Certified Staff

Measures installed through the Program must be installed by a Participating Contractor who possesses the proper credentials or by using a sub-contractor who maintains the necessary credentials as defined in Section 2.01 above. The Participating Contractor shall ensure that work performed in the Program adheres to the technical standards established and maintained by the credentialing organization, for each certification and meet the Program requirements outlined in the Contractor Resource Manual.

Per Section 3.01(b), the Participating Contractor shall provide NYSERDA written documentation that identifies each individual in the Contractor's business and their certifications. As an ongoing requirement, the Participating Contractor shall immediately inform the Program of any change to the list of certified staff.

Section 2.03 Service Territories

Participating Contractors may choose to serve specific market regions, counties, or a defined radius from their office. The Participating Contractor shall dedicate sufficient staff with Program approved certifications for each approved service territory. The Participating Contractor shall employ at least one individual meeting the certification requirements of Section 2.01 per 75-mile radius.

The Participating Contractor shall only offer Program services in approved Program service territories listed on the fully executed Participation Agreement on file with NYSERDA or as approved through a separate communication submitted to NYSERDA. The Participating Contractor shall not offer or provide Program incentives in other territories where it does not have prior approval from NYSERDA. The Participating Contractor may submit a request to provide services to additional locations outside their approved Program service territories. The decision to allow a Participating Contractor to expand its Program service territory is at the sole discretion of NYSERDA.

Section 2.04 Licensing

It is the sole responsibility of the Participating Contractor and its sub-contractors to obtain and maintain any required federal, state, county, or municipal government licenses required for installing eligible measures through the Program, and to not perform work for which they are not licensed, if required. The Participating Contractor shall produce evidence of current licensing upon request by NYSERDA or its Program implementation contractors. Failure to comply with licensing requirements may result in disciplinary action.

Section 2.05 Permits

It is the sole responsibility of the Participating Contractor and its sub-contractors to obtain and comply with the terms of any required permits for installing eligible measures through the Program prior to the start of work. The Participating Contractor shall produce evidence of

applicable permits upon request by NYSERDA or a program implementation contractor. Failure to comply with permitting requirements may result in disciplinary action.

Section 2.06 Codes

All Participating Contractors and any sub-contractor retained by a Participating Contractor must perform Program work in compliance with all applicable codes, regulations, laws, and standards in the jurisdiction where completing work. In instances where Program guidance may conflict with state and/or local code, code must take precedent.

Section 2.07 Health and Safety

Each Participating Contractor must have a health and safety plan and maintain a copy of the plan at the work site. Contractors must maintain Safety Data Sheets (SDS) for products and materials used as part of the project. SDS must be available and presented to program participants upon request.

Section 2.08 Insurance

a) The Participating Contractor, at no additional cost to NYSERDA, shall maintain or cause to be maintained throughout the term of this Agreement, insurance of the types and in the amounts specified in this Section. All such insurance shall be evidenced by insurance policies, each of which shall: (1) reference this Agreement; name or be endorsed to cover the Participating Contractor as the insured, and NYSERDA and the State of New York as additional insured; and reference all work to be performed under the Program; (2) provide that such policy may not be cancelled or modified until at least 30 days after receipt by NYSERDA of written notice thereof; and be reasonably satisfactory to NYSERDA in all other respects. NYSERDA reserves the right to request insurance documentation and copies of sub-contractor agreements for any sub-contractor, and to request the identity of all individuals participating in Program**.**

The types and amounts of insurance required to be maintained under this Section are as follows: (1) commercial general liability insurance for bodily injury liability, including death, and property damage liability, incurred in connection with the performance of this Agreement, with minimum limits of $1,000,000 in respect of claims arising out of personal injury, sickness, or death of any one person, $1,000,000 in respect of claims arising out of personal injury, sickness or death in any one accident or disaster, and $1,000,000 in respect of claims arising out of property damage in any one accident or disaster, and (2) Workers' Compensation coverage as required by New York State.

Not less than 15 days prior to the date any policy furnished or carried pursuant to this Agreement will expire, the Participating Contractor shall deliver to NYSERDA a certificate(s) of insurance evidencing the renewal of such policy(s), and the Participating Contractor shall promptly pay all premiums thereon due. No work shall be performed under this Agreement without current insurance. NYSERDA will not make payments for projects completed under this Agreement without current insurance certificates.

b) In the event of threatened legal action, claims, encumbrances, or liabilities that may affect NYSERDA hereunder, or if deemed necessary by NYSERDA due to events rendering a review necessary, the Participating Contractor shall deliver to NYSERDA a certified copy of each policy upon request.

Within five working days, or contemporaneously with the requirements of each insurance policy, the Participating Contractor shall notify NYSERDA in writing of the occurrence of any accident, event or incident involving personal injury or property damage that might reasonably result in any complaint or claim, in law or in equity, against the Participating Contractor, any non-customer party to the applicable Program participant agreement or NYSERDA.

Section 2.09 Workers' Compensation

The Participating Contractor shall maintain Workers' Compensation covering the obligations of the Contractor as required under the provisions of the Workers' Compensation Law, Employers Liability, and Disability Benefits.

If a Participating Contractor is identified as a Sole Proprietor, the contractor must complete and submit form CE-200: https://ce-200-form.com/.

The Participating Contractor must provide proof of Workers' Compensation upon request by NYSERDA.

Section 2.10 Warranty

The Participating Contractor shall provide the Program participant a written warranty of labor and materials valid for a minimum of one (1) year from the date that NYSERDA has reviewed the completion submission paperwork and approved the project for payment. Equipment installed shall carry at a minimum, the manufacturer's warranty, plus optional extended warranty coverage, if applicable. The Participating Contractor must provide copies of all relevant warranties to the Program participant. For installed measures not meeting Program requirements, as later identified through a Program participant concern submission or confirmed through a QA field inspection, the warranty shall, at the contractor's expense, be extended one year from the date the contractor completed remediation to Program/manufacturer's standards for all confirmed deficiencies.

Section 2.11 Program Participant Issue and Dispute Resolution

NYSERDA requires the Participating Contractor maintain a dispute resolution policy on file. If a Participating Contractor, or its sub-contractor, becomes involved in a dispute with a Program participant over business practices, the Participating Contractor shall work to settle the dispute amicably utilizing the Participating Contractor's customer dispute resolution policy.

NYSERDA may request a copy of the Participating Contractor's dispute resolution policy at any time.

NYSERDA and its Program implementation contractors have no responsibility to provide dispute resolution assistance. Regardless of the nature of, or parties involved in, the dispute and any resolution, the Participating Contractor shall hold NYSERDA and its Program implementation contractor(s) harmless from any legal action arising from work associated with the Program per Section 7.09 of this Agreement. Failure to resolve Program participant issues in a timely manner may result in disciplinary action.

Section 2.12 Financing & Incentives

NYSERDA administers the Green Jobs - Green New York ("GJGNY") Loan Fund for Residential Financing (the "GJGNY Loan Fund") which was authorized by Title 9-A of Article 8 of the Public Authorities Law of the State of New York, as amended (known as the Green Jobs-Green New York Act) to finance energy audits and energy efficiency retrofits or improvements, including solar energy and other renewable installations, for the owners of residential 1-4 family buildings ("GJGNY Loan").

The ability to provide access to GJGNY loans and other participant financing options ("Program Financing") and incentives through the Program is reserved exclusively for the Participating Contractor. At no time may a non-participating subcontractor of a Participating Contractor represent itself as having the ability to access Program Financing or incentives.

The Participating Contractor shall ensure that the Program Financing options and incentives are utilized only for the installation of those eligible measures and accessories identified in the work scope submitted to, and satisfactorily approved by, the Program. Program participants can receive an incentive on a measure that is also receiving a utility incentive or an incentive through another NYSERDA program; however, the combined value of incentives cannot exceed value of the total cost of the measure. For any measure receiving an incentive from a utility or other outside funding, contractors must inform the Program of the incentive source and amount. Application of fair and reasonable pricing is also required per Section 8.07 of this Agreement for any measures installed through the Program.

If the Participating Contractor wishes to offer third-party (other than GJGNY Loan Fund) vendor financing to any Program participant, such offer must be made in accordance with all applicable New York State and federal laws, including, but not limited to, the New York State Banking Law and all applicable rules and regulations.

Participating Contractors have the ability to offer financing with a GJGNY Loan to customers with a household income greater than 80% of the Area Median Income. The terms and conditions of offering a GJGNY Loan to these customers can be found in the Green Jobs Green New York Loan Fund Residential Financing Manual, located in Addendum 1 of the Contractor Resource Manual.

Section 2.13 Residential Energy Audit Program

For customers with income above 80 percent of Area Median Income, NYSERDA offers the Residential Energy Audit Program. Participating Contractors in the Residential Existing Homes Program are eligible to participate in the Residential Energy Audit Program if the following conditions are met:

- They are in good standing with the New York Residential Existing Homes Program New York Program (full or provisional status)

- **Each individual** who will offer energy audits through the Residential Energy Audit Program must hold at least one the following certifications:

    - AEE Certified Energy Auditor
    - ASHRAE- Building Energy Assessment Professional
    - BPI Building Analyst

- BPI Energy Auditor
- BPI Multifamily Building Analyst
- HERS Rater
- ICP Quality Assurance (QA) Assessor
- LEED Rater

The Residential Energy Audit program has a different set of requirements and procedures than the Assisted Home Performance with ENERGY STAR or EmPower New York programs. Contractors who are interested in participating in the Residential Energy Audit Program must fully read the Residential Energy Audit Program Manual, which can be found as Addendum 2 of the Contractor Resource Manual, and the Residential Energy Audit Program Participation Agreement which can be found as Addendum 3 Contractor Resource Manual.

To participate in the Residential Energy Audit Program, Participating Contractors must submit a list of staff members who will complete Residential Energy Audits and a copy of the auditing certifications to homeaudits@nyserda.ny.gov.

Article III. General Application Information

Section 3.01 Application Requirements

The Participating Contractor shall provide NYSERDA the information below when submitting the Participation Agreement Application Signature Form, as requested by NYSERDA, or when there are changes or updates to the information previously provided.

(a) Completed Participation Agreement Application Signature Form: The Applicant must read and submit the completed Agreement Application Signature Form to NYSERDA indicating agreement with its terms. The Agreement Application Signature Form must be submitted by an individual with the full power and authority to enter into an Agreement on behalf of the Company.

(b) Detail of company and staff experience in the energy efficiency sector. This is a requirement for all new applicants and for returning applicants at NYSERDA's request.

- **(i)** A minimum of three completed references detailing relevant energy efficiency projects performed within the past six months. The reference must contain a detailed description of the work performed and customer contact information.
- **(ii)** Employee roster of both certified and non-certified employees providing work experience, previous firms worked at and training. The contractor must provide sufficient information for Program staff to make a determination on the qualifications of a contractor to perform work through the Program. It is NYSERDA's sole discretion to request additional information as necessary for determining the eligibility of an applicant in meeting the requirements of Section 2.01 of this Agreement.
- **(iii)** **Home Performance Contractors** should provide documentation for a minimum of 6 months experience for each type of specialty measure work they are looking to perform through the Program. If for example a contractor is looking to perform Oil Heat Work through the Program, they should document how many installs they have performed for the past 6 months, type of equipment installed, and reference of the standards/procedures used (BPI, manufacturers, NORA) during a typical installation.

(c) Certificate of Insurance

(d) Dba form (if applicable)

Section 3.02 Evaluation Criteria for Contractor Acceptance

NYSERDA will evaluate the information provided on the Participation Agreement Application Signature Form and review all submitted documentation prior to approving an Agreement. NYSERDA will not make a determination on any Participation Agreement until all the requested information is received by NYSERDA from the applicant. The decision to fully execute an Agreement is at NYSERDA's sole discretion.

(a) For both new applicants and returning applicants, key evaluation criteria include, but are not limited to the following:

- **(i)** An on-boarding interview with NYSERDA and implementation staff. This requirement may be waived for returning applicants, at NYSERDA's discretion.
- **(ii)** The applicant's commitment to fair and ethical business practices as demonstrated through references and review of other resources including, but not limited to, the Better Business Bureau, NYS Department of Labor, and crowd-sourcing websites.
- **(iii)** Confirmation that applicant has been in business for a minimum of six months, with documentation of three recently completed energy efficiency projects.
- **(iv)** Documented experience with advanced building science methods, as demonstrated through proof of professional certifications, training certificates, awards and review of provided company information and information publicly available.
- **(v)** Documented prior relevant experience, such as references for completed projects, or participation in other NYSERDA programs or the Weatherization Assistance Program.
- **(vi)** Documentation for certifications to related trainings (such as BPI, SPFA, NATE, NORA, manufacturer's installation certification).

(b) For returning applicants, the past performance of the applicant and/or certified individuals in the Program or other similar programs which may include but is not limited to:

- **(i)** The quality of workmanship documented through the Program's Quality Assurance (QA) / Quality Control (QC) processes.
- **(ii)** Demonstration of the applicant's ability to properly, and consistently, follow Program policies and procedures, including minimum production requirements.
- **(iii)** Satisfactory and expedient resolution of non-conformances discovered during QA field inspection(s).
- **(iv)** Satisfactory and professional interaction with Program Staff, Program participants, other contractors and Program implementation contractors.
- **(v)** Satisfactory record of fair and ethical business practices.
- **(vi)** Responsiveness to Program participant complaints, Program implementation contractor inquiries, and NYSERDA directives.
- **(vii)** Contractors who have been suspended or terminated from the Program or other NYSERDA Programs.

Article IV. Agreement Terms

Section 4.01 Program Participation Terms

Upon entering the Agreement, each Participating Contractor shall commit to promoting the Program and its mission of improving the energy performance, durability, comfort and safety of existing residential buildings, as defined by the Program.

The Contractor acknowledges this Agreement is completely voluntary. NYSERDA may deny an applicant's approval or suspend or terminate a Participating Contractor from participation in the Program for any reason, including failure to maintain Program standards, poor performance, unresponsiveness or inappropriate behavior. In all cases involving a Contractor's participation status, NYSERDA's written decision is final.

Following execution of this Agreement, the Participating Contractor agrees to be an active contributor to the Program by providing high quality and professional building performance services to Program participants. As a condition for ongoing Program participation and associated benefits, each applicant and Participating Contractor understands and agrees to the terms and conditions outlined in this Agreement, the Contractor Resource Manual, and any Program Announcements distributed and/or posted by NYSERDA or an implementation contractor.

Section 4.02 Project Eligibility

The Program provides incentives and access to financing to promote the installation of eligible energy efficiency measures designed to increase the energy efficiency of existing buildings; the Program does not offer financial incentives for projects that include stand-alone additions, extensive gut rehabilitation (i.e. demolition to bare walls), or for energy related improvements that are required by state or local building code.

Section 4.03 Enforcement

In all cases, or at any time, NYSERDA's failure to enforce any provisions of this Agreement shall not constitute a waiver of such provisions, nor does it limit NYSERDA's ability to enforce such provisions in the future.

Section 4.04 Program Changes

NYSERDA reserves the right to make changes to the Program upon notice to the Participating Contractor. Programmatic changes announced through Program Announcements will supersede policies and procedures in this Agreement and the Contractor Resource Manual. Such notifications shall be communicated via email and posting of the Program Announcement on the HPwES Contractor Support Site at http://hpwescontractorsupport.com and the NY HP Portal, https://nyserda.energysavvy.com. It is the Participating Contractor's responsibility to ensure the appropriate Program contact's email address is on file with NYSERDA in the event of staff additions/losses or responsibility changes.

Section 4.05 Post Termination Obligations

Articles VI, VII, IX and X and Sections 2.08 (b), 2.10 and 2.11 shall survive termination of this Agreement.

Article V. Program Support

Section 5.01 Program Support

Support services NYSERDA makes available to the Participating Contractor include the following, which are fully detailed in the Contractor Resource Manual:

(a) Financial incentives for contractors and Program participants;
(b) Access to free audits;
(c) Access to GJGNY Loan Fund for Program participants and for customers with a household income of greater than 80% of the Area Median Income;
(d) The opportunity to respond to leads generated from NYSERDA's public awareness campaigns, Community Energy Advisors, and the residential program's website;
(e) Use of approved NYSERDA marketing materials that can be customized to include the Participating Contractor's logo and other company information;
(f) Third-party Quality Assurance;
(g) Technical assistance;
(h) Opportunities to participate in other NYSERDA pilot initiatives (i.e., programs, studies) as needs arise;
(i) Access to the web-based Portal for project submission and tracking and program communication; and
(j) Prompt payment for eligible incentives and financed projects.

Article VI. Contractor Relations with Program Participants

Section 6.01 Program Participant Inquiries

Participating Contractors shall promptly and appropriately respond to inquiries referred to the Participating Contractors by NYSERDA or the Program implementers.

Section 6.02 Referrals

Participating Contractors shall accept referrals from the Program and shall make every reasonable effort to encourage applicants to participate in the Program and, when providing Program services to these referral leads, do so in accordance with the Program guidelines, this Agreement and the contents of the Contractor Resource Manual. Participating Contractors found to be actively discouraging their customers from participating in the Program, including options for free or partially-incentivized services for low and moderate income customers through alternative contractors, will be subject to the disciplinary measures detailed in Section 10.01 of this document.

Section 6.03 Timely Communication

Participating Contractors shall ensure prompt and accurate reporting of all audit and project completions to Program participants and the Program. Participating Contractors shall respond to inquiries from Program participants, Program staff, and Program implementation contractors in a prompt, professional, and courteous manner.

Article VII. Business Practices

The Participating Contractor is expected to be an ambassador for the Program and any conduct contrary will result in disciplinary action. Participating Contractors shall remain in full compliance

with the following Program requirements:

Section 7.01 Contract Compliance

It is the sole responsibility of the Participating Contractor to ensure that all contracts and subcontracts submitted to the Program by the Participating Contractor are written in full compliance with the General Business Law, Article 36-A “HOME IMPROVEMENT CONTRACTS” and any other applicable statutory or regulatory provisions. Contracts and other documents submitted by the contractor must be clear and legible, and include line item detail for each installed measure, including nameplate and efficiency information. The measured square footage of all areas to be insulated and lineal footage for all air sealing should be clearly identified. Pricing, depth, type and quantities for each measure should be clearly identified. Any changes to the contract should be identified in a field change order, signed by the Program participant and submitted as part of the required Program paperwork.

Upon request by NYSERDA or Program implementation staff, the Participating Contractor shall provide additional details regarding contractual terms and costs for the purposes of project review.

Section 7.02 Professional Conduct

The Participating Contractor shall comply with all Program requirements, treat all Program participants fairly, provide accurate information on all available Program Financing and incentives and deliver promised services in a timely, competent, professional, and reasonable manner.

Section 7.03 Professional Courtesy

Participating Contractors shall conduct themselves in a professional, respectful, and reasonable manner at all times when interacting with Program participants, NYSERDA staff, Program Implementation contractors, and external Program contractors. Participating Contractors shall not engage in behavior that adversely impacts NYSERDA or other Participating Contractors, tarnishes NYSERDA’s service marks, and/or diminishes the profession or service in the eyes of the public.

Section 7.04 Past Performance

At NYSERDA’s discretion, an employee of a Participating Contractor who has demonstrated unprofessionalism, unethical behavior or has exhibited poor workmanship on one or more past Program projects may be prohibited from working on Program projects. This includes any staff member associated with a former Participating Contractor who was under suspension or terminated from the Program, or any other NYSERDA program. NYSERDA will notify the Participating Contractor of any individuals prohibited from working on Program projects and these individuals will continue to be prohibited from working on Program projects unless written consent is provided by NYSERDA.

Section 7.05 Program Representations

The Participating Contractor shall not engage in unfair or inaccurate representations of NYSERDA, the Program, the Program Implementation contractors, external Program contractors, Community Partners, other Participating Contractors or Program affiliates.

Participating Contractor

The Participating Contractor shall properly and accurately represent the relationship of the Participating Contractor and its sub-contractor(s) to the State of New York, NYSERDA, and NYSERDA's Program Implementation contractors. This relationship shall be that the Participating Contractor currently meets Program participation requirements, acts as independent contractor, and voluntarily participates in NYSERDA's Program.

The Participating Contractor shall not represent itself as working for, approved by, or certified by, the State of New York, NYSERDA or NYSERDA's Program Implementation contractors. The Participating Contractor shall not represent that the services they provide, or the materials they use, are in any way endorsed or approved by the State of New York, NYSERDA, or NYSERDA's Program implementation contractors.

A Participating Contractor employing the services of sub-contractors shall ensure each sub-contractor adheres to Program policies and standards.

Participating Sub-Contractor
NYSERDA strongly encourages the use of other Participating Contractors for sub-contracted work to ensure the installed work meets Program standards. Participating Contractors acting as a sub-contractor are expected to perform the work in a manner consistent with Program procedures and policy. Any deficiencies identified in sub-contracted work, regardless of the Program participation status of the sub-contractor, are expected to be resolved by the primary Participating Contractor in a timely manner through either the stated sub-contractor, alternative sub-contractor or directly. Any Participating Contractor serving as a sub-contractor on a Program project may be subject to disciplinary action should the sub-contracted work not comply with BPI, required certifications, licenses, permits, and/or Program policies and standards.

Non-Participating Sub-Contractor
It is the Participating Contractor's responsibility to make their sub-contractors aware that a non-participating sub-contractor of a Participating Contractor shall not represent itself as a participant in the Program or as able to offer Program services and benefits, for the purpose of executing the sale of a non-Program project. Additionally, any sub-contractor of a Participating Contractor shall not represent itself as working for, approved by, or certified by the State of New York, NYSERDA, or NYSERDA's Program implementation contractors.

The primary Participating Contractor assumes all responsibilities for services and benefits provided through the Program by sub-contractors. The Primary Contractor shall ensure compliance with BPI, required certifications, licenses, permits and/or Program policies and standards.

Use of Sub-Contractors

(a) Documentation
Any sub-contractor(s) utilized by a Participating Contractor shall be listed on the Program participant's contract and the contract between the Participating Contractor and sub-contractor shall be submitted to the Program. The Program requires documentation if any of the sub-contracted work is funded or financed by the Program. In addition, the use of sub-contractors should be clearly explained to the Program participant prior to the start of work.

(b) Business Structure/Sub-Contractor Relationship

The Participating Contractor shall, upon request from the Program, provide information (company name, address, phone number, email address and addition information as needed) for any sub-contractors who have provided services on Program projects.

(c) Poor Performing Sub-contractors

Chronic poor workmanship or unprofessionalism associated with a given sub-contractor identified through Program participant complaints or through routine QA inspections may result in disciplinary action to the Participating Contractor. In addition, NYSERDA reserves the right to deny future participation of a given sub-contractor on Program projects for any reason including but not limited to poor workmanship, unprofessionalism, or unethical behavior.

(d) Past Performance

The Participating Contractor shall not sub-contract with any Participating Contractor that is under suspension or former Participating Contractor that has been terminated from the Program, or any other NYSERDA program, without NYSERDA's prior written permission. An employee of a sub-contractor who has demonstrated unprofessionalism, unethical behavior or has exhibited poor workmanship on one or more past Program projects may be prohibited from working on Program projects. This includes any staff member associated with a former Participating Contractor who was under suspension or terminated from the Program, or any other NYSERDA program. These individuals shall not work on Program projects unless NYSERDA provides written permission.

(e) Participating Contractor Payments to Sub-Contractor

It is the Participating Contractor's responsibility to promptly pay any sub-contractors providing services on a Program project to ensure the sub-contractor does not place a lien on the Program participants' homes for lack of payment by the Participating Contractor. NYSERDA will not act as an intermediary between a Participating Contractor and a sub-contractor on a Program project. A Participating Contractor not providing payment for services rendered to a sub-contractor on a Program project may be subject to disciplinary action in the event this action discredits NYSERDA or the Program in any way.

Section 7.06 Proper Use of Program Marketing Material

(a) Required Program Material

To ensure the Program participant is educated on the features and benefits of the Program and able to make informed decisions, the Participating Contractor shall distribute required consumer and Program information materials to the Program participant prior to contracting for Program related measures. Required Program materials are provided in the Contractor Resource Manual. It is required that Participating Contractors provide the Program participant with information regarding specific measures that require routine maintenance, such as high-efficiency heating equipment, to ensure the Program participant is aware of potential added costs of the measure and maintenance required to ensure the equipment operates effectively.

(b) Distribution to Non-Participating Contractor

Marketing materials are only to be distributed by Participating Contractors. Any

Participating Contractor found to be providing Program marketing materials to a non-participating contractor for distribution to Program participants will be subject to disciplinary action. NYSERDA, at its discretion, may grant marketers and outreach providers operating on behalf of a Participating Contractor(s) permission to distribute program materials.

(c) Website Content

The Participating Contractor shall avoid publishing specific Program content and offerings and uploading copies of NYSERDA forms and applications on their individual company websites. Instead, Participating Contractors are encouraged to provide links directly to pertinent content, forms, and applications on NYSERDA's website to ensure the information provided is consistent and up to date for all interested parties.

Participating Contractors shall address any Programmatic changes that may affect the content on their websites in a timely manner. The Program provides Participating Contractors with a website widget at no cost for the purpose of promoting the Program.

(d) Logo Policy

Participating Contractors may request permission to use NYSERDA's Attribution Logo. Participating Contractors are participants in the Program, not NYSERDA employees, contractors, partners, or representatives. Participating Contractors and their employees must therefore identify themselves as representatives of the Participating Contractor's company, not as representatives of NYSERDA or as NYSERDA employees.

Full details and instructions for requesting permission to use NYSERDA's logo are included in Section 12 of the Contractor Resource Manual.

Section 7.07 Computer, Operating System, and Internet Access Requirements

(a) Minimum Requirements

The Participating Contractor shall have access to a computer with an operating system capable of running the required and necessary Program software. The Participating Contractor shall have an active email account(s) with the ability to receive emails from NYSERDA and Program affiliates and check email on a regular basis for Program Announcements and other communications. The Participating Contractor shall ensure the email addresses on file with the Program are current and must identify a Program contact, Quality Assurance contact and webmaster (if applicable). The Participating Contractor shall ensure that all computer equipment has an antivirus solution, and that this solution is kept to the most current level necessary.

The Participation Contractor is prohibited from downloading any type of hacking tools, including, but not limited to, network sniffers, vulnerability scanners, or password cracking tools.

(b) Modeling Software

The Participating Contractor shall acquire and use Program-approved energy modeling software for building analysis, energy savings estimation, and reporting. A list of approved software is included in Section 11 of the Contractor Resource Manual.

(c) Use of Program Reference

Should the Participating Contractor no longer participate in the Program, they are

required to immediately inform NYSERDA and remove all references to NYSERDA, the Program, and Program Financing and incentives from the modeling software that generates their reports as outlined in Section 10.01 of this Agreement.

(d) Training

The Participating Contractor shall actively pursue training provided by software vendor(s) supporting NYSERDA's Programs and become proficient in the use of Program-approved energy modeling software and NYSERDA Program's platforms.

Section 7.08 Program Participant Personal Private Information

(a) Program Communications

All Participating Contractors and sub-contractors performing work in association with NYSERDA's Program are required to comply with the NYSERDA External Contractor Data Security and Controls Policy. In general, when corresponding with Program participants, Program Implementation, and NYSERDA, use the NYSERDA External Contractor Data Security and Controls Policy to determine the type of Program participant information that can be shared based on the platform being used. To minimize the occurrence of incoming emails containing confidential information, please instruct Program participants to redact utility account numbers, social security numbers and bank account numbers if you are requesting documents containing this information. Participating Contractors who fail to comply with the NYSERDA External Contractor Data Security and Controls Policy will be subject to disciplinary action.

Section 7.09 Standard Terms and Conditions

(a) Relationship of the Parties

It is understood and agreed that the personnel furnished by the Participating Contractor to perform the services stipulated in this Agreement, including personnel who may perform such services at NYSERDA's offices, shall be the Participating Contractor's employee(s) or agent(s), and under no circumstances are such employee(s) to be considered NYSERDA's employee(s) or agent(s), and shall remain the employees of the Participating Contractor, except to the extent required by section 414(n) of the Internal Revenue Code.

The relationship of the parties to this Agreement is that of independent contractors. Nothing in this Agreement shall be construed as creating a partnership, joint venture, employment, agency, legal representation or other relationship between NYSERDA and the Participating Contractor for any reason, including but not limited to unemployment, workers' compensation, employee benefits, expense reimbursement, vicarious liability, professional liability coverage or indemnification. Neither party shall have the right, power or authority to obligate or bind the other in any manner not specified in this Agreement.

(b) No Benefits

The Participating Contractor agrees that the personnel furnished by the Participating Contractor are determined to be "leased employees" within the meaning of section 414(n) of the Internal Revenue Code, the Participating Contractor acknowledges that leased employees are excluded from participation in the employee benefit plans, funds and programs provided by NYSERDA to its employees including, but not limited to, any

group health plan, sickness or accident plan, retirement plan, retirement plan or similar benefit plan provided to employees by NYSERDA, by the terms of such benefit plans, funds or programs. The Participating Contractor agrees to notify NYSERDA if it maintains (or ceases to maintain) a plan described in section 414(n)(5)(B) of the Internal Revenue Code.

(c) Notification of Claims/Events

The Participating Contractor expressly acknowledges NYSERDA's need to be advised, on an immediate basis, of the existence of any claim or event that might result in a claim or claims against NYSERDA, the Participating Contractor and/or a member of a Participating Contractor's staff. Accordingly, the Participating Contractor expressly covenants and agrees to notify NYSERDA of any such claim or event, including but not limited to, requests for accommodation and allegations of harassment and/or discrimination, immediately upon the Participating Contractor's discovery of the same, and to fully and honestly cooperate with NYSERDA in its efforts to investigate and/or address such claims or events, including but not limited to, complying with any reasonable request by NYSERDA for disclosure of information concerning such claim or event even in the event that this Agreement should terminate for any reason.

(d) Information

The Participating Contractor shall not use information obtained from NYSERDA or NYSERDA's designees in conjunction with its participation in the Program for any purpose other than to implement obligations under this Agreement.

The Participating Contractor acknowledges that information obtained from NYSERDA, or NYSERDA's designees, may include certain information concerning the Program or Program participants that is non-public, confidential, or proprietary in nature. The Participating Contractor agrees such information will be kept confidential and will not, without NYSERDA's prior written consent, be disclosed by the Participating Contractor, its agents, employees, contractors, or professional advisors, other than is expressly required to implement its obligations under this Agreement.

(e) Indemnification

The Participating Contractor shall protect, indemnify and hold harmless NYSERDA, its Program implementation contractors, and the State of New York from and against all liabilities, losses, claims, damages, judgments, penalties, causes of action, costs and expenses (including, without limitation, attorneys' fees and expenses) imposed upon or incurred by or asserted against NYSERDA or the State of New York, resulting from, arising out of or relating to Participating Contractor's or its sub-contractor's performance of this Agreement including, but not limited to, any claim or suit resulting from or related to mildew, fungus, moisture intrusion or mold of every type and nature. The obligations of the Participating Contractor under this Section shall survive any expiration or termination of this Agreement and shall not be limited by any enumeration herein of required insurance coverage.

Article VIII. Project Requirements

The Participating Contractor acknowledges that failure to follow Program requirements and procedures, including the work scope submittal and review procedures and processing of completion documents contained in the Agreement, Contractor Resource Manual, and Program

Announcements, will result in the loss of applicable incentives, and disciplinary action.

Section 8.01 Required Certifications

(a) Comprehensive Energy Assessment
The Participating Contractor shall ensure that personnel conducting a Comprehensive Energy Assessment are certified per the requirements of Section 2.01 (a) of this Agreement.

(b) Appropriate Certification(s) for Proposed Measures
The Participating Contractor may only submit projects to the Program for which it has the necessary certifications or by using a sub-contractor who maintains the necessary credentials as identified by the Program in Section 2.01 (b) of this Agreement.

Section 8.02 Project Oversight

The Participating Contractor may only submit completion documentation for projects that have had direct oversight by personnel with the appropriate professional certification(s) as determined by the Program.

The Participating Contractor shall ensure that personnel with the appropriate certification(s) oversee all Program projects, including work performed by a sub-contractor. The Participating Contractor shall ensure a technician with the appropriate Program required certification(s) for the measure(s) installed performs the required project test-out.

Section 8.03 Home Energy Assessment/Audit Process and Report

(a) Assisted Home Performance with ENERGY STAR Comprehensive Home Energy Assessments

The Program offers moderate income applicants free comprehensive home energy assessments. Availability of free comprehensive energy assessments is subject to the availability of funding. The Participating Contractor shall follow the free or reduced-cost comprehensive energy assessment reservation and incentive claim process outlined in the Contractor Resource Manual.

The Participating Contractor shall provide moderate rate Program participants with a finalized assessment report within 14 calendar days of site visit audit completion. The report shall be generated from Program-approved software and include a detailed work scope proposal that identifies measures and pricing for improving the energy efficiency, comfort and safety of the home. The report shall include all energy efficiency, comfort, health and safety opportunities that exist in the home regardless of type of service(s) the Participating Contractor offers (i.e., a Participating Contractor with heating certification needs to identify applicable envelope issues in the report) while adhering to the policies and procedures. The report shall comply with the Audit procedures documented in the Contractor Resource Manual.

(b) Residential Energy Audit Program

In addition to the ability to offer free energy assessments to moderate income customers Participating Contractors also have the ability to offer free energy audits to customers with incomes above 80% of the Area Median Income under the Residential Energy Audit Program. The policies and procedures for participating in the Residential

Energy Audit Program can be found in Addendum XYZ of the Contractor Resource Manual.

Section 8.04 Minimum Production Requirement

The Participating Contractor is required to report, annually, a minimum of twelve (12) completed projects, and/or at least $48,000 in completed, eligible work. Following the execution of this Agreement, Contractor performance will be evaluated at 6 months. Contractors not on pace to meet minimum production requirements will be required to work with their account manager and submit a work plan for meeting Program production requirements. A Participating Contractor that fails to meet the production requirement one year after the execution of this Agreement will be placed on probation for a period of 90 days. During that time the Participating Contractor will be required to meet the annual production requirement or report a minimum of three (3) completed projects, averaging at least $4,000, to the Program. If a Participating Contractor fails to meet the project completion requirement during the probationary period, their participation in the Program will be subject to termination. Refer to Section 10.01 for additional information about Program disciplinary designations.

Section 8.05 Project Submittal Review, Work Stoppage, and Completion

The Participating Contractor shall only submit work under the Program organization name that is on file with NYSERDA in the fully executed Agreement. Additionally, the proposed Program work scope and energy efficiency measures shall include only measures identified by the Program as eligible. A list of Program Eligible Measures and Accessories is provided in the Contractor Resource Manual.

For each project expected to receive Program benefits, the following steps must occur in the order listed:

(a) Project Submittal

The Participating Contractor shall only submit projects that comply with the policies set forth in this Agreement, the Contractor Resource Manual, and any applicable Program Announcements. The Program will reject non-compliant Project submittals.

(b) Initial Project Review

All Projects submitted to the Program shall be subject to the review process as detailed in the Contractor Resource Manual. With the exception of EmPower Electric Reduction (direct install) projects, it is strongly recommended that work not start on any project until the Participating Contractor has been notified that the submitted work scope has complied with Program requirements. This policy also applies to any field change order(s) submitted to the Program.

Projects started without Program approval must be submitted to the Program no later than 14 days after the start of work. Program incentives will be calculated based upon the project submission date, not the date that work began on the project. Certain energy efficiency measures, including but not limited to windows and doors, may be subject to review by the State Historic Preservation Office (SHPO) and may require a SHPO form to be submitted and approved prior to commencement of work on these measures. See Contractor Resource Manual for further details.

Any project that has been partially or fully completed prior to Project review and

approval is at the Participating Contractor's risk. In these cases, the Participating Contractor shall assume all financial liabilities associated with these projects (i.e., Contractor incentives and Program participant financing, as well as the value of the Program participant incentive and/or contractor incentive).

(c) Work Stoppage

If a Participating Contractor discovers a deficiency that prevents the energy efficiency work from being completed, the contractor will stop all work that is affected by the deficiency; notify the Program participant of the deficiency; explain that the energy efficiency work cannot resume until the deficiency is addressed; discussion restoration of the affected areas with the Program participant; and, if agreed to by the Program participant, restore the affected areas.

(d) Project Completion

Upon completion of a Program project, the Participating Contractor shall upload all required data identified in the Contractor Resource Manual.

For each project completed through the Program, the Participating Contractor shall submit all required documentation needed to process Program incentives and dispense finance payments. For AHPwES projects, all completion documents must be submitted to the Program within 90 calendar days following work scope approval. Project completion submissions not received by the Program within the 90-day approval timeframe may, at the sole discretion of NYSERDA, need to reapply for approval. For EmPower projects, Home Performance jobs must be completed within 120 days of Participating Contractor referral acceptance and Electric Reduction jobs must be completed within 60 days of Participating Contractor referral acceptance.

Participating Contractor agrees to complete all Program related work prior to submission of the invoice to NYSERDA. In the event that billing discrepancies are identified for work already paid for, NYSERDA reserves the right to withhold future payments due to the Participating Contractor until the discrepancies are resolved or request a check be submitted to the Program by the Participating Contractor for the overage. Invoicing for measures which have not been completed may result in immediate termination from the Program.

For all Program projects, all completion documents must be submitted to the Program within 30 days of completing work. Project completion documentation received after the 30-day deadline may be denied incentives, and the Participating Contractor will assume all financial liabilities for the project, including the value of the contactor incentive or Program participant incentives, where applicable. For the complete list of project submittal and completion documents, please refer to the Contractor Resource Manual.

(e) Satisfactory Job Review and Financing Approval

Notification of job review approval and Program Financing approval are independent of each other. Approval of Program Financing or incentive does not imply a satisfactory job review of a submitted project. Similarly, a satisfactory job review does not imply approval of Program Financing or incentives.

Section 8.06 Project Minimum Requirements and Eligible Measures

All projects measures submitted to the Program shall meet the requirements of the Eligible

Measures and Accessories list detailed in the Contractor Resource Manual.

Section 8.07 Pricing

The Participating Contractors shall apply fair and reasonable pricing when providing Program services, including sub-contracted services, for the installation of Eligible Measures. NYSERDA reserves the right to request additional information from contractors on pricing and to obtain comparative price quotes. The Program reserves the right to withhold Program Financing or incentives or in cases that do not appear to be fair and reasonable, or for which requested documentation has not been provided.

Section 8.08 Low-Income Households

Participating Contractors serving low-income households (households earning 60% or less of the State Median Income) must adhere to the following.

(a) Electric Reduction and Home Performance Measures

Participating Contractors providing low-income energy efficiency services will prioritize cost-effective Electric Reduction (ER) measures. ER measures include, but are not limited to, replacement of incandescent lighting with energy efficient LED lighting, replacement of refrigerators and freezers with more efficient appliances, and cost-effective conversions of electric clothes dryers or water heaters to natural gas.

Cost-effective Home Performance (HP) measures, such as air sealing and insulation, are also available through the Program. A full list of eligible measures and installation guidelines are available in the Contractor Resource Manual.

(b) Referrals

NYSERDA coordinates with utilities and other entities to receive referrals of low-income customers in need of energy efficiency services. NYSERDA will refer these customers to Participating Contractors for services. The Participating Contractor shall accept referrals from the Program, based upon the areas identified by the contractor in their signed Participating Agreement or subsequently communicated to Program Implementation Staff, and shall provide services to such leads in accordance with the provisions of this Agreement and the Contractor Resource Manual. Any changes to the Participating Contractor's service areas should be promptly communicated to Program staff.

Participating Contractors must make every effort to promptly pursue a referral and complete the necessary work. If the Participating Contractor fails to properly respond to a referral within 10 business days, the referral may be reassigned to another Participating Contractor by NYSERDA or its Program Implementers. Future referrals may be affected by a failure to promptly respond to referrals.

It is expected that the Participating Contractor will complete ER services within 60 calendar days and HP services within 120 calendar days; if services are not provided in a timely manner, and alternative production arrangements have not been agreed to, NYSERDA reserves the right to re-allocate incomplete work to another contractor.

NYSERDA will provide production goals for each approved Participating Contractor for a given production goal period. The Participating Contractor understands that NYSERDA

cannot guarantee funding for projects above the number of projects indicated in a production goal period. If it is apparent that the Participating Contractor is unlikely to meet their production goals during a given period, NYSERDA reserves the right to modify the Participating Contractor's goals at any time during the given period.

It is understood that during a Participating Contractor's normal course of business they may find a low-income customer in need of energy-efficiency services. In these situations, Participating Contractors may self-refer a project to the Program; however, it is the responsibility of the Participating Contractor to manage their workload and self-referrals so that they do not exceed their production target.

(c) Limitations of Referrals

NYSERDA has a defined budget to serve low-income Program participants and reserves the right to limit the number of contractors approved to provide programmatic services to low-income Program participants, and the number of projects assigned to approved Participating Contractors. Approval of this Agreement by NYSERDA does not guarantee that projects will be assigned to the Participating Contractor.

(d) Pricing and Project Eligibility

Participating Contractors shall adhere to the current pricing schedule for ER and HP measures installed on Program projects as outlined in Section 7 of the Contractor Resource Manual. This schedule is subject to change based upon 30 days written notice to Participating Contractors.

Participating Contractor shall not charge an income-eligible customer for any portion of a work scope approved for free services. For work scopes approved at partial incentive funding, Participating Contractors may not charge more than 50% of the total measure cost, unless otherwise approved by NYSERDA or the Program Implementor. Any direct charges to a landlord must be covered by a landlord agreement approved in advance by NYSERDA's Program Implementer.

When presenting the work scope to the low-income Program participant, the Participating Contractor must inform the Program participant of the services that are provided at no cost, and that the Program participant is under no obligation to agree to additional measures at partial or full cost in order to obtain free services.

Section 8.09 Program Participant Contribution

NYSERDA provides up to 100% of the cost of eligible work for income-qualified Program participants. The Program participant is responsible for any balance of work and the Participating Contractor must clearly state the Program participant's contribution on the contract. The Participating Contractors must not inflate costs to maximize program funding and must not change the required Program participant contribution. Participating Contractors found inflating costs or modifying the required Program participant contribution may result in disciplinary action in accordance with Section 10.01.

Section 8.10 Measure Eligibility

The Program will rely on the Eligible Measures list for determining eligibility for incentives and

Program Financing. These measures have been deemed by NYSERDA as meeting the program's requirements for program eligibility. Eligibility requirements for Program Financing are outlined in Section 4 of the Contractor Resource Manual. The Program will monitor project costs as well as projected and actual energy cost savings while working with contractors to ensure the Program meets its energy savings and cost-effectiveness targets.

Section 8.11 Project Payment Processing

It is expressly understood that NYSERDA and the Program implementor will not initiate the processing of any project payment to a Participating Contractor until all required project documentation has been received and verified as accurate. The list of required project documentation is provided in the Contractor Resource Manual.

Section 8.12 Program Financing Options

The Participating Contractor shall ensure that the Program Financing options are utilized only for the installation of Eligible Measures and Accessories identified on a Program project. A list of Program Eligible Measures and information on Program Financing options is provided in the Contractor Resource Manual.

Section 8.13 Repayment or Recapture of Program Incentives

The Participating Contractor acknowledges that failure to follow Program requirements and procedures contained in this Agreement, the Contractor Resource Manual, and future Program Announcements will result in a loss of applicable incentives and possible disciplinary action.

The Participating Contractor also acknowledges if NYSERDA determines a Participating Contractor has not strictly adhered to the terms and conditions of the Program for a project, any Program incentives paid to the Program participant and/or Participating Contractor on the project, shall be repaid to, or recaptured by, the Program from the Participating Contractor. Upon notice from NYSERDA, the Participating Contractor shall provide NYSERDA direct payment within 30 days for the identified outstanding value of any Program incentives paid on Projects that do not comply with Program terms, conditions, policies or procedures identified in this Agreement, the Contractor Resource Manual, or Program Announcements.

Section 8.14 Income-Eligibility Verification and Information

To qualify for income-based incentives, a homeowner's or renter's income must be verified by the Program. While an income-eligible Program participant may decline in writing to accept free services through the low-income component, the Participating Contractor must inform the Program participant of their eligibility to receive free services, even if the Participating Contractor does not provide low-income services through the Program. The Participating Contractor understands that the Program monitors and maintains the same high quality of service for all Program participants and must not misrepresent the availability of quality of services available through contractors approved to offer low-income services through NYSERDA's program.

Section 8.15 Mechanic's Lien

The Participating Contractor shall agree to limit any Mechanic's Lien on any project to the value of such project minus the value of the incentive.

Section 8.16 Dwellings Owned by Employees

Participating Contractors are prohibited from providing energy efficiency services, accepting Program referrals or acting as a sub-contractor to another Participating Contractor on dwellings owned or occupied or by a Participating Contractor's employees, any principal, immediate family members, or associates with a financial interest in the Participating Contractor's business. In the event there is an existing relationship, as outlined above, with a Participating Contractor and an income eligible household, the household remains eligible to receive services through NYSERDA's programs; however, the services must be provided by a Participating Contractor with no existing relationship with the household.

Section 8.17 Stop Work Order

NYSERDA may at any time, by written Order to the Participating Contractor/Vendor, require the Participating Contractor/Vendor to stop all or any part of the Work called for by this Agreement for a period of up to ninety (90) days after the Stop Work Order is delivered to the Participating Contractor/Vendor, and for any further period to which the parties may agree. Any such order shall be specifically identified as a Stop Work Order issued pursuant to this Section. Upon receipt of such an Order, the Participating Contractor/Vendor shall forthwith comply with its terms and take all reasonable steps to minimize the incurrence of costs allocable to the Work covered by the Order during the period of work stoppage consistent with public health and safety. Within a period of ninety (90) days after a Stop Work Order is delivered to the Participating Contractor/Vendor, or within any extension of that period to which the parties shall have agreed, NYSERDA shall either:

a) by written notice to the Participating Contractor/Vendor, cancel the Stop Work Order, which shall be effective as provided in such cancellation notice, or if not specified therein, upon receipt by the Participating Contractor/Vendor, or
b) terminate the Work covered by such order

If a Stop Work Order issued under this section is cancelled or the period of the Order or any extension thereof expires, the Participating Contractor/Vendor shall resume Work. An equitable adjustment shall be made in the delivery schedule and or the fee, if any, and in any other provisions of the Agreement that may be affected, and the Agreement shall be modified in writing accordingly, if:

a) the Stop Work Order results in an increase in the time required for, or in the Participating Contractor/Vendor's cost properly allocable to, the performance of any part of this Agreement, and
b) the Participating Contractor/Vendor asserts a claim for such adjustments within 30 days after the end of the period of Work stoppage; provided that, if NYSERDA decides the facts justify such action, NYSERDA may receive and act upon any such claim asserted at any time prior to final payment under this Agreement.

If a Stop Work Order is not cancelled and the Work covered by such Order is terminated, the reasonable costs resulting from the Stop Work Order shall be allowed by equitable adjustment or otherwise.

Notwithstanding the provisions of this section, the maximum amount payable by NYSERDA to the Provider shall not be increased or deemed to be increased except by specific written amendment hereto.

Article IX. Quality Assurance

The main goal of the Program Quality Assurance (QA) process is to verify that projects completed through the Program meet all Program requirements while maintaining healthy and safe living conditions for the occupants. The secondary goal of the Program QA process is to identify Participating Contractors who regularly provide effective, high quality services to their customers, and to support their efforts. A third goal is to enable early detection of performance and compliance issues, at both individual contractor and Program-wide levels, to support prompt resolution, identify needs for development or delivery of training, and ensure market confidence. Participating Contractors who provide high quality services may be recognized by NYSERDA through awards or other means, while Participating Contractors who cannot regularly complete Program projects meeting the standards of the Program are subject to probation, suspension and termination from the Program. The QA process for the Program includes an administrative review and QA field inspections.

The current Program QA policy and procedures documents are in the Contractor Resource Manual, and any updates will be issued to the QA contact for all Participating Contractors as necessary to comply with changing standards or meet the goals of the Program. Participating Contractors shall be responsible for staying current with all revisions to the QA Policy and Procedures document, BPI technical standards and the MIG.

The Participating Contractor shall not inhibit or discourage Program participants from participating in the Program QA process and shall make a good faith effort to facilitate this process. A Program participant may request a QA field inspection up to one year after the completion of a Program project; however, the Program goal is to conduct QA field inspections within 90 days from the signing of the Certificate of Completion/Project Incentives and Financing Eligibility Summary Report. Additionally, projects completed for more than one year may be subject to inspection if the situation warrants.

The Participating Contractor shall provide project related information to NYSERDA and its Program implementation contractors, upon request. This information may include, but is not limited to, approved modeling software files, contracts, and installed product information.

Article X. Participating Contractor Status Designations

Section 10.01 Participation

The Participating Contractor shall be classified in one of the participation status designations listed below. Each status designation shall be subject to limitations or requirements associated with that classification, as detailed below. NYSERDA reserves the right to modify the definition, limitations, and requirements of the participation status designations at any time. NYSERDA retains sole discretion for determining the Participating Contractor's progression into and through each status designation. In all cases, NYSERDA's written decision is final.

(a) Provisional

(i) Minimum Period of Performance

The Participating Contractor shall have the participation status of 'Provisional' during, at a minimum, the first 6 months of participation. During this time, NYSERDA may limit the number of projects a Provisional Contractor can submit to the Program as determined based on reported and founded customer complaints or failed QA field inspections, or other compliance issues deemed by NYSERDA as cause for limitation.

(ii) Provisional by Participation Level

a. **Home Performance Contractors**- Must have 3 project completions meeting minimum QA standards by the 6th inspected project or within one year. All project submissions are subject to manual review. After one year, or the 6th inspected project, whichever comes first, the Program will review Provisional Contractors not meeting the above requirements to determine future Program participation.

b. **Audit Contractor**- Must have 3 audit reviews and/or project reviews meeting Program standards by the 6th reviewed audit or project or within one year. After one year, or the 6th review, whichever comes first, the Program will review Provisional Contractors not meeting the above requirements to determine future Program participation.

(iii) Past Participants

Contractors renewing their Participation Agreements who have not completed a minimum of 12 projects during the past 12 months may, at the Program's discretion, be re-designated as Provisional and be required to meet the above criteria to be considered "Full" status.

(iv) Program Benefits

The Participating Contractor will be eligible for contractor incentives, its customers will have access to financing offered through the Program, and income-eligible households will be eligible to receive Program incentives.

(v) Quality Assurance/Quality Control (QA/QC)

The Provisional Participating Contractor must complete a minimum of three projects meeting the minimum standard QA requirements. These QA requirements must be met by the sixth inspected project or within a period of one year from the date of completion of the first completed project, whichever comes first.

Alternatively, the Participating Contractor must have consistently delivered quality projects for a period of greater than one year with an average score of all completed projects exceeding the minimum standard QA requirements, have no more than three (3) failed QA inspections at any time during the 12-month period, and have a positive correlation of performance over 12 months. Status may proceed to 'Full,' be extended as 'Provisional' or the Participating Contractor may be terminated from further participation.

At any time during, or at the end of a Participating Contractor's Provisional period, NYSERDA can change the Participating Contractor's status to Probation, Suspension, or

Termination for any reason including, but not limited to poor workmanship, lack of responsiveness, Program participant complaints, unprofessional behavior, or failure to meet minimum production requirements of the Program.

In addition to QA, contractor will be subject to Quality Control (QC) for in-progress work. QC inspections can include desktop reviews and/or in-person site visits.

(b) Full

A Participating Contractor who is not operating under any of the other status designations described herein, abides by the conditions of this Agreement and provides quality services utilizing industry best practices shall have the status designation of Full Status Contractor. Full Status Contractors are entitled to all applicable Program benefits. Full Status Contractors may have different QA/QC inspection rates based upon Program sub-status designations below:

(i) Audit Contractor-Standard Rate

a. Target of 3 inspections per year or at least 10% of completed audits or projects on an annual basis.

(ii) Home Performance-Standard Rate

a. Target of 3 QA inspections per year or at least 10-15% of completed projects, and 3 QC inspections or 10%, of in-progress projects on an annual basis.

(iii) Home Performance-Reduced Rate

a. Target of 3 QA inspections or at least 5-10% of completed projects, and 3 QC inspections or 5-10% of in-progress projects on an annual basis. To be considered for a reduced-rate, contractor must have a minimum of 20 completed projects in each of the past 2 years with at least 3 QA scores per year and an average of 4.0 or higher.

(c) Inactive

Includes contractors voluntarily deciding to end participation in the Program and Contractors terminated by the Program for disciplinary reasons. A contractor with an Inactive status will relinquish all privileges associated with participation, including access to incentives. The Contractor must immediately remove any reference to the Program from any of the Contractor's materials.

(i) Inactive-Voluntarily Withdrawal- Contractors voluntarily deciding to end participation in the Program will be placed in Inactive status. To resume participation, the Contractor may return to the Program, at the Program's sole discretion, within 30 days without penalty, providing there have been no significant changes to the Contractor's staff or certifications. After 30 days the Contractor will need to apply to the Program as a new contractor and if accepted, will have a "Provisional" status.

(ii) Inactive-Terminated- Contractors designated with the 'Terminated' status are prohibited from participation in the Program for the remainder of the Participation Agreement term. A Terminated Contractor shall be removed from the NYSERDA website and shall not represent themselves as a Participating Contractor, accept any applications for, nor recruit new participants except in the execution of

remedial action as approved by NYSERDA. A Terminated Contractor forfeits its eligibility for contractor incentives and its customers will not have access to incentives or financing offered through the Program. All references to NYSERDA and ENERGY STAR must be removed from all marketing materials, vehicles, and advertising including vehicle clings and websites, as applicable.

Customers with incomplete projects at the time of Contractor termination will be notified that the Contractor is no longer participating in the Program and may be offered such remedies as NYSERDA deems appropriate. If appropriate, NYSERDA may notify the New York State Attorney General, the New York State Department of Labor, the Better Business Bureau, BPI, or others of NYSERDA's findings and decision to terminate the Participating Contractor. Further, a Participating Contractor who hires the officers, owners or other staff of a Terminated Contractor risks disqualification from the Program at NYSERDA's sole discretion. In the event a Terminated Contractor's company is sold to new owners, the company must reapply; the use of the terminated Company's name, or similar derivations, in Program activities will be allowed at NYSERDA's discretion. Nothing in this process relieves the Terminated Contractor of the responsibility to fulfill any remaining obligation to the Program, or Program participants.

NYSERDA has sole discretion in determining whether to terminate a Participating Contractor. A Participating Contractor may be terminated from participation in the Program for any of the following reasons:

- **a.** Maintaining a suspended status for more than 30 days and is unresponsive to or failed to adequately fulfill the terms of their suspension
- **b.** Failure to maintain minimum credentials for participation
- **c.** Submits falsified documents or unauthorized signatures to the Program
- **d.** Commits illegal actions while participating in the Program
- **e.** Is convicted or has a principal who is convicted of a criminal charge that casts the Program in negative light or calls the integrity or workmanship of the Participating Contractor into question
- **f.** Is in gross violation of Program standards
- **g.** Repeatedly bills for uninstalled measures
- **h.** Fails to meet the terms of the Provisional period

(d) Disciplinary Action

A Full Status Contractor who fails to comply with any of the terms of this Agreement or the Contractor Resource Manual, or who provides fraudulent or misleading Program documentation, is subject to disciplinary action. Participating Contractors under disciplinary action have been notified in writing by the Program and are under disciplinary action for a set time frame or until the conditions of their disciplinary action notice have been met.

NYSERDA reserves the right to impose any of the following disciplinary measures at any

time. In addition, NYSERDA reserve the right to hold approvals on all submissions while investigating alleged issues. In all cases involving a Participating Contractor's disciplinary status or denial of Program incentives, NYSERDA's written decision is final.

(i) Probation

Probationary Status is reserved for Participating Contractors that have failed to meet the requirements of the Program. Probation is prescriptive in nature with both a specific list of results to be achieved and a time frame for achieving those results.

a. **Minimum Period of Performance-** A Probation period will last no less than 60 days with terms outlined in the disciplinary action letter to the Program.

b. **Program Benefits-** Under the Probation Status, the Participating Contractor will be eligible for all contractor incentives, its customers will have access to financing offered through the Program, and income-eligible households will be eligible to receive Program incentives.

c. **Quality Assurance/Quality Control (QA/QC)-** Under the Probation Status, the Participating Contractor May be subject to increased QA/QC inspection rates that, if applicable, will be defined in the terms of their disciplinary letter from the Program.

A Participating Contractor may be placed on Probation for any of the following reasons:

a. **Violation of Program Policies and Procedures or Ethical Standards-** The Participating Contractor has failed to adhere to Program policies and procedures as outlined in this Agreement. This includes but is not limited to poor or unclear contract documents, misrepresentation of available Program participant incentives, poor quality of work, repeated submissions of inaccurate, incomplete, illegible or otherwise faulty documentation, performing work in municipalities they are not licensed to work in, failure to submit overpayment reimbursements in a timely manner, and not obtaining proper building permits.

b. **Failure to Maintain Credentials-** Contractor does not maintain the minimum credentials required for Program participation as outlined in Section 2.01.

c. **Minimum Production-** A Participating Contractor is not meeting the minimum production requirements of the Program.

d. **Failure to meet Quality Requirements-** Failure to consistently deliver completed projects which pass the QA standard required for 'Full' status.

e. **Health and Safety and other Critical Violations-** Failure to take effective corrective action on a critical deficiency.

f. **Unprofessionalism-** Contractors exhibits repeated unprofessionalism in interactions with Program Staff, Implementation Staff, or Program participants.

g. **Unresponsive to Open-Fail Report Resolution-** Three (3) or more Open-Fail reports that have not been responded to or remain unresolved for more

than 30 days.

h. **Program participant Complaints-** NYSERDA and its designees have received one or more valid Program participant Complaints per quarter, the Participating Contractor is unresponsive or slow in resolving Program participant issues, exhibits poor quality workmanship or unprofessional manner on one or more projects.

i. **Contractor is Not Licensed/Not Obtaining Proper Permits**- The Program is informed that the Participating Contractor performed work in a municipality they are not licensed to work in. The Participating Contractor performs work without obtaining the proper permits as required by the governing municipality.

j. **Failure to Follow Program Procedure-** The Participating Contractor continuously submits incorrect or incomplete documentation or requires an excessive amount of administrative or technical support.

While on Probation, the contractor must continue to put work through the Program and meet minimum production requirements. In the event a contractor is placed on probation and fails to meet the terms of the Probation within six months of the issuance date of the letter, the Program, at its discretion, may elect to Suspend or Terminate the Participating Contractor for failure to meet the terms of Probation.

(ii) Suspension

A Suspended Participating Contractor shall be removed from the NYSERDA website and shall not represent themselves as a Participating Contractor, accept any applications for, nor recruit new participants into, the Program except in the execution of remedial action as approved by NYSERDA. A Suspended Participating Contractor forfeits its eligibility for contractor incentives and its customers will not have access to incentives or financing offered through the Program. NYSERDA has sole discretion in determining whether to suspend a Participating Contractor. With Program permission, a Suspended Contractor may be allowed to close out in progress Projects. Projects may be subject to increased QA/QC inspection rates that, if applicable, will be defined in the terms of their disciplinary letter from the Program. NYSERDA has sole discretion in determining the length of the Suspension Period. Grounds for suspension shall include, but are not limited to, the following:

a. **Unresponsive-Probation-** The Participating Contractor is on Probationary status and has either been unresponsive to, or failed to adequately fulfill, the terms of their probation.

b. **Unresponsive-Other-** The Participating Contractor is unresponsive to addressing outstanding Program participant concerns, Corrective Action Reports, incentive over payment reimbursements or requests from Program or Program implementation contractors.

c. **Violation of Program Policy and Procedures or Ethical Standards-** The Participating Contractor has failed to adhere to Program policies and procedures as outlined in this Agreement, thereby putting the Program, NYSERDA, and Program participants at risk. This includes but is not limited to poor or unclear contract documents, misrepresentation of available Program participant incentives, poor quality of work, repeated

submissions of inaccurate, incomplete, illegible or otherwise faulty documentation, billing for uninstalled measures, performing work in municipalities they are not licensed to work in, and not obtaining proper building permits.

d. **Contractor Staffing**- The Participating Contractor has staffing changes or staffing certification status changes resulting in the contractor not maintaining the minimum Program certification requirements.

e. **Misrepresentation**- The Participating Contractor has submitted false or fraudulent documentation to the Program at any time, during any phase of participation in the Program. This includes, but is not limited to, forging Program participant signatures, falsifying existing onsite conditions, submission of photo documentation that does not correspond to the project for which it was submitted.

Addendum to the
2019-2020 NY Residential Existing Homes Program Contractor Participation Agreement to Provide Low-Income Energy Efficiency Services for Long Island

The NYS Office of Temporary and Disability Assistance (OTDA) has allocated a portion of Low-Income Home Energy Assistance Program funds to NYSERDA for the delivery of energy efficiency and weatherization services to low-income households.

NYSERDA will deliver low-income energy efficiency and weatherization services statewide through its EmPower New York Program (EmPower). For Nassau and Suffolk Counties (Long Island), approximately $1 million will be allotted, representing an estimated 250 projects.

NYSERDA is seeking Participating Contractors currently serving Long Island who meet the qualifying criteria outlined in this Addendum to complete this work through EmPower. NYSERDA anticipates referrals to be provided under this Addendum between January 2019 and July 2019. All projects must be completed and invoiced before September 2019.

This Addendum, once executed, replaces the 2017-2018 Long Island Addendum that was extended through February 2019. This Addendum is completely voluntary and can be terminated at any time, for any reason, by NYSERDA or the contractor. Upon applicant's approval, the Participating Contractor agrees to actively participate in the Program by providing high-quality services to income-eligible customers on Long Island referred by NYSERDA.

Policies contained in this Addendum apply solely to low-income eligible households on Long Island and are not applicable to other low-income, market or moderate-income projects. Participating Contractors providing these low-income services, in addition to standard Program procedures outlined in the 2019-2020 NY Residential Existing Homes Program Contractor Participation Agreement must adhere to the following:

1. Minimum Requirements

In ordered to be considered for participation, contractors must meet the following minimum requirements:

A. Only "Full Status" Participating Contractors, not currently on suspension or probation will be considered. Provisional contractors will not be considered for this offering.
B. Participating Contractors must have a minimum of two inspections over the past 12 months with an overall post-completion quality control average inspection score of 4.5 or better for 2 inspections or 4.0 or better for 3 or more inspections in EmPower under the current QACSS scoring system.
C. Have no more than two (2) open customer concerns or Corrective

Action Reports (CARs) unresolved for over 30 days at the time of the submission and review process.

2. Additional Evaluation Criteria

In addition to the minimum requirements outlined above, preference will be given to contractors based upon the additional recommended qualifications and evaluation criteria outlined below.

A. Routinely perform work through the Program
   i. Participating Contractors who have a strong presence on Long and have the capacity, and can commit to, and complete at least 20 projects referred to the contractor during the participation period.

B. Provide comprehensive energy efficiency services

   i. In addition to BPI GoldStar status (minimum qualification), contractors must maintain at least one of the following specialty certifications: BPI Envelope, BPI Heating, NATE, NORA or BPI Manufactured Housing specialty certifications. Contractors that can provide comprehensive services by holding multiple certifications are preferred.

C. Contractor's performance

   i. NYSERDA will seek input from Program Implementation staff on the applicant's ability to consistently meet or exceed Program expectations including, but not limited to, responsiveness to Implementation/Program staff, proficiency of administrative procedures, responsiveness to inspection reports, customer concerns, and ability to perform quality work on a consistent basis.

3. Selection Process

A. All applications received by the contractor application submission deadline will be reviewed by NYSERDA Program and Implementation staff to ensure they meet the Minimum Requirements outlined in Section 1 and will be scored and ranked based on the Additional Evaluation Criteria listed in Section 2.

B. Referral goals will be established based on contractor ranking and capacity.

C. All applicants will be notified of approval/denial status.

D. Each approved applicant will be notified of the anticipated number of EmPower Home Performance/ Electric Reduction referrals to be served.

4. Referrals

Referral procedures will follow the provisions outlined in the Low-Income Addendum with the following exceptions:

A. Work will be distributed based upon the number of successful applicants, the ranking of the applicants, and their capacity. Meeting the requirements and additional evaluation criteria of this Addendum is not a guarantee of referrals. Referrals will be made at NYSERDA's discretion.

B. Under this Addendum, NYSERDA will allocate all work. Participating Contractors may not refer households into the program nor shall advertise or promote the program to recruit participants.

C. By signing this Addendum, the Participating Contractor understands that NYSERDA cannot guarantee funding for projects above the number listed above.

4. Program Procedures

A. All Program procedures, including Pricing and Project Eligibility and invoice and Payment procedures shall follow the provisions outlined in the Low-Income Addendum.

B. Projects are not eligible for incentives for the same measures through both NYSERDA's EmPower NY Program and other programs, such as PSEGLI's Residential Energy Affordability Partnership Program and National Grid's low-income program.

5. Participating Contractor Approval

NYSERDA has a defined budget and timeline to serve low-income customers on Long Island and reserves the right to limit the number of contractors approved to provide programmatic services to low-income customers, and the number of projects assigned to approved Participating Contractors. Approval of this Addendum by NYSERDA does not guarantee that projects will be assigned to the Participating Contractor.

APPLICANT AGREEMENT OF TERMS & CONDITIONS

By signing this Addendum, I attest that I have read, understand and agree to comply with the terms and conditions listed in this Addendum, in the 2019-2020 NY Residential Existing Homes Program Contractor Participation Agreement and the Contractor Resource Manual. This Addendum will remain valid unless the contractor no longer wishes to participate in the Program, provides written notice to NYSERDA that they no longer wish to participate in this effort, or the funding source for these activities is exhausted. I understand that I must maintain minimum criteria for eligibility throughout the duration of this agreement.

Company Information:

_____
Company Name

Number of **EmPower Home Performance Projects** Contractor Can Serve during the participation period: _____

Number of **EmPower Electric Reduction Projects** Contractor Can Serve during the participation period: _____

Number of Residential Energy Efficiency Projects Completed on Long Island in the Last 12 Months (both in and outside of EmPower NY): ____

List of Current Certifications:

_____
Name of Authorized Contact

_____ _____
Signature Date

Applicants should submit this entire Addendum including signed signature page to **hpwes@nyserda.ny.gov** for consideration. Applications submitted after the contractor application deadline will not be considered.

ADDENDUM ANNOUNCEMENT

New York State Healthy Homes

To: Participating EmPower NY Contractors and Interested Parties:
From: NYS Healthy Homes Value-Based Payment Pilot Team
Subject: Opportunity for Contractors Serving Western NY and NYC

The New York State Healthy Homes Value-Based Payment Pilot (Pilot) is being implemented as a partnership between the New York State Energy Research and Development Authority (NYSERDA) and the New York State Department of Health (NYS DOH). The Pilot seeks to deliver residential healthy homes interventions to 500 households in targeted regions of New York State over a two-year period. For the purposes of this Pilot, a healthy homes intervention is comprised of the following dwelling-based services: energy efficiency/weatherization measures, environmental trigger reduction measures, and home injury prevention measures. In tandem with these services, the intervention includes in-home visits from a Registered Nurse and the assignment of a Community Health Worker to support each Pilot household throughout the Pilot duration. When implemented, these combined interventions can improve occupant health, reduce energy bills, improve the comfort and safety of the home, and may result in healthcare cost savings for New York State.

The Pilot intervention is comprised of a full suite of in-unit measures. Additional detail about the possible services included is available in the NYS Healthy Homes Value-Based Payment Pilot Addendum. Not all measures will be installed in every household. Each dwelling will be assessed for appropriate measures, subject to work scope review and approval by NYSERDA. Services can be delivered by Participating Contractors or their subcontractors. Approximately $6.1 million is available for the completion of these projects.

NYSERDA is seeking Participating Contractors serving the counties listed below who meet the qualifying criteria outlined in this Addendum. These Participating Contractors shall have the technical and administrative capacity to deliver the dwelling-based services included in the Pilot intervention. Dwelling-based services can be delivered by Participating Contractors or their technically-qualified subcontractors. NYSERDA anticipates referrals to be provided under this Addendum between March 2021 and June 2023. Dwelling-based services will be delivered within some or all of the following counties, which have been identified by NYS DOH as regions of the State with high asthma burden that will also be served by Pilot-participating Medicaid managed care organizations:

- Chautauqua County (Western NY)
- Erie County (Western NY)
- Niagara County (Western NY)
- Bronx County (The Bronx)
- Kings County (Brooklyn)
- New York County (Manhattan)
- Queens County (Queens).
- Richmond County (Staten Island)

Participating Contractors seeking consideration for this offering should complete and submit the NYS Healthy Homes Value-Based Payment Pilot Addendum to no later than **November 30, 2022.**

Due to the nature of this offering and target households served, NYSERDA will provide all referrals to contractors. Customers may not be referred into the program by Participating Contractors or outreach organizations. This offer should not be advertised or promoted in order to recruit additional participants. Further, customers may not receive funding for the same measure from other programs.

Please contact Matt Houle at Matthew.Houle@nyserda.ny.gov if you have any questions about this offer.

Addendum to the 2019-June 2022 NY Residential Existing Homes Program Contractor Participation Agreement to Provide Services for the NYS Healthy Homes Value-Based Payment Pilot

The New York State Healthy Homes Value-Based Payment Pilot (Pilot) is being implemented as a partnership between the New York State Energy Research and Development Authority (NYSERDA) and the New York State Department of Health (NYS DOH). The Pilot seeks to deliver residential healthy homes interventions to 500 households in targeted regions of New York State over a two-year period. For the purposes of this Pilot, a healthy homes intervention is comprised of the following dwelling-based services: energy efficiency/weatherization measures, environmental trigger reduction measures, and home injury prevention measures. In tandem with these services, the intervention includes in-home visits from a Registered Nurse and the assignment of a Community Health Worker to support each Pilot household throughout the Pilot duration. When implemented, these combined interventions can improve occupant health, reduce energy bills, improve the comfort and safety of the home, and may result in healthcare cost savings for New York State.

NYSERDA is seeking Participating Contractors serving the counties listed below who meet the qualifying criteria outlined in this Addendum. These Participating Contractors shall have the technical and administrative capacity to deliver the dwelling-based services included in the Pilot intervention. Dwelling-based services can be delivered by Participating Contractors or their technically-qualified subcontractors. NYSERDA anticipates referrals to be provided under this Addendum between March 2021 and June 2023. Dwelling-based services will be delivered within some or all of the following counties, which have been identified by NYS DOH as regions of the State with high asthma burden that will also be served by Pilot-participating Medicaid managed care organizations:

- Chautauqua County (Western NY)
- Erie County (Western NY)
- Niagara County (Western NY)
- Bronx County (The Bronx)
- Kings County (Brooklyn)
- New York County (Manhattan)
- Queens County (Queens).
- Richmond County (Staten Island)

This Addendum is completely voluntary and can be terminated at any time, for any reason, by NYSERDA or the Participating Contractor. Upon applicant's approval, the Participating Contractor agrees to actively participate in the Pilot and will be responsible for timely completion of projects in accordance with service specifications to be provided at Pilot participation commencement and quality standards established under current NYSERDA residential programs

Policies contained in this Addendum apply solely to Pilot-participating households and are not applicable to other low-income, market or moderate-income projects. Participating Contractors providing these Pilot services in addition to standard Program procedures outlined in the 2019-June 2022 NY Residential Existing Homes Program Contractor Participation Agreement must adhere to the following:

1. Pilot Intervention Measures and Services Requested

For the purposes of this Pilot, a healthy homes intervention is comprised of the following dwelling-based services: energy efficiency/weatherization measures, environmental trigger reduction measures, and home injury prevention measures. Additional detail about the possible services included in the dwelling-based intervention are below. Not all measures will be installed in every household. Each dwelling will be assessed for appropriate measures, subject to work scope review and approval by NYSERDA. Services can be delivered by Participating Contractors or their technically-qualified subcontractors.

Healthy Homes Pilot Assessment

Pilot-specific residential dwelling assessment, including identification of needed energy efficiency measures, environmental trigger reduction measures, and home injury prevention measures

Energy Efficiency Measures

– Insulation – Air sealing – Heating unit clean and tune, repairs, and replacement	– Replacement of air filters in HVAC system – Installation of programmable thermostat – Refrigerator/freezer replacement	– Installation of LED light bulbs – Installation of low flow showerheads

Environmental Trigger Reduction Measures

– Range stove clean and tune up – Range stove replacement – Kitchen exhaust fan - repair/install – Bathroom exhaust fan - repair/install – Dryer venting – Carpet removal and installation of replacement flooring – Carpet steam cleaning – Integrated Pest Management – Mold remediation (less than 10 ft^2) – Mold remediation (greater than 10 ft^2)	– Window air conditioner and installation – Dehumidifier (with built-in pump) - basement – Dehumidifier - room – Humidifier - room unit – Dirt floor vapor barrier basement/crawlspace – Roof repair – Gutter/Downspout system - repair/replacement – Cleaning of gutters and installation of gutter screens – Plumbing - repair to supply and waste lines	– Plumbing - faucet replacement – Ventilation system – Repairs to Condensate Drain – Repairs to boilers (steam and water) – Basement Water proofing - Coatings – Basement Water proofing - Drainage systems – Basement Water proofing – Sump pump repair/ replacement

Home Injury Prevention Measures

– Smoke detectors – Carbon monoxide detectors – Anti-scalding devices – Shower seat with feet grips – Tub/shower safety grab bar – Toilet safety grab bar – Toilet safety frame – Grip strips for bathtub – Tip resistant furniture anchors	– Window repair/replacement – Handrail – interior/exterior – repair/installation – Walkway repair – Stair gripper treads, non-slip – Repair to damaged floors or stairs: trip and fall hazards – Threshold lowering/repair – Porch repair – Exterior motion sensor lights	– Installation of LED nightlights with day/night sensors – Cabinet safety latches – Child safety self-closing electrical outlet covers – Child safety gates (permanently fixed only) – Bump guards for tables – Electrical hazard mediation

Resident Education

Resident education and end-user demonstration of installed measure functionality and optimization

2. Minimum Requirements

In ordered to be considered for participation, Participating Contractors must meet the following minimum requirements:

A. Only "Full Status" or "Provisional Status" Participating Contractors, not currently on suspension or probation will be considered.
B. Participating Contractors must have a minimum of two inspections over the past 12 months with an overall post-completion quality control average inspection score of 4.0 or better for 2 inspections in EmPower under the current QACSS scoring system.
C. Participating Contractors must have no more than two (2) open customer concerns or Corrective Action Reports (CARs) unresolved for over 30 days at the time of the submission and review process.
D. Participating Contractors must have the technical and administrative capacity to deliver, or willingness to subcontract with appropriately licensed and accredited parties, for the full menu of services included in the Pilot intervention in designated Pilot counties, as listed in the "Pilot Intervention Measures and Services Requested" section of this document.

E. At commencement of Pilot participation, Participating Contractors are required to have at least one staff with Building Performance Institute Healthy Home Evaluator (HHE) certification. A staff member with the Healthy Homes Evaluator certification must be on the job site 30% of the time when measures are being installed In cases when the HHE staff member cannot be on site , they must fill out and provide the crew and/or subcontractor with the New York State Healthy Homes On-site Precautions Agreement. Information is available at http://www.bpi.org/certified-professionals/healthy-home-evaluator.

F. Building Performance Institute Healthy Housing Principles certification is preferred, but not required, for administrative staff working on Pilot activities.

G. A commitment to participation in future business development webinars (dates to be determined) designed to prepare Participating Contractors to engage in sustainable business practices for healthy homes work beyond the Pilot, aligned with recent changes to New York State healthcare policy.

3. Additional Evaluation Criteria

In addition to the minimum requirements outlined above, preference will be given to Participating Contractors based upon the additional recommended qualifications and evaluation criteria outlined below.

A. Healthy Home Evaluator Certification - Preference will be given to Participating Contractors who already have at least one staff with Building Performance Institute Healthy Home Evaluation (HHE) certification, prior to applying to the pilot.

B. Routinely perform work through the Program - Participating Contractors who have a strong presence in the counties listed on the first page of this Addendum and have the capacity, and can commit to, and complete 20 or more projects referred to the Participating Contractor during the participation period.

C. Provide comprehensive energy efficiency services - In addition to meeting the requirements of the Participation Agreement and the Minimum Requirements outlined above, contractors with additional certifications allowing them to install a comprehensive workscope will be given preference with project assignment.

D. Contractor's performance - NYSERDA will seek input from Program Implementation staff on the applicant's ability to consistently meet or exceed Program expectations including, but not limited to, responsiveness to Implementation/Program staff, proficiency of administrative procedures, responsiveness to inspection reports, customer concerns, and ability to perform quality work on a consistent basis.

4. Selection Process

A. All applications received by the contractor application submission deadline will be reviewed by a scoring committee to ensure they meet the Minimum Requirements outlined in Section 2 and will be scored and ranked based on the Additional Evaluation Criteria listed in Section 3.

B. All applicants will be notified of approval/denial status.

5. Referrals

Referral procedures will follow the provisions outlined in the Low-Income Addendum with the following exceptions:

A. Work will be distributed based upon the number of successful applicants, the ranking of the applicants, and their capacity. Meeting the requirements and additional evaluation criteria of this Addendum is not a guarantee of referrals. Interventions will be completed utilizing NYSERDA's residential program implementation infrastructure, to include assignment of projects on a first come first served basis according to the procedure established by the existing NYSERDA residential programs implementation infrastructure to ensure fair distribution of projects among [participating] entities.

B. Under this Addendum, NYSERDA will allocate all work. Participating Contractors may not refer households into the program nor shall advertise or promote the program to recruit participants.

C. By signing this Addendum, the Participating Contractor understands that NYSERDA cannot guarantee the number of referred projects associated with the Pilot for any participating contractor.

4. Program Procedures and Requirements

A. All Program procedures, including pricing, shall follow the provisions outlined in the current *NY Residential Existing Homes Program Contractor Participation Agreement.*

B. The process and requirements for compensation will follow those referenced in the "Project Requirements" section of the current *NY Residential Existing Homes Program Contractor Participation Agreement.* For each project completed, the Pilot Participating Contractor will submit all required documentation needed to process Pilot incentives. Projects must be completed within 120 days of referral acceptance. All completion documents must be submitted within 30 days of completing work.

C. Pilot Participating Contractors will comply with the quality assurance and quality control expectations established in NYSERDA's current residential programs as outlined in the "Quality Assurance" section and as referenced throughout the current *NY Residential Existing Homes Program Contractor Participation Agreement,* with the stipulation that 20% of completed Pilot projects will be inspected.

D. Projects are not eligible for incentives for the same measures through both the NYS Healthy Homes Value-Based Payment Pilot and other programs, such as EmPower NY, the New York State Weatherization Assistance Program and Utility-supported low-income programs.

5. Participating Contractor Approval

NYSERDA has a defined budget and timeline to serve NYS Healthy Homes Value-Based Payment Pilot households and reserves the right to limit the number of contractors approved to provide programmatic services, and the number of projects assigned to approved Participating Contractors. Approval of this Addendum by NYSERDA does not guarantee that projects will be assigned to the Participating Contractor.

APPLICANT AGREEMENT OF TERMS & CONDITIONS

By signing this Addendum, I attest that I have read, understand and agree to comply with the terms and conditions listed in this Addendum, in the 2019-2020 NY Residential Existing Homes Program Contractor Participation Agreement and the Contractor Resource Manual. This Addendum will remain valid unless the contractor no longer wishes to participate in the Pilot, provides written notice to NYSERDA that they no longer wish to participate in this effort, or the funding source for these activities is exhausted. I understand that I must maintain minimum criteria for eligibility throughout the duration of this agreement.

Company Information:

_____
Company Name

Number of Residential Energy Efficiency Projects Completed within the Pilot counties in the last 12 months (both in and outside of NYSERDA programs): ____

List of Current Certifications:

_____
Name of Authorized Contact

_____ _____
Signature Date

Applicants should submit this entire Addendum including signed signature page to **HealthyHomes@nyserda.ny.gov** for consideration. Applications submitted after the contractor application deadline will not be considered.

2019-2020 NY Residential Existing Homes Program
Contractor Participation Agreement
SIGNATURE FORM

SECTION 1: COMPANY INFORMATION

Please type or print legibly. Only forms with an original signature from the authorized company contact will be accepted for program review.

My company is ◯ A New Participant ◯ Renewing Participation

My company is interested in serving the following groups of customers (check all that apply)

☐ Home Performance with ENERGY STAR / Assisted Home Performance with ENERGY STAR ☐ Audit only

EmPower New York ☐ Comprehensive Home Performance ☐ Electric Reduction

Legal Company Name
(company name must match the Taxpayer ID # or SSN)

DBA - (if different than name above dba certificate must be attached)

Physical Address

Address

City

State Zip Code

County

Mailing Address (if different)

Address

City

State Zip Code

Fax

Main Phone Number

Company Website

SECTION 2: AUTHORIZED COMPANY CONTACT

Authorized Contact Name Title

(must have legal signatory rights to enter into a contractual agreement on behalf of the company listed above)

Email Phone

Owner Name ☐ Same as above

Email Phone

SECTION 3: SERVICE AREA

For Home Performance with ENERGY STAR contractors, the following information will be used on the contractor profile web page (nyserda.energysavvy.com/contractors) where homeowners search for contractors by entering their ZIP code. If you select option 1 below, the search will be performed from the center of the service area you select. If you select option 2, the search will be performed from the center of the ZIP code where your company is located. Please select only one option (by county OR radius, not both).

For EmPower New York contractors, this information will be used for project assignment purposes. If your EmPower territory is different than your Home Performance with ENERGY STAR territory please complete the information below and contact support.residential@nyserda.ny.gov to provide updates to service territory.

It is the contractor's responsibility to obtain all required licenses and permits in the regions in which they provide services per the terms outlined in the Participation Agreement.

☐ I certify my company and any subcontractors utilized on Program projects hold the necessary licenses and permits to perform work in the regions indicated below per the terms outlined in the Participation Agreement.

My Company would like to serve projects ... (*Please check only ONE*) ○ (1)Within the counties selected below OR ○ (2) Within a defined radius Radius (miles) ☐

Western New York
- ☐ Allegany
- ☐ Cattaraugus
- ☐ Chautauqua
- ☐ Erie
- ☐ Niagara

Finger Lakes
- ☐ Genesee
- ☐ Livingston
- ☐ Monroe
- ☐ Ontario
- ☐ Orleans
- ☐ Seneca
- ☐ Wayne
- ☐ Wyoming
- ☐ Yates

Central New York
- ☐ Cayuga
- ☐ Cortland
- ☐ Madison
- ☐ Onondaga
- ☐ Oswego

North Country
- ☐ Clinton
- ☐ Essex
- ☐ Franklin
- ☐ Hamilton
- ☐ Jefferson
- ☐ Lewis
- ☐ St. Lawrence

Mohawk Valley
- ☐ Fulton
- ☐ Herkimer
- ☐ Montgomery
- ☐ Oneida
- ☐ Otsego
- ☐ Schoharie

Capital Region
- ☐ Albany
- ☐ Columbia
- ☐ Greene
- ☐ Rensselaer
- ☐ Saratoga
- ☐ Schenectady
- ☐ Warren
- ☐ Washington

Southern Tier
- ☐ Broome
- ☐ Chemung
- ☐ Chenango
- ☐ Delaware
- ☐ Schuyler
- ☐ Steuben
- ☐ Tioga
- ☐ Tompkins

Mid-Hudson
- ☐ Dutchess
- ☐ Orange
- ☐ Putnam
- ☐ Rockland
- ☐ Sullivan
- ☐ Ulster
- ☐ Westchester

New York City
- ☐ Bronx
- ☐ Kings
- ☐ New York
- ☐ Queens
- ☐ Richmond

Long Island
- ☐ Nassau
- ☐ Suffolk

SECTION 4: CERTIFIED STAFF

☐ I certify that services will be provided by staff holding appropriate certifications.

My company provides the following services ☐ Audits ☐ Shell ☐ Heat ☐ AC ☐ Manufactured Housing

Please identify all staff that will be working on projects through the Program and their certifications including BPI, SPFA, NATE, NORA and manufacturer's installation certifications. Use additional pages if necessary. The Program may request a copy of certificates or ID cards for certifications other than BPI.

Year Company Established: ____________

Year Received BPI GoldStar Accreditation: ____________

Company BPI Certificate ID#: ____________

Staff Name	BPI Certification #	BPI Building Analyst	BPI Energy Auditor	BPI Healthy Home Evaluator	BPI AC/Heat Pump	BPI Envelope Professional	BPI Crew Leader	BPI Quality Control Inspector	BPI Retrofit Installer Technician	BPI Heating Professional	BPI Manufactured Housing Professional	HERS Rater	Approved Installer in NYSERDA's ASHP Program (PON 3653)	NATE AC	NATE Heat Pump	NATE Oil Heating	NATE Gas Heating	NORA Oil Heat Silver	NORA Oil Heat Gold	Manufacturer Authorized/Licensed Installer	Other
		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
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Please disclose any staff affiliations with contractors who have been terminated from any NYSERDA program in the past 5 years

Staff Name	Previous Company

SECTION 6: AFFILIATIONS WITH OTHER NYSERDA PROGRAMS

Please disclose your company's active or previous participation in other NYSERDA programs over the last five years.

☐ NYESH ☐ MPP ☐ PV/Solar Thermal ☐ Solar For All ☐ RHNY ☐ ASHP ☐ Clean Heating & Cooling

Other

SECTION 7: SIGNATURE

By signing below, I attest that I have legal signatory rights to enter into a contractual agreement on behalf of my company.

I have read, understand, and agree to comply with all participation commitments in NYSERDA's 2019-2020 NY Residential Existing Homes Program Contractor Participation Agreement, including all Participation Statuses and all supporting policies described or referenced therein. I understand that my participation in the Program is not approved until NYSERDA has reviewed and executed this Agreement.

I understand the provisions of this Agreement are effective from the date of approval by NYSERDA. NYSERDA reserves the right to modify, any any time during this Agreement term, the provision of this Agreement. I certify under the penalties of law that the statements made in the Agreement and in supporting documentation provided along with this agreement, have been examined by me and are true and complete. I understand that by signing this Agreement, I consent to any other inquiry to verify or confirm the information I have given. I hereby authorize any reference identified or provided to NYSERDA by Contractor release to NYSERDA any information pertaining to past or present relevant work. I hereby release from all liability or damage, NYSERDA and those persons, agencies or organizations who may furnish such information.

Signature of Authorized Company Contact | Print Name | Date

Electronic signatures will not be accepted. The signature above must match the name listed as the Authorized Company Contact on page 1 of this application. Please print, sign and then scan this application and submit to NYSERDA as directed below.

SECTION 8: SUPPORTING DOCUMENTATION/ATTACHMENTS & SUBMISSION INSTRUCTIONS

- ☐ Fully completed Contractor Participation Agreement Signature Form
- ☐ One copy of a current insurance certificate with NYSERDA & The State of New York listed as additional insured
- ☐ One copy of a DBA certificate (if applicable)
- ☐ Details of company and staff experience in the energy efficiency sector (required for all new applicants, renewing contractors with provisional program status or upon NYSERDA request)
- ☐ Employee roster of both certified and non-certified employees providing work experience, previous firms and training.
- ☐ Contractors should provide documentation for a minimum of six months experience for each specialty measure work they are looking to perform through the Program.(Required for all new applicants and for returning contractors upon NYSERDA request)
- ☐ A minimum of 3 Customer Reference letters detailing relevant energy efficiency projects performed within the last six months. (Required for all new applicants and for returning contractors upon NYSERDA request)

EMAIL COMPLETED APPLICATION TO:
HPWES@NYSERDA.NY.GOV -OR- MAIL COMPLETED APPLICATION TO:
New York State Energy Research and Development Authority
Attn: NY Residential Existing Home Program
17 Columbia Circle
Albany, NY 12203

Applications missing any of the above required documentation will not be approved.

Any any time, if the information provided on this Participation Agreement Signature Form and any attachment changes, it must be reported to NYSERDA, in writing or via e-mail to HPwES@nyserda.ny.gov.

To ensure delivery to your inbox, add HPwES@nyserda.ny.gov to your safe senders list.

EmPower New York
Appliance Vendor Agreement

For the Agreement Period of
July 1, 2019 - December 31, 2020

Appliance Vendor:
(hereinafter "Vendor")

Street Address:

City: State: Zip:

County:

Primary Contact: Job Title:

Telephone Number: Email Address:

Please check the regions in which the counties to be served are located

OR

Provide a service radius in miles from your location in the box below:

- ☐ **Capital Region** (Albany, Schenectady, Rensselaer, Columbia, Green, Warren, Washington, Hamilton, Saratoga County)
- ☐ **Western** (Erie, Niagara, Chautauqua, Cattaraugus, Allegany County)
- ☐ **North Country** (Jefferson, Lewis County)
- ☐ **Adirondack** (Clinton, Essex, Franklin County)
- ☐ **Mohawk** (Schoharie, Montgomery, Fulton, Herkimer, Oneida County)
- ☐ **NYC** (New York, Bronx, Queens, Kings, Richmond County)
- ☐ **Finger Lakes** (Orleans, Genesee, Wyoming, Monroe, Livingston, Wayne, Ontario, Seneca, Yates, Delaware County)
- ☐ **Southern Tier** (Steuben, Schuyler, Tompkins, Chemung, Tioga, Broome, Chenango, and Otsego County)
- ☐ **Mid-Hudson** (Sullivan, Orange, Rockland, Ulster, Westchester, Putnam, Dutchess County)
- ☐ **Central** (Oswego, Cayuga, Onondaga, Cortland, Oneida, Madison County)

OR

I wish to serve a radius of ____ miles from the street address listed above.

Through the New York Residential Existing Homes Program, New York State Energy Research and Development Authority (NYSERDA) offers EmPower New York (hereinafter referred to as “the Program”) to deliver energy efficiency and energy-use education to income-eligible households in New York State.

The Program provides cost-effective electric reduction and home performance measures. Electric reduction measures include, but are not limited to, replacement of inefficient lighting with energy efficient lighting, replacement of refrigerators and freezers with more efficient appliances, and cost-effective conversions of electric

clothes dryers or water heaters to natural gas. Home performance measures include, but are not limited to, blower-door assisted air sealing, attic, sidewall and basement insulation, and the repair or replacement of heating systems.

The role of the Vendor will be to replace inefficient refrigerators and freezers for low-income families as identified by the Program.

This Vendor Agreement (Agreement) sets out the terms and conditions under which Vendors may participate in the Program. Under this Agreement, Vendor agrees to accept referrals of income-eligible Program participants from NYSERDA's Program Implementer. NYSERDA agrees to provide Program and technical support for participating Vendors.

This Agreement supersedes any previous Agreement, is completely voluntary and can be terminated at any time for any reason by NYSERDA. In the event the Vendor wishes to terminate this Agreement, the Vendor must provide 30-days written notice to NYSERDA.

NYSERDA will make available the following services and support to Vendor:

- Referrals of Program participants for installation of energy saving appliances.
- Program support and training on service delivery, reporting, and payment procedures;
- Access to NYSERDA's NY HP Portal to access Program participant project information;
- Prompt payment for eligible services provided under the Program;
- Quality Assurance (QA) and quality control with prompt feedback to the Vendor to ensure adherence to high standards of quality;
- Easy access to the Program Implementer, for prompt response to Program inquiries.

Prospective Vendors should review this document in its entirety before completing and submitting to the Program for review and consideration. Following the submission of an application package, NYSERDA will evaluate the provided documentation prior to considering an Agreement for approval. For both new applicants and returning applicants, key evaluation criteria include, but are not limited to the following:

(i) Completion and submission of all the required Program paperwork;
(ii) The Vendor's commitment to fair and ethical business practices as demonstrated through a review of resources including, but not limited to, the Better Business Bureau, NYS Department of Labor, and crowd-sourcing websites

For returning Vendors only, the past performance of the Vendor and/or Vendor staff in the Program or other similar programs which may include but is not limited to:

(i) Demonstration of the Vendor's ability to properly, and consistently, follow Program policies and procedures, and timely completion of work;
(ii) Review of historic Vendor's QA scores;
(ii) Satisfactory and professional interaction with Program staff, Program participants, other Program Contractors and Implementation Staff;
(iii) Satisfactory record of fair and ethical business practices;
(iv) Responsiveness to Program participant complaints, Implementation Contractor inquiries, and NYSERDA directives

Following the execution of this Agreement, the Vendor agrees to play an active role in the Program by providing high-quality services to Program participants. As a condition of participating in the Program and accessing NYSERDA's benefits, Vendor agrees to the following:

1. Program Requirements

A. The Vendor, at no additional cost to NYSERDA, shall maintain or cause to be maintained throughout the term of this Agreement, insurance of the types and in the amounts specified in this Section. All such insurance shall be evidenced by insurance policies, each of which shall: (1) reference this Agreement; name or be endorsed to cover the Vendor as the insured, and NYSERDA and the State of New York as additional insured; and reference all work to be performed under the Program; (2) provide that such policy may not be cancelled or modified until at least 30 days after receipt by NYSERDA of written notice thereof; and be reasonably satisfactory to NYSERDA in all other respects. NYSERDA reserves the right to request insurance documentation and copies of sub-contractor agreements for any sub-contractor, and to request the identity of all individuals participating in Program**.**

The types and amounts of insurance required to be maintained under this Section are as follows: (1) commercial general liability insurance for bodily injury liability, including death, and property damage liability, incurred in connection with the performance of this Agreement, with minimum limits of $1,000,000 in respect of claims arising out of personal injury, sickness, or death of any one person, $1,000,000 in respect of claims arising out of personal injury, sickness or death in any one accident or disaster, and $1,000,000 in respect of claims arising out of property damage in any one accident or disaster, and (2) Workers' Compensation coverage as required by New York State.

Not less than 15 days prior to the date any policy furnished or carried pursuant to this Agreement will expire, the Vendor shall deliver to NYSERDA a certificate(s) of insurance evidencing the renewal of such policy(s), and the Vendor shall promptly pay all premiums thereon due. No work shall be performed under this Agreement without current insurance. NYSERDA will not make payments for projects completed under this Agreement without current insurance certificates.

B. The Vendor shall maintain Workers' Compensation covering the obligations of the Vendor as required under the provisions of the Workers' Compensation Law, Employers Liability, and Disability Benefits. The Vendor must provide proof of Worker's Compensation upon request by NYSERDA.

   If a Vendor is identified as a Sole Proprietor, the Vendor must complete and submit form CE-200: http://www.wcb.ny.gov/content/ebiz/wc_db_exemptions/requestExemptionOverview.jsp

   In the event a Sole Proprietor gains employees during the Agreement period, the Vendor shall notify the Program and provide proof of Worker's Compensation within 10 days of the date of hire.

C. The Vendor shall have access to a computer with an operating system capable of running the required and necessary Program software. The Vendor shall have an active email account(s) with the ability to receive emails from NYSERDA and Program affiliates and check email on a regular basis for Program communications. The Vendor shall ensure the email address on file with the Program is current and must identify a Program contact. The Vendor shall ensure that all computer equipment has an antivirus solution, and that this solution is kept to the most current level necessary.

D. The Vendor shall adhere to the pricing schedule of appliances and Program-approved models are included as Attachment A. This schedule is subject to change based upon 30-days written notice from the Vendor.

E. Vendor shall accept referrals from the Program and shall provide services to such referral leads in accordance with the 2019-2020 NY Residential Existing Home Program Contractor Resource Manual (Contractor Resource Manual) and this Agreement.

   Vendor recognizes that referrals received from the Program constitute a benefit from NYSERDA and that the Vendor must make every effort to pursue a referral in a timely fashion. If the Vendor fails to properly respond to a referral within 30 days, the referral may be made to another participating Vendor and future referrals may be affected. Vendor shall invoice for all work within 30 days of completion of the appliance delivery.

F. The Vendor shall not use information obtained from NYSERDA or NYSERDA's designees in conjunction with its participation in the Program for any purpose other than to implement obligations under this Agreement. The Vendor acknowledges that information obtained from NYSERDA, or NYSERDA's designees, may include certain information concerning the Program or Program participants that is non-public, confidential, or proprietary in nature. The Vendor

agrees such information will be kept confidential and will not, without NYSERDA's prior written consent, be disclosed by the Vendor, its agents, employees, contractors, or professional advisors, other than is expressly required to implement its obligations under this Agreement.

G. All Vendors performing work in association with NYSERDA's Program are required to comply with the NYSERDA External Contractor Data Security and Controls Policy. In general, when corresponding with Program participants, Program Implementation, and NYSERDA, use the NYSERDA External Contractor Data Security and Controls Policy to determine the type of Program participant information that can be shared based on the platform being used. To minimize the occurrence of incoming emails containing confidential information, please instruct Program participants to redact utility account numbers, social security numbers and bank account numbers if you are requesting documents containing this information. Vendors who fail to comply with the NYSERDA External Contractor Data Security and Controls Policy will be subject to disciplinary action.

H. Vendor shall maintain any relevant licenses as required by federal, State, county or municipal governments or any other governmental agencies for work in the trades it undertakes through this Program. Vendor shall produce evidence of current licensing upon request by NYSERDA or its Program Implementer.

I. Vendor acknowledges that participation in the Program is voluntary, and NYSERDA or its Program Implementer may suspend or terminate Vendor's participation in the Program for any reason, including but not limited to, failure to maintain these standards, poor performance, or inappropriate conduct. In all cases involving termination of Vendor's participation, NYSERDA's written decision is final.

J. Vendor shall not knowingly employ as a sub-contractor any firm that has been suspended or terminated from this Program or any other NYSERDA program(s) without NYSERDA's prior written permission. An employee of a sub-contractor who has demonstrated unprofessionalism, unethical behavior or has exhibited poor workmanship on one or more past Program projects may be prohibited from working on Program projects.

K. NYSERDA reserves the right to make changes to the Program upon notice to the Vendor. Programmatic changes announced through Program Announcements will supersede policies and procedures in this Agreement and/or the Contractor Resource Manual. Such notifications shall be communicated via email and posting of the Program Announcement on the HPwES Contractor Support Site at http://hpwescontractorsupport.com and the NY HP Portal, https://nyserda.energysavvy.com.

L. It is the Vendor's responsibility to ensure the appropriate Program contact's email address is on file with NYSERDA in the event of staff additions/losses or

responsibility changes. Vendor acknowledges that failure to follow Program requirements and procedures, including processing of required documents, will jeopardize reimbursement for costs incurred under this Program.

M. Vendor agrees to perform appliance replacement prior to invoicing NYSERDA for the service. In the event that billing discrepancies are identified for work already paid for, NYSERDA reserves the right to withhold comparable amounts of payments owed to the Vendor until the discrepancies are resolved. Billing for appliance installations which have not been completed may result in termination from the Program.

N. If Vendor does not comply with Program guidelines on a particular job, NYSERDA may not approve payment for that job.

O. It is the sole responsibility of the Vendor and its sub-contractors to obtain and comply with the terms of any required permits for installing appliances through the Program. The Vendor shall produce evidence of applicable permits upon request by NYSERDA or its Program Implementer.

P. A non-participating sub-contractor of a Vendor shall not represent itself as a participant in the Program or as able to offer Program services and benefits, for the purpose of executing the sale of a non-Program project. Additionally, Vendor shall not permit any sub-contractor to represent itself as working for, approved by, or certified by the State of New York, NYSERDA, or NYSERDA's Program Implementer.

Q. The Vendor shall protect, indemnify and hold harmless NYSERDA and the State of New York from and against all liabilities, losses, claims, damages, judgments, penalties, causes of action, costs and expenses (including, without limitation, attorneys' fees and expenses) imposed upon or incurred by or asserted against NYSERDA or the State of New York resulting from, arising out of or relating to Vendor's obligations under this Agreement. The obligations of the Vendor under this Section shall survive any expiration or termination of this Agreement and shall not be limited by any enumeration herein of required insurance coverage.

R. The Vendor shall not represent that the services it provides, or the materials it uses, are in any way endorsed or approved by the State of New York, NYSERDA, or NYSERDA's Program Implementer.

S. The relationship of the parties to this Agreement is that of independent contractors. Nothing in this Agreement shall be construed as creating a partnership, joint venture, employment, agency, legal representation or other relationship between NYSERDA and Vendor for any reason, including but not limited to unemployment, workers' compensation, employee benefits, vicarious liability, professional liability coverage or indemnification. Neither Vendor nor its employees shall represent themselves as employees of or certified by the State of

New York, NYSERDA or NYSERDA's Program Implementer. Neither party shall have the right, power or authority to obligate or bind the other in any manner not specified in this Agreement.

T. Vendor agrees that if the personnel furnished by Vendor are determined to be "leased employees" within the meaning of section 414(n) of the Internal Revenue Code, Vendor acknowledges that leased employees are excluded from participation in the employee benefit plans, funds and programs provided by NYSERDA to its employees including, but not limited to, any group health plan, sickness or accident plan, retirement plan, retirement plan or similar benefit plan provided to employees by NYSERDA, by the terms of such benefit plans, funds or programs. Vendor agrees to notify NYSERDA if it maintains (or ceases to maintain) a plan described in section 414(n)(5)(B) of the Internal Revenue Code.

U. Notification of Claims/Events. The Vendor expressly acknowledges NYSERDA's need to be advised, on an immediate basis, of the existence of any claim or event that might result in a claim or claims against NYSERDA, the Vendor and/or a member of a Vendor's staff. Accordingly, the Vendor expressly covenants and agrees to notify NYSERDA of any such claim or event, including but not limited to, requests for accommodation and allegations of harassment and/or discrimination, immediately upon the Vendor's discovery of the same, and to fully and honestly cooperate with NYSERDA in its efforts to investigate and/or address such claims or events, including but not limited to, complying with any reasonable request by NYSERDA for disclosure of information concerning such claim or event even in the event that this Agreement should terminate for any reason.

V. NYSERDA may at any time, by written Order to the Participating Contractor/Vendor, require the Participating Contractor/Vendor to stop all or any part of the Work called for by this Agreement for a period of up to ninety (90) days after the Stop Work Order is delivered to the Participating Contractor/Vendor, and for any further period to which the parties may agree. Any such order shall be specifically identified as a Stop Work Order issued pursuant to this Section. Upon receipt of such an Order, the Participating Contractor/Vendor shall forthwith comply with its terms and take all reasonable steps to minimize the incurrence of costs allocable to the Work covered by the Order during the period of work stoppage consistent with public health and safety. Within a period of ninety (90) days after a Stop Work Order is delivered to the Participating Contractor/Vendor, or within any extension of that period to which the parties shall have agreed, NYSERDA shall either:

    a. by written notice to the Participating Contractor/Vendor, cancel the Stop Work Order, which shall be effective as provided in such cancellation notice, or if not specified therein, upon receipt by the Participating Contractor/Vendor, or
    b. terminate the Work covered by such order

If a Stop Work Order issued under this section is cancelled or the period of the Order or any extension thereof expires, the Participating Contractor/Vendor shall resume Work. An equitable adjustment shall be made in the delivery schedule and or the fee, if any, and in any other provisions of the Agreement that may be affected, and the Agreement shall be modified in writing accordingly, if:

a. the Stop Work Order results in an increase in the time required for, or in the Participating Contractor/Vendor's cost properly allocable to, the performance of any part of this Agreement, and
b. the Participating Contractor/Vendor asserts a claim for such adjustments within 30 days after the end of the period of Work stoppage; provided that, if NYSERDA decides the facts justify such action, NYSERDA may receive and act upon any such claim asserted at any time prior to final payment under this Agreement.

If a Stop Work Order is not cancelled and the Work covered by such Order is terminated, the reasonable costs resulting from the Stop Work Order shall be allowed by equitable adjustment or otherwise.

Notwithstanding the provisions of this section, the maximum amount payable by NYSERDA to the Provider shall not be increased or deemed to be increased except by specific written amendment hereto.

2. Project Requirements

A. All refrigerators and freezers installed as part of this Agreement shall be brand new and ENERGY STAR® rated. All refrigerators and freezers installed must include:
   a. Controls that are understandable and easy to use
   b. Levelers on front legs.
   c. Shelf adjustability.

B. All refrigerators installed must include:
   a. Automatic defrost
   b. Full shelf in freezer
   c. Separate freezer control

C. The Vendor shall provide the Program participant with a written warranty of labor and materials. Refrigerators and freezers shall carry a minimum one-year parts and labor warranty from the Vendor, valid from the date the delivery is completed. After one year, the Vendor must honor any valid manufacturer's warrantee for the installed appliance. In the event labor is not covered during

this period, the Vendor is expected to charge the Program participant fair market rate for any needed repairs. Damaged or defective items, as determined by the Implementation Contractor, shall be replaced at no cost (including shipping) to the Program. For appliances installed not meeting Program requirements, as identified through a Program participant concern submission or QA inspection, the warranty will be extended one year once the Vendor has remediated all deficiencies to Program/manufacturer's standards.

D. The Vendor must provide the Program participant with a reasonable time frame for delivery. A courtesy phone call must be made if they are running more than one hour past the scheduled delivery time.

E. Vendor must maintain satisfactory and professional Program participant interaction, treat Program participants fairly, and shall provide timely completion of work and response to Program participant complaints and NYSERDA directives.

F. Deliveries must include complete installation into the home, including placement into the designated space and leveling of the new appliance. All refuse related to delivery, including appliance packing materials, must be removed at the time of installation.

G. The Vendor must make sure that all units are operational before the delivery crew leaves the home.

H. Vendor shall provide all Program participants with Vendor contact information, and all included manufacturer's documentation that came with the appliance, which at a minimum shall include the manual(s).

I. Vendor will obtain from the Program participant a delivery receipt signed by the Program participant and identifying the make and model of the appliance installed, as well as the makes and models of appliances removed. It is expressly understood that NYSERDA and its Program Implementer will not approve payment for a job without a delivery slip, signed by the Program participant, identifying the make and model of the appliance(s) installed.

J. Following the installation of an appliance, the Vendor must make repairs or provide financial compensation within seven working days for any damage done to either the appliance or the home during the installation.

K. Vendor shall remove old refrigerators and freezers from Program participant's home at the time of installation. The Vendor is responsible to legally dispose of all replaced refrigerators and freezers. All refrigerators and freezers must be dismantled to prevent reuse and parts must not be sold or distributed for reuse. Refrigerants, including but not limited to chlorofluorocarbons (CFC's), hydro chlorofluorocarbons (HCFC's), or 134A (HFC's), must be removed in accordance

with Section 608 of the Clean Air Act and 40 CFR Part 82. Any capacitors or ballasts that may contain Polychlorinated-biphenyls (PCB's) must be removed and disposed in a manner consistent with federal, state, and local laws. All capacitors must be physically removed and examined. Any capacitor that clearly says "NO PCBS" can be disposed of in a manner consistent with generally accepted industry practices. If the words, "NO PCBS" do not appear on the label, the capacitor contains PCBs and must be incinerated by an EPA approved incineration site or put in a landfill that is permitted to legally handle PCBs. All refrigerators and freezers must be sent to a shredding or baling facility for final destruction and recycling of materials.

L. If, during the warranty period, the unit fails three times for a problem originating from the manufacturer and/or repair, the Vendor must replace the appliance at no cost to the Program participant.

M. The Vendor must notify the Program Implementer immediately once they have been made aware of a manufacturing defect identified during the warranty period and assist in ensuring that the manufacturer proactively fixes the defect before the unit fails.

N. If a refrigerator or freezer fails due to manufacturing defects during the warranty period, the Vendor must reimburse the Program participant for the cost of food spoilage due to the appliance failure.

O. If the Program participant has to wait more than three days for a warranty repair part for an appliance provided by the Vendor and the appliance is inoperative, the Vendor must provide a loaner to the family.

P. If Vendor becomes involved in a dispute with a Program participant over business practices, Vendor shall work with the Program Implementer to resolve the dispute amicably.

Q. NYSERDA, its Program Implementer or QA Contractor may conduct random field inspections of work that has been performed through the Program as part of this Agreement. Vendor recognizes NYSERDA's commitment to inspect at least 10% of all jobs performed by the Vendor under the Program.

R. Vendor, upon request of NYSERDA, Program Implementer, or QA Contractor, and at no additional cost to the Program participant, shall make reasonable repairs or corrections as required. This provision survives termination of the Agreement.

S. Vendor shall maintain effective procedures for QA, for resolution of Program participant complaints or disputes, and for response to Program participant emergencies. Vendor agrees to make these procedures available to NYSERDA or its Program Implementer for review and approval upon request.

3. Required Disclosures

A. Using the space below, Vendor shall disclose whether it (any owner, member, principal, shareholder, officer, or employee) has been suspended or terminated from any NYSERDA program(s) during the past five (5) years. In addition, please provide a written explanation of the circumstances leading to such suspension or termination by attaching additional pages if necessary.

Name	Program
_____	_____
_____	_____

B. Vendor shall disclose whether the company is a Minority or Woman Owned Business.

Is your company a Minority, Veteran or Woman Owned Business? ____Yes ___No

APPLICANT CERTIFICATION

I certify, under the penalties of law that the statements made in this Agreement, and in supporting documentation provided along with this Agreement, have been examined by me and are true and complete and that I have the authority to sign on behalf of Vendor. I understand that by signing this Agreement, I consent to any other inquiry to verify or confirm the information I have given. I hereby authorize any reference identified or provided to NYSERDA by Vendor to release to NYSERDA any information pertaining to past or present relevant work. I hereby release from all liability or damage, NYSERDA and those persons, agencies or organizations who may furnish such information.

Signed:

_____
Name of Vendor Company

_____
Signature Date

_____
Printed Name

_____
Title

NEW YORK STATE OF OPPORTUNITY. | NYSERDA

EmPower New York

Appliance Price List Form

Attachment A

Please type the following information, print, and attach to your signed Agreement

Vendor Name:

Date:

Refrigerators (please propose at least 3 sizes: 15-16 cu. ft.; 18-19 cu. ft.; 21 cu. ft.)
All refrigerators MUST be ENERGY STAR models

	Manufacturer	Model #	Size (cubic foot)	kWh/year	Unit Cost	Management Fee	Total Cost
SAMPLE ONLY	XX	XX12345678901234	15	425	$ 375.00	$ 100.00	$ 475.00
	Dimensions, in inches	Width 40		Height w/Hinge 72		Depth 38	
Refrigerator 1							
	Exterior Dimensions, in inches	Width		Height w/Hinge		Depth	
Refrigerator 2							
	Exterior Dimensions, in inches	Width		Height w/Hinge		Depth	
Refrigerator 3							
	Exterior Dimensions, in inches	Width		Height w/Hinge		Depth	
Refrigerator 4							
	Exterior Dimensions, in inches	Width		Height w/Hinge		Depth	
Refrigerator 5							
	Exterior Dimensions, in inches	Width		Height w/Hinge		Depth	
Refrigerator 6							
	Exterior Dimensions, in inches	Width		Height w/Hinge		Depth	

If refrigerators are to be provided by a subcontractor, please list name:

NEW YORK STATE OF OPPORTUNITY. | NYSERDA

EmPower New York

Appliance Price List Form

Attachment A

Please type the following information, print, and attach to your signed Agreement

Vendor Name: _____

Freezers (please propose at least 2 sizes: 9-10 cu. ft.; 14-15 cu. ft.)
ENERGY STAR models are preferred

	Manufacturer	Model #	Size (cubic foot)	kWh/year	Unit Cost	Management Fee	Total Cost
SAMPLE ONLY	XX	XX12345678901234	10	410	$ 300.00	$ 75.00	$ 375.00
UPRIGHT ☒	Exterior Dimensions, in inches	Width	30	Height w/Hinge	48	Depth	30
CHEST ☐							
Freezer 1							
UPRIGHT ☐	Exterior Dimensions, in inches	Width		Height w/Hinge		Depth	
CHEST ☐							
Freezer 2							
UPRIGHT ☐	Exterior Dimensions, in inches	Width		Height w/Hinge		Depth	
CHEST ☐							
Freezer 3							
UPRIGHT ☐	Exterior Dimensions, in inches	Width		Height w/Hinge		Depth	
CHEST ☐							
Freezer 4							
UPRIGHT ☐	Exterior Dimensions, in inches	Width		Height w/Hinge		Depth	
CHEST ☐							
Freezer 5							
UPRIGHT ☐	Exterior Dimensions, in inches	Width		Height w/Hinge		Depth	
CHEST ☐							
Freezer 6							
UPRIGHT ☐	Exterior Dimensions, in inches	Width		Height w/Hinge		Depth	
CHEST ☐							

If freezers are to be provided by a subcontractor, please list name:

EmPower New York

Appliance Price List Form

Attachment A

Supplement to EmPower New York Vendor Agreement for period from July 1, 2019 through December 31, 2020. This form must be submitted with the Appliance Price List form, a hardcopy must be attached or an electronic copy sent to elizabeth.lazarou@nyserda.ny.gov .

Vendor Name:

I certify, under penalty of law that the revisions made to the pricing schedule for our Appliance Vendor Participation Agreement, submitted on the enclosed Attachment A, for the NYSERDA EmPower New York program, and the statements made in this agreement, have been examined by me and are true and complete. I understand that by signing this price form, my company consents to any other inquiry to verify or confirm the information that I have given.

Vendor Representative

Title

Signature

Date

Appendix 1

ADDITIONAL COVID-19 TERMS AND CONDITIONS

In response to the ongoing COVID-19 pandemic, beginning in March 2020, Governor Cuomo issued a series of Executive Orders addressing various categories of business activities, including, but not limited to, construction, manufacturing, administrative, and professional services. In addition, Empire State Development (ESD) was authorized to develop *Guidance for Determining Whether a Business Enterprise is Subject to a Workforce Reduction Under Recent Executive Orders*. Although much of NYSERDA's clean energy efforts involve construction activity, NYSERDA engages in many other activities that are affected by State COVID-19 directives and requirements.

The State has also established a series of metrics required to begin a phased reopening plan. The phase-in plan prioritizes businesses considered to have a greater economic impact and inherently low risks of infection for the workers and customers, followed by other businesses considered to have less economic impact, and those that present a higher risk of infection spread.[1] Pursuant to Executive Order 202.31 and "NY Forward," New York will reopen on a regional basis as each region meets the criteria necessary to protect public health.

For New York State regions and approved activities that have been deemed reopened pursuant to the State's Regional Monitoring Dashboard, and in light of the paramount importance placed on health and safety at this time, NYSERDA hereby directs and requires that NYSERDA contractors performing clean energy activity pursuant to a NYSERDA contract or program to comply with all Executive Orders addressing the COVID-19 pandemic, and in all events, NYSERDA contractors are expected to continue to comply with all relevant State, federal and local rules. All contractors are also accountable for staying current with any updates to these requirements. COVID-19 related guidance and references can be found on NYSERDA's website at: https://www.nyserda.ny.gov/ny/COVID-19-Response, and is hereby deemed incorporated herein, as may be updated from time to time.

Phase I of reopening does include all construction activity. All NYSERDA contractors specifically engaging in construction activity are required to, without limitation, adhere to and attest to the New York State Department of Health (NYS DOH) *Interim Guidance for Construction Activities During the COVID-19 Public Health Emergency* prior to commencing work on NYSERDA clean energy construction projects. The attestation is embedded within the Guidance Document and NYSERDA advises that contractors maintain a copy of such attestation for their records. Also, as

[1] In accordance with ESD's current Essential Business Guidance and subject to all relevant health and safety requirements, NYSERDA is hereby allowing its contractors performing program work pursuant to a NYSERDA contract or program to undertake the following activities on a Statewide basis:

- electric power generation and storage-related development, construction, operation or maintenance, except with respect to new solar projects on residential sites (which residential projects must continue to follow the regional reopening);
- electric vehicle (EV) charging station installation, operation and maintenance at commercial and government sites; and
- activity by a single worker who is the sole worker on a project site.

included in the NYS DOH Construction Guidance, for all contractors performing construction activities, completed safety plans must be conspicuously posted on a project site. The State has provided a template to assist in developing Business Safety Plans, which is available through the NY Forward website as well as NYSERDA's COVID-19 webpage. While these plans are not required to be submitted to NYSERDA or a State agency for approval, they must be retained on the premises of the business or construction site and must made available to the NYS DOH or local health or safety authorities in the event of an inspection.

In accordance with Executive Order 202.31, business activities may only commence for New York State regions that have been deemed reopened and is limited to only those activities approved for reopening. For state regions and activities that remain on PAUSE, or for reopened areas that revert back to PAUSE, NYSERDA continues to direct a pause in work until that region is re-opened for all NYSERDA contractors performing program activity pursuant to a NYSERDA contract or program, requiring in-person presence at a project site, that is not explicitly permitted under State directives or guidance.

During this time of uncertainty, NYSERDA is committed to working collaboratively with its Contractors to address contractual obligations when performance under the contract may be suspended or delayed due to COVID-19-related limitations in business activity that are beyond the reasonable control of either NYSERDA or the Contractor.

NYSERDA takes health and safety issues of its contractors and program participants very seriously and will strictly enforce compliance with Executive Order 202.31, and any relevant subsequent Executive Orders, and this guidance, as well as existing contractual obligations that require NYSERDA's contractors to comply with all general and special Federal, State, municipal and local laws, ordinances and regulations that may in any way affect the performance of agreements executed with NYSERDA. Accordingly, non-compliance may give rise to disciplinary action, which may include, without limitation:

- orders to stop work;
- immediate termination of the Agreement;
- a determination of ineligibility to participate in one or more NYSERDA program efforts, on either a temporary or permanent basis;
- reporting of non-compliant activity to enforcement authorities, including but not limited to the NY Forward online complaint submission form, which will result in investigation and, if credible, enforcement.

This guidance supersedes all previously issued guidance and shall be deemed to modify any applicable provisions in any NYSERDA contract, program rule, guideline, manual, solicitation or other applicable document or agreement.

Overview of Customer Incentives

NYSERDA offers energy efficiency services to New York State homeowners at all income levels through the Home Performance with ENERGY STAR®, Assisted Home Performance with ENERGY STAR and EmPower New York Programs. Below is an outline of services available that are further described in Sections 3 and 4 of the Contractor Resource Manual.

Home Performance with ENERGY STAR – Market Rate

- For households with income above 80% of the State or Area Median Income.
- Low cost and no-cost comprehensive home energy assessments
- Green Jobs – Green NY Financing

Assisted Home Performance with ENERGY STAR – Moderate Income

- For households with income less than or equal to 80% of the State or Area Median Income, whichever is greater.
- No-cost comprehensive home energy assessments.
- Discount of up to 50% of eligible work. Customers must apply for the Assisted Home Performance with ENERGY STAR Subsidy.
    - For a single family household, the cap is $5,000. Effective October 1, 2016 the cap will be $4,000.
    - For a 2-4 unit home, the cap is $10,000. Effective October 1, 2016 the cap will be $8,000.
- Green Jobs – Green NY Financing

EmPower NY - Low Income

- For households with income less than or equal to 60% of the State Median Income. Customers must apply to EmPower New York.
- No-cost and partial cost energy services at an average of $3,200 for home performance (HP) measures and $600 for electric reduction (ER) measures.
- No-cost comprehensive home energy assessment.
- EmPower HP services will be limited to households with high to moderate energy usage, as follows:
    - Natural gas heat and hot water: at least 750 therms/year
    - Natural gas heat with electric hot water: at least 550 therms/year
    - Propane heat and hot water: at least 700 gallons/year
    - Propane heat with electric hot water: at least 525 gallons/year
    - Oil heat: at least 525 gallons/year
- Projects that do not reach the thresholds above, will be limited to ER services.

Customer Incentives Summary

Income Qualification[1]	Comprehensive Energy Assessment	Customer Incentives[2]	GJGNY Financing[3]	
			On-Bill Recovery	Smart Energy Loan
Low-Income EmPower NY ≤60% SMI	FREE	100% of eligible measures	3.49%	3.49%
Moderate-Income Assisted Home Performance with ENERGY STAR 61-80% S/AMI	FREE	Up to 50% of cost of eligible measures Max. $5,000 – single family home Max. $10,000 2-4 unit building Effective 10/1/2016 – Max. $4,000 – single family home Max. $8,000 2-4 unit building	3.49%	3.49%
Market Rate Home Performance with ENERGY STAR 81-120% S/AMI	FREE	N/A	3.49%	3.49%
Market Rate Home Performance with ENERGY STAR Above 120% S/AMI	FREE	N/A	6.99%	7.49%
Market Rate Home Performance with ENERGY STAR 200-400% S/AMI	REDUCED COST	N/A	6.99%	7.49%

- [1]Based on State Median Income or Area Median Income, whichever is greater.
- [2]Incentives apply only to eligible measures (see section 6 for measures eligible for incentives and financing).
- [3] Interest rates for energy efficiency work. Consumers may opt to apply for either or both GJGNY loan types. Interest rates for Smart Energy loans that include standard billing by mail are 0.5% higher than the rate shown.

COMBINED RESIDENTIAL APPLICATION

EmPower New York and Assisted Home Performance with ENERGY STAR®

NEW YORK STATE OF OPPORTUNITY. | NYSERDA

This checklist will help ensure that your application will be processed in a timely manner. Please place a ✓ in the appropriate box once you have ensured that all Application Sections are complete, and the required documentation is provided. Applications are processed on a first come, first served basis.

☐ General Applicant Information (Sections A, B & C) – Verify that all required fields are completed (unless marked as "optional").

RENTERS ONLY:

☐ Landlord Name, Address and Phone Number provided in Section C

UTILITY INFORMATION (SECTION D):

☐ Sign Customer Fuel/Energy Bill Release Authorization

☐ Include a copy of complete Electric Bill

☐ Include a copy of complete Gas Utility Bill or bill from Fuel Supplier if heating by propane, oil, kerosene, wood, or coal

INCOME INFORMATION (SECTION F & G):

☐ Verify that all required fields are complete

DEMOGRAPHICS (SECTION H): *Optional*

☐ Optional

APPLICANT AFFIRMATION (SECTION I):

☐ Read and sign

PLEASE RETURN APPLICATION TO:

Energy Audit Application
8 Southwoods Blvd
Suite 201
Albany, NY 12211

The following information will help determine which services and programs are most appropriate for you. In some situations, EmPower New York services are provided by agencies of the Weatherization Assistance Program (WAP). In these instances, this application will serve as an application for the WAP and may be forwarded to your local agency for these services. Please print clearly and provide as much information as possible. This application can be completed online at nyserda.ny.gov/ahp-empower. Completing the application online is the fastest for NYSERDA to review and approve your application.

SECTION A: APPLICANT INFORMATION

Applicant Name

Address | Apartment #

City | State | Zip

NY

County

Phone Number *(include area code)* | Secondary Phone *(include area code)*

Email Address

Mailing Address *(if different from above)*

Additional Contact Person | Relationship to Applicant | Phone Number *(include area code)*

SECTION B: DWELLING INFORMATION

☐ I own ☐ I rent

☐ Single-Family ☐ Multifamily_____# of units ☐ Manufactured/mobile home ☐ Group home/shelter

SECTION C: OWNER INFORMATION

Owner's Name | Phone Number *(include area code)*

Email Address

Is the Owner's Address the same as the building address? ☐ Yes ☐ No – If "No" please complete the address below.

Address

OPTIONAL: *Please add any information that we may find helpful in reducing your energy consumption and list occupant health issues or special needs we need to aware of:*

EMPOWER CONTRACTORS AND REFERRING AGENCIES: *Print your buisness or agency name.*

SECTION D: UTILITY INFORMATION

My main heating fuel is:

☐ Electric ☐ Oil ☐ Kerosene ☐ Natural Gas ☐ Propane ☐ Wood ☐ Pellets ☐ I don't know

☐ Other:_____

My secondary heating fuel is:

☐ Electric ☐ Oil ☐ Kerosene ☐ Propane ☐ Wood ☐ Pellets ☐ Coal ☐ I do not have secondary fuel

☐ Other:_____

ELECTRIC UTILITY: If you are responsible for the electric bill, provide the following:

Utility Name:_____

Account Number:_____ If NYSEG or RG&E – POD # _____

GAS UTILITY: If you are a natural gas utility customer and responsible for the bill, provide the following:

Utility Name:_____

Account Number:_____ If NYSEG or RG&E – POD # _____

PRIMARY FUEL SUPPLIER: if you heat by a fuel other than natural gas or electricity, provide the following:

Company Name:_____

Account Number: _____

CUSTOMER AUTHORIZATION for Release of Fuel/Energy Bills (for previous two years and future three years)

My signature certifies that I am financially responsible for the account(s) listed on this application. I hereby consent and authorize the electricity and fuel suppliers named in this application to release any and all energy usage information, including account number(s), related to the above property address, to representatives of the New York State Energy Research and Development Authority (NYSERDA), and the Weatherization Assistance Program (WAP), and/or its designated representatives for the period beginning two years prior to the application date and ending three years after program participation. I understand that this information will be kept confidential, to the extent permitted by law, and used for the purposes of assisting me to utilize the programs, determining eligibility for NYSERDA's residential programs and financial incentives, eligibility for the WAP, for estimating energy savings, and for evaluation purposes.

Customer Signature:_____ Date: _____

SECTION E: PARTNER INFORMATION

If you would like to work with a specific participating program contractor in NYSERDA's energy efficiency programs, please indicate below. We will work to accommodate your request, but final selection is based on the participating program contractor's availability and acceptance of your project. If you are not working with a program contractor, we will assign the next available participating program contractor from our approved list.

Contractor Name: _____

NYSERDA maintains a network of professional energy advisors who may already be assisting you with this program and other NYSERDA programs, utility offerings, and other local resources. If you are currently working with a NYSERDA energy advisor, please indicate which one below. The program will share limited project information with them so they can continue to assist you each step of the way.

NYSERDA Energy Advisor Name: _____

SECTION F: INCOME DOCUMENTATION - Please select one of the following

A. ☐ Geo-Eligibility: You may be eligible to qualify for incentives based on your address. Visit nyserda.ny.gov/ahp-empower for more information. If you are in a Geo-eligibility area, please check the box.

B. ☐ Referral letter: If you received a letter from NYSERDA with a referral code, enter it below. If you have a referral code, no additional income documentation is required.

Referral ID#:_____

C. ☐ Provide a copy of ONE of the following: Copy of entire award letter for HEAP, SNAP (Food Stamps), TANF (Temporary Assistance for Needy Families) or Supplemental Security Income dated within the past 12 months

D. ☐ If A, B, or C above do not apply, then provide income documentation under one of the options below:

Option 1

- Pay stubs: all household gross income for the last 60 days. To calculate monthly income total, if income is:
  - Weekly: multiply weekly income representing 4 most recent weeks by 4.3
  - Bi-weekly: multiply 2 most recent consecutive weeks by 2.15
  - Twice a month: multiply by 2
- Social Security and Social Security Disability: copy of award letter
- Documentation of all forms of income including disability, worker's compensation, unemployment, pension, maintenance, child support, annuities, Veteran's benefits, and all other income
- Self-Employment: IRS Report of quarterly earnings for the last three months

Option 2

- Tax returns: This option is only available if all household members who were required to file a tax return did so. If documenting income with tax returns, all sources of income must be documented with tax returns. Returns must be the most recent Federal Income Tax Return (Form 1040, 1040A, or 1040EZ). If documenting rental, business or farm income – you must submit corresponding schedules (Schedule C, E, and F).

SECTION G: INCOME INFORMATION

Total number of members in the household?_____

Include the following information for each household member.

Full Name	Gender (optional)	Age	Student (Yes or No)	Source(s) of Income	Weekly	Monthly	Yearly
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
				Total Income for the Household	$	$	$

SECTION H: DEMOGRAPHICS

To assist NYSERDA understand the impacts of our programs on local communities, please complete the below demographic questions. Answering these questions is optional and does not affect your program eligibility.

Indicate the number of household members who are:

60 years of age or older: _____ Disabled: _____ 17 years of age or younger: _____ Veteran: _____

Indicate if a member of the household is: *(select at least one, and as many as applicable)*

- ☐ Prefer Not to Answer
- ☐ Hispanic or Latinx
- ☐ Native American / First Nation / Alaskan Native
- ☐ Asian
- ☐ Black or African American
- ☐ Native Hawaiian or Pacific Islander
- ☐ White
- ☐ Unknown
- ☐ Other

SECTION I: APPLICANT AFFIRMATION

I authorize the release of my eligibility determination and information provided on this application, supporting documents including income documentation, as well as information regarding my project status to the following: NYSERDA and its representatives; the NYS Weatherization Assistance Program (WAP) and/or its designated representatives; any community-based organizations working on behalf of NYSERDA programs; my electric and natural gas utilities; and the following individuals or organizations:_____ whom I have engaged for the purpose of assisting me with the completion and submittal of the application.

I understand that the information provided by me may be used to contact or assist me to utilize any current or future program offerings I may be eligible for and for the purposes of determining eligibility for NYSERDA and/or utility residential programs and financial incentives, determining eligibility for the NYS WAP, for estimating energy savings potential, and for evaluation purposes. I understand that all information will be kept confidential to the extent permitted by law. I understand that if services are provided to me through NYSERDA's residential programs or the NYS WAP, that my participation in these programs will not affect my social security, public assistance, or any other income.

I understand that this application does not guarantee that assistance will be granted to me. Whether or not services are provided will depend on the number of applications received and the availability of funds and priorities established by the programs.

I agree to provide NYSERDA representatives, the NYS WAP representatives, and independent participating contractors access to my dwelling, at times that are mutually acceptable, to perform program activities including energy inspections, installation of measures, Quality Assurance, and evaluation activities. I understand that participating contractors are independent contractors and provide a one-year warranty on labor for work completed. I further understand that participating contractors and vendors will provide appropriate warranties on any equipment provided and that no additional warranties are provided by NYSERDA or the NYS WAP.

I subscribe and affirm, under the penalties of law, that the statements made on all parts of this application, including statements made on any accompanying documents, have been examined by me and are to the best of my knowledge true and complete.

I understand that my signature on this form gives permission for NYSERDA, representatives of the NYS WAP, and their designees to assure my eligibility for NYSERDA's programs and the NYS WAP. I consent to any inquiry to verify or confirm the information that I have given. I understand that if I give false information or withhold information in order to receive benefits that I am not entitled to, I can be prosecuted to the fullest extent of the law. I also state that no person named in this application is subject to disqualification for weatherization services under the Immigration Reform and Control Act of 1986 (Public Law 99-063).

Applicant Signature _____ Date _____

Applicant Representative Signature _____ Date _____

Your contact information may be shared with other residential programs within NYSERDA. To opt out of this, please initial here._____

INTERNAL USE ONLY

Reviewed By: ☐ HEAP ☐ OFA ☐ Utility ☐ Weatherization Subgrantee ☐ EmPower ☐ Other:_____

Check all benefits that the household receives: ☐ SSI ☐ HEAP ☐ SNAP ☐ TANF

On the basis of the information provided by the applicant, the household is determined to be:

☐ Eligible for AHP Only ☐ Eligible for Weatherization ☐ NOT Eligible for Weatherization

☐ Eligible for EmPower ☐ NOT Eligible for EmPower ☐ EmPower eligible, but wait-listed for Weatherization

Check here if:

☐ Household was previously served by Weatherization

☐ Household ineligible for further services through EmPower

Additional Comments:

Empower Representative Signature | Title | Date

NEW YORK STATE OF OPPORTUNITY. NYSERDA

طلب السكن المدمج

EmPower New York - طلب السكن المدمج والأداء المنزلي المُدعم مع ®ENERGY STAR

ائمة التحقق هذه على ضمان تناول ومعالجة طلبك في الوقت المناسب. يرجى وضع علامة ✓ بجانب كل بند بمجرد التأكد من اكتمال جميع أقسام الطلب وتقديم الوثائق المطلوبة. تتم معالجة الطلبات على أساس نظام الأولوية للأسبقية.

- ☐ معلومات عامة خاصة بمقدم الطلب (القسم (أ) و(ب) و(ج)) - تحقق من إكمال جميع الحقول المطلوبة (لم يتم وضع علامة "اختياري").

المستأجرون فقط:

- ☐ سجل اسم المالك وعنوانه ورقم هاتفه في القسم (ج)

معلومات عن المرافق (القسم د):

- ☐ يع العميل على تصريح تحرير فاتورة الوقود/الطاقة
- ☐ إرفاق نسخة كاملة من فاتورة الكهرباء
- ☐ من فاتورة مرفق الغاز أو فاتورة صادرة من مزود الوقود في حالة التسخين بالبروبان أو الزيت أو الكيروسين أو الخشب أو الفحم

معلومات عن الدخل (القسم (و) و (ز)):

- ☐ تحقق من أن جميع الحقول المطلوبة كاملة

ات الديموغرافية / التركيبة السكانية (القسم ح(اختياري

- ☐ اختياري

تأكيد مقدم الطلب (القسم ط):

- ☐ برجاء القراءة والتوقيع

برجاء إرسال الطلب إلى العنوان التالي:

Energy Audit Application
8 Southwoods Blvd
Suite 201
Albany, NY 12211

ستساعدك المعلومات التالية على تحديد الخدمات والبرامج الأنسب لك. في بعض الحالات، يتم تقديم خدمات EmPower New York من قبل برنامج مساعدة وحماية المنازل من عوامل الطقس السيئة (WAP). في هذه الحالات، سيكون هذا الطلب بمثابة طلب مرسل إلى برنامج مساعدة وحماية المنازل من عوامل الطقس السيئة (WAP) ويمكن استخدامه للتأهل للحصول على تلك الخدمات. يرجاء الطباعة بوضوح وتقديم أكبر قدر ممكن من المعلومات. يمكن إكمال هذا الطلب عبر الإنترنت على nyserda.ny.gov/ahp-empower أو اختيار إرسال الطلب عبر البريد الإلكتروني أو البريد العادي إلى هيئة أبحاث وتطوير الطاقة بولاية نيويورك (NYSERDA) لمراجعة طلبك والموافقة عليه.

قسم (أ): معلومات عن مقدم الطلب

اسم مقدم الطلب

العنوان | رقم الشقة

المدينة | الولاية: نيويورك | الرمز البريدي

المقاطعة

رقم الهاتف (مع كتابة كود المنطقة) | رقم الهاتف الثانوي (مع كتابة كود المنطقة)

البريد الإلكتروني

العنوان البريدي (إذا كان يختلف عن العنوان البريدي المذكور أعلاه)

جهة/شخص إضافي يمكن الاتصال به | صلته بمقدم الطلب | رقم الهاتف (مع كتابة كود المنطقة)

قسم (ب): معلومات عن المسكن

☐ تملك ☐ تستأجر

☐ عائلة واحدة ☐ متعدد العائلات عدد ________ من الوحدات ☐ مسكن مصنوع / منزل متنقل ☐ مسكن جماعي / مأوى

قسم (ج): معلومات عن المالك:

اسم المالك | رقم الهاتف (مع كتابة كود المنطقة)

البريد الإلكتروني

هل عنوان المالك مطابق لعنوان المبنى؟ ☐ نعم ☐ لا إذا كانت الإجابة "لا"، يرجاء كتابة العنوان في الحقل أدناه.

العنوان

يرجاء تقديم أي معلومات قد نجدها مفيدة في تقليل معدل استهلاك الطاقة أو ذكر المشكلات الخاصة بالمنزل أو الاحتياجات الخاصة التي نحتاج إلى أن نكون على علم بها:

مقاول EMPOWER أو الوكالات المجتمعية: *يرجاء كتابة اسم الشركة أو الوكالة التجارية بأحرف واضحة.*

مس)د(: معلومات عن المرافق

ر المصدر الرئيسي لوقود التدفئة في محل إقامتي هو:

☐ كهرباء ☐ زيت ☐ الكيروسين ☐ الغاز الطبيعي ☐ بروبان ☐ خشب ☐ كريات ☐ فحم

☐ أخرى: ______________________

المصدر الثاني / الاحتياطي لوقود التدفئة في محل إقامتي هو:

☐ كهرباء ☐ زيت ☐ الكيروسين ☐ بروبان ☐ خشب ☐ كريات ☐ الفحم ☐ ال مصدر ثاني / احتياطي للوقود

☐ أخرى: ______________________

مرفق الكهرباء: إذا كنت مسؤولاً عن دفع فاتورة استهالك الكهرباء، قدم ما يلي:

اسم المرفق: ______________________

الحساب: ______________________ إذا كان صادر من شركة/وكالة والية نيويورك للكهرباء والغاز)NYSEG(أو الرقم الصادر من شركة/ روتشيستر للكهرباء والغاز - نقطة تقديم الخدمة)RG&E - POD #(______________________

ز: إذا كنت أحد عمالء لمرفق الغاز الطبيعي ومسؤول عن دفع فاتورة االستهالك، فقدم ما يلي:

اسم المرفق: ______________________

الحساب: ______________________ إذا كان صادر من شركة/وكالة والية نيويورك للكهرباء والغاز)NYSEG(أو الرقم الصادر من شركة/ روتشيستر للكهرباء والغاز - نقطة تقديم الخدمة)RG&E - POD #(______________________

لوقود: إذا قمت باستخدام وقود غير الغاز الطبيعي أو الكهرباء ألغراض التدفئة والتسخين، فقدم ما يلي:

اسم الشركة: ______________________

رقم الحساب: ______________________

راج عن فواتير استهالك الوقود / الطاقة)للسنتين السابقتين وثالث سنوات مستقبلية(

أقر بتوقيعي أدناه أن الحساب)الحسابات(المدرجة في هذا الطلب. أقر بموجب بموجب هذا وأصرح لموردي الكهرباء والوقود المذكورين في هذا التطبيق لومات تتعلق باستهالك الطاقة، بما في ذلك رقم)أرقام(الحساب الخاصة بعنوان العقار أعاله، إلى ممثلي هيئة أبحاث وتطوير الطاقة بوالية نيويورك)NYSERDA(أو برنامج مساعدة وحماية المنازل من عوامل الطقس السيئة)WAP(للفترة التي تبدأ قبل عامين من تاريخ تقديم الطلب سنوات من المشاركة في البرنامج. أفهم وأقر أن هذه المعلومات ستبقى سرية، في حدود ما يسمح به القانون، وستُستخدم لتحديد أهليتي في طلباتي لالستفادة من واألحقية للحصول على مزايا البرامج السكنية والحوافز المالية المقدمة من هيئة أبحاث وتطوير الطاقة بوالية نيويورك)NYSERDA(وبرنامج مساعدة وحماية المنازل من عوامل الطقس السيئة)WAP(ووفورات الطاقة وألغراض التقييم.

توقيع العميل: ______________________ التاريخ:

مس)ه(: معلومات الشريك

عمل مع مقاول معين لبرنامج تشاركي في برامج كفاءة الطاقة المقدمة من هيئة أبحاث وتطوير الطاقة بوالية نيويورك)NYSERDA(ال يجب إجراء اإلشارة ك لكن االختيار النهائي يعتمد على مدى توفر مقاول البرنامج التشاركي وقبوله لمشروعك. إذا كنت ال تتعامل مع مقاول برنامج، فسنعين لك قاول متاح للبرنامج التشاركي من قائمتنا المعتمدة.

اسم المقاول: ______________________

م هيئة أبحاث وتطوير الطاقة بوالية نيويورك)NYSERDA(شركاء مستشاري الطاقة المحترفين الذين قد يساعدونك بالفعل في هذا البرنامج وبرامج هيئة أبحاث وتطوير الطاقة بوالية نيويورك)NYSERDA(األخرى وعروض خدمات المرافق والموارد المحلية األخرى. إذا كنت تعمل مع أحد مستشاري الطاقة التابع لهيئة بحاث وتطوير الطاقة بوالية نيويورك)NYSERDA(، يُرجى تحديده أدناه. سيشاركهم البرنامج معلومات محدودة عن المشروع حتى يتمكنوا من االستمرار في مساعدتك في كل خطوة في هذا السبيل.

تشار الطاقة في هيئة أبحاث وتطوير الطاقة بوالية نيويورك)NYSERDA(: ______________________

توثيق المعلومات الخاصة بالدخل - اختر واحدة من الخيارات التالية

☐ أ. الأهلية / التحقق الجغرافي: قد تستحق التأهل للحصول على حوافز وفقاً لعنوانك. برجاء زيارة nyserda.ny.gov/ahp-empower لتعرف على مزيد من المعلومات. إن كنت في منطقة تحظى بالأهلية (التحقق الجغرافي)، فبرجاء وضع علامة في المربع.

☐ ب. خطاب الإحالة: إذا تلقيت خطاباً من هيئة الأبحاث وتطوير الطاقة بولاية نيويورك (NYSERDA) مع رمز للإحالة، فاكتبه أدناه. إذا كان لديك رمز إحالة، فلا داعي لتقديم وثائق إضافية لبيان مستوى الدخل.

رقم الإحالة: _______________

☐ ج. نسخة من أي مما يلي: نسخة من الخطاب الكامل الخاص بمنح مزايا برنامج المساعدة في الطاقة المنزلية (HEAP) أو برنامج المساعدة الغذائية التكميلية (SNAP) (كوبونات الطعام) أو برنامج المساعدة المؤقتة للأسر المحتاجة في الولايات المتحدة الأمريكية (TANF) أو دخل الضمان التكميلي (SSI) المؤرخة خلال الأشهر الـ 12 الماضية

☐ لا تنطبق النقاط (أ) أو (ب) أو (ج) المذكورة أعلاه، فقم بتقديم وثائق لبيان مستوى الدخل ضمن أحد الخيارات أدناه:

الخيار الأول

- قسائم المرتب/الدفع: إجمالي دخل الأسرة الإجمالي آخر 60 يوماً. لحساب إجمالي الدخل الشهري، إذا كان الدخل:
  - أسبوعياً: اضرب الدخل الأسبوعي الذي يمثل الأسبوع الأخير بمقدار 4.3
  - كل أسبوعين: اضرب آخر أسبوعين متتاليين في 2.15
  - مرتين شهريا: اضرب في 2
- الضمان الاجتماعي والضمان الاجتماعي عن العجز وذوي الإعاقة: نسخة من الخطاب الخاص بمنح المزايا ذات الصلة
- أي دخل بما في ذلك الإعاقة وتعويضات العمال والبطالة والمعاشات التقاعدية والإعالة ودعم الطفل والمعاشات السنوية ومزايا المحاربين القدامى وجميع الأشكال الأخرى للدخل
- العمل الحر: تقرير دائرة الإيرادات الداخلية (IRS) الربع السنوية للأشهر الثالثة الماضية

الخيار الثاني

- الإقرارات الضريبية: هذا الخيار غير متاح إلا في حال قيام جميع أفراد الأسرة الراشدين بتقديم هذا الإقرار. في حالة توثيق الدخل باستخدام الإقرار الضريبي، يجب توثيق جميع مصادر الدخل باستخدام الإقرارات الضريبية. يجب أن تكون الإقرارات هي الإقرارات الضريبية الفيدرالية الأحدث للدخل (نموذج 1040 أو 1040A أو 1040EZ). في حالة وجود دخل ناتج عن الإيجار أو العمل التجاري أو المزرعة - يجب عليك تقديم الجداول المقابلة (الجدول C وE وF).

قسم (ز): معلومات عن الدخل

إجمالي عدد أفراد الأسرة داخل المسكن؟ _______________

يرجى القيام بذكر المعلومات التالية لكل فرد من أفراد الأسرة.

الاسم بالكامل	الجنس (اختياري)	السن	طالب (نعم أم لا)	مصدر/مصادر الدخل	أسبوعياً	شهرياً	سنوياً
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
إجمالي الدخل لدى الأسرة					$	$	$

البيانات الديموغرافية / التركيبة السكانية

لمساعدة هيئة أبحاث وتطوير الطاقة بولاية نيويورك (NYSERDA) في التعرف على النتائج الناتجة عن إطلاق برامجنا على المجتمعات المحلية، يرجاء إكمال الأسئلة التي تتعلق بالبيانات الديموغرافية (التركيبة السكانية) أدناه. الإجابة على هذه الأسئلة اختيارية وال تؤثر على أهليتك للحصول على خدمات هذا البرنامج.

حدد عدد أفراد الأسرة الذين هم:

بسن 60 أو أكثر: __________ من ذوي الإعاقة: __________ بسن 17 أو أقل: __________ من المحاربين القدامى: __________

حدد إن كان أحد أفراد الأسرة: *(حدد خياراً واحداً أو اختيارات متعددة حسبما تقتضيه الحالة)*

- ☐ أفضل عدم الإجابة
- ☐ من أصل هسباني أو التيني
- ☐ من األميركيين األصليين / األمم األولى / سكان ألاسكا األصليين
- ☐ آسيوي
- ☐ أسود أو أفريقي أميركي
- ☐ من سكان جزر هاواي والمحيط الهادئ األصليين
- ☐ أبيض
- ☐ غير معلوم
- ☐ آخر

م) ط): تأكيد مقدم الطلب

أفوض وأسمح باإلفراج عن المعلومات الخاصة بي وبأهليتي بالحصول على البرنامج والمعلومات المقدمة في هذا الطلب والمستندات الداعمة له في ذلك الوثائق الخاصة بتحديد وتوثيق الدخل، أو مكان اإلقامة، أو معلومات المرافق إلى ما يلي: هيئة أبحاث وتطوير الطاقة بوالية نيويورك (NYSERDA) وممثليها؛ برنامج مساعدة وحماية المنازل من عوامل الطقس السيئة (WAP) وممثليه المعينين؛ أي جهات مختصة تعمل لصالح برامج هيئة أبحاث وتطوير الطاقة بوالية نيويورك (NYSERDA)؛ مرفق الكهرباء والغاز الطبيعي الخاصة بي؛ باإلضافة إلى األفراد أو المنظمات التالية: ______________________________ الذين أشركتهم لغرض مساعدتي في إكمال الطلب وتقديمه.

أفهم وأقر أن المعلومات التي قدمتها ستستخدم للتواصل معي بخصوص أي عروض برامج حالية أو مستقبلية قد أكون مؤهالً لالستفادة منها، وألغراض تحديد األهلية والأحقية للحصول على برامج هيئة أبحاث وتطوير الطاقة بوالية نيويورك (NYSERDA) و/أو القروض السكنية والخدمات المالية واألهلية واألحقية للحصول على برامج مساعدة وحماية المنازل من عوامل الطقس السيئة (WAP) في والية نيويورك، ولتقدير التحقق من الدخل بوفورات الطاقة وألغراض التقييم.

أفهم وأقر أن جميع المعلومات ستبقى سرية في حدود ما يسمح به القانون. أفهم وأقر أنه إذا تم تقديم الخدمات إلى منزلي السكني المقدمة من قبل هيئة أبحاث وتطوير الطاقة بوالية نيويورك (NYSERDA) أو برامج مساعدة وحماية المنازل من عوامل الطقس السيئة (WAP) في والية نيويورك، فإن مشاركتي في هذه البرامج لن تؤثر على أهليتي لإعانات الضمان االجتماعي أو اإلعانات الحكومية أو أي دخل آخر.

أفهم وأقر أنه ال يضمن لي الحصول على هذا الدعم. سيعتمد تقديم الخدمات من عدمه على عدد الطلبات الواردة وتوافر األموال واألولويات التي تحددها البرامج.

أوافق على أن يقوم ممثلي هيئة أبحاث وتطوير الطاقة بوالية نيويورك (NYSERDA) وبرامج مساعدة وحماية المنازل من عوامل الطقس السيئة (WAP) في والية نيويورك والمقاولين المشاركين المستقلين بالوصول إلى منزلي في األوقات التي يتفق عليها الطرفان، ألداء أنشطة البرنامج بما في ذلك عمليات فحص الطاقة وتنفيذ اإلجراءات وضمان الجودة وأنشطة التقييم. أفهم وأقر أن المقاولين المشاركين مستقلون ويقدمون ضماناً لمدة عام واحد على العمل المنجز. أفهم وأقر أيضاً أن المقاولين والموزعين المشاركين سيقدمون الضمانات المناسبة على أي معدات مقدمة وأنه ال يتم تقديم ضمانات من قبل هيئة أبحاث وتطوير الطاقة بوالية نيويورك (NYSERDA) وبرامج مساعدة وحماية المنازل من عوامل الطقس السيئة (WAP) في والية نيويورك.

أؤيد وأؤكد، بموجب العقوبات المنصوص عليها في القانون، أن البيانات التي أدليت بها في جميع أجزاء هذا الطلب، بما في ذلك البيانات التي تم اإلدالء بها على أي مستندات مصاحبة لهذا الطلب، قد تم فحصها من قبلي وعلى حد علمي صحيحة وكاملة.

أقر أن توقيعي على هذا النموذج يمنح اإلذن لهيئة أبحاث وتطوير الطاقة بوالية نيويورك (NYSERDA) وممثلي برامج مساعدة وحماية المنازل من عوامل الطقس السيئة (WAP) في والية نيويورك ومصمميها للتأكد من أهليتي وأحقيتي للحصول على برامج هيئة أبحاث وتطوير الطاقة بوالية نيويورك (NYSERDA) وبرامج مساعدة وحماية المنازل من عوامل الطقس السيئة (WAP) في والية نيويورك أو للإجابة على أي استفسار للتحقق والتأكد من المعلومات التي قدمتها. أفهم وأقر أنه إذا قدمت معلومات خاطئة أو حجبت معلومات من أجل الحصول على اإلعانات أو الحصول عليها، فإنني أعرض نفسي للمحاكمة أو أحكام أخرى إلى الحد الذي يسمح به القانون. أصرح أيضاً أنه ال يوجد أي شخص ورد اسمه في هذا الطلب يخضع لالستبعاد من خدمات برامج حماية المنازل من عوامل الطقس السيئة بموجب قانون إصالح ومراقبة الهجرة لعام 1986 (القانون العام 063-99).

توقيع مقدم الطلب ______________________________ التاريخ

توقيع ممثل مقدم الطلب ______________________________ التاريخ

قد تتم مشاركة بيانات االتصال الخاصة بك مع البرامج السكنية األخرى المقدمة من قبل هيئة أبحاث وتطوير الطاقة بوالية نيويورك (NYSERDA). إذا كنت ترغب في االشتراك في هذه الخدمة، يرجاء كتابة األحرف األولى من اسمك هنا ______________

للاستخدام الداخلي فقط

تمت المراجعة بواسطة: ☐ برنامج المساعدة في الطاقة المنزلية (HEAP) ☐ مكتب المساعدات العائلية (OFA) ☐ مرافق

☐ حماية المنازل من عوامل الطقس السيء من الباطن ☐ EmPower ☐ أخرى: ____________________

قم بوضع علامة أمام جميع المزايا التي تحصل عليها الأسرة: ☐ برنامج الضمان التكميلي (ISS) ☐ برنامج المساعدة في الطاقة المنزلية (HEAP)

☐ برنامج المساعدة الغذائية التكميلية (SNAP) ☐ المساعدة المؤقتة للأسر المحتاجة في الولايات المتحدة الأمريكية (TANF)

بناءً على المعلومات التي قدمها مقدم الطلب، تم تحديد الأسرة على أنها:

☐ مؤهلة لبرنامج خدمات السكن الميسور الكلفة في إطار الشراكة (AHP) فقط ☐ مؤهلة للحصول على خدمات برامج مساعدة وحماية المنازل من عوامل الطقس السيئة (WAP) ☐ غير مؤهلة للحصول على خدمات برامج مساعدة وحماية المنازل من عوامل الطقس (WAP)

☐ مؤهلة للحصول على الخدمات المقدمة عبر EmPower ☐ غير مؤهلة للحصول على الخدمات المقدمة عبر EmPower ☐ مؤهلة للحصول على الخدمات المقدمة عبر EmPower في انتظار الحصول على خدمات مساعدة وحماية المنازل من عوامل الطقس السيئة (WAP)

قم بوضع علامة هنا في حال:

☐ حظيت الأسرة بخدمات حماية المنازل من عوامل الطقس السيئة في السابق

☐ الأسرة غير مؤهلة للحصول على المزيد من الخدمات عبر EmPower

تعليقات إضافية:

توقيع ممثل EmPower | اللقب الوظيفي | التاريخ

সম্মিলিত আবাসিক আবেদন

EmPower নিউ ইয়র্ক এবং ENERGY STAR® এর সাথে সহায়তায় হোম পারফরম্যান্স

এই চেকলিস্ট আপনার আবেদন একটি সময়মত পদ্ধতিতে প্রক্রিয়া করা হবে তা নিশ্চিত করতে সাহায্য করবে। একবার আপনি নিশ্চিত গেলে যে সমস্ত আবেদন বিভাগ সম্পূর্ণ হয়েছে, এবং প্রয়োজনীয় ডকুমেন্টেশন সরবরাহ করা হয়েছে, অনুগ্রহ করে উপযুক্ত বাক্সে একটি ✓ রাখুন। আগে আসলে আগে পাবেন ভিত্তিতে আবেদন প্রক্রিয়া করা হয়।

☐ সাধারণ আবেদনকারীর তথ্য (বিভাগ এ, বি এবং সি) - যাচাই করুন যে সমস্ত প্রয়োজনীয় ক্ষেত্র সম্পূর্ণ হয়েছে (যদি না "ঐচ্ছিক" হিসাবে চিহ্নিত করা হয়)।

শুধু ভাড়াটেরা:

☐ জমির মালিকের নাম, ঠিকানা এবং ফোন নম্বর সি সেকশনে দেওয়া আছে

ইউটিলিটি তথ্য (বিভাগ ডি):

☐ গ্রাহক জ্বালানী/শক্তি বিল রিলিজ অনুমোদন স্বাক্ষর করুন

☐ সম্পূর্ণ বৈদ্যুতিক বিলের একটি অনুলিপি অন্তর্ভুক্ত করুন

☐ প্রোপেন, তেল, কেরোসিন, কাঠ বা কয়লা দ্বারা গরম করা হলে সম্পূর্ণ গ্যাস ইউটিলিটি বিল বা জ্বালানী সরবরাহকারীর বিলের একটি অনুলিপি অন্তর্ভুক্ত করুন

আয়ের তথ্য (এফ এবং জি বিভাগ):

☐ সমস্ত প্রয়োজনীয় ক্ষেত্র সম্পূর্ণ হয়েছে তা যাচাই করুন

ডেমোগ্রাফিক (বিভাগ এইচ): *ঐচ্ছিক*

☐ ঐচ্ছিক

আবেদনকারী নিশ্চিতকরণ (বিভাগ আই):

☐ পড়ুন এবং স্বাক্ষর করুন

অনুগ্রহ করে এখানে আবেদনটি ফেরত দিন:

এনার্জি অডিট অ্যাপ্লিকেশন
8 Southwoods Blvd
Suite 201
Albany, NY 12211

নিম্নলিখিত তথ্যগুলি আপনার জন্য কোন পরিষেবা এবং প্রোগ্রামগুলি সবচেয়ে উপযুক্ত তা নির্ধারণ করতে সাহায্য করবে। কিছু পরিস্থিতিতে, EmPower নিউ ইয়র্ক পরিষেবাগুলি ওয়েদারাইজেশন অ্যাসিসট্যান্স প্রোগ্রাম (WAP) এর সংস্থাগুলি দ্বারা সরবরাহ করা হয়। এই ক্ষেত্রে, এই অ্যাপ্লিকেশনটি WAP-এর জন্য একটি অ্যাপ্লিকেশন হিসাবে কাজ করবে এবং এই পরিষেবাগুলির জন্য আপনার স্থানীয় সংস্থার কাছে ফরোয়ার্ড করা হতে পারে। অনুগ্রহ করে স্পষ্টভাবে প্রিন্ট করুন এবং যতটা সম্ভব তথ্য প্রদান করুন। এই অ্যাপ্লিকেশনটি অনলাইনে সম্পূর্ণ করা যেতে পারে এখানে nyserda.ny.gov/ahp-empower. অনলাইনে আবেদনটি পূরণ করা NYSERDA-এর জন্য আপনার আবেদন পর্যালোচনা এবং অনুমোদনের জন্য সবচেয়ে দ্রুত।

বিভাগ এ: আবেদনকারীর তথ্য

আবেদনকারীর নাম

ঠিকানা | অ্যাপার্টমেন্ট #

নগর | রাজ্য NY | জিপ

কাউন্টি

ফোন নম্বর *(এরিয়া কোড সহ)* | সেকেন্ডারি ফোন *(এরিয়া কোড সহ)*

ইমেইল অ্যাড্রেস

ডাক পাঠানোর ঠিকানা *(যদি উপরের থেকে আলাদা হয়)*

অতিরিক্ত যোগাযোগের ব্যক্তি | আবেদনকারীর সাথে সম্পর্ক | ফোন নম্বর *(এরিয়া কোড সহ)*

বিভাগ বি: বাসস্থানের তথ্য

☐ আমি মালিক ☐ আমি ভাড়া থাকি

☐ একক-পরিবার ☐ অনেকগুলো পরিবার_____# গুলো ইউনিটের ☐ তৈরি/মোবাইল হোম ☐ গ্রুপ হোম/আশ্রয়কেন্দ্র

বিভাগ সি: মালিকের তথ্য

মালিকের নাম | ফোন নম্বর *(এরিয়ার কোড সহ)*

ইমেইল অ্যাড্রেস

মালিকের ঠিকানা কি বিল্ডিং ঠিকানার মতোই? ☐ হ্যাঁ ☐ না – যদি "না" হয় অনুগ্রহ করে নিচের ঠিকানাটি সম্পূর্ণ করুন।

ঠিকানা

ঐচ্ছিক: *অনুগ্রহ করে এমন যেকোন তথ্য যোগ করুন যা আপনার শক্তি খরচ কমাতে সহায়ক হতে পারে এবং বাসিন্দাদের স্বাস্থ্য সমস্যা বা বিশেষ চাহিদার তালিকা করুন যা সম্পর্কে আমাদের সচেতন হতে হবে:*

EMPOWER ঠিকাদার এবং রেফারিং এজেন্সি: *আপনার ব্যবসা বা সংস্থার নাম প্রিন্ট করুন।*

বিভাগ ডি: ইউটিলিটি তথ্য

আমার প্রধান গরমকারী জ্বালানী হল:

☐ বিদ্যুৎ ☐ তেল ☐ কেরোসিন ☐ প্রাকৃতিক গ্যাস ☐ প্রোপেন ☐ কাঠ ☐ প্যালেটস ☐ আমি জানিনা

☐ অন্যান্য:_____

আমার সহায়ক গরমকারী জ্বালানী হল:

☐ বিদ্যুৎ ☐ তেল ☐ কেরোসিন ☐ প্রোপেন ☐ কাঠ ☐ প্যালেটস ☐ কয়লা ☐ আমার কোন সহায়ক গরমকারী জ্বালানী নেই

☐ অন্যান্য:_____

বৈদ্যুতিক ইউটিলিটি: আপনি যদি বৈদ্যুতিক বিলের জন্য দায়ী হন তবে নিম্নলিখিতগুলি প্রদান করুন:

ইউটিলিটির নাম:_____

অ্যাকাউন্ট নম্বর:_____ যদি NYSEG বা RG&E – POD # _____

গ্যাস ইউটিলিটি: আপনি যদি একজন প্রাকৃতিক গ্যাস ইউটিলিটি গ্রাহক হন এবং বিলের জন্য দায়ী হন, তাহলে নিম্নলিখিতগুলি প্রদান করুন:

ইউটিলিটির নাম:_____

অ্যাকাউন্ট নম্বর:_____ যদি NYSEG বা RG&E – POD # _____

প্রাথমিক জ্বালানি সরবরাহকারী: আপনি যদি প্রাকৃতিক গ্যাস বা বিদ্যুৎ ছাড়া অন্য কোনো জ্বালানি দিয়ে গরম করেন, তাহলে নিম্নলিখিতগুলি সরবরাহ করুন:

কোম্পানির নাম: _____

অ্যাকাউন্ট নম্বর: _____

জ্বালানি/শক্তি বিল প্রকাশের জন্য গ্রাহক অনুমোদন (আগের দুই বছর এবং ভবিষ্যতের তিন বছরের জন্য)

আমার স্বাক্ষর প্রত্যয়িত করে যে আমি এই আবেদনে তালিকাভুক্ত অ্যাকাউন্ট(গুলি) এর জন্য আর্থিকভাবে দায়ী। আমি এতদ্বারা এই আবেদনে নাম দেওয়া বিদ্যুৎ এবং জ্বালানি সরবরাহকারীদের সম্মতি দিচ্ছি এবং অনুমোদন করছি যে কোনো এবং সমস্ত শক্তি ব্যবহারের তথ্য, অ্যাকাউন্ট নম্বর(গুলি) সহ, উপরের সম্পত্তির ঠিকানা সম্পর্কিত, নিউ ইয়র্ক স্টেট এনার্জি রিসার্চ অ্যান্ড ডেভেলপমেন্ট অথরিটির প্রতিনিধিদের কাছে NYSERDA), এবং Weatherization Assistance Program (WAP), এবং/অথবা এর মনোনীত প্রতিনিধিদের কাছে প্রকাশ করতে, আবেদনের তারিখের দুই বছর আগে শুরু হয় এবং প্রোগ্রামে অংশগ্রহণের তিন বছর পর পর্যন্ত সময়ের জন্য। আমি বুঝি যে এই তথ্য গোপন রাখা হবে, আইন দ্বারা অনুমোদিত পরিমাণে, এবং প্রোগ্রামগুলি ব্যবহার করতে আমাকে সহায়তা করার উদ্দেশ্যে, NYSERDA-এর আবাসিক প্রোগ্রাম এবং আর্থিক প্রণোদনাগুলির জন্য যোগ্যতা নির্ধারণ, WAP-এর জন্য যোগ্যতা, শক্তি সঞ্চয় অনুমান করার জন্য, এবং মূল্যায়নের উদ্দেশ্যে ব্যবহার করা হবে।

গ্রাহকের স্বাক্ষর: _____ তারিখ: _____

বিভাগ ই: অংশীদার তথ্য

আপনি যদি NYSERDA-এর শক্তি দক্ষতা প্রোগ্রামগুলিতে একটি নির্দিষ্ট অংশগ্রহণকারী প্রোগ্রাম ঠিকাদারের সাথে কাজ করতে চান, অনুগ্রহ করে নিচে নির্দেশ করুন। আমরা আপনার অনুরোধ মিটমাট করার জন্য কাজ করব, কিন্তু চূড়ান্ত নির্বাচন অংশগ্রহণকারী প্রোগ্রাম ঠিকাদারের উপলভ্যতা এবং আপনার প্রকল্পের গ্রহণযোগ্যতার উপর ভিত্তি করে। আপনি যদি একটি প্রোগ্রাম ঠিকাদারের সাথে কাজ না করেন, আমরা আমাদের অনুমোদিত তালিকা থেকে পরবর্তী উপলভ্য অংশগ্রহণকারী প্রোগ্রাম ঠিকাদারকে বরাদ্দ করব।

ঠিকাদারের নাম: _____

NYSERDA পেশাদার শক্তি উপদেষ্টাদের একটি নেটওয়ার্ক রক্ষণাবেক্ষণ করে যারা ইতোমধ্যেই এই প্রোগ্রাম এবং অন্যান্য NYSERDA প্রোগ্রাম, ইউটিলিটি অফার এবং অন্যান্য স্থানীয় সংস্থানগুলির সাথে আপনাকে সহায়তা করছে। আপনি যদি বর্তমানে একজন NYSERDA শক্তি উপদেষ্টার সাথে কাজ করছেন, অনুগ্রহ করে নিচে কোনটি নির্দেশ করুন। প্রোগ্রামটি তাদের সাথে সীমিত প্রকল্পের তথ্য ভাগ করবে যাতে তারা আপনাকে প্রতিটি ধাপে সহায়তা করতে পারে।

NYSERDA শক্তি উপদেষ্টার নাম: _____

বিভাগ এফ: ইনকাম ডকুমেন্টেশন - অনুগ্রহ করে নিম্নলিখিতগুলির মধ্যে একটি নির্বাচন করুন।

এ. ❑ ভৌগলিক-যোগ্যতা: আপনি আপনার ঠিকানার উপর ভিত্তি করে ইনসেনটিভের জন্য যোগ্য হতে পারেন। আরও তথ্যের জন্য nyserda.ny.gov/ahp-empower দেখুন। আপনি যদি একটি ভৌগলিক-যোগ্যতার অঞ্চলে থাকেন, অনুগ্রহ করে বাক্সটি চেক করুন।

বি. ❑ রেফারেল লেটার: আপনি যদি একটি রেফারেল কোড সহ NYSERDA থেকে একটি চিঠি পেয়ে থাকেন তবে তা নিচে লিখুন। আপনার যদি একটি রেফারেল কোড থাকে তবে অতিরিক্ত আয়ের ডকুমেন্টেশনের প্রয়োজন নেই।

রেফারেল আইডি#:____________

সি. ❑ নিম্নলিখিত একটির একটি অনুলিপি প্রদান করুন: HEAP, SNAP (ফুড স্ট্যাম্প), TANF (দরিদ্র পরিবারের জন্য অস্থায়ী সহায়তা) বা গত 12 মাসের মধ্যে পরিপূরক নিরাপত্তা আয়ের জন্য সম্পূর্ণ পুরস্কার পত্রের অনুলিপি

ডি. ❑ যদি উপরের এ, বি, বা সি প্রযোজ্য না হয়, তাহলে নিচের বিকল্পগুলির একটির অধীনে আয়ের ডকুমেন্টেশন প্রদান করুন:

বিকল্প 1

- পে স্টাব: গত 60 দিনের জন্য সমস্ত পরিবারের মোট আয়। মাসিক আয়ের মোট হিসাব করতে, যদি আয় হয়:
  - সাপ্তাহিক: 4টি সাম্প্রতিক সপ্তাহের প্রতিনিধিত্বকারী সাপ্তাহিক আয়কে 4.3 দ্বারা গুণ করুন
  - দ্বি-সাপ্তাহিক: সাম্প্রতিক টানা 2 সপ্তাহ 2.15 দ্বারা গুণ করুন
  - মাসে দুবার: 2 দিয়ে গুণ করুন
- সামাজিক নিরাপত্তা এবং সামাজিক নিরাপত্তা অক্ষমতা: পুরস্কার পত্রের অনুলিপি
- প্রতিবন্ধিতা, কর্মীর ক্ষতিপূরণ, বেকারত্ব, পেনশন, রক্ষণাবেক্ষণ, চাইল্ড সাপোর্ট, বার্ষিকী, ভেটেরানের সুবিধা এবং অন্যান্য সমস্ত আয় সহ সকল প্রকার আয়ের ডকুমেন্টেশন
- আত্মকর্মসংস্থান: গত তিন মাসের ত্রৈমাসিক আয়ের IRS রিপোর্ট

বিকল্প 2

- কর রিটার্ন: এই বিকল্পটি শুধুমাত্র তখনই পাওয়া যায় যখন পরিবারের সকল সদস্য যাদের ট্যাক্স রিটার্ন দাখিল করতে হবে তারা তা করে থাকেন। যদি ট্যাক্স রিটার্নের সাথে আয়ের নথিভুক্ত করা হয়, তাহলে আয়ের সমস্ত উৎস অবশ্যই ট্যাক্স রিটার্নের সাথে নথিভুক্ত করতে হবে। রিটার্ন অবশ্যই সাম্প্রতিক ফেডারেল আয়কর রিটার্ন (ফর্ম 1040, 1040A, বা 1040EZ) হতে হবে। ভাড়া, ব্যবসা বা খামারের আয় নথিভুক্ত করলে - আপনাকে অবশ্যই সংশ্লিষ্ট সময়সূচী জমা দিতে হবে (শিডিউল C, E, এবং F)।

বিভাগ জি: আয়ের তথ্য

পরিবারের মোট সদস্য সংখ্যা?____________

প্রতিটি পরিবারের সদস্যের জন্য নিম্নলিখিত তথ্য অন্তর্ভুক্ত করুন।

					মার্কিন ডলার	মার্কিন ডলার	মার্কিন ডলার
					মার্কিন ডলার	মার্কিন ডলার	মার্কিন ডলার
					মার্কিন ডলার	মার্কিন ডলার	মার্কিন ডলার
					মার্কিন ডলার	মার্কিন ডলার	মার্কিন ডলার
					মার্কিন ডলার	মার্কিন ডলার	মার্কিন ডলার
					মার্কিন ডলার	মার্কিন ডলার	মার্কিন ডলার
					মার্কিন ডলার	মার্কিন ডলার	মার্কিন ডলার
					মার্কিন ডলার	মার্কিন ডলার	মার্কিন ডলার
					মার্কিন ডলার	মার্কিন ডলার	মার্কিন ডলার
পরিবারের জন্য মোট আয়					মার্কিন ডলার	মার্কিন ডলার	মার্কিন ডলার

বিভাগ এইচ: ডেমোগ্রাফিক্স

স্থানীয় সম্প্রদায়ের উপর আমাদের প্রোগ্রামগুলির প্রভাব বুঝতে NYSERDA-কে সহায়তা করতে, অনুগ্রহ করে নিচের ডেমোগ্রাফিক সংক্রান্ত প্রশ্নগুলি সম্পূর্ণ করুন। এই প্রশ্নের উত্তর দেওয়া ঐচ্ছিক এবং আপনার প্রোগ্রামের যোগ্যতাকে প্রভাবিত করে না।

পরিবারের সদস্যদের সংখ্যা নির্দেশ করুন যারা:

60 বছর বা তার বেশি বয়সী: _____ অক্ষম: _____ 17 বছর বা তার কম বয়সী: _____ ভেটেরান: _____

নির্দেশ করুন যদি পরিবারের একজন সদস্য হয: *(অন্তত একটি নির্বাচন করুন, এবং যতগুলি প্রযোজ্য)*

- ☐ উত্তর দিতে স্বাচ্যন্দবোধ করছিনা
- ☐ হিস্পানিক বা ল্যাটিনক্স
- ☐ নেটিভ আমেরিকান / ফার্স্ট নেশন / আলাস্কান নেটিভ
- ☐ এশিয়ান
- ☐ কৃষ্ণাঙ্গ বা আফ্রিকান আমেরিকান
- ☐ স্থানীয় হাওয়াইয়ান বা প্রশান্ত মহাসাগরীয় দ্বীপবাসী
- ☐ শ্বেতাঙ্গ
- ☐ অজানা
- ☐ অন্যান্য

বিভাগ আই: আবেদনকারী নিশ্চিতকরণ

আমি আমার যোগ্যতা নির্ধারণ এবং এই আবেদনে প্রদত্ত তথ্য, আয়ের ডকুমেন্ট সহ সহায়ক ডকুমেন্ট, সেইসাথে নিম্নলিখিতগুলিতে আমার প্রকল্পের অবস্থা সম্পর্কিত তথ্য প্রকাশ করার অনুমোদন দিই: NYSERDA এবং এর প্রতিনিধিরা; NYS Weatherization Assistance Program (WAP) এবং/অথবা এর মনোনীত প্রতিনিধি; NYSERDA প্রোগ্রামের পক্ষে কাজ করছে এমন কোনো সম্প্রদায়-ভিত্তিক সংস্থা; আমার বৈদ্যুতিক এবং প্রাকৃতিক গ্যাস ইউটিলিটি; এবং নিম্নলিখিত ব্যক্তি বা সংস্থাগুলি: _____ যাদের আমি আবেদনটি সম্পূর্ণ করা এবং জমা দেওয়ার জন্য আমাকে সহায়তা করার উদ্দেশ্যে নিযুক্ত করেছি।

আমি বুঝি যে আমার দ্বারা প্রদত্ত তথ্যগুলি আমার সাথে যোগাযোগ করতে বা যে কোনো বর্তমান বা ভবিষ্যতের প্রোগ্রাম অফারগুলি ব্যবহার করতে যার জন্য আমি যোগ্য হতে পারি এবং NYSERDA এবং/অথবা ইউটিলিটি আবাসিক প্রোগ্রাম এবং আর্থিক প্রণোদনা, NYS WAP এর জন্য যোগ্যতা নির্ধারণের উদ্দেশ্যে, শক্তি সঞ্চয়ের সম্ভাব্যতা অনুমান করার জন্য এবং মূল্যায়নের উদ্দেশ্যে আমাকে সহায়তা করতে ব্যবহার করা যেতে পারে।
আমি বুঝি যে সমস্ত তথ্য আইন দ্বারা অনুমোদিত পরিমাণে গোপন রাখা হবে। আমি বুঝি যে যদি আমাকে NYSERDA-এর আবাসিক প্রোগ্রাম বা NYS WAP-এর মাধ্যমে পরিষেবা প্রদান করা হয়, তাহলে এই প্রোগ্রামগুলিতে আমার অংশগ্রহণ আমার সামাজিক নিরাপত্তা, জনসাধারণের সহায়তা বা অন্য কোনো আয়কে প্রভাবিত করবে না।

আমি বুঝি যে এই আবেদনটি আমাকে সহায়তা প্রদানের নিশ্চয়তা দেয় না। পরিষেবাগুলি প্রদান করা হবে কি না তা নির্ভর করবে প্রাপ্ত আবেদনের সংখ্যা এবং তহবিলের প্রাপ্যতা এবং প্রোগ্রাম দ্বারা প্রতিষ্ঠিত অগ্রাধিকারের উপর।

আমি NYSERDA প্রতিনিধিদের, NYS WAP প্রতিনিধিদের, এবং স্বাধীন অংশগ্রহণকারী ঠিকাদারদের আমার বাসস্থানে প্রবেশাধিকার প্রদান করতে সম্মত হই, যা পারস্পরিকভাবে গ্রহণযোগ্য সময়ে, শক্তি পরিদর্শন, ব্যবস্থা ইনস্টলেশন, গুণমান নিশ্চিতকরণ, এবং মূল্যায়ন কার্যক্রম সহ প্রোগ্রাম কার্যক্রম সম্পাদন করতে হবে। আমি বুঝি যে অংশগ্রহণকারী ঠিকাদাররা স্বাধীন ঠিকাদার এবং কাজ সম্পন্ন করার জন্য শ্রমের উপর এক বছরের ওয়ারেন্টি প্রদান করে। আমি আরও বুঝি যে অংশগ্রহণকারী ঠিকাদার এবং বিক্রেতারা প্রদত্ত যেকোন সরঞ্জামের জন্য উপযুক্ত ওয়ারেন্টি প্রদান করবে এবং NYSERDA বা NYS WAP দ্বারা কোন অতিরিক্ত ওয়ারেন্টি প্রদান করা হয় না।

আমি সাবস্ক্রাইব করি এবং নিশ্চিত করি, আইনের দণ্ডের অধীনে, এই আবেদনের সমস্ত অংশে দেওয়া বিবৃতিগুলি, যে কোনও সহগামী ডকুমেন্টে দেওয়া বিবৃতিগুলি সহ, আমার দ্বারা পরীক্ষা করা হয়েছে এবং আমার জ্ঞান অনুসারে সত্য এবং সম্পূর্ণ।

আমি বুঝি যে এই ফর্মে আমার স্বাক্ষর NYSERDA, NYS WAP-এর প্রতিনিধিদের এবং তাদের মনোনীত ব্যক্তিদের NYSERDA-এর প্রোগ্রাম এবং NYS WAP-এর জন্য আমার যোগ্যতা নিশ্চিত করার অনুমতি দেয়। আমি যে তথ্য দিয়েছি তা যাচাই বা নিশ্চিত করার জন্য আমি যেকোন তদন্তে সম্মতি দিচ্ছি। আমি বুঝি যে আমি যদি এমন সুবিধা পাওয়ার জন্য মিথ্যা তথ্য দিই বা তথ্য আটকে রাখি যা আমি পাওয়ার অধিকারী নই, আমার আইনের পূর্ণ মাত্রায় বিচার হতে পারে। আমি এও বলছি যে এই আবেদনে নাম লেখা কোনো ব্যক্তিই 1986 সালের ইমিগ্রেশন রিফর্ম অ্যান্ড কন্ট্রোল অ্যাক্ট (পাবলিক ল 99-063) এর অধীনে ওয়েদারাইজেশন পরিষেবাগুলির জন্য অযোগ্য নয়।

_____

আবেদনকারীর প্রতিনিধির স্বাক্ষর তারিখ

_____

আবেদনকারীর প্রতিনিধির স্বাক্ষর তারিখ

আপনার যোগাযোগের তথ্য NYSERDA-এর মধ্যে অন্যান্য আবাসিক প্রোগ্রামের সাথে শেয়ার করা হতে পারে। এটি অপ্ট আউট করতে, অনুগ্রহ করে এখানে নামের আদ্যক্ষর লিখুন।_____

শুধু অভ্যন্তরীন ব্যবহারের জন্য

পর্যালোচনা করেছেন: ❑ HEAP ❑ OFA ❑ ইউটিলিটি ❑ ওয়েদারাইজেশন সাবগ্রান্টি ❑ EmPower ❑ অন্যান্য:_____

পরিবারের প্রাপ্ত সমস্ত সুবিধাগুলি চেক করুন: ❑ SSI ❑ HEAP ❑ SNAP ❑ TANF

আবেদনকারীর প্রদত্ত তথ্যের ভিত্তিতে, পরিবারটি নির্ধারণ করা হয়েছে:

❑ কেবল AHP এর জন্য যোগ্য ❑ ওয়েদারাইজেশন এর জন্য যোগ্য ❑ ওয়েদারাইজেশন এর জন্য যোগ্য নয়

❑ EmPower এর জন্য যোগ্য ❑ EmPower এর জন্য যোগ্য নয় ❑ EmPower এর জন্য যোগ্য, তবে ওয়েদারাইজেশন এর জন্য অপেক্ষা তালিকাভুক্ত

এখানে চেক করুন যদি:

❑ পূর্বে ওয়েদারাইজেশন দ্বারা পরিবারে পরিষেবা প্রদান করা হয়েছিল

❑ EmPower এর মাধ্যমে আরও পরিষেবার জন্য পরিবার অযোগ্য

অতিরিক্ত মন্তব্যগুলি:

Empower প্রতিনিধির স্বাক্ষর | শিরোনাম | তারিখ

綜合住宅申請表

EmPower New York 與由 ENERGY STAR® 支持的Assisted Home Performance

本核對表將幫助您確保您的申請得到及時處理。在確認所有的申請內容均完整且提供了所需的文檔之後，請在相應的方框內打上 ✓。申請將按照先來後到的原則處理。

☐ 申請人基本資訊（A、B和C部分）- 請確認所有必填項都完整填寫（除非標記為 "可選填"）。

僅租房者填寫：

☐ C部分中提供的房東姓名、地址和電話號碼

公用事業資訊（D部分）。

☐ 簽署客戶燃料/能源賬發佈授權書

☐ 附上一份完整的電費帳單副本

☐ 如果取暖燃料為丙烷、石油、煤油、木材或煤，請附上完整的天然氣帳單副本或燃料供應商的帳單副本。

收入資訊（F和G部分）。

☐ 請核實所有必填項是否完整

人口統計資訊（H部分）。*可選填*

☐ 可選填

申請人申明（I部分）。

☐ 閱讀並簽署

請將申請表寄回至：

Energy Audit Application
8 Southwoods Blvd
Suite 201
Albany, NY 12211

以下資訊可幫助您確定哪些服務和計畫最適合您。在某些情況下，EmPower New York的服務是由負責耐候化補助計畫(Weatherization Assistance Program，簡稱WAP) 的機構提供的。在這些情況下，本申請表將作為WAP的申請表，並可能將轉交給您當地提供這些服務的機構。請清楚地填寫並盡可能多地提供資訊。本申請可以線上填寫，網址是 nyserda.ny.gov/ahp-empower。線上填寫申請是NYSERDA審查和批准您的申請的最快方式。

A部分：申請人信息

申請人姓名

地址　　公寓號

城市　　州　紐約　　郵編

縣

電話號碼 *(含區號)*　　其他電話 *(含區號)*

電子郵寄地址

郵寄地址 *(如果與上述地址不同)*

其他連絡人　　與申請人的關係　　電話號碼 *(含區號)*

B部分：居住資訊

❑ 本人擁有　❑ 本人租住

❑ 單戶家庭　❑ 多戶家庭 戶數#：_____　❑ 預製/活動房屋　❑ 集體住宅/庇護所

C部分：房主信息

房主姓名　　電話號碼 *(含區號)*

電子郵寄地址

房主的地址是否與房屋地址相同？ ❑ 是　❑ 否 - 如果回答 "否"，請在下面填寫地址。

地址

可選填： *請添加任何我們可能認為有助於減少能源消耗的資訊，並列出我們需要予以注意的居住者健康問題或特殊需求：*

EMPOWER承包商和推薦機構。 *正楷填寫您的企業或機構名稱。*

D部分：公用事業信息

我的主要取暖燃料是：

❑ 電 ❑ 石油 ❑ 煤油 ❑ 天然氣 ❑ 丙烷 ❑ 木材 ❑ 生物顆粒 ❑ 不清楚

❑ 其他：_____

我的輔助供暖燃料是：

❑ 電 ❑ 石油 ❑ 煤油 ❑ 丙烷 ❑ 木材 ❑ 生物顆粒 ❑ 煤 ❑ 沒有輔助燃料

❑ 其他：_____

電力公司：如果您須支付電費，請提供以下資訊。

公用事業單位名稱：_____

賬號：_____ 如果是NYSEG或RG&E，請提供 POD # _____

天然氣公司：如果您是天然氣公司的客戶並負責支付帳單，請提供以下資訊。

公用事業單位名稱: _____

賬號：_____ 如果是NYSEG或RG&E - POD #_____

主要燃料供應商：如果您使用天然氣或電力以外的燃料供暖，請提供以下資訊。

公司名稱：_____

賬號：_____

客戶授權發佈燃料/能源帳單（此前兩年和未來三年）。

本人在此簽名即證明本人對本申請表所列的帳戶負有財務責任。本人在此同意並授權本申請表中所列的電力和燃料供應商向紐約州能源研發局 (New York State Energy Research and Development Authority, 簡稱NYSERDA) 和耐候化補助計畫 (Weatherization Assistance Program, 簡稱WAP) 的代表和/或其指定的代表發佈包括帳號在內的與上述房產地址有關的任何和所有能源使用資訊，時間從申請日期前兩年開始，到參與計畫後三年結束。本人瞭解，這些資訊將在法律允許的範圍內保密，並用於協助本人使用這些項目，確定是否有資格參加NYSERDA的住宅專案和財務激勵措施、是否有資格參加WAP，估算節能效果，以及用於評估。

客戶簽名：_____ 日期：_____

E 部分：合作夥伴資訊

如果您想與NYSERDA的能源效率計畫的某一計畫參與承包商合作，請在下面注明。我們將努力滿足您的要求，但最終的選擇取決於是否有計畫參與承包商可用，以及對您專案的接受程度。如果您目前沒有與計畫承包商合作，我們將從我們的核准名單中指定一個可用的計畫參與承包商。

承包商名稱：_____

NYSERDA擁有一個專業能源顧問網路，其中可能已經有顧問在本計畫和其他NYSERDA計畫、公用事業產品和其他當地資源方面為您提供幫助。如果您目前已經在與NYSERDA的能源顧問合作，請在下面注明是哪一位顧問。該計畫將有限度地與他們分享專案資訊，以便他們能夠繼續在後續工作的每個化解上協助您。

NYSERDA能源顧問名稱： _____

F部分：收入證明 - 請選擇下列中的一項

A. ❑ 地理資格核可：根據您的地址，您可能有資格獲得獎勵。請訪問nyserda.ny.gov/ahp-empower瞭解更多資訊。如果您位於地理資格核可區域，請勾選該方框。

B. ❑ 轉介信：如果您從NYSERDA收到一封帶有轉介代碼的信函，請在下方輸入。如果您有轉介代碼，則不需要額外的收入文檔。

轉介ID#:_____

C. ❑ 提供以下其中一項的副本。過去12個月內的HEAP、SNAP（食品券）、TANF（貧困家庭臨時援助）或補充社安收入授予函的完整副本。

D. ❑ 如果上述A、B或C項不適用，則請根據以下選項之一提供收入文檔。

選項1

- 工資單：顯示過去60天內的所有家庭總收入。如果是以下收入計發方式，應計算每月收入總額：
  - 每週發薪：將最近4周的每週收入乘以4.3
  - 雙周發薪：將最近連續2周的收入乘以2.15
  - 每月兩次發薪：乘以2
- 社會保險和社會保險殘障：授予函副本
- 所有形式的收入文檔，包括身心障礙、工傷賠償、失業、養老金、贍養費、子女養育費、年金、退伍軍人福利和所有其他收入。
- 自雇：過去三個月的國稅局 (IRS)季度收入報告

選項2

- 納稅申報表：該選項僅在所有需要報稅的家庭成員都報了稅的情況下才能使用。如果用納稅申報表記錄收入，所有收入來源都必須用納稅申報表記錄。申報表必須是最近的聯邦所得稅申報表（1040、1040A或1040EZ表）。如果記錄的是租金、商業或農場收入，您必須提交相應的附表（附表C、E和F）。

G部分：收入資訊

家庭成員總數？_____

請提供每位元家庭成員的以下資訊。

					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
				家庭總收入	$	$	$

H部分：人口統計資訊

為了幫助NYSERDA瞭解我們的計畫對當地社區的影響，請填寫以下人口統計資訊相關問題。回答這些問題是可選的，並不影響您的計畫資格。

請說明，家庭成員中有多少是：

60歲或以上：_____ 殘疾人：_____ 17歲或以下：_____ 退伍軍人：_____

請說明，家庭中是否有成員是： *（至少選擇一個，可視情況選擇多個）*

- ❑ 不願回答
- ❑ 西班牙裔或拉美裔
- ❑ 美國原住民/第一民族/阿拉斯加原住民
- ❑ 亞裔
- ❑ 黑人或非裔美國人
- ❑ 夏威夷原住民或太平洋島民
- ❑ 白人
- ❑ 未知
- ❑ 其他

第一部分：申請人申明

本人授權將我的資格認定和本申請表中提供的資訊、包括收入證明文檔在內的證明文件以及有關我的專案狀況的資訊透露給以下人員：NYSERDA及其代表、紐約州耐候化補助計畫（NYS Weatherization Assistance Program，簡稱WAP）和/或其指定代表、任何代表NYSERDA計畫的社區組織、我的電力和天然氣公司、以及本人為協助我完成和提交申請而聘用的以下個人或機構：_____。

本人理解，本人所提供的資訊可用於聯繫或協助我利用本人可能有資格獲得的任何當前或未來的計畫，用於確定獲得NYSERDA 和/或公用事業住宅項目和財務獎勵的資格，確定獲得 NYS WAP 的資格，估計節能潛力，以及用於評估目的。本人瞭解，所有資訊將在法律允許的範圍內予以保密。本人瞭解，本人如果通過NYSERDA的住宅計畫或NYS WAP獲得服務，本人對這些計畫的參與將不會影響本人的社會保險、公共援助或任何其他收入。

本人瞭解，本申請表並不保證我將獲得援助。是否提供服務將取決於所收到的申請數量和資金的可用性以及各個計畫所確定的優先次序。

本人同意， NYSERDA 代表、NYS WAP 代表和獨立的參與承包商可以在雙方都能接受的時間內進入我的住宅開展計畫下的活動，包括能源檢查、測量儀器安裝、品質保證和評估活動。本人瞭解，參與的承包商是獨立的承包商，對所完成的工作提供一年的工時保證。本人進一步瞭解，參與的承包商和供應商將為所提供的任何設備提供適當的質保，NYSERDA 或 NYS WAP 不提供額外的質保。

本人同意並確認，本申請表所有部分的陳述，包括任何隨附文檔上的陳述，已經過本人審查，就本人所知是真實和完整的，否則願受　證罪處罰。

本人瞭解，我在本表上簽名即為允許NYSERDA、NYS WAP的代表以及他們的指定人員保證本人有資格參加NYSERDA的計畫和NYS WAP。本人同意為核實或確認我所提供的資訊而進行的任何查詢。本人瞭解，如果本人出於獲得無權獲得的福利目的而提供虛假資訊或隱瞞資訊，本人將在法律允許的最大範圍內受到起訴。本人同時聲明，根據《1986年移民改革和控制法案》（公法第99-063號），本申請表中提到的任何人都不會被取消享受耐候化服務的資格。

_____

申請人簽名　　日期

_____

申請人代表簽名　　日期

您的聯繫資訊可能會與NYSERDA的其他住宅計畫共用。要選擇不共用，請在此以姓名首字母簽署。_____

僅供內部使用

審查者：☐ HEAP ☐ OFA ☐ 公用事業 ☐ 耐候化次級受資助方 ☐ EmPower ☐ 其他：_____

請勾選該家庭接受的所有福利：☐ SSI ☐ HEAP ☐ SNAP ☐ TANF

根據申請人提供的資訊，該家庭被確定為：

☐ 僅符合AHP的資格 ☐ 有資格接受耐候化改造 ☐ 無資格接受耐候化改造
☐ 符合EmPower的條件 ☐ 不符合EmPower的條件 ☐ 符合EmPower的條件，但要候補耐候化改造

如為以下情形，請在這裡勾選：

☐ 住戶以前曾接受過耐候化改造服務
☐ 家庭不符合通過EmPower提供進一步服務的資格

其他意見：

EmPower代表簽名	職位	日期

APLIKASYON REZIDANSYÈL KONBINE

EmPower New York ak Pwogram pou Ede Pèfòmans Enèji Kay avèk ENERGY STAR®

Lis verifikasyon sa a pral ede ou garanti yo trete aplikasyon w lan san pèdi tan. Tanpri mete ✓ nan ti kare ki apwopriye a lè w fin sèten ke w fin ranpli tout Seksyon Aplikasyon yo nèt, epi ou fin bay dokiman ki nesesè yo. Aplikasyon yo trete sou prensip sa ki vini avan yo ap jwenn sèvis avan.

☐ Enfòmasyon Jeneral sou Moun k ap Aplike a (Seksyon A, B & C) – Verifye ke tout pati ki obligatwa yo ranpli (sòf si li make "ochwa").

LOKATÈ YO SÈLMAN:

☐ Non Mèt Kay la, Adrès ak Nimewo Telefòn yo bay nan Seksyon C a

ENFÒMASYON SOU SÈVIS DLO, GAZ, KOURAN, ELATRIYE (SEKSYON D):

☐ Siyen otorizasyon pou pataje bòdwo pou gaz/enèji kliyan yo

☐ Mete yon kopi bòdwo kouran ki konplè

☐ Mete yon kopi bòdwo gaz pou sèvis dlo, gaz, kouran, elatriye oswa bòdwo Founisè Gaz la bay ki konplè si se chofaj pa mwayen pwopàn, lwil, kewozèn, bwa oswa chabon

ENFÒMASYON SOU REVNI (SEKSYON F & G):

☐ Verifye ke tout pati ki obligatwa yo byen ranpli nèt

DONE DEMOGRAFIK (SEKSYON H): *Ochwa*

☐ Ochwa

AFIMASYON MOUN K AP APLIKE A (SEKSYON I):

☐ Li epi siyen

TANPRI VOYE APLIKASYON AN TOUNEN BAY:

Energy Audit Application
8 Southwoods Blvd
Suite 201
Albany, NY 12211

Enfòmasyon sa yo ki annapre la ap ede detèmine ki sèvis ak pwogram ki pi apwopriye pou ou. Nan kèk sitiyasyon, se ajans yo nan Pwogram pou Ede Pwoteje kont Move Tan (Weatherization Assistance Program, WAP) ki ofri sèvis EmPower New York la. Nan ka sa yo, aplikasyon sa a pral sèvi kòm yon aplikasyon pou WAP epi yo ka transmèt li bay ajans lokal ou a pou sèvis sa yo. Tanpri ekri an lèt detache byen klè epi bay mezi enfòmasyon posib. Ou ka ranpli aplikasyon sa a sou entènèt nan nyserda.ny.gov/ahp-empower. Ranpli aplikasyon an sou entènèt se fason ki pi rapid pou NYSERDA revize ak apwouve aplikasyon w lan.

SEKSYON A: ENFÒMASYON SOU MOUN K AP APLIKE A

Non moun k ap aplike a

Adrès | # Apatman

Vil | ETa: NY | Kòd

Konte

Nimewo telefòn *(mete kòd telefòn zòn lan)* | Dezyèm nimewo telefòn *(mete kòd telefòn zòn lan)*

Adrès imèl

Adrès ou resevwa kourye lapòs *(si l diferan de adrès ki anwo a)*

Lòt moun pou kontakte Relasyon ak moun k ap aplike a Nimewo Telefòn *(mete kòd telefòn zòn lan)*

SEKSYON B: ENFÒMASYON SOU KAY LA

☐ Mwen posede ☐ Mwen lwe

☐ Sèl fanmi ☐ Plizyè fanmi_____# inite ☐ Kay fabrike/mobil ☐ Kay gwoup/refij

SEKSYON C: ENFÒMASYON SOU MÈT KAY LA

Non mèt kay la | Nimewo telefòn *(mete kòd telefòn zòn lan)*

Adrès imèl

Èske adrès mèt kay la se menm ak adrès bilding lan? ☐ Wi ☐ Non – Si “Non”, tanpri mete adrès li anba la.

Adrès

OCHWA: *Tanpri ajoute nenpòt enfòmasyon ke nou ka twouve itil pou diminye kantite enèji ou itilize epi mete pwoblèm sante oswa bezwen espesyal lokatè yo genyen ke nou dwe konnen nan yon lis:*

KONTRAKTÈ EMPOWER YO AK AJANS KI BAY REFERANS YO: *Ekri non biznis ou oswa ajans ou an.*

SEKSYON D: ENFÒMASYON SOU SÈVIS DLO, GAZ, KOURAN, ELATRIYE

Mwayen chofaj prensipal mwen se:

☐ Kouran ☐ Lwil ☐ Kewozèn ☐ Gaz Natirèl ☐ Pwopàn ☐ Bwa ☐ Miyèt bwa ☐ Mwen pa konnen

☐ Lòt:_____

Mwayen chofaj segondè mwen se:

☐ Kouran ☐ Lwil ☐ Kewozèn ☐ Pwopàn ☐ Bwa ☐ Miyèt bwa ☐ Chabon ☐ Mwen pa gen yon dezyèm mwayen chofaj

☐ Lòt:_____

SÈVIS KOURAN: Si w responsab pou w peye bòdwo kouran an, bay sa yo ki annapre la:

Non konpayi a: _____

Nimewo kont:_____ si se NYSEG oswa RG&E – #POD _____

SÈVIS GAZ: Si ou se yon kliyan sèvis gaz natirèl epi se ou ki responsab pou w peye bòdwo a, bay sa yo ki annapre la:

Non konpayi a: _____

Nimewo kont:_____ si se NYSEG oswa RG&E – #POD _____

FOUNISÈ GAZ PRENSIPAL: si w itilize chofaj avèk yon gaz ki pa gaz natirèl oswa se pa kouran, bay sa yo ki annapre la:

Non konpayi a: _____

Nimewo kont lan: _____

OTORIZASYON KLIYAN bay pou pataje bòdwo gaz/enèji (pou de ane anvan yo ak twa ane k ap vini yo)

Lè m siyen la, mwen sètifye ke mwen responsab pou m peye pou kont (yo) ki endike nan aplikasyon sa a. Mwen dakò epi mwen otorize founisè sèvis kouran ak gaz ki site nan aplikasyon sa a pou yo bay reprezantan Otorite Rechèch ak Devlopman Enèji Eta New York la (New York State Energy Research and Development Authority, NYSERDA) nenpòt enfòmasyon sou itilizasyon enèji, ki gen ladan nimewo kont, ki gen rapò ak adrès pwopriyete ki anwo a. NYSERDA, ak Pwogram pou Ede Pwoteje kont Move Tan (WAP), ak/oswa reprezantan li deziyen yo pou peryòd ki kòmanse dezan anvan dat aplikasyon an epi ki fini twa zan apre mwen fin patisipe nan pwogram lan. Mwen konprann ke enfòmasyon sa yo pral rete konfidansyèl, nan limit lalwa pèmèt, epi y ap itilize yo nan objektif pou ede m itilize pwogram yo, pou detèmine kalifikasyon m pou pwogram rezidansyèl NYSERDA yo ak pou ban m ankourajman finansye, kalifikasyon pou WAP, pou estime ekonomi enèji, ak pou zafè evalyasyon.

Kliyan siyen la:_____ Dat: _____

SEKSYON E: ENFÒMASYON SOU ASOSYE

Si w ta renmen travay avèk yon kontraktè espesifik k ap patisipe nan pwogram efikasite enèji NYSERDA, tanpri make anba la. N ap travay pou fè aranjman pou demann ou an, men dènye chwa ap baze sou disponiblite kontraktè pwogram k ap patisipe a ak si yo aksepte pwojè w la. Si w p ap travay ak yon kontraktè pwogram lan, n ap bay pwochen kontraktè k ap patisipe nan pwogram lan ki disponib apati lis nou apwouve a.

Non Kontraktè a: _____

NYSERDA kenbe yon rezo konseye enèji pwofesyonèl ki ka deja ap ede w ak pwogram sa a ak lòt pwogram NYSERDA, lòt òf Sèvis dlo, gaz, kouran, elatriye, ak lòt resous lokal yo. Si w ap travay kounye a ak yon konseye enèji NYSERDA, tanpri make kiyès li ye anba la. Pwogram lan pral pataje kèk enfòmasyon nan limit pwojè a avèk yo pou yo ka kontinye ede w chak etap nan chemen an.

Non Konseye Enèji NYSERDA: _____

SEKSYON F: DOKIMAN KI PWOUVE REVNI - Tanpri chwazi youn nan sa yo ki annapre la

A. ☐ Elijiblite jewografik: Ou ka elijib pou w kalifye pou prim ankourajman dapre adrès ou. Al sou nyserda.ny.gov/ahp-empower pou w jwenn plis enfòmasyon. Si w nan yon zòn kalifikasyon jewografik, tanpri tcheke kare a.

B. ☐ Lèt referans: Si w te resevwa yon lèt nan men NYSERDA ak yon kòd referans, antre li anba a. Si w gen yon kòd rekòmandasyon, ou pa bezwen bay okenn lòt dokiman sou revni anplis.

ID Referans lan:_____

C. ☐ Bay yon kopi YOUN nan sa yo ki annapre la: Kopi tout lèt prim pou HEAP, SNAP (Koupon pou Manje), TANF (Asistans Tanporè pou Fanmi ki nan Nesesite) oswa Revni Sekirite Siplemantè ki gen dat nan 12 dènye mwa ki sot pase la yo.

D. ☐ Si A, B, oswa C pi wo a pa aplike, lè sa a bay dokiman sou revni anba youn nan opsyon yo ki anba la:

Opsyon 1

- Souch pèman: tout revni brit nan kay la pou 60 dènye jou yo ki sot pase la. Pou kalkile total revni mansyèl, si revni an se:
  - Chak semèn: miltipliye revni chak semèn ki reprezante 4 semèn ki pi resan pa 4.3
  - Chak de semèn: miltipliye 2 dènye semèn youn apre lòt yo pa 2.15
  - De fwa pa mwa: miltipliye pa 2
- Sekirite Sosyal ak Sekirite Sosyal pou Andikap: kopi lèt prim lan
- Dokimantasyon sou tout fòm revni ki gen ladan andikap, dedomajman pou aksidan nan travay, chomaj, pansyon, antretyen, sipò timoun, alokasyon, avantaj Veteran, ak tout lòt revni.
- Travay endepandan: Rapò IRS sou salè chak trimès pou twa dènye mwa yo ki sot pase la

Opsyon 2

- Deklarasyon taks: Opsyon sa a disponib sèlman si tout moun nan kay la ki te oblije ranpli yon deklarasyon taks te fè sa. Nan dokimantasyon revni ak deklarasyon taks, tout sous revni yo dwe dokimante ak deklarasyon taks yo. Deklarasyon yo dwe Deklarasyon Taks sou Revni Federal ki pi resan an (Fòmilè 1040, 1040A, oswa 1040EZ). Si w ap dokimante revni lokasyon, biznis oswa fèm – ou dwe soumèt fòmilè anèks ki asosye ak yo (fòmilè anèks C, E, ak F).

SEKSYON G: ENFÒMASYON SOU REVNI

Konbyen moun ototal k ap viv nan kay la?_____

Mete enfòmasyon sa yo pou chak moun k ap viv nan kay la.

Kon konplè	Sèks (ochwa)	Laj	Elèv/Etidyan (Wi oswa Non)	Sous revni (yo)	Chak semèn	Chak mwa	Chak ane
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
				Revni total pou kay la	$	$	$

SEKSYON H: DONE DEMOGRAFIK

Pou ede NYSERDA konprann enpak pwogram nou yo genyen sou kominote lokal yo, tanpri ranpli kesyon demografik yo ki anba la. Reponn kesyon sa yo ochwa e sa p ap afekte kalifikasyon w pou pwogram lan.

Ekri konbyen moun k ap viv nan kay la ki:

gen 60 lane oswa plis: _____ Andikape: _____ 17 lane oswa pi piti: _____ Veteran: _____

Make si yon moun k ap viv nan kay la se: *(chwazi omwen youn, ak mezi ki aplikab)*

- ☐ Pito pa reponn
- ☐ Panyòl oswa Latinx
- ☐ Amerendyen/Premye Nasyon/Endijèn Alaska
- ☐ Azyatik
- ☐ Ameriken Nwa oswa Afwo-Ameriken
- ☐ Endijèn Awayi oswa moun Zile Pasifik
- ☐ Blan
- ☐ Pa konnen
- ☐ Lòt

SEKSYON I: AFIMASYON MOUN K AP APLIKE A

Mwen otorize pou yo kominike detèminasyon kalifikasyon mwen ak enfòmasyon yo bay nan aplikasyon sa a, dokiman sipò ki gen ladan dokiman sou revni, ansanm ak enfòmasyon konsènan sitiyasyon pwojè mwen an bay ajans yo ki annapre la: NYSERDA ak reprezantan li yo; Pwogram pou Ede Pwoteje kont Move Tan (WAP) nan Eta New York ak/oswa reprezantan li nonmen yo; nenpòt òganizasyon kominotè k ap travay sou non pwogram NYSERDA; sèvis kouran ak gaz natirèl mwen yo; ak moun oswa òganizasyon sa yo:_____ ke mwen te angaje nan objektif pou ede m ranpli ak soumèt aplikasyon an.

Mwen konprann ke yo ka itilize enfòmasyon mwen bay yo pou kontakte oswa ede m itilize nenpòt òf pwogram aktyèl oswa pwochen mwen ka elijib pou li ak nan objektif pou detèmine kalifikasyon m pou NYSERDA ak/oswa pwogram rezidansyèl sèvis kouran, gaz, dlo elatriye ak prim ankourajman finansye, detèmine kalifikasyon pou NYS WAP, pou estime potansyèl ekonomi enèji, ak pou zafè evalyasyon.
Mwen konprann ke tout enfòmasyon yo pral rete konfidansyèl nan limit lalwa pèmèt. Mwen konprann si yo ban mwen sèvis atravè pwogram rezidansyèl NYSERDA oswa NYS WAP, patisipasyon mwen nan pwogram sa yo p ap afekte sekirite sosyal mwen, asistans piblik, oswa nenpòt lòt revni.

Mwen konprann ke aplikasyon sa a pa garanti ke yo pral ban m èd. Y ap detèmine si pou yo ba w sèvis sa yo ou pa tou depan de kantite aplikasyon yo resevwa ak disponiblite lajan ak priyorite pwogram yo etabli yo.

Mwen dakò pou m bay reprezantan NYSERDA, reprezantan NYS WAP yo, ak kontraktè endepandan k ap patisipe yo aksè nan kay mwen an, nan moman ki akseptab youn pou lòt, pou yo fè aktivite pwogram tankou enspeksyon enèji, enstalasyon mezi, Asirans Kalite, ak aktivite evalyasyon. Mwen konprann ke kontraktè k ap patisipe yo se kontraktè endepandan epi yo bay yon garanti yon lane sou ouvraj pou travay ki fini. Anplis de sa, mwen konprann ke kontraktè ak founisè k ap patisipe yo pral bay garanti apwopriye sou nenpòt ekipman yo bay epi NYSERDA oswa NYS WAP pa bay okenn lòt garanti.

Mwen abòne epi mwen afime, anba sanksyon lalwa yo, ke deklarasyon ki fèt sou tout pati aplikasyon sa a, pami yo deklarasyon ki fèt sou nenpòt ki dokiman ki akonpaye yo, mwen te egzamine yo epi se selon sa m konnen, yo vrè e konplè.

Mwen konprann lè m siyen fòm sa, mwen bay NYSERDA, reprezantan NYS WAP yo, ak moun yo deziyen yo otorizasyon pou asire m kalifye pou pwogram NYSERDA yo ak NYS WAP lan. Mwen dakò pou reponn nenpòt demann pou verifye oswa konfime enfòmasyon mwen bay yo. Mwen konprann si mwen bay fo enfòmasyon oswa si mwen kache enfòmasyon pou mwen ka resevwa avantaj mwen pa gen dwa pou m resevwa,

Yo kapab pouswiv mwen lajitis nan tout limit lalwa pèmèt. Mwen deklare tou pa gen okenn moun ki site nan aplikasyon sa a ki kapab diskalifye pou sèvis pou ede pwoteje kont move tan dapre Lwa sou Refòm ak Kontwòl Imigrasyon 1986 lan (Lwa Piblik 99-063).

Aplikan an siyen la _____ Dat _____

Reprezantan aplikan an siyen la _____ Dat _____

Yo ka bay lòt pwogram rezidansyèl ki nan NYSERDA yo enfòmasyon kontak ou pou yo kontakte w. Pou mande pou yo pa pataje enfòmasyon w, tanpri mete inisyal non ou la._____

POU ITILIZASYON ENTÈN SÈLMAN

Moun ki egzamine aplikasyon an: ☐ HEAP ☐ OFA ☐ Konpayi dlo, kouran, gaz, elatriye

☐ Soubenefisyè sibvansyon pou pwoteksyon kont move tan ☐ EmPower ☐ Lòt:_____

Make tout avantaj kay la resevwa: ☐ SSI ☐ HEAP ☐ SNAP ☐ TANF

Dapre enfòmasyon moun k ap aplike a bay la, nou detèmine kay la:

☐ Elijib pou AHP Sèlman ☐ Elijib pou pwoteksyon kont move tan sèlman ☐ PA elijib pou pwoteksyon kont move tan

☐ Elijib pou EmPower ☐ PA elijib pou EmPower ☐ Elijib pou EmPower, an atant pou pwoteksyon kont move tan

Make la si:

☐ Fwaye a te resevwa èd Pwoteksyon Kont Move Tan avan

☐ Fwaye a pa elijib pou plis sèvis nan EmPower

Kòmantè anplis:

Reprezanan EmPower a siyen la Tit Date

DOMANDA RESIDENZIALE COMBINATA

EmPower New York e Assisted Home Performance con ENERGY STAR®

Questa lista di controllo aiuterà a far sì che la Sua domanda venga processata in tempi brevi. Inserisca un ✓ nell'apposita casella dopo aver controllato che tutte le sezioni della domanda siano complete e che sia stata fornita la documentazione richiesta. Le domande vengono elaborate in base all'ordine di arrivo.

☐ Informazioni generali sul richiedente (sezioni A, B e C) - Informazioni generali sul richiedente (sezioni A, B e C) - Verifichi che tutti i campi obbligatori siano stati compilati (a meno che non siano contrassegnati come "opzionali").

SOLO PER GLI AFFITTUARI:

☐ Nome del proprietario, indirizzo e numero di telefono forniti nella Sezione C.

INFORMAZIONI SULLE UTENZE (SEZIONE D):

☐ Firmare l'autorizzazione al rilascio della bolletta del combustibile/energia per il cliente.

☐ Includere una copia completa della bolletta dell'elettricità

☐ Includere una copia della bolletta completa del gas o della fattura del fornitore di combustibile se il riscaldamento è a propano, olio, cherosene, legna o carbone.

INFORMAZIONI SUL REDDITO (SEZIONE F E G):

☐ Verifichi che tutti i campi richiesti siano completi

DATI DEMOGRAFICI (SEZIONE H): *Opzionale*

☐ Opzionale

AFFERMAZIONE DEL RICHIEDENTE (SEZIONE I):

☐ Leggere e firmare

SI PREGA DI INVIARE LA DOMANDA A:

Energy Audit Application
8 Southwoods Blvd
Suite 201
Albany, NY 12211

Le seguenti informazioni saranno utili per determinare quali sono i servizi e i programmi più adatti a Lei. In alcune situazioni, i servizi di EmPower New York sono forniti da agenzie del Weatherization Assistance Program (WAP). In questi casi, la presente domanda servirà come domanda per il WAP e potrà essere inoltrata alla Sua agenzia locale per questi servizi. La preghiamo di scrivere in modo chiaro e di fornire il maggior numero di informazioni possibile. La domanda può essere compilata online su nyserda.ny.gov/ahp-empower. La compilazione della domanda online è la più rapida per NYSERDA al fine di esaminare e approvare la Sua domanda.

SEZIONE A: INFORMAZIONI DEL RICHIEDENTE

Nome del Richiedente

Indirizzo | Appartamento #

Città | NY | Stato | Codice Zip

Contea

Numero di telefono *(includere il prefisso)* | Telefono Secondario *(includere il prefisso)*

Indirizzo Email

Indirizzo postale *(se diverso dal precedente)*

Persona di contatto aggiuntiva | Relazione con il Richiedente | Numero di telefono *(includere il prefisso)*

SEZIONE B: INFORMAZIONI SULL'ABITAZIONE

❑ Proprietario ❑ Affittuario

❑ Monofamiliare ❑ Multifamiliare_____# di membri ❑ casa fabbricato/casa mobile ❑ istituto/rifugio

SEZIONE C: INFORMAZIONI SUL PROPRIETARIO

Nome del proprietario | Numero di telefono *(includere il prefisso)*

Indirizzo Email

L'indirizzo del proprietario è lo stesso dell'edificio? ❑ Sì ❑ No – Se "No", inserisca l'indirizzo qui sotto.

Indirizzo

OPZIONALE: *La preghiamo di aggiungere qualsiasi informazione che potremmo trovare utile per ridurre il Suo consumo energetico e di elencare i problemi di salute degli occupanti o le loro esigenze specifiche di cui dobbiamo essere a conoscenza:*

APPALTATORI EMPOWER E AGENZIE DI RIFERIMENTO: *Scriva il nome della Sua azienda o agenzia.*

SEZIONE D: INFORMAZIONI SULLE UTENZE

Il mio combustibile principale per il riscaldamento è:

❑ Elettricità ❑ Olio ❑ Cherosene ❑ gas naturali ❑ Propano ❑ Legno ❑ Pellet ❑ Non lo so

❑ Altro:_____

Il mio combustibile secondario per il riscaldamento è:

❑ Elettricità ❑ Olio ❑ Cherosene ❑ Propano ❑ Legno ❑ Pellet ❑ Carbone ❑ Non ho un combustibile secondario

❑ Altro:_____

BOLLETTA DELL'ELETTRICITÀ Se Lei è la persona responsabile della bolletta dell'elettricità, fornisca quanto segue:

Nome della compagnia dell'utenza: _____

Numero di conto:_____ se NYSEG o RG&E – POD # _____

BOLLETTA DEL GAS: Se è un cliente del servizio di gas naturale ed è responsabile della bolletta, fornisca quanto segue:

Nome della compagnia dell'utenza: _____

Numero di conto:_____ se NYSEG o RG&E – POD #_____

FORNITORE PRIMARIO DI COMBUSTIBILE: se si riscalda con un combustibile diverso dal gas naturale o dall'elettricità, fornisca i seguenti dati:

Nome della compagnia: _____

Numero di conto: _____

AUTORIZZAZIONE DEL CLIENTE per il rilascio delle fatture di combustibile/energia (per i due anni precedenti e i tre anni futuri)

La mia firma certifica che sono economicamente responsabile per il conto o i conti elencati in questa domanda. Con la presente acconsento e autorizzo i fornitori di energia elettrica e di combustibile indicati nella presente domanda a rilasciare tutte le informazioni sull'utilizzo dell'energia, compresi i numeri di conto, relative all'indirizzo dell'immobile di cui sopra, ai rappresentanti dell'Agenzia per la Ricerca e lo Sviluppo del Settore energetico dello Stato di New York (NYSERDA) e del Weatherization Assistance Program (WAP), e/o ai suoi rappresentanti designati per il periodo che inizia due anni prima della data della domanda e termina tre anni dopo la partecipazione al programma. Sono consapevole che queste informazioni saranno mantenute riservate, entro i limiti consentiti dalla legge, e utilizzate per assistermi nell'utilizzo dei programmi, per determinare l'idoneità ai programmi residenziali e agli incentivi finanziari di NYSERDA, per l'idoneità al WAP, per stimare i risparmi energetici e per scopi di valutazione.

Firma Cliente:_____ Data: _____

SEZIONE E: INFORMAZIONI SUI PARTNER

Se desidera lavorare con uno specifico contraente partecipante ai programmi di efficienza energetica di NYSERDA, lo indichi di seguito. Faremo il possibile per soddisfare la Sua richiesta, ma la selezione finale si basa sulla disponibilità dell'appaltatore partecipante al programma e sull'accettazione del Suo progetto. Se non lavora con un appaltatore del programma, Le assegneremo il prossimo appaltatore del programma disponibile dal nostro elenco approvato.

Nome dell'appaltatore: _____

NYSERDA dispone di una rete di consulenti energetici professionali che potrebbero già assisterLa con questo programma e altri programmi NYSERDA, offerte di servizi e altre risorse locali. Se attualmente sta lavorando con un consulente energetico NYSERDA, La preghiamo di indicare quale. Il programma condividerà con loro informazioni limitate sul progetto, in modo che possano continuare ad assisterLa in ogni fase del percorso.

Nome del consulente energetico di NYSERDA: _____

SEZIONE F: DOCUMENTAZIONE RELATIVA AL REDDITO - La preghiamo di selezionare una delle seguenti opzioni

A. ❑ Geo-ammissibilità: Potrebbe avere diritto agli incentivi in base al Suo indirizzo Visiti nyserda.ny.gov/ahp-empower per maggiori informazioni. Se si trova in un'area di Geo-ammissibilità, selezioni la casella.

B. ❑ Lettera di riferimento: Se ha ricevuto una lettera da NYSERDA con un codice di riferimento, lo inserisca qui sotto. Se ha un codice di riferimento, non è richiesta alcuna documentazione aggiuntiva sul reddito.

ID# di riferimento:_____

C. ❑ Fornisca una copia di UNO dei seguenti documenti: Copia dell'intera lettera di assegnazione di HEAP, SNAP (Food Stamps/Buoni Pasto), TANF (Temporary Assistance for Needy Families/Assistenza Temporanea per Famiglie Bisognose) o Supplemental Security Income datata negli ultimi 12 mesi.

D. ❑ Se i punti A, B o C non sono applicabili, fornisca la documentazione del reddito secondo una delle opzioni seguenti:

Opzione 1

- Buste paga: tutti i redditi lordi della famiglia negli ultimi 60 giorni. Per calcolare il reddito mensile totale, se il reddito è:
  - Settimanale: moltiplichi il reddito settimanale che rappresenta le 4 settimane più recenti per 4,3
  - Bisettimanale: moltiplichi le 2 settimane consecutive più recenti per 2,15
  - Due volte al mese: moltiplicare per 2
- Sicurezza sociale e invalidità della sicurezza sociale: copia della lettera di assegnazione
- Documentazione di tutte le forme di reddito, tra cui invalidità, indennità di disoccupazione, pensione, alimenti, mantenimento dei figli, rendite, sussidi per i veterani e tutti le altre fonti di redditi.
- Lavoro autonomo: Rapporto IRS dei guadagni trimestrali degli ultimi tre mesi.

Opzione 2

- Dichiarazioni dei redditi: Questa opzione è disponibile solo se tutti i membri della famiglia che dovevano presentare una dichiarazione dei redditi l'hanno fatto. Se documenta il reddito con le dichiarazioni fiscali, tutte le fonti di reddito devono essere documentate con le dichiarazioni fiscali. Le dichiarazioni devono essere la più recente dichiarazione dei redditi federale (Modulo 1040, 1040A o 1040EZ). Se documenta il reddito da locazione, da impresa o da azienda agricola, deve presentare i relativi prospetti (Prospetto C, E e F).

SEZIONE G: INFORMAZIONE SUL REDDITO

Numero totale di membri del nucleo familiare?_____

Includa le seguenti informazioni per ogni membro della famiglia.

Nome e cognome	Genere (opzionale)	Età	Studente (Sì o no)	Fonte/fonti di reddito	Settimanale	Mensile	Annuale
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
				Reddito totale per nucleo familiare	$	$	$

SEZONE H: DEMOGRAFIA

Per aiutare NYSERDA a capire l'impatto dei nostri programmi sulle comunità locali, La preghiamo di compilare le seguenti domande di carattere demografico. Rispondere a queste domande è facoltativo e non influisce sulla Sua ammissibilità al programma.

Indichi il numero di componenti del nucleo familiare che hanno:

60 anni o più: _____ Disabili _____ 17 anni o meno: _____ Veterani: _____

Indichi se un componente del nucleo familiare è: *(selezionare almeno uno, e tutti quelli che sono applicabili)*

- ☐ Preferisco non rispondere
- ☐ Ispanico o Latino
- ☐ Nativo americano / Prima Nazione / Nativo dell'Alaska
- ☐ Asiatico
- ☐ Nero o Afroamericano
- ☐ Nativo Hawaiano o delle Isole del Pacifico
- ☐ Bianco
- ☐ Non so
- ☐ Altro

SEZONE I: AFFERMAZIONE DEL RICHIEDENTE

Autorizzo il rilascio della mia determinazione di ammissibilità e delle informazioni fornite in questa domanda, dei documenti di supporto, compresa la documentazione sul reddito, nonché delle informazioni relative allo stato del mio progetto ai seguenti soggetti: NYSERDA e i suoi rappresentanti; il programma NYS Weatherization Assistance Program (WAP) e/o i suoi rappresentanti designati; qualsiasi organizzazione legata alla comunità che lavori per conto dei programmi NYSERDA; i miei fornitori di energia elettrica e gas naturale; e le seguenti persone o organizzazioni:_____ che ho incaricato di assistermi nella compilazione e presentazione della domanda.

Sono consapevole che le informazioni da me fornite potranno essere utilizzate per contattarmi o assistermi nell'utilizzo di qualsiasi offerta di programma attuale o futura per la quale potrei essere idoneo e per determinare l'ammissibilità ai programmi residenziali e agli incentivi finanziari di NYSERDA e/o delle aziende di servizi pubblici, per determinare l'ammissibilità al NYS WAP, per stimare il potenziale di risparmio energetico e per scopi di valutazione.
Sono consapevole che tutte le informazioni saranno mantenute riservate entro i limiti consentiti dalla legge. Sono consapevole che se mi vengono forniti servizi attraverso i programmi residenziali di NYSERDA o il NYS WAP, la mia partecipazione a questi programmi non influirà sulla mia sicurezza sociale, sull'assistenza pubblica o su qualsiasi altro reddito.

Sono consapevole che questa domanda non garantisce che l'assistenza mi sarà concessa. La fornitura o meno di servizi dipenderà dal numero di domande ricevute, dalla disponibilità di fondi e dalle priorità stabilite dai programmi.

Accetto di consentire ai rappresentanti di NYSERDA, ai rappresentanti del NYS WAP e agli appaltatori indipendenti partecipanti di accedere alla mia abitazione, in orari accettabili per entrambe le parti, per svolgere le attività del programma, comprese le ispezioni energetiche, l'installazione delle misure, l'assicurazione della qualità e le attività di valutazione. Sono consapevole che gli appaltatori partecipanti sono indipendenti e forniscono una garanzia di un anno sulla manodopera per il lavoro completato. Inoltre, sono consapevole che gli appaltatori e i fornitori partecipanti forniranno garanzie appropriate su qualsiasi apparecchiatura fornita e che NYSERDA o il NYS WAP non forniscono garanzie aggiuntive.

Sottoscrivo e affermo, ai sensi della legge, che le dichiarazioni rese in tutte le parti della presente domanda, comprese le dichiarazioni rese in qualsiasi documento di accompagnamento, sono state da me esaminate e sono, a mia conoscenza, veritiere e complete.

Sono consapevole che la mia firma su questo modulo autorizza NYSERDA, i rappresentanti del NYS WAP e i loro incaricati a garantire la mia ammissibilità ai programmi di NYSERDA e al NYS WAP. Autorizzo qualsiasi indagine per verificare o confermare le informazioni che ho fornito. Sono consapevole che se fornisco informazioni false od ometto informazioni al fine di ricevere benefici a cui non ho diritto,

potrò essere perseguito nella misura massima prevista dalla legge. Dichiaro inoltre che nessuna persona nominata in questa domanda è soggetta a squalifica per i servizi di termoregolazione ai sensi della legge del 1986 sul controllo e la riforma dell'immigrazione (Immigration Reform and Control Act of 1986, P.L. 99- 603).

Firma del Richiedente Data

Firma del rappresentante del richiedente Data

Le Sue informazioni di contatto possono essere condivise con altri programmi residenziali di NYSERDA. Per negare questa possibilità, La preghiamo di apporre la Sua firma qui._____

SOLO PER USO INTERNO

Revisionato da: ☐ HEAP ☐ OFA ☐ Utenze ☐ Subappaltatore per la termoregolazione (Weatherization) ☐ EmPower ☐ Altro:_____

Selezionare tutti i benefici che la famiglia riceve: ☐ SSI ☐ HEAP ☐ SNAP ☐ TANF

Sulla base delle informazioni fornite dal richiedente, si stabilisce che la famiglia sia:

☐ Ammissibile solo per AHP ☐ Ammissibile solo per la Termoregolazione (Weatherization) ☐ NON ammissibile per la Termoregolazione (Weatherization)

☐ Ammissibile solo per EmPower ☐ NON Ammissibile solo per EmPower ☐ Ammissibile per EmPower, ma in lista d'attesa per la Termoregolazione (Weatherization)

Selezionare qui se:

☐ Il nucleo familiare è stato precedentemente servito da Weatherization

☐ Il nucleo familiare non è idoneo a ricevere ulteriori servizi tramite EmPower

Commenti aggiuntivi:

Firma del rappresentante Empower	Titolo	Data

КОМБИНИРОВАННЯ ЖИЛИЩНАЯ ЗАЯВКА

EmPower New York и Assisted Home Performance с ENERGY STAR®

Этот список поможет обеспечить оперативную обработку вашей заявки. Поставьте ✓ в соответствующем поле, когда убедитесь в том, что все разделы Заявки заполнены, а необходимые документы предоставлены. Заявки обрабатываются в порядке поступления.

☐ Общая информация о соискателе (Разделы A, B и C) – Убедитесь, что все обязательные поля заполнены (если на них не указано «необязательное поле»).

ТОЛЬКО ДЛЯ АРЕНДАТОРОВ:

☐ Имя, адрес и номер телефона арендодателя приводится в Разделе C.

ИНФОРМАЦИЯ О КОММУНАЛЬНЫХ УСЛУГАХ (РАЗДЕЛ D):

☐ Подпишите разрешение клиента на раскрытие информации счетов за топливо/электроэнергию

☐ Прикрепите копию полного счета за электроэнергию

☐ Прикрепите копию полного счета за газ или счет от поставщика топлива в случае отопления пропаном, нефтью, керосином, дровами или углем

ИНФОРМАЦИЯ О ДОХОДЕ (РАЗДЕЛЫ F И G)

☐ Убедитесь, что все обязательные поля заполнены

ДЕМОГРАФИЧЕСКИЕ ДАННЫЕ (РАЗДЕЛ H): ***Необязательное поле***

☐ Необязательное поле

ЗАЯВЛЕНИЕ СОИСКАТЕЛЯ (РАЗДЕЛ I)

☐ Прочитайте и подпишите

ОТПРАВЬТЕ ЗАЯВКУ ПО АДРЕСУ:

Energy Audit Application
8 Southwoods Blvd
Suite 201
Albany, NY 12211

Следующая информация поможет определить, какие ресурсы и программы наиболее вам подходят. В некоторых ситуациях услуги EmPower New York предоставляются организациями, работающими по Программе помощи с утеплением (Weatherization Assistance Program, WAP). В этих случаях настоящая заявка представляет собой заявку на программу WAP и может быть отправлена в вашу местную организацию, предоставляющую эти услуги. Пишите четко печатными буквами и предоставляйте как можно больше информации. Это заявку можно заполнить онлайн по адресу nyserda.ny.gov/ahp-empower. При подаче онлайн NYSERDA рассмотрит и утвердит ваше заявку быстрее всего.

РАЗДЕЛ A: ИНФОРМАЦИЯ ЗАЯВИТЕЛЯ

Имя заявителя

Адрес | Номер квартиры

Нью-Йорк

Город | Штат | Почтовый индекс

Округ

Номер телефона *(включая территориальный код)* | Дополнительный номер телефона *(включая территориальный код)*

Адрес эл. почты

Почтовый адрес *(если он отличается от приведенного выше)*

Дополнительное контактное лицо | Кем приходится соискателю | Номер телефона *(включая территориальный код)*

РАЗДЕЛ B: ИНФОРМАЦИЯ О ЖИЛЬЕ

❑ Мне принадлежит ❑ Я снимаю

❑ Отдельный дом ❑ Многоквартирный_____число квартир ❑ Сборный дом / дом на колесах

❑ Интернатное учреждение / приют

РАЗДЕЛ C: ИНФОРМАЦИЯ О ВЛАДЕЛЬЦЕ

Имя владельца | Номер телефона *(включая территориальный код)*

Адрес эл. почты

Адрес владельца тот же, что и адрес здания? ❑ Да ❑ Нет – Если вы выбрали «Нет», то укажите адрес ниже.

Адрес

НЕОБЯЗАТЕЛЬНОЕ ПОЛЕ: *Пожалуйста, добавьте любую информацию, которая позволит нам помочь снизить потребление вами электроэнергии, и укажите проблемы со здоровьем или особые нужды, о которых нам необходимо знать:*

КОНТРАГЕНТЫ EMPOWER И ОРГАНИЗАЦИИ, ДАЮЩИЕ РЕКОМЕНДАЦИЮ: *Напишите печатными буквами название вашего бизнеса или агентства.*

РЕЗДЕЛ D: ИНФОРМАЦИЯ О КОММУНАЛЬНЫХ УСЛУГАХ

Мое основное топливо для отопления — это:

❑ Электроэнергия ❑ Нефть ❑ Керосин ❑ Природный газ ❑ Пропан ❑ Дрова ❑ Гранулы ❑ Я не знаю
❑ Другое:_____

Мое вторичное топливо — это:
❑ Электричество ❑ Нефть ❑ Керосин ❑ Пропан ❑ Дрова ❑ Гранулы ❑ Уголь ❑ У меня нет вторичного топлива
❑ Другое:_____

ЭЛЕКТРОЭНЕРГИЯ: Если вы оплачиваете счета за электроэнергию, предоставьте следующее:

Название компании:_____

Номер счета:_____ If NYSEG или RG&E – POD # _____

ГАЗ: Если вы являетесь клиентом компании-поставщика природного газа и оплачиваете счета, предоставьте следующее:

Название компании:_____

Номер счета:_____ If NYSEG или RG&E – POD # _____

ПОСТАВЩИК ПЕРВИЧНОГО ТОПЛИВА: если вы отапливаете не природным газом или электричеством, а другим топливом, предоставьте следующее:

Название компании:_____

Номер счета:_____

РАЗРЕШЕНИЕ КЛИЕНТА на раскрытие информации счетов за топливо/электроэнергию (за предыдущие два года и последующие три года)

Моя подпись подтверждает, что я несу финансовую ответственность за счет(а), указанные в этой заявке. Настоящим я даю согласие и разрешаю поставщикам электроэнергии и топлива, указанным в этом заявке, раскрывать любую и всю информацию об энергопотреблении, включая номер(а) счета (счетов), относящихся к недвижимости по адресу, приведенному выше, представителям Управления по исследованиям и разработкам в области энергетики штата Нью-Йорк (New York State Energy Research and Development Authority, NYSERDA) и Программы помощи с утеплением (Weatherization Assistance Program, WAP) и/или их уполномоченным представителям на период, начинающийся за два года до даты подачи заявки и заканчивающийся через три года после участия в программе. Я понимаю, что информация будет оставаться конфиденциальной настолько, насколько это разрешается законом, и использоваться для помощи мне в использовании программ, определения соответствия критериям жилищных программ и финансовых инициатив NYSERDA, соответствия критериям программы WAP, для оценки экономии энергии, а также для целей анализа.

Подпись клиента:_____ Дата: _____

РАЗДЕЛ E: ИНФОРМАЦИЯ О ПАРТНЕРАХ

Если вы хотите работать с конкретным контрагентом-участником программы по программам энергоэффективности NYSERDA, укажите это ниже. Мы постараемся удовлетворить вашу просьбу, но окончательное решение будет зависеть от загруженности контрагента-участника программы и принятия вашего проекта. Если вы не работаете с одним из контрагентов программы, мы назначим вам следующего доступного контрагента-участника программы из утвержденного списка.

Название контрагента:_____

NYSERDA поддерживает сеть профессиональных энергетических консультантов, которые, возможно, уже помогают вам с этой и другим программам NYSERDA, предложениями коммунальных услуг и другими местными ресурсами. Если вы в настоящее время работаете с энергетическим консультантом NYSERDA, укажите ниже, с кем именно. Программа предоставит ему ограниченную информацию по проекту, чтобы он и дальше мог помогать вам на каждом этапе процесса.

Имя энергетического консультанта NYSERDA: _____

РАЗДЕЛ F: ДОКУМЕНТАЦИЯ О ДОХОДЕ — Выберите одно из следующего

A. ❑ Доступ по географическому положению: Возможно, вы будете соответствовать критериям получения льгот по причине вашего адреса. Дальнейшую информацию можно найти на веб-странице nyserda.ny.gov/ahp-empower. Если вы находитесь в географической зоне доступа, то поставьте галочку.

B. ❑ Рекомендательное письмо: Если вы получили от NYSERDA письмо с кодом рекомендации, введите его ниже. Если у вас есть код рекомендации, дополнительные документы о доходах не требуются.

ID-номер рекомендации:_____

C. ❑ Предоставьте копии ОДНОГО из следующих документов: Копия полного письма о назначении пособия HEAP, SNAP (купоны на еду), TANF (Temporary Assistance for Needy Families, Временная помощь нуждающимся семьям) or Supplemental Security Income (Дополнительный доход по социальному обеспечению), отправленного в течение последних 12 месяцев

D. ❑ Если приведенные выше варианты A, B и C к вам не относятся, предоставьте документы о доходах по одному из следующих вариантов:

Вариант 1

*Квитанции о начислении заработной платы: чистый доход всех членов домохозяйства за последние 60 дней. Суммарный ежемесячный доход рассчитывается следующим образом:

- Если доход еженедельный: умножьте еженедельный доход за последние 4 недели на 4,3
- Если доход поступает раз в две недели: умножьте 2 последние последовательные недели на 2,15
- Если доход поступает дважды в месяц: умножьте на 2

• Social Security (Социальное обеспечение) и Social Security Disability (Социальное пособие по нетрудоспособности): копия письма о назначении пособия

• Документы о всех видах дохода, включая пособие по нетрудоспособности, компенсацию служащим, получившим травмы на работе (worker's compensation), пособие по безработице, пенсию, алименты, алименты на детей, аннуитет, пособия ветеранов и все другие формы дохода

• Самозанятые лица: Отчет о квартальном доходе за последние три месяца от Налогового управления США

Вариант 2

• Налоговые декларации: Этот вариант доступен только в случаях, когда все члены домохозяйства, которые должны были подать налоговую декларацию, это сделали. Если вы подтверждаете доход с помощью налоговых деклараций, все источники дохода должны быть внесены в декларацию. В качестве налоговой декларации должна выступать последняя Декларация по федеральному подоходному налогу (Форма 1040, 1040A или 1040EZ). В документации дохода от аренды, бизнеса или фермы вы должны подавать соответствующие ведомости (Schedule C, E или F).

РАЗДЕЛ G: ИНФОРМАЦИЯ О ДОХОДЕ

Сколько всего людей включает домохозяйство? _____

Включите следующую информацию для каждого члена домохозяйства.

Полное имя	Пол (необязательное поле)	Возраст	Ученик или студент (Да или Нет)	Источник(и) доход	Ежемесячный	Еженедельный	Ежегодный
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
				Суммарный доход семьи	$	$	$

РАЗДЕЛ H: ДЕМОГРАФИЧЕСКИЕ ДАННЫЕ

Пожалуйста, ответьте на следующие демографические вопросы, чтобы помочь NYSERDA понять влияние наших программ на местных жителей. Ответы на эти вопросы не являются обязательными и не повлияют на ваше право на участие в программе.

Укажите число членов вашего домохозяйства, которым:

60 лет и старше: _____ Имеют инвалидность: _____ 17 лет и младше: _____ Ветераны: _____

Укажите, если один из членов домохозяйства:

(выберите столько вариантов, сколько требуется, по крайней мере один)

- ☐ Предпочитаю не отвечать
- ☐ Испанского или латиноамериканского происхождения
- ☐ Коренной американец / коренной житель / коренной житель Аляски
- ☐ Азиат
- ☐ Чернокожий или афро-американец
- ☐ Коренной гаваец или коренной житель тихоокеанских островов
- ☐ Белый
- ☐ Неизвестно
- ☐ Другое

РАЗДЕЛ I: ЗАЯВЛЕНИЕ СОИСКАТЕЛЯ

Я разрешаю раскрытие решения по моему соответствию критериям и информации, приведенной в этой заявке, подтверждающих документов, включая документы о доходах, а также информации о состоянии моего проекта следующим лицам: NYSERDA и его представителям; Программе помощи с утеплением штата Нью-Йорк (NYS Weatherization Assistance Program, WAP) и/или ее уполномоченным представителям; любым местным общественным организациям, работающим по программам NYSERDA; компаниям, предоставляющим мне коммунальные услуги электроэнергии и природного газа; а также следующим лицам или организациям:_____ к которым я обратился (обратилась) за помощью в заполнении и подаче этой заявки.

Я понимаю, что предоставленная мной информация может использоваться для того, чтобы связываться со мной или помогать мне использовать любую текущую или будущую программу, критериям которой я буду соответствовать, а также для определения соответствия критериям NYSERDA или жилищных программ по коммунальным услугам, финансовых льгот, определения соответствия критериям NYS WAP, для оценки потенциальной экономии энергии и для целей анализа.
Я понимаю, что вся информация будет оставаться конфиденциальной настолько, насколько это разрешается законом.
Я понимаю, что если услуги предоставляются мне через жилищные программы NYSERDA или NYS WAP, то мое участие в этих программах не окажет влияния на мое социальное обеспечение, государственное пособие и любой другой доход.

Я понимаю, что подача этой заявки на гарантирует получения мной помощи. То, будут ли мне предоставляться услуги, зависит от числа поданных заявок, наличия средств и приоритетов, определенных программами.

Я соглашаюсь предоставлять представителям NYSERDA, представителям NYS WAP и независимым контрагентам-участникам доступ к моему жилью во время, удобное для обеих сторон, для осуществления деятельности по программе, в том числе энергетических инспекций, установки средств, обеспечения качества и мероприятий по оценке. Я понимаю, что контрагенты-участники являются независимыми контрагентами и предоставляют одногодичную гарантию на выполненную работу. Я также понимаю, что контрагенты-участники и поставщики будут предоставлять соответствующие гарантии на любое предоставленное оборудование, и что NYSERDA или NYS WAP не будут предоставлять никаких дополнительных гарантий.

Я ставлю свою подпись, под страхом предусмотренных законом наказаний, в подтверждение того, что все заявления, сделанные в рамках этой заявки, включая заявления, сделанные на любых дополнительных документах, были проверены мной и являются, насколько мне известно, подлинными и полными.

Я понимаю, что моя подпись на этом бланке дает разрешение представителям NYSERDA, представителям NYS WAP и назначенным ими лицам удостоверяться в том, что я соответствую критериям программ NYSERDA и NYS WAP. Я даю согласие на любые запросы для проверки или подтверждения предоставленной мной информации. Я понимаю, что в случае предоставления ложной информации или утаивания информации с целью получения льгот, на которые я не имею права, меня могут преследовать по всей строгости закона. Я также сообщаю, что ни одно из лиц, указанных в этой заявке, не дисквалифицировано из услуг утепления в соответствии с Актом о реформе и контроле иммиграции (Immigration Reform and Control Act of 1986 (Гражданское право 99-063)).

_____

Подпись соискателя Дата

_____

Подпись представителя соискателя Дата

Ваша контактная информация может передаваться другим жилищным программам в рамках NYSERDA. Чтобы отказаться от этого, введите инициалы здесь_____

ТОЛЬКО ДЛЯ ВНУТРЕННЕГО ИСПОЛЬЗОВАНИЯ

Кем одобрено: ❑ HEAP ❑ OFA ❑ Энергетические компании

❑ Организации, получившие суб-грант по программе утепления ❑ EmPower ❑ Другое:_____

Отметьте все льготы, которые получает домохозяйство. ❑ SSI ❑ HEAP ❑ SNAP ❑ TANF

На основе предоставленной заявителем информации определено, что домохозяйство:

❑ Имеет право только на AHP ❑ Имеет право на программу утепления

❑ НЕ имеет права на программу утепления ❑ Имеет право на EmPower ❑ НЕ имеет права на EmPower

❑ Имеет право на EmPower, но находится в списке ожидания на программу утепления

Отметьте здесь, если:

❑ Ваше домохозяйство раньше обслуживали по программе утепления

❑ Ваша домохозяйство не имеет права на дальнейшие услуги про программе EmPower

Дополнительные комментарии:

Подпись представителя Empower	Должность	Дата

SOLICITUD RESIDENCIAL EN CONJUNTO
EmPower New York y Rendimiento Asistido en el Hogar con ENERGY STAR®

Esta lista de verificación ayudará a garantizar que su solicitud se procese de manera oportuna. Coloque una ✓ en la casilla correspondiente una vez que se haya asegurado de que todas las secciones de la solicitud estén completas y se haya proporcionado la documentación requerida. Las solicitudes se procesan por orden de llegada.

☐ Información general del solicitante (secciones A, B y C): verifique que todos los campos obligatorios estén completos (excepto los que estén marcados como «opcionales»).

ÚNICAMENTE PARA ARRENDATARIO:

☐ Nombre, dirección y número de teléfono del arrendador provistos en la Sección C.

INFORMACIÓN SOBRE LOS SERVICIOS PÚBLICOS (SECCIÓN D):

☐ Firmar la autorización de liberación de la factura de energía/combustible del cliente.

☐ Incluir una copia de la factura de electricidad completa.

☐ Incluya una copia de la factura de servicio de gas completa o la factura del proveedor de combustible si la calefacción es con propano, aceite, queroseno, madera o carbón.

INFORMACIÓN SOBRE LOS INGRESOS (SECCIÓN F Y G)

☐ Verifique que todos los campos requeridos estén completos.

DATOS DEMOGRÁFICOS (SECCIÓN H): ***opcional***

☐ Opcional

INFORMACIÓN SOBRE EL SOLICITANTE (SECCIÓN I):

☐ Lea y firme

PRESENTAR LA SOLICITUD A ESTA DIRECCIÓN:

Energy Audit Application
8 Southwoods Blvd
Suite 201
Albany, NY 12211

La siguiente información ayudará a determinar qué servicios y programas son los más apropiados para usted. En algunos casos, agencias del Programa de Asistencia de Climatización (WAP) proporcionan los servicios de EmPower New York. En estos casos, esta solicitud servirá como una solicitud para el WAP y puede ser enviada a su agencia local para estos servicios. Escriba de manera legible y proporcione la mayor cantidad de información posible. Puede completar esta solicitud en nyserda.ny.gov/ahp-empower. Completar la solicitud en línea será la forma más rápida para que NYSERDA revise y apruebe su solicitud.

SECCIÓN A: INFORMACIÓN DEL SOLICITANTE

Nombre del solicitante

Dirección | N.º de departamento

Ciudad | Estado: Nueva York | Código postal

Condado

Número de teléfono *(incluya el número de área)* | Número de teléfono secundario *(incluya el número de área)*

Correo electrónico

Correo postal *(si es diferente de la que indicó arriba)*

Persona de contacto adicional | Relación con el solicitante | Número de teléfono *(incluya el número de área)*

SECCIÓN B: INFORMACIÓN DE LA VIVIENDA

☐ Soy propietario ☐ Alquilo

☐ Individual Familiar ☐ Varias familias_____ N.º de unidades ☐ Casa prefabricada/móvil ☐ Casa de acogida/refugio

SECCIÓN C: INFORMACIÓN DEL PROPIETARIO

Nombre del propietario | Número de teléfono *(incluya el número de área)*

Correo electrónico

¿La dirección del propietario es la misma que la dirección del edificio? ☐ Sí ☐ No (si la respuesta es «No», indique la dirección a continuación).

Dirección

OPCIONAL: *agregue cualquier información que podamos encontrar útil para reducir su consumo de energía y enumere los problemas de salud de los ocupantes o las necesidades especiales que debemos saber:*

CONTRATISTAS DE EMPOWER Y AGENCIAS DE REFERENCIA: *escriba el nombre de su empresa o agencia.*

SECCIÓN D: INFORMACIÓN SOBRE LOS SERVICIOS PÚBLICOS

Mi principal combustible de calefacción es el siguiente:

☐ Electricidad ☐ Petróleo ☐ Queroseno ☐ Gas natural ☐ Propano ☐ Madera ☐ Pellets ☐ No sé

☐ Otro: _____

Mi combustible de calefacción secundario es el siguiente:

☐ Electricidad ☐ Petróleo ☐ Queroseno ☐ Propano ☐ Madera ☐ Pellets ☐ Carbón ☐ No tengo combustible secundario

☐ Otro: _____

ELECTRICIDAD: si usted es responsable de pagar la factura de electricidad, proporcione lo siguiente:

Nombre del servicio público: _____

Número de cuenta: _____.Si tiene NYSEG o RG&E, indique el n.º del punto del suministro (POD): _____

GAS: si usted es un cliente de servicios públicos de gas natural y es responsable de pagar la factura, proporcione lo siguiente:

Nombre del servicio público: _____

Número de cuenta: _____Si tiene NYSEG o RG&E, indique el n.º del punto del suministro (POD): ____

SUMINISTRO DE COMBUSTIBLE PRIMARIO: si utiliza un combustible que no sea gas natural o electricidad, proporcione lo siguiente:

Nombre de la compañía: _____

Número de cuenta: _____

AUTORIZACIÓN DEL CLIENTE para liberación de combustible/facturas de energía (por dos años anteriores y tres años futuros)

Mi firma certifica que soy financieramente responsable de la(s) cuenta(s) que figuran en esta solicitud. Por la presente, doy mi consentimiento y autorizo a los proveedores de electricidad y combustible mencionados en esta solicitud a divulgar toda la información sobre el uso de energía, incluidos los números de cuenta, relacionados con la dirección de la propiedad arriba mencionada, a los representantes de la Autoridad de Investigación y Desarrollo de Energía del Estado de Nueva York (NYSERDA), y el Programa de Asistencia de Climatización (WAP), o sus representantes designados para el período que comienza dos años antes de la fecha de la solicitud y finaliza tres años después de la participación en el programa. Entiendo que esta información se mantendrá confidencial y en la medida en que lo permita la ley, y se utilizará a modo de evaluación con el fin de ayudarme a utilizar los programas, determinar la elegibilidad para los programas residenciales e incentivos financieros de NYSERDA, la elegibilidad para el WAP, estimar los ahorros de energía.

Firma del cliente: _____ Fecha: _____

SECCIÓN E: INFORMACIÓN DEL SOCIO

Si desea trabajar con un contratista de programa participante específico en los programas de eficiencia energética de NYSERDA, indíquelo a continuación. Haremos lo posible para ubicar su solicitud, pero la selección final se basa en la disponibilidad y la aceptación de su proyecto por parte del contratista del programa participante. Si no está trabajando con un contratista del programa, le asignaremos el próximo contratista del programa participante disponible de nuestra lista aprobada.

Nombre del contratista: _____

NYSERDA mantiene una red de asesores de energía profesionales que ya pueden estar ayudándole con este programa y con otros programas de NYSERDA, con ofertas de servicios públicos y con otros recursos locales. Si actualmente está trabajando con un asesor de energía de NYSERDA, indique cuál a continuación. El programa compartirá información limitada del proyecto con ellos para que puedan continuar ayudándole en cada paso del camino.

Nombre del asesor de energía de NYSERDA: _____

SECCIÓN F: DOCUMENTACIÓN SOBRE LOS INGRESOS: seleccione una de las siguientes opciones

A. ☐ Elegibilidad según área geográfica: puede ser elegible para calificar para incentivos según su dirección. Visite nyserda.ny.gov/ahp-empower para obtener más información. Si se encuentra en un área de elegibilidad geográfica, marque la casilla.

B. ☐ Carta de referencia: si recibió una carta de NYSERDA con un código de referencia, anótelo a continuación. Si tiene un código de referencia, no se requiere documentación de ingresos adicional.

Número de identificación de referencia:_____

C. ☐ Presente una copia de UNO de lo siguiente: copia de la carta de adjudicación completa para Asistencia para Energía para hogares (HEAP), Asistencia Nutricional Suplementaria (SNAP) (bonos para alimentos), Asistencia Temporal para Familias Necesitadas (TANF), o Seguridad de Ingreso Suplementario (SSI) con fecha dentro de los últimos 12 meses.

D. ☐ Si A, B o C anteriores no corresponden, proporcione la documentación de ingresos según una de las siguientes opciones:

Opción 1

- Recibos de pago: todos los ingresos brutos del hogar durante los últimos 60 días. Para calcular el total de ingresos mensuales, si los ingresos son:
  - Semanales: multiplique los ingresos semanales que representan las 4 semanas más recientes por 4.3
  - Cada dos semanas: multiplique las 2 semanas consecutivas más recientes por 2.15
  - Dos veces al mes: multiplique por 2
- Seguro Social y discapacidad del Seguro Social: copia de la carta de adjudicación.
- Documentación de todas las formas de ingresos, incluida la discapacidad, la compensación del trabajador, el desempleo, la pensión, el mantenimiento, la manutención de los hijos, las anualidades, los beneficios de los veteranos y todos los demás ingresos.
- Trabajadores autónomos: informe del Servicio de Impuestos Internos (IRS) de las ganancias trimestrales de los últimos tres meses.

Opción 2

- Declaraciones de impuestos: esta opción solo está disponible si todos los miembros del hogar que debían presentar una declaración de impuestos lo hicieron. Si documenta los ingresos con declaraciones de impuestos, todas las fuentes de ingresos deben respaldarse con las declaraciones de impuestos. Las declaraciones deben ser la declaración de impuestos federales sobre ingresos más reciente (Formulario 1040, 1040A o 1040EZ). Si documenta ingresos de rentas, negocios o granjas, debe presentar los anexos correspondientes (Anexo C, E y F).

SECCIÓN G: INFORMACIÓN SOBRE LOS INGRESOS

¿Cuántas personas viven en el hogar?_____

Incluya la siguiente información para cada miembro del hogar.

Nombre completo	Género (opcional)	Edad	Estudiante (sí o no)	Fuentes de ingresos	Semanal	Mensual	Anual
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
Ingreso total del hogar					$	$	$

SECCIÓN H: INFORMACIÓN DEMOGRÁFICA

Para ayudar a NYSERDA a comprender los impactos de nuestros programas en las comunidades locales, complete las siguientes preguntas respecto de los datos demográficos. Responder estas preguntas es opcional y no afecta su elegibilidad para el programa.

Indique la cantidad de miembros del hogar:

60 años de edad o más: _____ Con discapacidad: _____ 17 años de edad o menos: _____ Veterano: _____

Indique si un miembro del hogar es: *(seleccione una opción, como mínimo, y tantas como corresponda)*

- ☐ Prefiero no responder
- ☐ Hispano o latino(a)
- ☐ Nativo estadounidense/Alaska/primera nación
- ☐ Asiático
- ☐ Negro o afroamericano
- ☐ Nativo hawaiano o isleño del Pacífico
- ☐ Blanco
- ☐ No sé
- ☐ Otro

SECCIÓN I: COFIRMACIÓN DEL SOLICITANTE

Autorizo la divulgación de mi determinación de elegibilidad y la información proporcionada en esta solicitud, los documentos de respaldo, incluida la documentación de ingresos, así como la información sobre el estado de mi proyecto a los siguientes: NYSERDA y sus representantes; el Programa de Asistencia de Climatización (WAP) del Estado de Nueva York o sus representantes designados; cualquier organización comunitaria que trabaje en nombre de los programas de NYSERDA; mis servicios públicos de electricidad y gas natural; y las siguientes personas u organizaciones: _____ a quien he contratado con el fin de ayudarme a completar y presentar la solicitud.

Entiendo que la información que proporcioné puede usarse para contactarme o ayudarme a utilizar cualquier oferta de programa actual o futura para la que pueda ser elegible y con el fin de determinar la elegibilidad para NYSERDA o programas residenciales de servicios públicos e incentivos financieros, determinar la elegibilidad para el NYS WAP, para estimar el potencial de ahorro de energía y para fines de evaluación. Entiendo que toda la información se mantendrá confidencial en la medida permitida por la ley. Entiendo que si se me brindan servicios a través de los programas residenciales de NYSERDA o NYS WAP, mi participación en estos programas no afectará mi seguro social, asistencia pública ni ningún otro ingreso.

Entiendo que esta solicitud no garantiza que se me otorgará asistencia. La prestación o no de los servicios dependerá del número de solicitudes recibidas y de la disponibilidad de fondos y prioridades establecidas por los programas.

Acepto proporcionar a los representantes de NYSERDA, los representantes de NYS WAP y los contratistas participantes independientes acceso a mi vivienda, en horarios que sean convenientes para ambas partes, para realizar actividades del programa, incluidas inspecciones de energía, instalación de medidas, control de la calidad y actividades de evaluación. Entiendo que los contratistas participantes son contratistas independientes y brindan una garantía de un año sobre la mano de obra por el trabajo completado. Además, entiendo que los contratistas y proveedores participantes proporcionarán garantías apropiadas sobre cualquier equipo provisto y que NYSERDA o NYS WAP no otorgan garantías adicionales.

Suscribo y afirmo, bajo pena de ley, que las declaraciones hechas en todas las partes de esta solicitud, incluidas las declaraciones en los documentos adjuntos, han sido examinadas por mí y, según mi conocimiento, son verdaderas y completas.

Entiendo que mi firma en este formulario autoriza a NYSERDA, a los representantes de NYS WAP y a sus designados a garantizar mi elegibilidad para los programas de NYSERDA y NYS WAP. Otorgo mi consentimiento para cualquier consulta para verificar o confirmar la información que he proporcionado. Entiendo que si doy información falsa u omito información para recibir beneficios a los que no tengo derecho, puedo ser procesado con todo el peso de la ley. También declaro que ninguna persona nombrada en esta solicitud está sujeta a descalificación para los servicios de climatización según la Ley de Control y Reforma de Inmigración de 1986 (Ley Pública 99-063).

_____

Firma del solicitante — Fecha

_____

Firma del representante del solicitante — Fecha

Su información de contacto puede compartirse con otros programas residenciales dentro de NYSERDA. Si no desea participar, escriba sus iniciales aquí. _____

SOLO PARA USO INTERNO

Revisado por: ☐ HEAP ☐ OFA ☐ Servicio público ☐ Subconcesionario de Climatización ☐ EmPower ☐ Otro: _____

Marque todos los beneficios que recibe el hogar: ☐ Seguridad de Ingreso Suplementario (SSI) ☐ Asistencia para Energía para hogares (HEAP)
☐ Asistencia Nutricional Suplementaria (SNAP) ☐ Asistencia Temporal para Familias Necesitadas (TANF)

En virtud de la información proporcionada por el solicitante, se determina que el hogar es:

☐ Elegible solo para Programa de Vivienda Asequible (AHP) ☐ Elegible para climatización ☐ NO es elegible para climatización

☐ Elegible para EmPower ☐ NO es elegible para EmPower ☐ Elegible para EmPower, pero en lista de espera para climatización

Verifique lo siguiente:

☐ El hogar recibió en el pasado servicios de climatización.

☐ El hogar no es elegible para más servicios a través de EmPower.

Comentarios adicionales:

Firma del representante de EmPower | Cargo | Fecha

NEW YORK STATE | NYSERDA

POŁĄCZONY WNIOSEK MIESZKANIOWY

Wyniki ENERGY STAR® programów EmPower New York i Pomocy Mieszkaniowej

Ta lista kontrolna pomoże zapewnić terminowe rozpatrzenie wniosku. Wstaw ✓ w odpowiednim polu po upewnieniu się, że wszystkie sekcje wniosku są wypełnione, a wymagana dokumentacja – złożona. Wnioski są rozpatrywane według kolejności zgłoszeń.

☐ Ogólne informacje wnioskodawcy (Sekcje A, B i C) – Sprawdź, czy wszystkie wymagane pola są wypełnione (jeśli nie są zaznaczone jako „opcjonalne”).

TYLKO NAJEMCY:

☐ Nazwisko wynajmującego, adres i numer telefonu podane w części C

INFORMACJE O MEDIACH (CZĘŚĆ D):

☐ Podpisz upoważnienie do wystawienia rachunku za opał/energię dla klienta

☐ Dołącz kopię kompletnego rachunku za energię elektryczną

☐ Dołącz kopię kompletnego rachunku za gaz lub rachunek od dostawcy opału, jeśli ogrzewanie jest za pomocą propanu, oleju, nafty, drewna lub węgla

INFORMACJE O DOCHODACH (CZĘŚĆ F I G):

☐ Sprawdź, czy wszystkie wymagane pola są wypełnione

DANE DEMOGRAFICZNE (CZĘŚĆ H): *Opcjonalne*

☐ Opcjonalne

OŚWIADCZENIE WNIOSKODAWCY (CZĘŚĆ I):

☐ Przeczytaj i podpisz

ZWRÓĆ WNIOSEK TO:

Wniosek o Audyt Energetyczny
8 Southwoods Blvd
Suite 201
Albany, NY 12211

Poniższe informacje pomogą określić, które usługi i programy są dla Ciebie najodpowiedniejsze. W niektórych sytuacjach usługi EmPower New York są świadczone przez agencje programu Weatherization Assistance Program (WAP). W takich przypadkach, niniejszy wniosek posłuży jako wniosek o WAP i może zostać przekazany do lokalnej agencji zajmującej się tymi usługami. Prosimy o czytelne wpisanie i podanie jak największej ilości informacji. Ten wniosek można wypełnić online na stronie nyserda.ny.gov/ahp-empower. Wypełnienie wniosku online jest najszybszym sposobem, w jaki NYSERDA może przejrzeć i zatwierdzić Twój wniosek.

CZĘŚĆ A: INFORMACJE O WNIOSKODAWCY

Imię i nazwisko wnioskodawcy

Adres | nr mieszk.

Miejscowość | NY | Stan | Kod

Powiat

Numer telefonu *(w tym kierunkowy)* | Drugi telefon *(w tym kierunkowy)*

Adres e-mail

Adres do korespondencji *(jeśli inny niż powyżej)*

Dodatkowa osoba kontaktowa | Pokrewieństwo z wnioskodawcą | Numer telefonu *(w tym kierunkowy)*

CZĘŚĆ B: INFORMACJE O MIESZKANIU

❑ Posiadam ❑ Wynajmuję

❑ Jednorodzinny ❑ Wielorodz._____liczba mieszkań ❑ Dom mobilny ❑ Dom grupowy/schronisko

CZĘŚĆ C: INFORMACJE O WŁAŚCICIELU

Imię i nazwisko właściciela | Numer telefonu *(w tym kierunkowy)*

Adres e-mail

Czy adres właściciela jest taki sam jak adres budynku? ❑ Tak ❑ Nie – Jeśli „Nie”, proszę wpisać adres poniżej.

Adres

OPCJONALNIE: *Proszę dodać wszelkie informacje, które mogą okazać się pomocne w zmniejszeniu zużycia energii i wymienić kwestie zdrowotne mieszkańców lub specjalne potrzeby, o których musimy wiedzieć:*

KONTRAHENCI EMPOWER I AGENCJE KIERUJĄCE: *Wpisz czytelnie nazwę swojej firmy lub agencji.*

SEKCJA D: INFORMACJE O MEDIACH

Moim głównym opałem grzewczym jest:

☐ Prąd ☐ Olej ☐ Nafta ☐ Gaz ziemny ☐ Propan ☐ Drewno ☐ Pelet ☐ Nie wiem

☐ Inny:_____

Moim dodatkowym opałem grzewczym jest:

☐ Prąd ☐ Olej ☐ Nafta ☐ Propan ☐ Drewno ☐ Pelet ☐ Węgiel ☐ Nie mam dodatkowego opału

☐ Inny:_____

ZAKŁAD ENERGETYCZNY: Jeśli odpowiadasz za rachunek za prąd, podaj następujące dane:

Nazwa zakładu: _____

Nr konta:_____ Jeśli NYSEG lub RG&E – Nr POD _____

GAZOWNIA: Jeśli jesteś odbiorcą gazu ziemnego i odpowiadasz za rachunek, podaj następujące informacje:

Nazwa zakładu: _____

Nr konta:_____ Jeśli NYSEG lub RG&E – Nr POD _____

GŁÓWNY DOSTAWCA OPAŁU: jeśli ogrzewasz opałem innym niż gaz ziemny lub energia elektryczna, podaj następujące informacje:

Nazwa firmy:_____

Numer konta: _____

ZGODA KLIENTA na udostępnienie rachunków za paliwo/energię (za poprzednie dwa lata i przyszłe trzy lata)

Mój podpis poświadcza, że odpowiadam finansowo za rachunek (rachunki) wymienione w niniejszym wniosku. Niniejszym wyrażam zgodę i upoważniam dostawców energii elektrycznej i paliw wymienionych w niniejszym wniosku do ujawnienia wszelkich informacji dotyczących zużycia energii, w tym numerów kont, związanych z powyższym adresem nieruchomości, przedstawicielom New York State Energy Research and Development Authority (NYSERDA), oraz programu Weatherization Assistance Program (WAP), i/lub jego wyznaczonym przedstawicielom na okres rozpoczynający się dwa lata przed datą złożenia wniosku i kończący się trzy lata po przystąpieniu do programu. Rozumiem, że informacje te zostaną zachowane jako poufne w zakresie dozwolonym przez prawo i wykorzystane do celów pomocy w korzystaniu z programów, określenia kwalifikacji do programów mieszkaniowych i zachęt finansowych NYSERDA, kwalifikacji do WAP, oszacowania oszczędności energii oraz do celów oceny.

Podpis klienta:_____ Data: _____

CZĘŚĆ E: INFORMACJE O PARTNERZE

Jeśli chcieliby Państwo współpracować z konkretnym wykonawcą programu uczestniczącym w programach efektywności energetycznej NYSERDA, proszę wskazać poniżej. Będziemy dążyć do uwzględnienia Państwa wniosku, ale ostateczny wybór jest oparty na dostępności wykonawcy programu uczestniczącego w programie i akceptacji Twojego projektu. Jeśli nie współpracujesz z wykonawcą uczestniczącym w programie, przydzielimy Ci następnego dostępnego wykonawcę programu z naszej zatwierdzonej listy.

Nazwa wykonawcy: _____

NYSERDA utrzymuje sieć profesjonalnych doradców energetycznych, którzy mogą już pomagać Państwu w tym programie oraz w innych programach NYSERDA, ofertach zakładów energetycznych i innych lokalnych zasobach. Jeśli obecnie współpracują Państwo z doradcą energetycznym NYSERDA, proszę wskazać poniżej, z którym. Program udostępni im ograniczone informacje o projekcie, aby mogli dalej pomagać Państwu na każdym kroku.

Nazwa doradcy energetycznego NYSERDA: _____

Część F: DOKUMENTACJA DOCHODOWA — Wybierz jedno z poniższych

A. ☐ Geokwalifikacja: Możesz kwalifikować się do otrzymania zachęt w oparciu o swój adres. Więcej informacji można znaleźć na stronie nyserda.ny.gov/ahp-empower. Jeśli znajdujesz się w obszarze geokwalifikowalności, zaznacz to pole.

B. ☐ Pismo polecający: Jeśli otrzymali Państwo pismo od NYSERDA z kodem polecającym, należy wpisać go poniżej. Jeśli mają Państwo kod polecający, nie jest wymagana dodatkowa dokumentacja dochodów.

Nr kodu polecającego:_____

C. ☐ Proszę przedłożyć kopię JEDNEGO z poniższych: Kopia całego pisma przyznającego HEAP, SNAP (kupony żywnościowe), TANF (Pomoc tymczasowa dla potrzebujących rodzin) lub Supplemental Security Income (Dodatkowy dochód zabezpieczający), datowanego w ciągu ostatnich 12 miesięcy

D. ☐ Jeśli A, B lub C powyżej nie mają zastosowania, proszę dostarczyć dokumentację dochodów w ramach jednej z poniższych opcji:

Opcja 1

- Odcinki wypłat: wszystkie dochody brutto gospodarstwa domowego za ostatnie 60 dni. Aby obliczyć miesięczną sumę dochodów, jeśli dochód jest:
  - Tygodniowy: pomnóż tygodniowy dochód za 4 ostatnie tygodnie przez 4,3
  - Dwutygodniowy: pomnóż 2 ostatnie kolejne tygodnie przez 2,15
  - Dwa razy w miesiącu: pomnóż przez 2
- Ubezpieczenie społeczne i renta inwalidzka: kopia pisma przyznającego
- Dokumentacja wszystkich form dochodu, w tym z tytułu niepełnosprawności, wynagrodzeń pracowniczych, zasiłku dla bezrobotnych, emerytury, alimentów, renty, świadczeń kombatanckich i wszystkie inne dochody
- Samozatrudnienie: Kwartalne deklaracje IRS (Urzędu Skarbowego) dotyczące zarobków z ostatnich trzech miesięcy

Opcja 2

- Deklaracje podatkowe: Ta opcja jest dostępna tylko wtedy, gdy wszyscy członkowie gospodarstwa domowego, którzy byli zobowiązani do złożenia zeznania podatkowego, zrobili to. W przypadku dokumentowania dochodu zeznaniami podatkowymi należy udokumentować wszystkie źródła dochodu. Deklaracje muszą być najnowszymi federalnymi deklaracjami podatkowymi (Formularz 1040, 1040A lub 1040EZ). W przypadku dokumentowania dochodów z wynajmu, działalności gospodarczej lub gospodarstwa rolnego - należy złożyć odpowiednie formularze (Schedule C, E i F).

CZĘŚĆ G: INFORMACJE O DOCHODACH

Łączna liczba osób w gospodarstwie domowym? _____

Należy podać następujące informacje dla każdego członka gospodarstwa domowego.

Pełne imię i nazwisko	Płeć (opcjonalnie)	Wiek	Student/ uczeń (Tak lub Nie)	Źródło(-a) dochodów	Tygodniowe	Miesięczne	Rocznie
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
Całkowity dochód gospodarstwa domowego					$	$	$

CZĘŚĆ H: DEMOGRAFIA

Aby pomóc NYSERDA zrozumieć wpływ naszych programów na społeczności lokalne, proszę wypełnić poniższe pytania demograficzne. Odpowiedzi na te pytania są opcjonalne i nie mają wpływu na kwalifikowalność do programu.

Wskaż liczbę członków gospodarstwa domowego, którzy są:

mają 60 lat lub więcej: _____ Są niepełnosprawni: _____ w wieku 17 lub młodsi: _____ Kombatantami: _____

Wskaż, czy członek gospodarstwa domowego jest:

(wybierz co najmniej jedną opcję, a w razie potrzeby wszystkie właściwe)

- ☐ Wolę nie odpowiadać
- ☐ Osobą hiszpańskojęzyczną lub latynoską
- ☐ Rdzennym Amerykaninem / należy do Pierwszego Narodu / jest rdzennym mieszkańcem Alaski
- ☐ Azjatą
- ☐ Osobą czarnoskórą / Afroamerykaninem
- ☐ Rdzennym mieszkańcem Hawajów lub Wysp Pacyfiku
- ☐ osobą białą
- ☐ nieznane
- ☐ inną

CZĘŚĆ I: OŚWIADCZENIE WNIOSKODAWCY

Upoważniam do udostępnienia informacji na temat mojej kwalifikowalności i informacji podanych w niniejszym wniosku, dokumentów uzupełniających, w tym dokumentacji dotyczącej dochodów, jak również informacji dotyczących mojego statusu w projekcie następującym podmiotom: NYSERDA i jej przedstawicielom; programowi NYS Weatherization Assistance Program (WAP) i/lub jego wyznaczonym przedstawicielom; wszelkim organizacjom społecznym działającym w imieniu programów NYSERDA; moim zakładom energetycznym i gazowym; oraz następującym osobom lub organizacjom: _____ _____, które zaangażowałem/-am w celu pomocy w wypełnieniu i złożeniu wniosku.

Rozumiem, że podane przeze mnie informacje mogą być wykorzystane do skontaktowania się ze mną lub do pomocy w skorzystaniu z jakiejkolwiek obecnej lub przyszłej oferty programowej, do której mogę się kwalifikować, oraz do celów określenia kwalifikacji do programów mieszkaniowych i zachęt finansowych NYSERDA i/lub przedsiębiorstw użyteczności publicznej, określenia kwalifikacji do NYS WAP, do oszacowania potencjału oszczędności energii oraz do celów oceny. Rozumiem, że wszystkie informacje będą traktowane jako poufne w zakresie dozwolonym przez prawo. Rozumiem, że jeśli usługi będą świadczone dla mnie w ramach programów mieszkaniowych NYSERDA lub NYS WAP, to mój udział w tych programach nie będzie miał wpływu na moje ubezpieczenie społeczne, pomoc publiczną lub jakiekolwiek inne dochody.

Rozumiem, że niniejszy wniosek nie gwarantuje, że pomoc zostanie mi przyznana. To, czy usługi będą świadczone, zależy od liczby otrzymanych wniosków, dostępności funduszy i priorytetów ustalonych przez programy.

Zgadzam się na zapewnienie przedstawicielom NYSERDA, przedstawicielom NYS WAP oraz niezależnym wykonawcom uczestniczącym w programie dostępu do mojego mieszkania, w godzinach, które są do przyjęcia dla obu stron, w celu przeprowadzenia działań programowych, w tym inspekcji energetycznych, instalacji środków, zapewnienia jakości oraz działań ewaluacyjnych. Rozumiem, że wykonawcy uczestniczący w programie są niezależnymi wykonawcami i udzielają rocznej gwarancji na robociznę za wykonaną pracę. Ponadto rozumiem, że uczestniczący wykonawcy i dostawcy zapewnią odpowiednie gwarancje na wszelkie dostarczone urządzenia i że NYSERDA ani NYS WAP nie zapewniają żadnych dodatkowych gwarancji.

Oświadczam i potwierdzam, pod groźbą kary, że oświadczenia zawarte we wszystkich częściach niniejszego wniosku, w tym oświadczenia zawarte we wszelkich dokumentach towarzyszących, zostały przeze mnie sprawdzone i są według mojej najlepszej wiedzy prawdziwe i kompletne.

Rozumiem, że mój podpis na tym formularzu daje zgodę NYSERDA, przedstawicielom NYS WAP i wyznaczonym przez te agencje osobom na zapewnienie mojej kwalifikacji do programów NYSERDA i NYS WAP. Wyrażam zgodę na wszelkie zapytania w celu weryfikacji lub potwierdzenia podanych przeze mnie informacji. Rozumiem, że jeśli podam fałszywe informacje lub zataję informacje w celu otrzymania świadczeń, do których nie mam uprawnienia, mogę podlegać ściganiu w pełnym zakresie prawa. Oświadczam również, że żadna osoba wymieniona w niniejszym wniosku nie podlega dyskwalifikacji w zakresie usług docieplania na podstawie Ustawy o Reformie i Kontroli Imigracji z 1986 roku (PL 99-063).

Podpis wnioskodawcy _____ Data _____

Podpis przedstawiciela wnioskodawcy _____ Data _____

Państwa dane kontaktowe mogą być udostępnione innym programom mieszkaniowym w ramach NYSERDA. Aby zrezygnować z tej opcji, proszę zaparafować tutaj._____

TYLKO DO UŻYTKU WEWNĘTRZNEGO

Sprawdził(a): ☐ HEAP ☐ OFA ☐ Zakł. energ. ☐ Sub-beneficjent docieplania ☐ EmPower ☐ Inne:_____

Zaznacz wszystkie świadczenia, które otrzymuje gospodarstwo domowe: ☐ SSI ☐ HEAP ☐ SNAP ☐ TANF

Na podstawie informacji podanych przez wnioskodawcę ustalono, że gospodarstwo domowe:

☐ Kwalifikuje się tylko do AHP ☐ Kwalifikuje się do docieplenia ☐ NIE kwalifikuje się do docieplenia

☐ Kwalifikuje się do EmPower ☐ NIE kwalifikuje się do EmPower

☐ Kwalifikuje się do EmPower, jest na liście oczekiwania do docieplenia

Zaznaczyć tutaj, jeśli:

☐ Gospodarstwo domowe było już obsługiwane przez program docieplania

☐ Gospodarstwo domowe nie kwalifikuje się do dalszych usług w ramach EmPower

Dodatkowe uwagi:

Podpis Przedstawiciela Empower	Stanowisko	Data

NEW YORK STATE | NYSERDA

קאמבינירטע וואוין אפליקאציע

עמפאָוער ניו יארק און אסיסטעד היים־פע־רפאָרמענס מיט ENERGY STAR®

די ליסטע וועט העלפן פארזיכערן אז אייער אפליקאציע וועט ווערן פראצעסירט ביי צייטנס. ביטע שטעלט א ✓ אין דעם ריכטיגן קעסטל איינמאל וואס איר זענט זיכער אז אלע אפליקאציע טיילן זענען פארענדיגט. אפליקאציעס ווערן פראצעסירט לויט ווער סע קומט פריער באקומט פריער.

☐ אלגעמיינע אפליקאציע אינפארמאציע)אפטייל A, B & C(- וועריפיקירט אז אלע געפאדערטע פעלדער זענען געפארטיגט)אויסער אז ס'איז אפגעצייכענט "אפציע"(.

נאר פאר דינגערס:

☐ נאמען פון לענדלארד, אדרעס און טעלעפאן נומער צוגעשטעלט אין אפטייל C

יוטיליטי אינפארמאציע)אפטייל D(:

☐ שרייבט אונטער קונה'ס ברענוואַרג/ענערגיע ביל ארויסלאז אויטאריזאציע

☐ לייגט צו א קאפיע פונעם גאנצן עלעקטריק ביל

☐ לייגט צו א קאפיע פונעם גאנצן גאז יוטיליטי ביל אדער א ביל פונעם ברענוואַרג סופלייער אויב איר הייצט מיט־פראָפּעין, אויל, קעראסין, האלץ אדער קוילן.

הכנסה אינפארמאציע)אפטייל F & G(:

☐ מאכט זיכער אז אלע געפאדערטע פעלדער זענען פארענדיגט

דעמאגראפיקס)אפטייל H(: אפציע

☐ אפציע

אפליקאנט באשטעטיגונג)אפטייל I(:

☐ לייענט און שרייבט אונטער

ביטע שיקט צוריק אייער אפליקאציע צו:

Energy Audit Application
8 Southwoods Blvd
Suite 201
Albany, NY 12211

די פאלגנדע אינפארמאציע וועט העלפן פעסטשטעלן וועלכע סערוויסעס און פראגראמען זענען צום מערסטנס פאסיג פאר אייך. אין געווינסט סיטואציעס, וועלן עמפאוער ניו יארק סערוויסעס צוגעשטעלט ביי ביוראס פון דער וועטערעזאציע הילף פראגראם)WAP(. וועלן דאס געשעט, וועט די אפליקאציע דינען אלץ אן אפליקאציע פאר דער WAP און קען וועלן איבערגעשיקט צו אייער לאקאלע ביורא פאר די סערוויסעס. ביטע דרוקט קלאר און שטעלט צו וויפיל אינפארמאציע נאר מעגליך. די אפליקאציע קען וועלן אויסגעפילט אנליין ביי nyserda.ny.gov/ahp-empower. אויספילן די אפליקאציע אנליין איז דער שנעלסטער וועג פאר NYSERDA איבערצוקוקן און באשטעטיגן אייער אפליקאציע.

אפטייל A: אפליקאנט אינפארמאציע

אפליקאנט נאמען

אדרעס | דירה#

שטאט | סטעיט | זיפקאוד
NY

לאנד

טעלעפאן נומער)*מיטן עריע קאוד*(| צווייטער טעלעפאן נומער)*מיטן עריע קאוג*(

אימעיל אדרעס

פאסט אדרעס)*אויב אנדערש ווי אויבן*(

נאך א קאנטאקט | שייכות צום אפליקאנט | טעלעפאן נומער)*מיטן עריע קאוד*(

אפטייל B: וואוין אינפארמאציע

☐ אייגן הויז ☐ געדינגען

☐ איין פאמיליע ☐ מערער פאמיליעס_____ #דירות ☐ פארבריצירט/מאבילע היימען ☐ גרופע היים/שיץ הויז

אפטייל C: אייגנטימער אינפארמאציע

אייגנטימער אינפארמאציע | טעלעפאו נומער)*מיטן עריע קאוד*(

אימעיל אדרעס

איז דער אייגנטימער אדרעסס דאס זעלבע ווי דעם בנין'ס אדרעס? ☐ יא ☐ ניין - אויב "ניין" ביטע פילט אויס דעם אדרעס אונטן.

אדרעס

אפציענעל: *ביטע לייגט צו אינפארמאציע וואס קען אונדז העלפן פארמינערן אייער ענערגיע פארניץ און רעכענט אויס געזונט פראבלעמען אדער ספעציעלע געבריכן וואס איז כדאי פאר אונדז צו וויסן:*

עמפאָוער קאנטראקטארן און רעקאמענדיר ביוראס: *דרוקט אייער ביזנעס אדער ביורא נאמען.*

אפטייל D: יוטיליטי אינפארמאציע

מיין הויפט הייצונג איז:

☐ עלעקטריק ☐ אויל ☐ קעראסין ☐ נאטורעלע גאז ☐ פראָפּעין ☐ פעלעטס ☐ האלץ ☐ איך ווייס נישט

☐ אנדערע:_____

מיין צווייטראנגיגע הייצונ ברענוארג איז:

☐ עלעקטריק ☐ אויל ☐ קעראסין ☐ פראָפּעין ☐ האלץ ☐ פעלעטס ☐ קוילן ☐ איך האב נישט קיין צווייטראנגיגע ברענוארג

☐ אנדערע:_____

עלעקטריק יוטיליטי: אויב איר זענט פאראנטווארטליך צו צאלן דעם עלעקטריק ביל, שטעלט צו די פאלגנדע:

יוטיליטי נאמען: _____

נומער קאנטע:_____ אויב # NYSEG or RG&E – POD _____

גאז יוטיליטי: אויב איר זענט א קונה פון נאטירלעכע גאז יוטיליטי און פאראנטווארטלעך פארן ביל, שטעלט צו די פאלגנדע:

יוטיליטי נאמען: _____

נומער קאנטע:_____ אויב # NYSEG or RG&E – POD _____

הויפט ברענוארג סופלייער: אויב איר הייצט מיט ברענוארג אנדערש ווי גאז אדער עלעקטריק, שטעלט צו די פאלגנדע:

קאמפאני נאמען: _____

נומער קאנטע: _____

אויטאריזאציע פון קונה ארויסצולאזן די ברענוארג/ענערגיע בילס)פאר די לעצטע צוויי יאר און די נעקסטע דריי יאר(

מיין חתימה אטעסטירט אז איך בין פינאנציש פאראנטווארטליך פאר די קאנטעס וואס זענען אויסגערעכנט אויף דער אפליקאציע. דערמיט בין איך מסכים און אויטאריזיר די עלעקטריק און גאז סאפלייערס אויסגערעכנט אין דער אפליקאציע ארויסצוגעבן אלע ענערגיע באניץ אינפארמאציע, ווי אויך די נעמען פון קאנטע)ס(וואס האבן א שייכות מיטן אויבנדערמאנטן אדרעס, צו רעפרעזענטעטיוון פון דער ניו יארק סטעיט ענערגיע פארש און אנטוויקלונג אויטאריטעט)NYSERDA(, און דער וועטערזאציע הילף פראגראם)WAP(, און אדער אירע דעזיגנירטע רעפרעזענטעטיוון, פאר דער צייט אנהייבנדיג צוויי יאר פארן דאטום פון דער אפליקאציע און ענדיגן דריי יאר נאכן פראגראם באטיליגונג. איך פארשטיי אז די אינפארמאציע וועט ווערן געהאלטן פריוואט, אויף ווי וועיט עס איז ערלויבט לויטן געזעץ, און ווערן געוונצט פארן צוועק מיר ארויסהעלפן גילטן די פראגראמען, פעסטשטעלן פאסיגקייט פאר NYSERDA'S וואוין פראגראמען און פינאציעלע אינצענטיוון, פאסיג פאר דער WAP, פאר אפשאצן ענערגישע איינשפארונג, און פאר אפשאץ צוועקן.

קונה אונטערשריפט:_____ דאטום: _____

אפטייל E: פארטנער אינפארמאציע

אויב איר ווילט ארבעטן מיט א געוויסע פראגראם קאנטראקטאר וואס נעמט אנטייל אין NYSERDA'ס ענערגיע שפארעוודיגקייט פראגראמען, ביטע לאזט אונדז וויסן אונטן. מיר וועלן ארבעטן צן באפרידיקן אייער פארלאנג, אבער די לעצטע סעלעקציע וועגדט זיך אויפן קאנטראקטארס פארהאנענקייט און אננעמונג פון אייער פראיעקט. אויב איר ארבעט נישט מיט א פראגראם קאנטראקטאר, וועלן מיר אייך צוטיילען דעם נעקסטן קאנטראקטאר וואס נעמט אנטייל אין דער פראגראם פון אונדזער באשטימטע ליסטע וואס איז פארהאן.

קאנטראקאר נאמען: _____

NYSERDA האלט אן א נעץ פון פראפעסיאנעלע ענערגיע יועצים וואס אפשר העלפן אייך שוין מיט דער פראגראם און אנדערע NYSERDA פראגראמען, יוטיליטי אנבאטן, און אנדערע לאקאלע רעסורסן. אויב איר ארבעט יעצט מיט א NYSERDA ענערגיע יועץ, ביטע לאזט אונדז וויסן מיט וועלכן אונטן. די פראגראם וועט אויסטיילן באגרעניצטע פראיעקט אינפארמאציע מיט זיי אז זיי זאלן אייך קענען ווייטער ארויסהעלפן טריט ביי טריט.

NYSERDA ענערגיע יועץ נאמען: _____

אפטייל F: הכנסה דאקומענטאציע - ביטע קלויבט אויס איינע פון די פאלגנדע

A. ❑ לאקאציע-פאסיגקייט: איר קענט זיין פאסיג פאר אינצענטיוועז לויט ווי איר וואוינט. באזוכט nyserda.ny.gov/ahp-empower פאר מער אינפארמאציע. אויב איר געפונט זיך אין א לאקאציע-פאסיגע געגנט, ביטע צייכנט אפ דאס קעסטל.

B. ❑ רעקאמענדאציע בריוו: אויב איר האט באקומען א בריוו פון NYSERDA מיט א רעקאמענדאציע קאוד, שרייבט עס אריין אונטן. אויב איר האט א רעקאמענדאציע קאוד, דארף מען נישט נאך קיין הכנסה דאקומענטאציע.

רעקאמענדאציע DI#_____

C. ❑ שטעלט צו א קאפיע פון איינע פון די פאלגנדע: קאפיע פון דעם צוטייל בריוו פאר HEAP, צו SNAP)פוד סטעמפס(, TANF)צייטווייליגע הילף פאר באדערפטיגע משפחות(אדער עקסטער סעקיוריטי הכנסה דאטירט אין משך פון די לעצטע 12 חודשים

D. ❑ אויב A, B,אדער C פון אויבן זענען נישט שייך, דאן שטעלט צו הכנסה דאקומענטאציע אונטער איינע פון די אפציעס אונטן:

אפציע 1

• טשעק קוויטלעך: אלע הויזגעזינד ברוטא הכנסה פאר די לעצטע 60 טעג. אויסרעכענען די חודש'לעכע הכנסה, אויב די הכנסה איז:

- וואכנטליך: כפל'ט די וואכנטליכע הכנסה פון די לעצטע פיר וואכן ביי 4.3

- צווייוואכיג: כפל'ט די צוויי לעצטע נאכאנאנדיגע וואכן ביי 2.15

- צווי מאל א חודש: כפל'ט ביי 2

• סאשעל סעקיוריטי און סאשעל סעקיוריטי דיסאביליטי: קאפיע פון צוטייל בריוו.

• דאקומענטאציע פון אלע סארטן הכנסות ווי אויך אינוואלידן-פענסיע, ארבעטער קאמפענסאציע, ארבעטלאזיגקייט, פענסיע, אויסהאלטונג, קינדאויסהאלט, רענטעפאנד, וועטעראנען בענעפיטן, און אלע אנדערע הכנסות

• ארבעטן פאר זיך שליין SRI רעפארט פון קוואַרטלדיגע פארדינסטן פון די לעצטע דריי חודשים.

אפציע 2

• שטייער דעקלאראציעס: די אפציע איז צום האבן נאר אויב אלע הויזגעזינד מיטגלידער וואס זענען געפאדערט איינצוגעבן א שטייער-דעקלאראציע האבן אזוי געטאן. אויב עס ווערט דאקומענטירט די הכנסה מיט שטייער דעקלאראציעס, מוזן אלע מקורות פון הכנסה ווערן דאקומענטירט מיט שטייער דעקלאראציעס. דעקלאראציעס מוזן זיין די נייסטע פעדעראלע הכנסה שטייער דעקלאראציע)פארם 1040, 1040A, אדער 1040EZ(. אויב איר באווייזט דינגען, ביזנעס, אדער פאַרם הכנסה - מוזט איר איינגעבן די פורמולארן וואס שטימען.)פארמולאר C, E און F(.

אפטייל G: הכנסה אינפארמאציע

סל הכל מיטגלידער אין דעם הוזגעזינד?_____

לייגט צו די פאלגנדע אימפארמאציע פאר יעדן הויזגעזינד מיטגליד.

$	$	$					
$	$	$					
$	$	$					
$	$	$					
$	$	$					
$	$	$					
$	$	$					
$	$	$					
$	$	$					
$	$	$	**סך הכל הכנסה פארן הויזגעזינד**				

אפטייל H: דעמאגראפיקס

צו העלפן NYSERDA פארשטיין די השפעות פון אונדזערע פראגראמען אויף די לאקאלע קאמיוניטיס, ביטע פילט אויס די דעמאגראפישע פראגעס. מע מוז נישט ענטפערן די פראגעס און עס איז נישט משפיע אויף אייער פראגראם פאסיגקייט.

שרייבט וויפיל הויזגעזינד מיטגלידער וואס זענען:

60 יאר אדער עלטער _____ אינוואליד: _____ 17 יאר אלט אדער יונגער: _____ וועטעראן: _____

שרייבט אויב א מיטגליד פון אייער הויזגעזינד איז: *(קלייבט אויס כאטש איינע, און וויפיל נאך וואס זענען שייך)*

- ☐ ליבערשט נישט ענפערן
- ☐ שפאניש אדער לאטיין
- ☐ אינדיאניש / ערשטע פאלק / אלאסקא געבארענער
- ☐ אזיאן
- ☐ שווארץ אדער אפריקן אמעריקאנער
- ☐ האוואי געבוירענער אדער פאסיפיק איילענדער
- ☐ ווייס
- ☐ אומבאוואוסט
- ☐ אנדערע

אפטייל I: אפליקאנט באשטעטיגונג

איך אויטאריזיר דאס ארויסגעבן וועגן מיין פאסיגקייט החלטה און אינפארמאציע צוגעשטעלט אויף דער אפליקאציע, באווייז דאקומענטן ווי אויך הכנסה דאקומענטן און דערצו אינפארמאציע וועגן מיין פראיעקט סטאטוס צו די פאלגנדע: NYSERDA און אירע רעפרעזענטעטיוונען; די SYN וועטעריזאציע הילף פראגראם)WAP(און/אדער אירע דעזיגנירטע רעפרעזענטעטיוונען; סיי ועלכע קאמיוניטי-באזירטע ארגאניזאציעס וואס ארבעטן לטובת NYSERDA פראגראמען; מיין עלעקטריק און נאטורעלע גאז יוטיליטיס; און די פאלגנדע מענטשן אדער ארגאניזאציעס:_____ וועמען איך האב באטייליגט פארן ציל פון העלפן מיר פארענדיגן און איינגעבן די אפליקאציע.

איך פארשטיי אז די אינפארמאציע וואס איך האב צוגעשטעלט קען גענוצט ווערן זיך צו פארבינדן אדער מיר העלפן באניצן זיך מיט יעצטיגע און צוקונפדיגע פראגראמען אנבאטן וואס איך קען זיין פאסיג צו באקומען און פאר די צוועקן פון באשטעטיגן פאסיגקייט פאר NYSERDA און/ אדער יוטיליטי וואוין פראגראמען און פינאנציעלע אינצענטיוועס, באשטעטיגן פאסיגקייט פאר דער NYS WAP, פאר שאצן פאטענציעלע ענערגיע שפארונגען, און פאר שאצונגען.
איך פארשטיי אז אלע אינפארמאציע וועט ווערן געהאלטן פריוואט ווי ווייט מעגליך געזעצליך. איך פארשטיי אז אויב די סערוויסעס וואס ווערן צוגעשטעלט פאר מיר דורך NYSERDA'ס וואוין פראגראמען אדער דער NYS WAP, אז מיין השתתפות אין די פראגראמען וועט נישט האבן קיין השפעה אויף מיין סאשעל סעקיוריטי, פובליק הילף, אדער אנדערע הכנסות.

איך פארשטיי אז די אפליקאציע פארזיכערט נישט אז איך וועל באקומען הילף. צי די סערוויסעס וועלן ווערן צוגעשטעלט צי נישט וועגדט זיך אויף די נומער אפליקאציע וואס זיי האבן באקומען און וויפיל געלט ס'איז דא און די פריאריטעט אוועקגעשטעלט ביי די פראגראמען.

איך בין מסכים צו צושטעלן NYSERDA רעפרעזענטעטיוועס, די NYS WAP רקעפרעזענטיטיוועס, און אומאפהענגיגע קאנטראקטארן וואס נעמען אנטייל, צוטריט צו מיין שטוב, אין צייטן וועלכע ביידע זענען מסכים, אויס צו פילן פראגראם אקטיוויטעטן וו אויך ענערגיע איבערקוק, אינסטאלירונג פון מיטלען, קוואליטעט פארזיכערונגען, און אפשאץ אקטיוויטעטן. איך פארשטיי אז קאנטראקטארן וואס נעמען אנטייל זענען אומאפהענגיגע קאנטראקטארן און שטעלן צו אן איין יעריגער פארזיכערונג פאר דער פארענדיגטער ארבט. איך פארשטיי וויייטער אז קאנטראקטארן וואס נעמען אנטייל און פארקויפערס וועלן צושטעלן געהעריגע פארזיכערונגען פאר סיי וועלכן געצייג צוגעשטעלט און קיין שום אנדערע פארזיכערונגען וועלן נישט ווערן צוגעשטעלן ביי NYSERDA אדער די NYS WAP.

איך שטיץ און שטעל פעסט, אונטער געזעצלעכע שטראף, אז די דעקלאראציעס וואס זענען געמאכט געווארן אויף אלע טיילן פון דער אפליקאציע, ווי אויך דעקלאראציעס געמאכט אויף איינע פון די צוגעגעבענע דאקומענטן, זענען געווארן איבערגעקוקט ביי מיר און צו מיין בעסטן וויסנשאפט זענען אמת און פולשטענדיג.

איך פארשטיי אז מיין אונטערשריפט אויף דעם פאָרם גיט רשות פאר NYSERDA, רעפרעזענטיטיוועס פון דער NYS WAP, און זייערע מיטארבעטער צו פארזיכערן מיין פאסיגקייט פאר NYSERDA'ס פראגראמען און דער NYS WAP. איך באשטיי צו סיי וועלכע אויספארשונג צו וועריפיקירן אדער באשטעטיגן די אינפארמאציע וואס איך האב געגעבן. איך פארשטיי אז אויב איך גיב פאלשע אינפארמאציע אדער האלט צוריק אינפארמאציע כדי צו באקומען בענעפיטן וואס קומט מיר נישט, קען איך ווערן געשטעלט צום משפט צום פולסטן פארנעם פון געזעץ. און איך באמערק אויך אז קיין שום מענטש אין דער אפליקאציע איז עלול צו ווערן דיסקוואליפיצירט פאר וועטערעזאציע סערוויסעס לויטן אימיגראציע רעפארם און קאנטראל אקט פון 1986)פובליק געזעץ 063-99(.

אפליקאנט אונטערשריפט — דאטום

אפליקאנט רעפרעזענטיטיוו אונטערשריפט — דאטום

אייער קאנטאקט אינפארמאציע קען ווערן געטיילט מיט אנדערע וואוין פראגראמען אינערהאלב NYSERDA. צו באשליסן זיך נישט צו באטייליגן, ביטע שרייבט אייער איניציאלן דא._____

נאר פאר אינעווייניגסטן באניץ

איבערגעקוקט בייַ: ☐ HEAP ☐ OFA ☐ יוטיליטי ☐ וועטערעזאציע סובגראנטי ☐ עמפאור ☐ אנדערע:_____

באקוקט אלע בענעפיטן וואס דאס הויזגעזינד באקומט: ☐ SSI ☐ HEAP ☐ SNAP ☐ TANF

לויט די אינפארמאציע צוגעשטעלט פונעם אפליקאנט, איז דאס הויזגעזינד באשטעטיגט צו זיין:

☐ פאסיג בלויז פאר AHP ☐ פאסיג פאר וועטערעזאציע ☐ נישט פאסיג פאר וועטערעזאציע

☐ פאסיג פאר עמפאור ☐ נישט פאסיג פאר עמפאור ☐ עמפאור פאסיג אבער איז אויף א וואַרט-ליסטע פאר וועטערעזאציע

צייכנט אפ דא אויב:

☐ הויזגעזינד וואס איז פריער באדינט געווארן בייַ וועטעריזאציע

☐ הויזגעזינד נישט פאסיג צו וווייטער באקומען סערוויסעס דורך עמפאור

נאך באמערקונגען:

עמפאור רעפרעזענטיטיוו אונטערשריפט | טיטל | דאטום

NY Residential Existing Homes Programs
Income Limits 2021-2022

Household Size	1	2	3	4	5	6	7	8	9	10
60% State Median Income	$32,748	$42,828	$52,908	$62,988	$73,056	$83,136	$85,032	$86,916	$95,700	$104,540
80% State Median Income	$43,664	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
120% State Median Income	$65,496	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
80% Area Median Income										
Albany County	$54,350	$62,100	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Allegany County	$43,664	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Bronx County	$66,850	$76,400	$85,950	$95,450	$103,100	$110,848	$118,400	$126,000	$133,630	$141,266
Broome County	$43,664	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Cattaraugus County	$43,664	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Cayuga County	$43,664	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Chautauqua County	$43,664	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Chemung County	$43,664	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Chenango County	$43,664	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Clinton County	$43,664	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Columbia County	$45,550	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Cortland County	$43,664	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Delaware County	$43,664	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Dutchess County	$55,950	$63,950	$71,950	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Erie County	$44,200	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Essex County	$43,664	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Franklin County	$43,664	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Fulton County	$43,664	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Genesee County	$43,664	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Greene County	$43,664	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Hamilton County	$43,664	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Herkimer County	$43,664	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Jefferson County	$43,664	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Kings County	$66,850	$76,400	$85,950	$95,450	$103,100	$110,848	$118,400	$126,000	$133,630	$141,266
Lewis County	$43,664	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Livingston County	$44,950	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Madison County	$44,550	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Monroe County	$44,950	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Montgomery County	$43,664	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Nassau County	$66,450	$75,950	$85,450	$94,900	$102,500	$110,848	$117,700	$125,300	$132,860	$140,452
New York County	$66,850	$76,400	$85,950	$95,450	$103,100	$110,848	$118,400	$126,000	$133,630	$141,266
Niagara County	$44,200	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Oneida County	$43,664	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Onondaga County	$44,550	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Ontario County	$44,950	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Orange County	$55,950	$63,950	$71,950	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Orleans County	$44,950	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Oswego County	$44,550	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Otsego County	$43,664	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Putnam County	$66,850	$76,400	$85,950	$95,450	$103,100	$110,848	$118,400	$126,000	$133,630	$141,266
Queens County	$66,850	$76,400	$85,950	$95,450	$103,100	$110,848	$118,400	$126,000	$133,630	$141,266
Rensselaer County	$54,350	$62,100	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Richmond County	$66,850	$76,400	$85,950	$95,450	$103,100	$110,848	$118,400	$126,000	$133,630	$141,266
Rockland County	$66,850	$76,400	$85,950	$95,450	$103,100	$110,848	$118,400	$126,000	$133,630	$141,266
Saratoga County	$54,350	$62,100	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Schenectady County	$54,350	$62,100	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Schoharie County	$54,350	$62,100	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Schuyler County	$43,664	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Seneca County	$43,664	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
St. Lawrence County	$43,664	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Steuben County	$43,664	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Suffolk County	$66,450	$75,950	$85,450	$94,900	$102,500	$110,848	$117,700	$125,300	$132,860	$140,452
Sullivan County	$43,664	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Tioga County	$43,664	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Tompkins County	$50,200	$57,400	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Ulster County	$49,200	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Warren County	$44,200	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Washington County	$44,200	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Wayne County	$44,950	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Westchester County	$63,700	$72,800	$81,900	$90,950	$98,250	$110,848	$113,376	$120,100	$127,600	$139,387
Wyoming County	$43,664	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
Yates County	$43,664	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387

Effective 11.12.2021

NY Residential Existing Homes Programs
Income Limits 2021-2022

Household Size	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
60% State Median Income	$32,748	$42,828	$52,908	$62,988	$73,056	$83,136	$85,032	$86,916	$95,700	$104,540
80% State Median Income	$43,664	$57,104	$70,544	$83,984	$97,408	$110,848	$113,376	$115,888	$127,600	$139,387
120% State Median Income	$65,496	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
120% Area Median Income										
Albany County	$81,525	$93,150	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Allegany County	$65,496	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Bronx County	$100,275	$114,600	$128,925	$143,175	$154,650	$166,272	$177,600	$189,000	$200,445	$211,899
Broome County	$65,496	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Cattaraugus County	$65,496	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Cayuga County	$65,496	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Chautauqua County	$65,496	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Chemung County	$65,496	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Chenango County	$65,496	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Clinton County	$65,496	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Columbia County	$68,325	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Cortland County	$65,496	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Delaware County	$65,496	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Dutchess County	$83,925	$95,925	$107,925	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Erie County	$66,300	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Essex County	$65,496	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Franklin County	$65,496	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Fulton County	$65,496	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Genesee County	$65,496	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Greene County	$65,496	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Hamilton County	$65,496	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Herkimer County	$65,496	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Jefferson County	$65,496	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Kings County	$100,275	$114,600	$128,925	$143,175	$154,650	$166,272	$177,600	$189,000	$200,445	$211,899
Lewis County	$65,496	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Livingston County	$67,425	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Madison County	$66,825	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Monroe County	$67,425	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Montgomery County	$65,496	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Nassau County	$99,675	$113,925	$128,175	$142,350	$153,750	$166,272	$176,550	$187,950	$199,290	$210,678
New York County	$100,275	$114,600	$128,925	$143,175	$154,650	$166,272	$177,600	$189,000	$200,445	$211,899
Niagara County	$66,300	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Oneida County	$65,496	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Onondaga County	$66,825	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Ontario County	$67,425	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Orange County	$83,925	$95,925	$107,925	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Orleans County	$67,425	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Oswego County	$66,825	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Otsego County	$65,496	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Putnam County	$100,275	$114,600	$128,925	$143,175	$154,650	$166,272	$177,600	$189,000	$200,445	$211,899
Queens County	$100,275	$114,600	$128,925	$143,175	$154,650	$166,272	$177,600	$189,000	$200,445	$211,899
Rensselaer County	$81,525	$93,150	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Richmond County	$100,275	$114,600	$128,925	$143,175	$154,650	$166,272	$177,600	$189,000	$200,445	$211,899
Rockland County	$100,275	$114,600	$128,925	$143,175	$154,650	$166,272	$177,600	$189,000	$200,445	$211,899
Saratoga County	$81,525	$93,150	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Schenectady County	$81,525	$93,150	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Schoharie County	$81,525	$93,150	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Schuyler County	$65,496	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Seneca County	$65,496	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
St. Lawrence County	$65,496	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Steuben County	$65,496	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Suffolk County	$99,675	$113,925	$128,175	$142,350	$153,750	$166,272	$176,550	$187,950	$199,290	$210,678
Sullivan County	$65,496	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Tioga County	$65,496	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Tompkins County	$75,300	$86,100	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Ulster County	$73,800	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Warren County	$66,300	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Washington County	$66,300	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Wayne County	$67,425	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Westchester County	$95,550	$109,200	$122,850	$136,425	$147,375	$166,272	$170,064	$180,150	$191,400	$209,080
Wyoming County	$65,496	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080
Yates County	$65,496	$85,656	$105,816	$125,976	$146,112	$166,272	$170,064	$173,832	$191,400	$209,080

Effective 11.12.2021

ENERGY USAGE HISTORY WAIVER

NEW YORK STATE OF OPPORTUNITY. | NYSERDA

Home Performance with ENERGY STAR®

APPLICANT/HOMEOWNER INFORMATION

First Name | Middle Initial | Last Name

I am currently unable to provide the energy usage information required by NYSERDA. Please select **one** of the following options:

- ☐ I am a new homeowner (less than 12 months) and do not have access to previous usage records.
  I have lived in my home for _____ months.
- ☐ I do not retain the records of my heating fuel usage, and am unable to obtain these records from my provider(s).
- ☐ I have _____ rental unit(s) in my building and the tenant(s) is/are unable to provide usage data.

PROPERTY INFORMATION

Building Address | Unit # | City | County | Zip Code

ENERGY USAGE HISTORY

Please complete for **all** fuel types that require the Energy Usage History Waiver. I estimate that my **yearly** usage is:

(Check the appropriate unit of measurement where indicated)

Heating Oil: _____ Gallons

Propane: _____ ☐ Pounds / ☐ Gallons

Natural Gas: _____ CCF

Electricity: _____ kWh

Pellets: _____ ☐ Pounds / ☐ Tons

Wood: _____ Cords

Coal: _____ ☐ Pounds / ☐ Tons

Other: _____

Primary Heating Fuel _____

FUEL TYPE	MONTH/ YEAR	DELIVERY AMMOUNT	PROVIDER	FUEL TYPE	MONTH/ YEAR	DELIVERY AMMOUNT	PROVIDER

I certify that the energy usage information provided above is accurate to the best of my knowledge. I understand that NYSERDA requires **12 to 24 months** of energy usage data in order to provide the most accurate savings and payback information for all proposed work to my home. All materials that include savings, calculations, payback schedules, or that are derived from my current energy usage will not necessarily reflect actual savings. I consent that NYSERDA and its designees have the authority to estimate my energy usage information.

X _____ _____

Signature **Date**

HOME PERFORMANCE WITH ENERGY STAR

COMBINED RESIDENTIAL APPLICATION

EmPower New York and Assisted Home Performance with ENERGY STAR®

NEW YORK STATE OF OPPORTUNITY. | NYSERDA

This checklist will help ensure that your application will be processed in a timely manner. Please place a ✓ in the appropriate box once you have ensured that all Application Sections are complete, and the required documentation is provided. Applications are processed on a first come, first served basis.

☐ General Applicant Information (Sections A, B & C) – Verify that all required fields are completed (unless marked as "optional").

RENTERS ONLY:

☐ Landlord Name, Address and Phone Number provided in Section C

UTILITY INFORMATION (SECTION D):

☐ Sign Customer Fuel/Energy Bill Release Authorization

☐ Include a copy of complete Electric Bill

☐ Include a copy of complete Gas Utility Bill or bill from Fuel Supplier if heating by propane, oil, kerosene, wood, or coal

INCOME INFORMATION (SECTION F & G):

☐ Verify that all required fields are complete

DEMOGRAPHICS (SECTION H): *Optional*

☐ Optional

APPLICANT AFFIRMATION (SECTION I):

☐ Read and sign

PLEASE RETURN APPLICATION TO:

Energy Audit Application
8 Southwoods Blvd
Suite 201
Albany, NY 12211

The following information will help determine which services and programs are most appropriate for you. In some situations, EmPower New York services are provided by agencies of the Weatherization Assistance Program (WAP). In these instances, this application will serve as an application for the WAP and may be forwarded to your local agency for these services. Please print clearly and provide as much information as possible. This application can be completed online at nyserda.ny.gov/ahp-empower. Completing the application online is the fastest for NYSERDA to review and approve your application.

SECTION A: APPLICANT INFORMATION

Applicant Name

Address | Apartment #

City | State | Zip

NY

County

Phone Number *(include area code)* | Secondary Phone *(include area code)*

Email Address

Mailing Address *(if different from above)*

Additional Contact Person | Relationship to Applicant | Phone Number *(include area code)*

SECTION B: DWELLING INFORMATION

☐ I own ☐ I rent

☐ Single-Family ☐ Multifamily_____# of units ☐ Manufactured/mobile home ☐ Group home/shelter

SECTION C: OWNER INFORMATION

Owner's Name | Phone Number *(include area code)*

Email Address

Is the Owner's Address the same as the building address? ☐ Yes ☐ No – If "No" please complete the address below.

Address

OPTIONAL: *Please add any information that we may find helpful in reducing your energy consumption and list occupant health issues or special needs we need to aware of:*

EMPOWER CONTRACTORS AND REFERRING AGENCIES: *Print your buisness or agency name.*

SECTION D: UTILITY INFORMATION

My main heating fuel is:

☐ Electric ☐ Oil ☐ Kerosene ☐ Natural Gas ☐ Propane ☐ Wood ☐ Pellets ☐ I don't know

☐ Other:_____

My secondary heating fuel is:

☐ Electric ☐ Oil ☐ Kerosene ☐ Propane ☐ Wood ☐ Pellets ☐ Coal ☐ I do not have secondary fuel

☐ Other:_____

ELECTRIC UTILITY: If you are responsible for the electric bill, provide the following:

Utility Name:_____

Account Number:_____ If NYSEG or RG&E – POD # _____

GAS UTILITY: If you are a natural gas utility customer and responsible for the bill, provide the following:

Utility Name:_____

Account Number:_____ If NYSEG or RG&E – POD # _____

PRIMARY FUEL SUPPLIER: if you heat by a fuel other than natural gas or electricity, provide the following:

Company Name:_____

Account Number: _____

CUSTOMER AUTHORIZATION for Release of Fuel/Energy Bills (for previous two years and future three years)

My signature certifies that I am financially responsible for the account(s) listed on this application. I hereby consent and authorize the electricity and fuel suppliers named in this application to release any and all energy usage information, including account number(s), related to the above property address, to representatives of the New York State Energy Research and Development Authority (NYSERDA), and the Weatherization Assistance Program (WAP), and/or its designated representatives for the period beginning two years prior to the application date and ending three years after program participation. I understand that this information will be kept confidential, to the extent permitted by law, and used for the purposes of assisting me to utilize the programs, determining eligibility for NYSERDA's residential programs and financial incentives, eligibility for the WAP, for estimating energy savings, and for evaluation purposes.

Customer Signature:_____ Date: _____

SECTION E: PARTNER INFORMATION

If you would like to work with a specific participating program contractor in NYSERDA's energy efficiency programs, please indicate below. We will work to accommodate your request, but final selection is based on the participating program contractor's availability and acceptance of your project. If you are not working with a program contractor, we will assign the next available participating program contractor from our approved list.

Contractor Name: _____

NYSERDA maintains a network of professional energy advisors who may already be assisting you with this program and other NYSERDA programs, utility offerings, and other local resources. If you are currently working with a NYSERDA energy advisor, please indicate which one below. The program will share limited project information with them so they can continue to assist you each step of the way.

NYSERDA Energy Advisor Name: _____

SECTION F: INCOME DOCUMENTATION - Please select one of the following

A. ☐ Geo-Eligibility: You may be eligible to qualify for incentives based on your address. Visit nyserda.ny.gov/ahp-empower for more information. If you are in a Geo-eligibility area, please check the box.

B. ☐ Referral letter: If you received a letter from NYSERDA with a referral code, enter it below. If you have a referral code, no additional income documentation is required.

Referral ID#:_____

C. ☐ Provide a copy of ONE of the following: Copy of entire award letter for HEAP, SNAP (Food Stamps), TANF (Temporary Assistance for Needy Families) or Supplemental Security Income dated within the past 12 months

D. ☐ If A, B, or C above do not apply, then provide income documentation under one of the options below:

Option 1

- Pay stubs: all household gross income for the last 60 days. To calculate monthly income total, if income is:
  - Weekly: multiply weekly income representing 4 most recent weeks by 4.3
  - Bi-weekly: multiply 2 most recent consecutive weeks by 2.15
  - Twice a month: multiply by 2
- Social Security and Social Security Disability: copy of award letter
- Documentation of all forms of income including disability, worker's compensation, unemployment, pension, maintenance, child support, annuities, Veteran's benefits, and all other income
- Self-Employment: IRS Report of quarterly earnings for the last three months

Option 2

- Tax returns: This option is only available if all household members who were required to file a tax return did so. If documenting income with tax returns, all sources of income must be documented with tax returns. Returns must be the most recent Federal Income Tax Return (Form 1040, 1040A, or 1040EZ). If documenting rental, business or farm income – you must submit corresponding schedules (Schedule C, E, and F).

SECTION G: INCOME INFORMATION

Total number of members in the household?_____

Include the following information for each household member.

Full Name	Gender (optional)	Age	Student (Yes or No)	Source(s) of Income	Weekly	Monthly	Yearly
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
				Total Income for the Household	$	$	$

SECTION H: DEMOGRAPHICS

To assist NYSERDA understand the impacts of our programs on local communities, please complete the below demographic questions. Answering these questions is optional and does not affect your program eligibility.

Indicate the number of household members who are:

60 years of age or older: _____ Disabled: _____ 17 years of age or younger: _____ Veteran: _____

Indicate if a member of the household is: *(select at least one, and as many as applicable)*

- ☐ Prefer Not to Answer
- ☐ Hispanic or Latinx
- ☐ Native American / First Nation / Alaskan Native
- ☐ Asian
- ☐ Black or African American
- ☐ Native Hawaiian or Pacific Islander
- ☐ White
- ☐ Unknown
- ☐ Other

SECTION I: APPLICANT AFFIRMATION

I authorize the release of my eligibility determination and information provided on this application, supporting documents including income documentation, as well as information regarding my project status to the following: NYSERDA and its representatives; the NYS Weatherization Assistance Program (WAP) and/or its designated representatives; any community-based organizations working on behalf of NYSERDA programs; my electric and natural gas utilities; and the following individuals or organizations:_____ whom I have engaged for the purpose of assisting me with the completion and submittal of the application.

I understand that the information provided by me may be used to contact or assist me to utilize any current or future program offerings I may be eligible for and for the purposes of determining eligibility for NYSERDA and/or utility residential programs and financial incentives, determining eligibility for the NYS WAP, for estimating energy savings potential, and for evaluation purposes. I understand that all information will be kept confidential to the extent permitted by law. I understand that if services are provided to me through NYSERDA's residential programs or the NYS WAP, that my participation in these programs will not affect my social security, public assistance, or any other income.

I understand that this application does not guarantee that assistance will be granted to me. Whether or not services are provided will depend on the number of applications received and the availability of funds and priorities established by the programs.

I agree to provide NYSERDA representatives, the NYS WAP representatives, and independent participating contractors access to my dwelling, at times that are mutually acceptable, to perform program activities including energy inspections, installation of measures, Quality Assurance, and evaluation activities. I understand that participating contractors are independent contractors and provide a one-year warranty on labor for work completed. I further understand that participating contractors and vendors will provide appropriate warranties on any equipment provided and that no additional warranties are provided by NYSERDA or the NYS WAP.

I subscribe and affirm, under the penalties of law, that the statements made on all parts of this application, including statements made on any accompanying documents, have been examined by me and are to the best of my knowledge true and complete.

I understand that my signature on this form gives permission for NYSERDA, representatives of the NYS WAP, and their designees to assure my eligibility for NYSERDA's programs and the NYS WAP. I consent to any inquiry to verify or confirm the information that I have given. I understand that if I give false information or withhold information in order to receive benefits that I am not entitled to, I can be prosecuted to the fullest extent of the law. I also state that no person named in this application is subject to disqualification for weatherization services under the Immigration Reform and Control Act of 1986 (Public Law 99-063).

Applicant Signature _____ Date _____

Applicant Representative Signature _____ Date _____

Your contact information may be shared with other residential programs within NYSERDA. To opt out of this, please initial here._____

INTERNAL USE ONLY

Reviewed By: ☐ HEAP ☐ OFA ☐ Utility ☐ Weatherization Subgrantee ☐ EmPower ☐ Other:_____

Check all benefits that the household receives: ☐ SSI ☐ HEAP ☐ SNAP ☐ TANF

On the basis of the information provided by the applicant, the household is determined to be:

☐ Eligible for AHP Only ☐ Eligible for Weatherization ☐ NOT Eligible for Weatherization

☐ Eligible for EmPower ☐ NOT Eligible for EmPower ☐ EmPower eligible, but wait-listed for Weatherization

Check here if:

☐ Household was previously served by Weatherization

☐ Household ineligible for further services through EmPower

Additional Comments:

Empower Representative Signature | Title | Date

NEW YORK STATE OF OPPORTUNITY. NYSERDA

SOLICITUD RESIDENCIAL EN CONJUNTO
EmPower New York y Rendimiento Asistido en el Hogar con ENERGY STAR®

NEW YORK STATE | NYSERDA

Esta lista de verificación ayudará a garantizar que su solicitud se procese de manera oportuna. Coloque una ✓ en la casilla correspondiente una vez que se haya asegurado de que todas las secciones de la solicitud estén completas y se haya proporcionado la documentación requerida. Las solicitudes se procesan por orden de llegada.

☐ Información general del solicitante (secciones A, B y C): verifique que todos los campos obligatorios estén completos (excepto los que estén marcados como «opcionales»).

ÚNICAMENTE PARA ARRENDATARIO:

☐ Nombre, dirección y número de teléfono del arrendador provistos en la Sección C.

INFORMACIÓN SOBRE LOS SERVICIOS PÚBLICOS (SECCIÓN D):

☐ Firmar la autorización de liberación de la factura de energía/combustible del cliente.

☐ Incluir una copia de la factura de electricidad completa.

☐ Incluya una copia de la factura de servicio de gas completa o la factura del proveedor de combustible si la calefacción es con propano, aceite, queroseno, madera o carbón.

INFORMACIÓN SOBRE LOS INGRESOS (SECCIÓN F Y G)

☐ Verifique que todos los campos requeridos estén completos.

DATOS DEMOGRÁFICOS (SECCIÓN H): ***opcional***

☐ Opcional

INFORMACIÓN SOBRE EL SOLICITANTE (SECCIÓN I):

☐ Lea y firme

PRESENTAR LA SOLICITUD A ESTA DIRECCIÓN:

Energy Audit Application
8 Southwoods Blvd
Suite 201
Albany, NY 12211

La siguiente información ayudará a determinar qué servicios y programas son los más apropiados para usted. En algunos casos, agencias del Programa de Asistencia de Climatización (WAP) proporcionan los servicios de EmPower New York. En estos casos, esta solicitud servirá como una solicitud para el WAP y puede ser enviada a su agencia local para estos servicios. Escriba de manera legible y proporcione la mayor cantidad de información posible. Puede completar esta solicitud en nyserda.ny.gov/ahp-empower. Completar la solicitud en línea será la forma más rápida para que NYSERDA revise y apruebe su solicitud.

SECCIÓN A: INFORMACIÓN DEL SOLICITANTE

Nombre del solicitante

Dirección | N.º de departamento

Ciudad | Estado: Nueva York | Código postal

Condado

Número de teléfono *(incluya el número de área)* | Número de teléfono secundario *(incluya el número de área)*

Correo electrónico

Correo postal *(si es diferente de la que indicó arriba)*

Persona de contacto adicional | Relación con el solicitante | Número de teléfono *(incluya el número de área)*

SECCIÓN B: INFORMACIÓN DE LA VIVIENDA

☐ Soy propietario ☐ Alquilo

☐ Individual Familiar ☐ Varias familias_____ N.º de unidades ☐ Casa prefabricada/móvil ☐ Casa de acogida/refugio

SECCIÓN C: INFORMACIÓN DEL PROPIETARIO

Nombre del propietario | Número de teléfono *(incluya el número de área)*

Correo electrónico

¿La dirección del propietario es la misma que la dirección del edificio? ☐ Sí ☐ No (si la respuesta es «No», indique la dirección a continuación).

Dirección

OPCIONAL: *agregue cualquier información que podamos encontrar útil para reducir su consumo de energía y enumere los problemas de salud de los ocupantes o las necesidades especiales que debemos saber:*

CONTRATISTAS DE EMPOWER Y AGENCIAS DE REFERENCIA: *escriba el nombre de su empresa o agencia.*

SECCIÓN D: INFORMACIÓN SOBRE LOS SERVICIOS PÚBLICOS

Mi principal combustible de calefacción es el siguiente:

☐ Electricidad ☐ Petróleo ☐ Queroseno ☐ Gas natural ☐ Propano ☐ Madera ☐ Pellets ☐ No sé

☐ Otro: _____

Mi combustible de calefacción secundario es el siguiente:

☐ Electricidad ☐ Petróleo ☐ Queroseno ☐ Propano ☐ Madera ☐ Pellets ☐ Carbón ☐ No tengo combustible secundario

☐ Otro: _____

ELECTRICIDAD: si usted es responsable de pagar la factura de electricidad, proporcione lo siguiente:

Nombre del servicio público: _____

Número de cuenta: _____.Si tiene NYSEG o RG&E, indique el n.º del punto del suministro (POD): _____

GAS: si usted es un cliente de servicios públicos de gas natural y es responsable de pagar la factura, proporcione lo siguiente:

Nombre del servicio público: _____

Número de cuenta: _____Si tiene NYSEG o RG&E, indique el n.º del punto del suministro (POD): ____

SUMINISTRO DE COMBUSTIBLE PRIMARIO: si utiliza un combustible que no sea gas natural o electricidad, proporcione lo siguiente:

Nombre de la compañía: _____

Número de cuenta: _____

AUTORIZACIÓN DEL CLIENTE para liberación de combustible/facturas de energía (por dos años anteriores y tres años futuros)

Mi firma certifica que soy financieramente responsable de la(s) cuenta(s) que figuran en esta solicitud. Por la presente, doy mi consentimiento y autorizo a los proveedores de electricidad y combustible mencionados en esta solicitud a divulgar toda la información sobre el uso de energía, incluidos los números de cuenta, relacionados con la dirección de la propiedad arriba mencionada, a los representantes de la Autoridad de Investigación y Desarrollo de Energía del Estado de Nueva York (NYSERDA), y el Programa de Asistencia de Climatización (WAP), o sus representantes designados para el período que comienza dos años antes de la fecha de la solicitud y finaliza tres años después de la participación en el programa. Entiendo que esta información se mantendrá confidencial y en la medida en que lo permita la ley, y se utilizará a modo de evaluación con el fin de ayudarme a utilizar los programas, determinar la elegibilidad para los programas residenciales e incentivos financieros de NYSERDA, la elegibilidad para el WAP, estimar los ahorros de energía.

Firma del cliente: _____ Fecha: _____

SECCIÓN E: INFORMACIÓN DEL SOCIO

Si desea trabajar con un contratista de programa participante específico en los programas de eficiencia energética de NYSERDA, indíquelo a continuación. Haremos lo posible para ubicar su solicitud, pero la selección final se basa en la disponibilidad y la aceptación de su proyecto por parte del contratista del programa participante. Si no está trabajando con un contratista del programa, le asignaremos el próximo contratista del programa participante disponible de nuestra lista aprobada.

Nombre del contratista: _____

NYSERDA mantiene una red de asesores de energía profesionales que ya pueden estar ayudándole con este programa y con otros programas de NYSERDA, con ofertas de servicios públicos y con otros recursos locales. Si actualmente está trabajando con un asesor de energía de NYSERDA, indique cuál a continuación. El programa compartirá información limitada del proyecto con ellos para que puedan continuar ayudándole en cada paso del camino.

Nombre del asesor de energía de NYSERDA: _____

SECCIÓN F: DOCUMENTACIÓN SOBRE LOS INGRESOS: seleccione una de las siguientes opciones

A. ☐ Elegibilidad según área geográfica: puede ser elegible para calificar para incentivos según su dirección. Visite nyserda.ny.gov/ahp-empower para obtener más información. Si se encuentra en un área de elegibilidad geográfica, marque la casilla.

B. ☐ Carta de referencia: si recibió una carta de NYSERDA con un código de referencia, anótelo a continuación. Si tiene un código de referencia, no se requiere documentación de ingresos adicional.

Número de identificación de referencia:_____

C. ☐ Presente una copia de UNO de lo siguiente: copia de la carta de adjudicación completa para Asistencia para Energía para hogares (HEAP), Asistencia Nutricional Suplementaria (SNAP) (bonos para alimentos), Asistencia Temporal para Familias Necesitadas (TANF), o Seguridad de Ingreso Suplementario (SSI) con fecha dentro de los últimos 12 meses.

D. ☐ Si A, B o C anteriores no corresponden, proporcione la documentación de ingresos según una de las siguientes opciones:

Opción 1

- Recibos de pago: todos los ingresos brutos del hogar durante los últimos 60 días. Para calcular el total de ingresos mensuales, si los ingresos son:
  - Semanales: multiplique los ingresos semanales que representan las 4 semanas más recientes por 4.3
  - Cada dos semanas: multiplique las 2 semanas consecutivas más recientes por 2.15
  - Dos veces al mes: multiplique por 2
- Seguro Social y discapacidad del Seguro Social: copia de la carta de adjudicación.
- Documentación de todas las formas de ingresos, incluida la discapacidad, la compensación del trabajador, el desempleo, la pensión, el mantenimiento, la manutención de los hijos, las anualidades, los beneficios de los veteranos y todos los demás ingresos.
- Trabajadores autónomos: informe del Servicio de Impuestos Internos (IRS) de las ganancias trimestrales de los últimos tres meses.

Opción 2

- Declaraciones de impuestos: esta opción solo está disponible si todos los miembros del hogar que debían presentar una declaración de impuestos lo hicieron. Si documenta los ingresos con declaraciones de impuestos, todas las fuentes de ingresos deben respaldarse con las declaraciones de impuestos. Las declaraciones deben ser la declaración de impuestos federales sobre ingresos más reciente (Formulario 1040, 1040A o 1040EZ). Si documenta ingresos de rentas, negocios o granjas, debe presentar los anexos correspondientes (Anexo C, E y F).

SECCIÓN G: INFORMACIÓN SOBRE LOS INGRESOS

¿Cuántas personas viven en el hogar?_____

Incluya la siguiente información para cada miembro del hogar.

Nombre completo	Género (opcional)	Edad	Estudiante (sí o no)	Fuentes de ingresos	Semanal	Mensual	Anual
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
					$	$	$
Ingreso total del hogar					$	$	$

SECCIÓN H: INFORMACIÓN DEMOGRÁFICA

Para ayudar a NYSERDA a comprender los impactos de nuestros programas en las comunidades locales, complete las siguientes preguntas respecto de los datos demográficos. Responder estas preguntas es opcional y no afecta su elegibilidad para el programa.

Indique la cantidad de miembros del hogar:

60 años de edad o más: _____ Con discapacidad: _____ 17 años de edad o menos: _____ Veterano: _____

Indique si un miembro del hogar es: *(seleccione una opción, como mínimo, y tantas como corresponda)*

- ☐ Prefiero no responder
- ☐ Hispano o latino(a)
- ☐ Nativo estadounidense/Alaska/primera nación
- ☐ Asiático
- ☐ Negro o afroamericano
- ☐ Nativo hawaiano o isleño del Pacífico
- ☐ Blanco
- ☐ No sé
- ☐ Otro

SECCIÓN I: COFIRMACIÓN DEL SOLICITANTE

Autorizo la divulgación de mi determinación de elegibilidad y la información proporcionada en esta solicitud, los documentos de respaldo, incluida la documentación de ingresos, así como la información sobre el estado de mi proyecto a los siguientes: NYSERDA y sus representantes; el Programa de Asistencia de Climatización (WAP) del Estado de Nueva York o sus representantes designados; cualquier organización comunitaria que trabaje en nombre de los programas de NYSERDA; mis servicios públicos de electricidad y gas natural; y las siguientes personas u organizaciones: _____ a quien he contratado con el fin de ayudarme a completar y presentar la solicitud.

Entiendo que la información que proporcioné puede usarse para contactarme o ayudarme a utilizar cualquier oferta de programa actual o futura para la que pueda ser elegible y con el fin de determinar la elegibilidad para NYSERDA o programas residenciales de servicios públicos e incentivos financieros, determinar la elegibilidad para el NYS WAP, para estimar el potencial de ahorro de energía y para fines de evaluación. Entiendo que toda la información se mantendrá confidencial en la medida permitida por la ley. Entiendo que si se me brindan servicios a través de los programas residenciales de NYSERDA o NYS WAP, mi participación en estos programas no afectará mi seguro social, asistencia pública ni ningún otro ingreso.

Entiendo que esta solicitud no garantiza que se me otorgará asistencia. La prestación o no de los servicios dependerá del número de solicitudes recibidas y de la disponibilidad de fondos y prioridades establecidas por los programas.

Acepto proporcionar a los representantes de NYSERDA, los representantes de NYS WAP y los contratistas participantes independientes acceso a mi vivienda, en horarios que sean convenientes para ambas partes, para realizar actividades del programa, incluidas inspecciones de energía, instalación de medidas, control de la calidad y actividades de evaluación. Entiendo que los contratistas participantes son contratistas independientes y brindan una garantía de un año sobre la mano de obra por el trabajo completado. Además, entiendo que los contratistas y proveedores participantes proporcionarán garantías apropiadas sobre cualquier equipo provisto y que NYSERDA o NYS WAP no otorgan garantías adicionales.

Suscribo y afirmo, bajo pena de ley, que las declaraciones hechas en todas las partes de esta solicitud, incluidas las declaraciones en los documentos adjuntos, han sido examinadas por mí y, según mi conocimiento, son verdaderas y completas.

Entiendo que mi firma en este formulario autoriza a NYSERDA, a los representantes de NYS WAP y a sus designados a garantizar mi elegibilidad para los programas de NYSERDA y NYS WAP. Otorgo mi consentimiento para cualquier consulta para verificar o confirmar la información que he proporcionado. Entiendo que si doy información falsa u omito información para recibir beneficios a los que no tengo derecho, puedo ser procesado con todo el peso de la ley. También declaro que ninguna persona nombrada en esta solicitud está sujeta a descalificación para los servicios de climatización según la Ley de Control y Reforma de Inmigración de 1986 (Ley Pública 99-063).

_____ _____

Firma del solicitante Fecha

_____ _____

Firma del representante del solicitante Fecha

Su información de contacto puede compartirse con otros programas residenciales dentro de NYSERDA. Si no desea participar, escriba sus iniciales aquí. _____

SOLO PARA USO INTERNO

Revisado por: ☐ HEAP ☐ OFA ☐ Servicio público ☐ Subconcesionario de Climatización ☐ EmPower ☐ Otro: _____

Marque todos los beneficios que recibe el hogar: ☐ Seguridad de Ingreso Suplementario (SSI) ☐ Asistencia para Energía para hogares (HEAP)
☐ Asistencia Nutricional Suplementaria (SNAP) ☐ Asistencia Temporal para Familias Necesitadas (TANF)

En virtud de la información proporcionada por el solicitante, se determina que el hogar es:

☐ Elegible solo para Programa de Vivienda Asequible (AHP) ☐ Elegible para climatización ☐ NO es elegible para climatización

☐ Elegible para EmPower ☐ NO es elegible para EmPower ☐ Elegible para EmPower, pero en lista de espera para climatización

Verifique lo siguiente:

☐ El hogar recibió en el pasado servicios de climatización.

☐ El hogar no es elegible para más servicios a través de EmPower.

Comentarios adicionales:

Firma del representante de EmPower | Cargo | Fecha

APPLICATION CHECKLIST

Weatherization Assistance Program
EmPower New York Program

This checklist will help ensure that your application will be processed in a timely manner. Please place a ☑ in the appropriate box once you have ensured that all Application Sections are complete and the required documentation is provided. Applications are processed on a first come, first serve basis.

☐ **General Applicant Information (Sections A, B & C) – Verify that all required fields are completed (unless marked as "optional").**

Energy Information (Section D):

☐ Sign Customer Fuel/Energy Bill Release Authorization

☐ Include a copy of complete Electric Bill

☐ Include a copy of complete Gas Utility Bill or bill from Fuel Supplier if heating by propane, oil, kerosene, wood or coal

Income Information (Section E)

☐ Complete table listing all household members and their income.

Income (Section F)
(gross income calculations and required documentation documents are listed on page 4).

☐ Award letter for ONE of the following: HEAP, SNAP (Food Stamps), TANF (Temporary Assistance for Needy Families) or Supplemental Security Income dated within the past 12 months

or

All household gross income for the last month:

☐ Pay stubs

☐ Social Security and Social Security Disability

☐ All forms of income including disability, worker's compensation, unemployment, pension, maintenance, annuities, Veteran's benefits and all other income

☐ Self Employment

OWNERS ONLY:

Include ONE of the following as Proof of Ownership:

☐ Current Property/School Tax Bill

☐ Deed

☐ Bill of Sale for mobile/manufactured homes

☐ Mortgage Statement

RENTERS ONLY:

☐ Landlord Name, Address and Phone Number provided in Section B

Applicant Affirmation (Section G)

☐ Read and sign

Attachment 1 – Frequently Asked Questions and Personal Privacy Protection Law Provisions

☐ Keep for your records

APPLICATION

Weatherization Assistance Program
EmPower New York Program

The following information will help determine which programs are the most appropriate for you.
Please print clearly and provide as much information as possible.

SECTION A: APPLICANT INFORMATION

Name _____ Social Security Number _____

Address _____ Apt # _____

City _____ State NY Zip _____

County _____ Primary Phone (include area code) _____ Secondary Phone (include area code) _____

Email _____

Mailing Address (if different from above) _____

Additional Contact Person _____ Relationship to Applicant _____ Phone Number (include area code) _____

SECTION B: DWELLING INFORMATION

☐ I own ☐ I rent I have lived here _____ years Approximate age of the home_____

☐ Single-Family ☐ Multifamily ___ # of units ☐ Manufactured/mobile home ☐ Group home/shelter

If you rent, certain upgrades require owner permission. Please provide owner information below:

Owner's Name: _____

Address: _____

Phone (include area code): _____

Who pays for the heat at the dwelling? ☐ I pay ☐ Owner

Who pays for the electric at the dwelling? ☐ I pay ☐ Owner

Does your roof leak? ☐ Yes ☐ No If yes, which rooms: _____

Do you own your refrigerator? ☐ Yes If yes, about how old is it? _____ years ☐ No

Do you use a second refrigerator? ☐ Yes If yes, about how old is it? _____ years ☐ No

Do you use a separate freezer? ☐ Yes If yes, about how old is it? _____ years ☐ No

SECTION C: HOUSEHOLD DEMOGRAPHICS

Total number of members in the household: _____

Please indicate the number of household members who are:

60 years of age or older _____ Persons with disabilities _____

Native American _____ Children age 17 years or younger _____

SECTION C: HOUSEHOLD DEMOGRAPHICS (CONTINUED)

OPTIONAL
Please add any information that we may find helpful in reducing your energy consumption and list occupant health issues or special needs that we need to be aware of:

_____

_____

SECTION D: ENERGY INFORMATION

Property Address: _____

My primary heating fuel is:

☐ Electric ☐ Oil ☐ Kerosene ☐ Natural Gas ☐ Propane ☐ Wood

☐ Pellets ☐ I don't know ☐ Other: _____

My secondary heating fuel is:

☐ Electric ☐ Oil ☐ Kerosene ☐ Propane ☐ Wood ☐ Pellets ☐ Coal

☐ I do not have secondary fuel ☐ Other: _____

Secondary Supplier Name: _____ Account Number: _____

My water heater runs on:

☐ Electric ☐ Oil ☐ Natural Gas ☐ Propane ☐ I don't know

ELECTRIC UTILITY: If you are responsible for the electric bill, provide the following:

Utility Name: _____ Name on Account: _____

Account Number: _____ If NYSEG or RG&E – POD #_____

GAS UTILITY: If you are a natural gas utility customer and responsible for the bill, provide the following:

Utility Name: _____ Name on Account: _____

Account Number: _____ If NYSEG or RG&E – POD #_____

PRIMARY FUEL SUPPLIER: if you heat by a fuel other than natural gas or electricity, provide the following:

Company Name: _____ Account Number: _____

Do you have a maintenance agreement for your heating system? ☐ Yes ☐ No

If yes, list the name of the maintenance provider: _____

CUSTOMER AUTHORIZATION for Release of Fuel/Energy Bills (for previous two years and future three years)

My signature certifies that I am financially responsible for the account(s) listed on this application. I hereby consent and authorize the electricity and fuel suppliers named in this application to release any and all energy usage information, including account number(s), related to the above property address, to representatives of the New York State Energy Research and Development Authority (NYSERDA), and the Weatherization Assistance Program (WAP), and/or its designated representatives for the period beginning two years prior to the application date and ending three years after program participation. I understand that this information will be kept confidential, to the extent permitted by law, and used for the purposes of assisting me to utilize the programs, determining eligibility for NYSERDA's residential programs and financial incentives, eligibility for the WAP, for estimating energy savings, and for evaluation purposes.

Customer Signature: _____ Date: _____

SECTION E: INCOME INFORMATION

Include the following information for each household member.						
Name	Age	Student (Yes or No)	Source(s) of income	Weekly	Monthly	Yearly
				$	$	$
				$	$	$
				$	$	$
				$	$	$
				$	$	$
				$	$	$
				$	$	$
				$	$	$
				$	$	$
			Total Income for the Household	$	$	$

☐ **Check here if you have received HEAP within the past 12 months.**

SECTION F: INCOME DOCUMENTATION

A. ☐ **Provide a copy of ONE of the following:**

Copy of entire award letter for HEAP, SNAP (Food Stamps), TANF (Temporary Assistance for Needy Families) or Supplemental Security Income dated within the past 12 months

B. ☐ **Only if you cannot provide one of the documents listed under A, provide income documentation as follows:**

- All household gross income for the last month: Pay stubs. To obtain monthly income total, if income is:
  - Weekly - multiply weekly income representing 4 most recent weeks by 4.3
  - Bi-weekly: multiply 2 most recent consecutive weeks by 2.15
  - Twice a month: multiply by 2
- Social Security and Social Security Disability: copy of award letter
- Documentation of all forms of income including disability, worker's compensation, unemployment, pension, maintenance, annuities, Veteran's benefits and all other income.
- Self Employment: IRS Report of Quarterly earnings for the last three months

SECTION G: APPLICANT AFFIRMATION

I authorize release of my contact information, dwelling information, and income documentation to representatives of NYSERDA, to the NYS Weatherization Assistance Program (WAP) and/or its designated representatives, to any community-based organizations working on behalf of NYSERDA programs, and to my utilities. I understand that the information provided by me will be used for the purposes of assisting me to utilize the programs, determining eligibility for NYSERDA's residential programs and financial incentives, determining eligibility for the NYS WAP, for estimating energy savings potential, and for evaluation purposes. I understand that all information will be kept confidential to the extent permitted by law. I understand that if services are provided to me through NYSERDA's residential programs or the no-cost NYS WAP, that my participation in these programs will not affect my social security, public assistance, or any other income.

I understand that this application does not guarantee that assistance will be granted to me. Whether or not services are provided will depend on the number of applications received and the availability of funds and priorities established by the programs.

I agree to provide NYSERDA representatives, the NYS WAP representatives, and independent participating contractors access to my dwelling, at times that are mutually acceptable, to perform program activities including energy inspections, installation of measures, Quality Assurance, and evaluation activities. I understand that participating contractors are independent contractors and provide a one-year warranty on labor for work completed. I further understand that participating contractors and vendors will provide appropriate warranties on any equipment provided and that no additional warranties are provided by NYSERDA or the NYS WAP.

I subscribe and affirm, under the penalties of law, that the statements made on all parts of this application, including statements made on any accompanying documents, have been examined by me and are to the best of my knowledge true and complete.

I understand that my signature on this form gives permission for NYSERDA, representatives of the NYS WAP, and their designees to assure my eligibility for NYSERDA's programs and the NYS WAP. I consent to any inquiry to verify or confirm the information that I have given. I understand that if I give false information or withhold information in order to receive benefits that I am not entitled to, I can be prosecuted to the fullest extent of the law. I also state that no person named in this application is subject to disqualification for weatherization services under the Immigration Reform and Control Act of 1986 (Public Law 99-063). I have read and understand the provisions of the Personal Privacy Protections Law in Attachment #1.

X _____

Applicant Signature **Date**

X _____

Applicant Representative Signature **Date**

Your contact information may be shared with other residential programs within NYSERDA. To opt out of this, please initial here. ___

AGENCY USE ONLY

Reviewed By: ❑ HEAP ❑ OFA ❑ Utility ❑ Weatherization Subgrantee ❑ EmPower ❑ Other: _____

Check all benefits that the household receives: ❑ SSI ❑ HEAP ❑ SNAP ❑ TANF

On the basis of the information provided by the applicant, the household is determined to be:

❑ Eligible for Weatherization ❑ NOT Eligible for Weatherization

❑ Eligible for EmPower ❑ NOT Eligible for EmPower ❑ EmPower eligible, but wait-listed for Weatherization

Check here if: ❑ Household was previously served by Weatherization

❑ Household ineligible for further services through EmPower

Additional Comments:

Agency Representative Signature: _____ **Date:** _____

Title: _____

Agency: _____

Homes and Community Renewal | NYSERDA

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ATTACHMENT 1 - Keep for Your Records

Frequently Asked Questions

EmPower New York and Weatherization Assistance Program

Are services really free?
Yes – State residents meeting the Weatherization or EmPower New York eligibility requirements can receive home energy services through the programs at no cost.

Do Weatherization and EmPower New York provide services to renters as well as owners?
Yes – both programs provide energy services to anyone who owns or rents a home and meets all of the eligibility requirements. Owners of rental properties that receive Weatherization funds are generally required to contribute a portion of the cost of the work.

What are some of the no-cost energy services that Weatherization or EmPower New York may provide?

- Replacement of old-style light bulbs with high-efficiency lighting.
- Replacement of inefficient refrigerators and freezers with new ENERGY STAR® certified models.
- Added insulation to keep your home more comfortable.
- Strategic air sealing to reduce drafts.
- Heating system upgrades and repairs.
- Everyday strategies and tips to help you manage your energy costs.
- Minor repairs to ensure that the installed energy efficiency materials will perform correctly.
- Health and safety measures to help ensure indoor air quality.
- Identification of any hazardous conditions discovered during the energy audit.

If I accept work from Weatherization and/or EmPower New York, is a lien going to be on my home? Am I required to pay the program back if I move or my income changes?
There is no cost or future obligation for eligible residents that participate in the Weatherization Program or EmPower New York.

Do the contractors perform code inspections?
No – Weatherization and EmPower New York contractors are not Code Enforcement Officials.

Can I hire my own contractor?
No – all work will be completed by a contractor accredited by the Building Performance Institute (BPI), a national organization that sets the technical standards for contractors in energy efficient building performance, so you know they're applying the latest knowledge and technology to the energy efficiency of your home.

Can I get paid back for work I have already performed?
No – Weatherization and EmPower New York cannot reimburse you for work that has already been completed.

Privacy Protection Information

Weatherization Assistance Program

The New York State Personal Privacy Protection Law (Public Officers Law, Article 6-A) requires in §94(1)(d) that each subgrantee of the Weatherization Assistance Program that maintains a system of records provide each subject from whom it requests information with certain notifications as provided below.

Name of agency requesting and responsible for information:
New York State Homes and Community Renewal
www.nyshcr.org

Authority for collection and principal purpose for which the information is collected:
The Energy Conservation and Production Act (P.L. 94-385) §416 and §417 and the Low-Income Home Energy Assistance Act of 1981 (P.L. 97-35, as amended) require the State to keep records for the purposes of monitoring and evaluation and for the preparation of reports, and that eligibility for the program be established, which requires the collection of personal information, including the Social Security number of the applicant.

Effects of not providing the requested information:
If information requested on the Weatherization Application is not provided, the applicant's application may be delayed.

Routine uses for the collected information:
This information is used by New York State Homes and Community Renewal and its subgrantees for administration of the Weatherization Assistance Program. Some of the information collected is aggregated and reported to the New York State Office of Temporary and Disability Assistance and to the United States Department of Energy. This information may also be used to perform data matches with other state and federal agencies, to verify your eligibility for assistance, and for improving delivery of services and program evaluation. No personally-identifiable information is used for this purpose.

Subgrantee Information:

Serving Rental Properties in Assisted Home Performance with ENERGY STAR

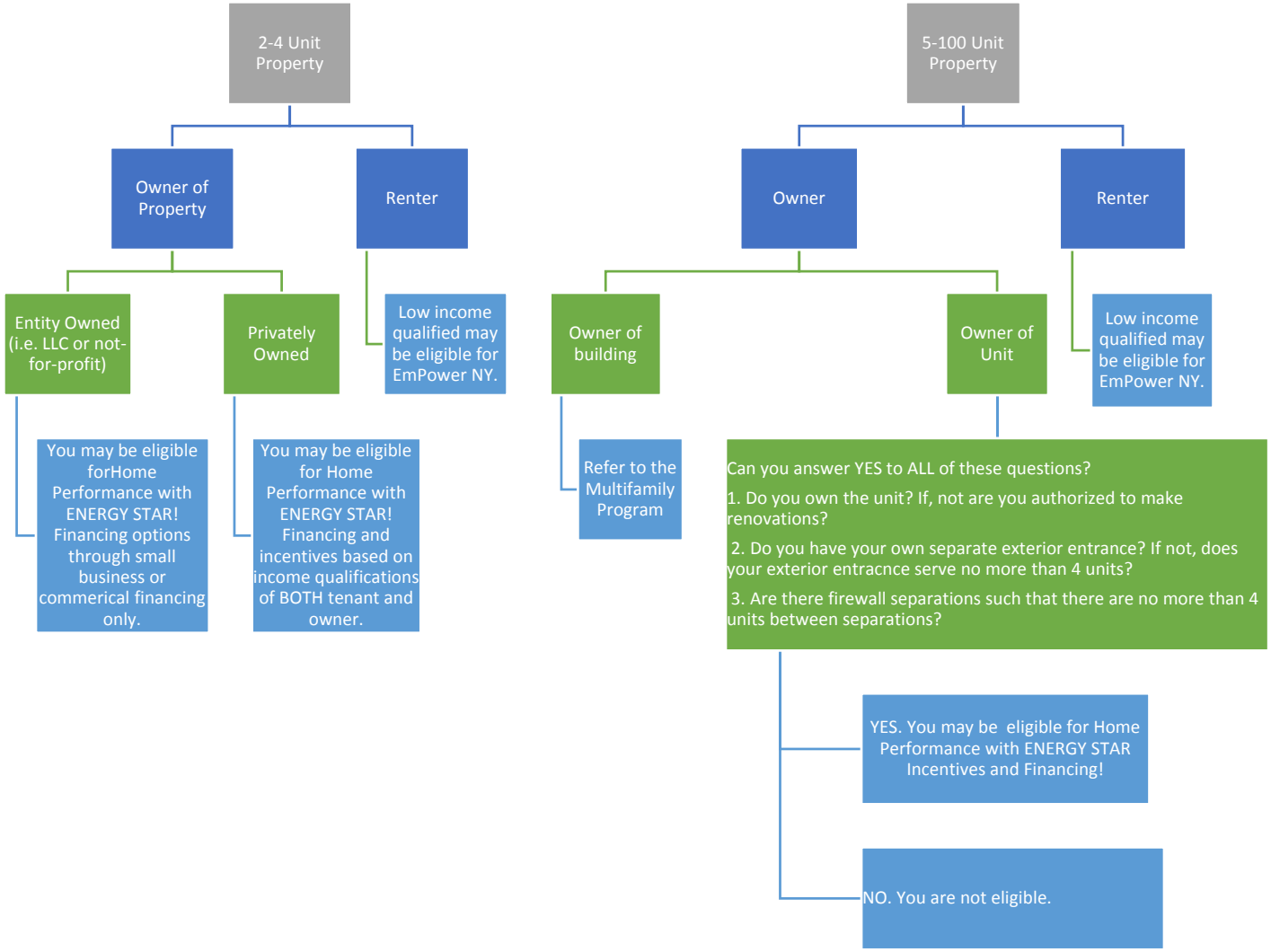
NYSERDA will provide financial assistance for projects in one-to-four unit residential dwellings in which an **occupying owner or tenant is income qualified**. The maximum moderate income incentive (Assisted Home Performance Subsidy) is up to 50% of the approved work scope, not to exceed $4,000 for a single-unit building and $8,000 for a two-to-four unit building. If not all tenants are income-qualified, the subsidy is calculated as follows:

Assisted Home Performance with ENERGY STAR				
	Total Number of Building Units			
Number of Income Eligible Units	**1**	**2**	**3**	**4**
4				50% up to $8,000
3			50% up to $8,000	40% up to $6,000
2		50% up to $8,000	40% up to $5,820	30% up to $4,000
1	50% up to $4,000	30% up to $3,400	20% up to $2,700	15% up to $2,000

- A Building Owner's Agreement is required for each project, including rental units not occupied by an income-eligible owner. The participating contractor will be responsible for obtaining a completed form from the owner and submitting to it to NYSERDA's income verification contractor, Energy Finance Solutions (EFS), or other approved lenders as identified by NYSERDA.
- For eligibility consideration, income verification is required for each tenant where the rental unit is not occupied by an income-eligible owner. The Participating Home Performance Contractor will be responsible for verifying income eligibility from EFS or another approved lender.
- An income qualified owner that occupies a unit in a two-to-four family residential building may receive the moderate income incentive representing up to 50% of an approved project, capped at $4,000 for the whole building without any income verification for the tenants.
- Owners of rental properties are eligible to apply for program financing. Full details on program financing options can be found in Section 4 of the Contractor Resource Manual.
- The value of the project to the income-eligible tenants must be documented prior to approval of the work scope. The documented value of the project to the income eligible tenants must fairly reflect the value of the NYSERDA incentives.
- For owners of multiple one-to-four unit properties, once the owner has received 10,000 of incentives in a calendar year, the incentive for any subsequent moderate rate 2-4 family projects submitted that year will be capped at 30% of the cost of the eligible measures up to $1,500 per unit providing there is at least one moderate income eligible tenant.
- See Section 7 for EmPower NY (low income) services for rental properties.

Multi-Family Building Participation Decision Tree

Parties interested in applying for energy efficiency services through NYSERDA that live in multi-unit properties should use this decision tree as a tool to determine which program they may be eligible for.



NY Residential Existing Homes Program

Rental Property Energy Efficiency Services Agreement

For any questions regarding the use of this document, please contact the program implementer at **1-877-NYSMART.**

For EmPower New York and Assisted Home Performance with ENERGY STAR Program (Program) Projects:

It is agreed by and between NYSERDA and the Owner/Authorized Agent ("Owner") of the building located at **[Property Street Address, Property City, Property Zip Code]** as follows:

1. The Owner:
    a. Declares that they are the legal Owner/Authorized Agent of the property listed above.
    b. Declares that the property is not for sale.
2. A list of units must be attached to this Agreement as Attachment A, which is made a part hereof.
3. The Owner grants to independent participating contractors and/or NYSERDA's implementation contractors permission to enter the premises to assess the potential for the installation of energy-saving measures, test and evaluate the heating system(s), and to assess the current condition of insulation. The Owner understands the assessment may include testing for insulation by drilling small probe holes in closets on outside walls. In these instances, the contractor will be responsible to reseal the test hole. The Owner agrees to allow testing of all combustion appliances in each unit to ensure complete assessment of the building.
4. The Owner grants permission to the independent participating contractor to enter the premises to install energy efficient measures. Measures installed through NYSERDA's Programs are contingent upon the Owner and tenant(s) granting clear and unencumbered access to all work areas.
5. In exchange for the Program incentives to be paid by NYSERDA to the participating contractor, the Owner agrees to be bound for a period of two years commencing on the date this Agreement is signed to two years after the project is completed ("Agreement Term") by the terms and conditions of this Agreement.
6. The Owner agrees to maintain the equipment and materials installed under this Agreement in working order in accordance with all relevant codes.
7. The Owner understands participating contractors in the NY Residential Existing Homes Program are independent contractors. If any issues arise regarding the services provided

or warranties of installed measures, the Owner will contact the responsible independent contractor.

8. It is understood that the present and future tenant(s) are meant as the persons to benefit from the Program. The owner shall provide a summary of this Agreement to each tenant and provide a copy of this Agreement to any tenant upon request. Tenants may contact the program implementer at **1-877-NYSMART** with any questions or concerns in association with the terms of this Agreement.

9. The Owner agrees not to evict a tenant during the Agreement Term to obtain higher rent tenants based upon the improvements made pursuant to this Agreement. The Owner agrees not to increase the rent of any tenant of the building during the Agreement Term as a result of the energy improvements made through the Program, except to recover actual increases in property taxes if applicable. In the event the owner does not comply, NYSERDA will be entitled to a refund from the Owner of all monies paid hereunder.

10. The Owner agrees to rent vacant, eligible dwelling units identified in Attachment A, to a low or moderate rate tenant. A unit that becomes vacant during the Agreement Term must be rented to income-eligible households within 90 days. The Owner must submit supporting documentation to NYSERDA that the vacant unit has been rented to income-eligible tenants or pay NYSERDA the full amount of the incentive pro-rated by the number of months remaining under this Agreement.

11. The Owner agrees to obtain, in writing, from any successor in ownership that said successor shall assume the Owner's obligations under this Agreement or, if the building is sold and this assumption is not obtained, the Owner shall pay NYSERDA the full amount of the NYSERDA incentive pro-rated by the number of months remaining under this Agreement after such sale closes. Said payment shall be made to NYSERDA at the time of conveyance.

12. NYSERDA shall give the Owner written notice of non-compliance with this Agreement and the grounds for the notice. If within seven days of receipt of the notice, the Owner fails to take responsible steps to come into compliance, the Owner will be considered in default of this Agreement and agrees to pay to NYSERDA the pro-rated amount of any NYSERDA incentive received based on the number of months remaining under this Agreement

13. If units are unoccupied, the Owner may seek authorization for the rehabilitation of unoccupied housing units with the agreement that proof of occupancy by an income eligible household will be submitted within 90 days after the date a job completion form is submitted to NYSERDA’s implementation contractor by the participating contractor. The Owner is liable for the full amount of the NYSERDA incentive if adequate income documentation is not submitted within 90 days of completed work.

14. Upon default of this Agreement, the Owner agrees to pay to NYSERDA the pro-rated amount of any subsidy received based on the number of months remaining under this agreement.

For EmPower New York Projects Only:

1. The Owner understands that an independent participating contractor will be assigned to complete energy assessment and associated work, as agreed to by the Owner.
2. If the Owner of the property owns the primary refrigerator/freezer in use by the tenant(s) and the appliance meets the age/energy usage requirements for replacement, the Owner grants permission to NYSERDA and its independent contractors to exchange the current refrigerator/freezer with a brand new, white, fully warranted ENERGY STAR model of similar size at no cost to the Owner. The Owner understands the current refrigerator/freezer will be exchanged only if it meets program cost-effectiveness criteria for replacement, and that a new refrigerator/freezer will not be provided unless the Owner allows the Contractor to remove the old one. The Owner agrees to keep the new refrigerator/freezer in this apartment until replaced by one of equal or higher efficiency.
3. It is understood that the Owner and Contractor may agree to the installation of additional measures at the Owner's expense, but that the Owner is under no obligation to purchase any additional measures to obtain the free measures offered through EmPower.

I have read this agreement and understand all its provisions. To indicate my agreement, I have signed below.

Signed _____ Date _____

Owner/Authorized Agent of Owner

Property Owner Name: _____

Agreement Term:_____

For EmPower projects only:

_____ Initial here if you would like to be notified as to the time and date of the energy audit and you are interested in being present.

Mailing
Address:_____

Phone Number: _____

NY Residential Existing Homes Program
Rental Property Energy Efficiency Services Agreement

ATTACHMENT A

The documented eligible dwelling units included in the workscope under the attached Agreement as of the effective date of the Agreement is as follows:

Property Address:

_____

_____

Unit Number:_____

Unit Number: _____

Unit Number: _____

Unit Number: _____

Assisted Home Performance
EmPower New York
Toll Free 1-877-NY-SMART

Homeowner Agreement

PROOF OF OWNERSHIP IS REQUIRED TO COMPLETE THIS APPLICATION

I _____ certify that I am the owner of the property
(Print Property Owner(s) Name Here)

located at: _____
(Print Property Address Here)

and further certify that I have given permission for New York Energy Research Development Authority (NYSERDA) and/or its independent contractors to work on the property listed above.

I understand that participating Assisted Home Performance and EmPower New York contractors are independent contractors and provide a one- year warranty on labor and materials for work completed. I further understand that contractors and vendors will provide information on all existing manufacturer warranties for any equipment installed.

Customer Name: _____ Date: _____

Property Ownership Verified by Examination of:

_____ Deed

_____ Property Tax Bill

_____ Mortgage Statement

_____ Bill of Sale

_____ Homeowners Insurance

Note: Utility bills are not acceptable as documentation of ownership

Certifying Contractor: _____ Date: _____

Consumer Financing Options - Summary

NYSERDA offers two loan options to help homeowners pay for the upfront cost of energy efficiency upgrades through the Home Performance with ENERGY STAR® (HPwES) program. Both loan options are available for up to $13,000 per applicant, and up to $25,000 if the project meets additional cost-effectiveness standards. Both options offer repayment periods of 5-, 10- or 15-years, and may be combined with program incentives. NYSERDA offers lower interest rates to lower income New Yorkers and those who cannot qualify for traditional financing. Interest rates are subject to change and interest rate availability is subject to customer's credit qualification.

Option 1: The On-Bill Recovery (OBR) Loan provides homeowners the convenience of paying for energy improvements on their utility bill. Participating utilities include: Central Hudson Gas & Electric, Con Edison, PSEG Long Island, National Grid (Upstate), New York State Electric & Gas, Orange and Rockland, and Rochester Gas & Electric.

- The current interest rates are 3.49% or 6.99%.
- The expected annual energy cost savings must be greater than the annual loan repayment. In other words, your energy upgrades should pay for themselves with the savings they create.
- Loan repayments will appear as a loan installment line item charge on your electric or gas utility bill.
- The applicant or co-applicant must be named on the utility bill.
- Requires a Declaration to be signed by the borrower and filed by NYSERDA with the county clerk's office to provide notice to any subsequent purchaser of the property. The Declaration is not subject to any fees or NYS recording tax.
- When the homeowner sells or rents their home they will have the option to transfer the unpaid balance of the loan to the new owners or tenant; written disclosure is required.

Option 2: The Smart Energy Loan offers affordable interest rates and simple repayment options.

- The current interest rates are 3.99% or 7.49%. A 0.5% interest rate discount is applied to these rates if the borrower selects automatic ACH payments prior to loan closing.
- The loan is repaid monthly directly to NYSERDA's loan servicer, Concord Servicing Corporation.
- Up to 15%, not to exceed $2,000, of the total loan amount, in non-prequalified upgrades listed in Table 1 and eligible Health & Safety Measures and Accessories in Table 2 may be included in a Smart Energy Loan without additional cost-effectiveness screening. For those projects where more than 15% of the cost is for items other than those on the Prequalified List, the estimated energy cost savings over the anticipated life of all eligible energy improvements must be at least 80% of the total principal and interest to be repaid on the loan.

For full eligibility requirements and instructions on how to apply for either loan, visit www.nyserda.ny.gov/hp-finance; or call **1-800-361-5663**.

Small Commercial and Not-for-Profit Financing Options

Green Jobs-Green NY also offers low-interest loans to small business/not-for-profit customers.

For more information on these loan products, eligibility and how to apply, please visit www.nyserda.ny.gov/small-commercial-financing. These financing options may serve residential buildings owned by a Not-for-Profit.

Finance your energy efficiency improvement project with a loan from NYSERDA

Homeowners and renters who participate in the Home Performance with ENERGY STAR® program offered by the New York State Energy Research and Development Authority (NYSERDA) can pay for energy improvements with one of two loan options:

1. A **Smart Energy Loan**, which is repaid in installments to NYSERDA's loan servicer — just like a conventional loan.
2. An **On-Bill Recovery Loan**, which is paid directly through your utility bill — the money you are estimated to save on energy covers the cost of your loan repayment.

What can I finance?

You may use either loan to pay for energy efficiency improvements made by a participating Home Performance with ENERGY STAR contractor to a 1- to 4-unit residential building. The improvements may include some "health and safety" improvements, provided these do not exceed 15% of the total project cost and a maximum of $2,000. To download the full list of eligible energy efficiency improvements, visit nyserda.ny.gov/eligible-measures

How much can I borrow?

With either loan, you may finance up to $13,000. The limit increases to $25,000 if the simple payback period is 15 years or less, calculated by dividing the loan amount by the estimated 1st year energy cost savings. The minimum loan amount is $1,500.

What are the cost-effectiveness requirements?

Smart Energy Loan

Pre-qualified eligible energy efficiency improvements must account for at least 85% of the total loan amount OR the estimated energy cost savings over the anticipated life of all eligible energy efficiency improvements must amount to at least 80% of the total principal and interest.

On-Bill Recovery Loan

Your monthly loan payment may not exceed 1/12th of the estimated average annual energy cost savings resulting from the improvements over the loan term. Projects that do not meet this requirement may be eligible for an affordable, low-interest Smart Energy Loan. Only one On-Bill Recovery Loan per utility account is allowed.

Future energy savings will include forecasted utility rate increases of .8% per year.

How do I know I'm eligible to apply for a NYSERDA loan?

Smart Energy Loan

You must own the home, or lease or manage the residential building and be an authorized representative of the owner.

On-Bill Recovery Loan

Only property owners are eligible, and the applicant and/or co-applicant must be named on the account of one of the following utilities: Central Hudson, Con Edison, PSEG-Long Island, National Grid (upstate NY customers only), New York State Electric and Gas Corporation, Orange & Rockland Utilities, Rochester Gas & Electric.

How do I repay the loan?

Smart Energy Loan

Repaid directly to NYSERDA's loan servicer through monthly statement billing or automatic bank transfers (ACH).

If you sell or transfer your property, you remain responsible for the outstanding balance of the loan, which may not be assigned.

On-Bill Recovery Loan

Repaid through a NYSERDA Loan Installment charge on your utility bill, except in instances when utility service is terminated or suspended, at which time you will be billed directly by NYSERDA's loan servicer. If you do not finish repaying your loan before you sell your property, you must provide a notice to the buyer about the loan. You will be responsible for any amounts billed by the utility up to the date of transfer. If agreed upon by the buyer and seller, the remaining monthly installments will be billed to the new utility account holder. Nonpayment of billing by utility may subject you to termination of utility service.

HOME PERFORMANCE WITH ENERGY STAR

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How long will I have to repay the loan?

Both NYSERDA loans may be repaid over 5, 10, or 15 years. The term of your loan may not be longer than the expected useful life of your energy efficiency improvements.

What are the interest rates?

Smart Energy Loan

3.99% or 7.49%
A 0.5% interest rate discount is applied to these rates if the customer selects automatic ACH payments prior to loan closing.

On-Bill Recovery Loan

3.49% or 6.99%

Interest rates are subject to change and interest rate availability is subject to the customer's credit qualification. Visit **nyserda.ny.gov/hp-finance** for additional information on interest rates.

Will I be charged any fees?

Both loan options include a $150 lender processing fee, which may be included in the amount financed. You will be charged for making late payments or missing payments.

Will I have to sign anything?

Both NYSERDA loans require signed loan documents.

Smart Energy Loan

You will sign a Note with the Lender. Once the loan is disbursed, it will be purchased by NYSERDA and serviced by NYSERDA's loan servicer.

On-Bill Recovery Loan

You will sign and have notarized a Note and Declaration with NYSERDA. All individuals (or representatives of legal entities) named on the property deed must sign an On-Bill Recovery Program Declaration, which will be filed by NYSERDA to provide notice to any subsequent purchaser of the property. The Declaration is not a lien on the property, but is recorded in a way similar to a Mortgage to provide notice to others of the loan obligation.

How do I get approved for a loan?

To be approved for either loan, you and/or your co-applicant must meet NYSERDA credit standards, which include all of the following:

- A satisfactory credit score.
- An acceptable debt-to-income ratio
- No bankruptcies, foreclosures, or repossessions within the last 24 months
- No more than $2,500 in outstanding collections, charge-offs, liens and judgments

If you're co-applying and either you or your co-applicant are unable to meet the eligibility requirements, you may be able to meet combined eligibility requirements. If so, both of you will be listed as co-borrowers on the Note and will be jointly liable.

What kind of information will be reviewed as my application is processed?

To qualify you for either loan, the following information will be reviewed:

- Credit Application
- A credit report inquiry will be made to obtain your FICO score, monthly obligations, and other information
- Documentation of income stated on Application
- Additional items as necessary
- For On-Bill Recovery Loans, a title company under contract to NYSERDA will search public records to verify ownership of your property

Visit nyserda.ny.gov/hp-finance to get started

HOME PERFORMANCE WITH ENERGY STAR

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How to Participate in NYSERDA Residential Financing for Homeowners

Contractors can use the information below to help your homeowners understand the steps to accessing NYSERDA's residential financing.

1. **Select a participating Home Performance with ENERGY STAR® (HPwES) Contractor**
   The participating HPwES contractor will conduct a home energy assessment that takes a whole-house approach to energy efficiency to identify where the biggest energy efficiency gains can be made to make your home safer and more affordable. The assessment analyzes how multiple elements of your home work together to affect the amount of electricity and fuel you use. After your assessment is complete, you will review the results with your contractor to determine which of the recommended home energy improvements make the most sense for you.

   For a list of Participating Contractors servicing your area, please visit: nyserda.energysavvy.com/contractors/

2. **Apply for a loan to help pay for the work**
   If you are interested in financing your project, NYSERDA offers two loan options- (1) On-Bill Recovery Loan or (2) Smart Energy Loan. Find out which one works best for you.

   Loans are available to the owner, or authorized agent, of an existing one-to-four family home**.**

   You can finance up to $13,000; up to $25,000 if the project meets higher cost-**effectiveness** standards.

   There are no penalties for loan pre-payments.

   NYSERDA offers lower interest rates to lower income New Yorkers and those who cannot qualify for traditional financing. Visit nyserda.ny.gov/hp-finance for details on the interest rate ranges. Interest rates are subject to change and interest rate availability is subject to customer's credit qualifications. Requirements vary by loan type, so please visit nyserda.ny.gov/hp-finance for more information.

   On-Bill Recovery Loan:
   - The current interest rates are 3.49% or 6.99%.
   - Loan terms are available for 5-, 10-, or 15-years.
   - The expected annual energy cost savings must be greater than the annual loan repayment. In other words, your energy upgrades should pay for themselves with the savings they create.
   - Loan repayments will appear as a loan installment line item charge on your electric or gas utility bill.
   - The applicant or co-applicant must be named on the utility bill.
   - Requires a Declaration to be signed by the borrower and filed by NYSERDA with the county clerk's office to provide notice to any subsequent purchaser of the property. The Declaration is not subject to any fees or NYS recording tax.
   - When the homeowner sells or rents their home they will have the option

to transfer the unpaid balance of the loan to the new owners or tenant; written disclosure is required.

Smart Energy Loan:

- The current interest rates are 3.99% and 7.49%. A 0.5% interest rate discount is applied to these rates if the borrower selects automatic ACH payments prior to loan closing.
- Loan terms are available for 5-, 10-, or 15-years.
- Repaid directly to NYSERDA's loan servicer through monthly statement billing or monthly electronic (ACH) payments until the loan is repaid in-full

Apply for the loan:
Submit the required documentation to Energy Finance Solutions (EFS):

- Online at https://app.energyfinancesolutions.com/consumerportal/Default.aspx
- Fax to: 608-249-5788
- Mail to:
  Energy Finance Solutions
  431 Charmany Drive
  Madison, WI 53719

3. Receive Loan Status Notification

Applicants who submit a completed application package will be notified by EFS of their loan status either via email notification of by mail.
Your participating contractor, if known, will be notified of your loan status.

4. Return the Signed Loan Documents

When your work scope has been approved by NYSERDA and all outstanding conditions to your loan pre-approval have been satisfied, EFS will draft loan documents that will be provided to you.

- Complete the documents and return to EFS.
- **NOTE:** To expedite loan processing, applicants are requested to make a single submission to EFS containing all required loan documentation.

5. Complete the Energy Efficiency Work

Once the loan documents are signed and returned to EFS, contact your participating contractor to schedule the work. After the approved energy improvements are installed, your participating contractor will require your signature on the Certificate of Completion to certify the project is complete. The Certificate of Completion is then submitted to the HPwES Program for review and approval.

6. Paying for the Work

If you are using the Residential Financing offered through NYSERDA to pay for the work, upon receipt of the Certificate of Completion by EFS, loan proceeds are paid directly to your participating contractor.

Please contact EFS with any questions by calling toll-free (800) 361-5663.

RESIDENTIAL LOAN INFORMATION

Home Performance with ENERGY STAR®

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	ON-BILL RECOVERY LOAN	SMART ENERGY LOAN
Interest Rate (subject to change)	3.49% or 6.99%	3.99% or 7.49% A 0.5% interest rate discount is applied to these rates if the customer selects automatic ACH payments prior to loan closing.
	Interest rates are subject to change and interest rate availability is subject to the customer's credit qualification. Visit nyserda.ny.gov/hp-finance for additional information on interest rates.	
Loan Amount	• Up to $13,000 (up to $25,000 if the simple payback is less than 15 years, calculated by dividing the loan amount by the first year estimated energy cost savings). • $1,500 minimum loan amount.	
Loan Term	5, 10, or 15 years (term may not exceed expected useful life of home energy improvements)	
Repayment Terms	• Repayments added to borrower's utility bill as a NYSERDA Loan Installment charge. • If utility service is terminated or suspended, borrower will be billed directly by NYSERDA's loan servicer. • If the loan obligation is not fully satisfied prior to the sale of the home, the borrower must provide notice to the purchaser; is responsible for amounts billed by the utility up to the date of transfer; and with agreement from the buyer, can transfer the remaining monthly payments to the new utility account holder. • Non-payment of utility charges may result in termination of service; non-payment of the loan obligation may result in a judgment.	• Repayments made directly to NYSERDA's loan servicer via monthly statement billing or automatic bank withdrawal (ACH). • If home is sold or transferred, borrower is responsible for the outstanding balance of the loan and cannot be assigned. • Non-payment of the loan obligation may result in a judgment; NYSERDA is authorized under State law to certify amounts past due for collection by offset from income tax refunds and other payments due from the State.
Borrower Eligibility	• Borrower (or co-borrower) must own the home and be named on the utility account of a participating utility: Central Hudson, Con Edison, PSEG-Long Island, National Grid (upstate customers only), New York State Electric and Gas Corporation, Orange & Rockland Utilities, or Rochester Gas and Electric. *(PSEG-Long Island customers who are on bi-monthly billing will be changed to monthly billing when the approved loan installment charge is placed on their bill)* • A title company under contract with NYSERDA will search public records to verify ownership of the property.	• Borrower (or co-borrower) must own the home, or lease or manage the residential building, and be an authorized representative of the owner.
	At least one borrower must be an individual, but a legal entity may be included as a co-borrower. Additional credit approval criteria apply (see page 2).	
Eligible Home Energy Improvements	• Eligible home energy improvements made to a residential building (1-4 units) by a participating contractor. • Improvements may include ancillary "health and safety" measures not to exceed 15% of the total cost of eligible improvements or a maximum of $2,000. For a list of eligible energy improvements, visit nyserda.ny.gov/eligible-improvements	

*Estimated energy cost savings include forecasted utility rate increases of .8% per year.

(Continued on next page)

	ON-BILL RECOVERY LOAN	SMART ENERGY LOAN
Cost-Effectiveness Requirements	• Monthly payment may not exceed 1/12th of the estimated average annual energy cost savings from the improvements over the loan term.	• Pre-qualified eligible home energy improvements are at least 85% of the total loan amount. **-OR-** • Estimated energy cost savings over the anticipated life of all eligible home energy improvements must be at least 80% of the total principal and interest to be paid on the loan.*
	$150 origination fee (can be included in the loan amount)	
Fees	• Late payment fee equal to 1.5% of unpaid payments. • Returned payment fee may be charged by the utility as authorized by the Public Service Commission. • Past due balance on utility account may be subject to a collection fee by the utility as authorized by the Public Service Commission. • If utility service is terminated, borrower may be subject to a reconnection fee from the utility.	• $5 late payment fee. • $20 fee for returned payments. • Collection fee of up to 22% of amount due if not received within 90 days of due date, as authorized by State law.
Agreements	• Borrower must sign and have notarized a loan note with NYSERDA. • All individuals or legal entity representatives named on the property deed must sign and have notarized an On-Bill Recovery Program Declaration, which will be filed by NYSERDA to provide notice to any subsequent purchaser of the property; the Declaration is not a lien on the property, but is recorded in a similar way as a mortgage to provide notice to others of the loan obligation. • Only one On-Bill Recovery Loan per account allowed.	• Borrower must sign a loan note with NYSERDA's loan originator. • When the loan is disbursed, it will be purchased by NYSERDA and serviced by NYSERDA's loan servicer.

LOAN APPROVAL CRITERIA

Credit Score	540-599	600-679	680 and above
Debt-to-Income (DTI)*	Up to 70%**	Up to 75%**	Up to 80%**
Mortgage Payment History	Mortgage has been paid on-time for the past 12 months. No mortgage payments more than 60 days late during the past 12 months.		
Bankruptcy, Foreclosure, Repossession History	None in the past 24 months		
Outstanding Collections, Judgments, Liens, and Charge-offs	May not exceed $2,500		

** Debt-to-Income (DTI) is a measure of your existing debt payment obligations (mortgage, auto loan, student loan, credit card payments, etc.) to your income.*

*** DTI is up to 100% for applicants who qualify for the Assisted Home Performance with ENERGY STAR® 50% discount and up to 80% for applicants who qualify for Affordable Solar Incentives or the Low or Medium Income (LMI) Pellet Stove Incentives.*

This does not constitute a comprehensive list of loan underwriting guidelines. These standards are subject to change at NYSERDA's discretion.

HOME PERFORMANCE WITH ENERGY STAR

NEW YORK STATE OF OPPORTUNITY. NYSERDA

Income Documentation for Residential Financing and Incentive Applicants

The NYSERDA Residential Financing and Income Screening Application requires the applicant to state his/her current annual income amount and the income amounts received by all adult household members who are not full-time students. The income for an applicant and co-applicant is used to determine Debt to Income Ratio ("DTI") for loan underwriting purposes; while household income is used to determine the loan interest rate and/or eligibility for an incentive.

Provided that an applicant is not seeking a reduced interest rate or an incentive, the DTI calculation for applicants with a credit score ("FICO") of 780 and above will be based on the stated income only and no documentation of income will be required. Applicants with a FICO of below 780 must document all income and DTI calculations for these applicants will be based on the documented income.

Any applicants seeking an incentive or a reduced interest rate loan they must document income from all adult household members, age of 18 or older, that are not full-time students, no matter the FICO scores of the applicant. A household is any individual or group of individuals who are or expected to be living together at the premises at the time of application to the NYSERDA program. If a person is considered to be a household member then any income associated with that person shall be counted (i.e. foster children).

If an applicant submits loan and incentive applications at different times, but within six months of each other, and the stated income on the applications is different, the applicant will choose which income to document and the documented income shall apply to both applications, even if it results in revising the decision on the prior application. For example, the applicant may choose to use either historic income or anticipated income for the coming year that reflects changes in job status, but the new income must be adequately justified. The applicant must be consistent in providing forms of documentation (i.e. "historic" path or the anticipated/projected path).

The documentation of income may be accomplished through either of the means detailed below but the customer must be consistent in providing forms of documentation (i.e. "historic" path or the anticipated/projected path). Income documentation through prior year's tax return is the most efficient method and applicants should be encouraged to use that option whenever possible. An applicant may be advised that a different documentation method may be more advantageous, but the applicant must make the final decision regarding the method of documentation to use. If an applicant states that s/he had a significant change in income from what is documented, the applicant may submit alternative documentation to substantiate the current income. If the documentation submitted were something other than a tax return and does not reflect the stated amount in the application, the loan originator will undertake further outreach until the applicant either provides all of the income documentation for the stated amount or verifies to the loan

originator that they have provided all of the income documentation and the stated amount of income in the application needs to be changed to the documented amount.

Federal Income Tax Return:

If the applicant(s) elect to document income through a copy or transcript of the prior year's Federal Income Tax Return (Form 1040, 1040A or 1040EZ and to the extent are they are filed Schedules C, E and/or F)[1], the following standards shall apply:

a) The total reportable income stated on the applicant's tax return will be used. Reportable income is calculated by taking the total income stated on line 22 of Form 1040[2]; line 15 of Form 1040A or line 4 of Form 1040EZ (listed as Adjusted Gross Income on Form 1040EZ) and adding to it any non-taxable income reported on the return. Non-taxable reportable income includes certain Social Security benefits, pension/annuity benefits, IRA distributions, and tax-exempt interest. No adjustments should be made to this calculation based on the statement, or reasonable assumption, that a line item on the tax return is a retirement account rollover or a lump-sum distribution of income, unless the tax return states that a reported amount was a rollover or lump sum distribution.

b) Self-employment income includes income reported by an applicant on a Schedule C, E, or F. Income for self-employed applicants should be based upon federal income tax reporting standards and are based on net business income. Any mortgage interest and depreciation expenses on those schedules will be added back to the income or loss. This sum will be used as net income or loss when calculating the DTI Ratio. For calculation of incentives/lower interest rates the mortgage interest and depreciation will not be added back to the income or loss . Where there is a sole applicant who filed a joint tax return, only self-employment income attributable to the applicant may be included in the calculation of income.

c) If the prior year tax return has not yet been filed by an applicant who applies for a loan and submits income documentation between January 1 and "Tax Day" of a given calendar year, EFS may accept the tax return from the preceding year. A loan applicant who submits income documentation on or after "Tax Day" of a given calendar year and has not filed the prior year tax return must provide proof of current income as outlined in "Other Documentation" below.

Applicants who filed a joint tax return but are applying for the loan individually must provide the relevant tax schedules, W-2 statements, or 1099 statement, or submit proof of income according to "Other Documentation" below.

[1] Starting for 2018 tax returns there will no longer be Forms 1040A or 1040EZ.
[2] Starting for 2018 tax returns total income is on line 6 of Form 1040.

Other Documentation:

If the applicant elects to document income by submitting documents other than, or in addition to, a recent tax return to support a stated income amount, the following standards shall apply:

(a) Wage income shall be calculated by reviewing the applicant's year-to-date gross earnings as reported on a pay statement dated not more than 30 days prior to the date that the paystub was submitted and converting those year-to-date earnings to a monthly amount. Where this calculation does not provide an accurate assessment of the applicant's true income level (i.e. the applicant has not worked for the same employer for the whole year, the applicant's rate of pay or hours worked per week has changed, etc.), additional payment advices or a shorter time horizon shall be used to calculate a monthly gross income level for the applicant.

(b) Income from seasonal employment may be considered, however the amount that is determined as monthly income must be based upon the annual amount divided by 12 calendar months. Calculations of seasonal income should be supported by documentation of earnings from similar employment conditions in one or more past years.

(c) Self-employment income (including rental income) shall be calculated by:

  (i) a profit and loss statement with income/loss calculated prior to mortgage interest and depreciation expense; or
  (ii) for rental income, the applicant may submit either copies of executed leases or a summary signed by the applicant stating the lease term and monthly rent for all leased units. 75% of the annual gross lease payments shall be used when calculating the DTI Ratio.

(d) Benefit income, such as Social Security, annuities, and pension income, will be based upon the gross monthly amount of the benefit received. Benefit income may be documented by means of a copy of a current benefit award letter, benefit statement such as a Form 1099R or 1099SS, or a copy of a bank statement evidencing the direct deposit of benefit income.

(e) Investment income shall be supported by copies of 1099s, brokerage statements, or the previous year's tax return. Income from these sources shall be converted into a monthly amount. Only the reportable portion of investment earnings shall be considered as income for loan qualification purposes. Applicants may not declare a lump sum receipt to be an isolated and non-recurring event to exclude it from consideration for an Assisted Discount Application, while also claiming it as current regular income to support a Residential Credit Application.

(f) Child support and alimony/maintenance will be supported through a copy of court order documents or payment history provided by the Child Support Collections unit.

(g) Adoption and foster care subsidies will be supported through documentation of current receipt of subsidy funds.

(h) Proceeds of student loans, scholarships, and student financial aid shall not be considered as income.

(i) Housing stipends used to cover living expenses will be supported through documentation on paystubs or a letter or agreement from the employer attesting to the amount and should be included in the calculation of household income and included in the calculation of the DTI Ratio.

(j) Unemployment compensation received by the applicant at the time a credit application is submitted, and claimed by the applicant as current regular income, should be documented through the applicant's Unemployment Benefit Payment History. The Unemployment Benefit Payment History must confirm that the applicant is receiving benefits at the time of application and has a positive award balance remaining. Income from this source shall be calculated by annualizing the average weekly benefit received during the past four weeks.

(k) If the applicant or any member of the household is currently eligible for or has received within the past 12 months any of the following services, they will be categorically approved for the AHPwES program by submitting the applicable award letter (Designation of HEAP on a recent utility bill is acceptable documentation);

- NYSERDA's EmPower NY Program
- NYS Weatherization Assistance Program,
- HEAP, SNAP/food stamps,
- Temporary Assistance for Needy Families (TANF), or
- Supplemental Security Income

Additional income documentation, other than the award letter, needs to be provided for the purpose of determining DTI and qualification for a loan.

(l)

NYSERDA Residential Financing – Phased Loan Process

Phased Loans are available for Smart Energy Loans only

There are situations when customers may complete a project in two phases and wish to use NYSERDA Residential Financing for each phase. In these instances, Home Performance with ENERGY STAR® (HPwES) customers will have the option to submit a single credit application and set of supporting documentation to Energy Finance Solutions (EFS) for the creation of two separate Smart Energy loans for a two phase project. This feature allows a full work scope and financing to be approved up-front with the work proceeding as two separate phases. The first loan will be closed and the contractor paid upon completion and acceptance by the customer of the first phase. The second loan will be closed and the contractor paid upon completion and acceptance by the customer of the second phase.

This process was developed in response to fuel conversions projects where contractors have a signed contract with a customer but cannot complete all measures until the utility company completes the necessary gas infrastructure improvements needed to install the HVAC measures.

The process for a phased loan approach is outlined below. To apply for the phased loan, customers must complete a Payment Schedule Request Form. Payments on the two loans will be arranged based upon the instructions provided within the Payment Schedule Request Form and this fill-able PDF form must be uploaded to the NY HP Portal with the project submittal documentation. Upon loan approval, contractors will be copied on the Loan Approval Letter sent from EFS to the homeowner. A sample of this letter is included as a separate PDF attachment. Please note; the information in yellow will be customized per applicant.

HPwES Phased Loan Process:

1. Customer submits a single credit application and set of supporting documentation.
2. EFS obtains a credit report.
3. EFS provides one pre-approval letter to the customer and contractor, indicating the maximum loan amount for which the customer is eligible.
4. Contractor submits two separate projects to CLEAResult.
    a. On both contracts, the customer and contractor acknowledge that the project will be funded through two separate loans.
    b. Customer completes a *Payment Schedule Request Form* indicating whether they prefer to have payments for both loans due on the same day of the month, or according to a different schedule. This form is uploaded with the project submittal to CLEAResult.
    c. If utilizing TREAT, the contractor creates one model with two separate packages of improvements representing the two stages of the project and one combined package with all of the improvements. Contractor will submit a request to CLEAResult indicating a phased loan project. The contractor will create two

projects in the NY HP Portal (Portal)/HUB and upload one package to each project, along with the combined package. The total combined workscope and total loan amount will be used to determine eligibility (all project/loan documents must be resubmitted if the project is not completed within 12 months).

d. If utilizing RHA, the contractor will create one model and two projects through the Portal/HUB. The improvements will need to be added to separate contracts in RHA, representing the two stages of the project, and link one contract to each project. The contractors will not be able to create a combined package for the eligibility screening tool (EST) because RHA will not allow the same measure to be on more than one contract (or package) and there can only be one contract associated with each project. Contractor will submit a request to CLEAResult indicating a phased loan project. In cases where one phase of the project fails to pass the loan eligibility criteria through EST, contractors should contact CLEAResult to screen the entire project. The total combined workscope and total loan amount will be used to determine eligibility (all project/loan documents must be resubmitted if the project is not completed within 12 months).

e. If utilizing Auditor, the contractor will need to create one model with a comprehensive package and then create two separate contract packages of improvements representing the two stages of the project. Auditor will allow contractors to check and uncheck improvements on the comprehensive package to create the two HPXML files. There will only be one contract package and one combined package associated with each project. Contractor will submit a request to CLEAResult indicating a phased loan project. The comprehensive package (total combined workscope and total loan amount) will be used to determine eligibility (all project/loan documents must be resubmitted if the project is not completed within 12 months).

5. CLEAResult issues two approvals, but still uses the combined workscope for loan cost effectiveness screening.
6. Upon receipt of the project approval indicating two loans, EFS creates a second loan number for the customer. EFS uses the credit application, credit report, and supporting documentation that were submitted with the original loan to also underwrite the second loan. In its database, EFS creates a cross reference between the two loans.
7. EFS issues the *Loan Approval Letter* and includes two sets of loan documents.
    a. The EFS processing fee will be included on the loan documents for the shell work, or whichever portion of the project is expected to be completed first.
8. Customer signs and returns both sets of loan documents.
9. Contractor submits completion to CLEAResult for Project A. CLEAResult processes the applicable incentive in addition to the loan amount and marks the project as complete. The completion transmittal will reference the associated Loan B that has not yet closed. The incentives are reported to EFS and NYSERDA.
10. EFS issues payment to the contractor for Project A upon receipt of the completion transmittal for project A. EFS transfers Loan A to NYSERDA. EFS' data export to Concord will include a reference to the associated Loan B that has not yet closed.
11. Contractor submits completion to CLEAResult for Project B. CLEAResult processes the applicable incentive in addition to the loan amount and marks the project as complete. The incentives are reported to EFS and NYSERDA. Change orders may modify either workscope and a new approval will be issued only for the affected project, although the combined loan cost effectiveness will need to be recalculated if a change order is issued. New loan documents will be issued for only the affected project. If Project A is

closed out and a change order is submitted for Project B, the overall cost effectiveness of the project would be impacted. CLEAResult would recalculate the loan cost effectiveness of the project based on the new combined workscope. If the new combined workscope does not meet eligibility criteria, CLEAResult/NYSERDA would require the contractor to make necessary revisions to insure overall cost effectiveness is maintained.

12. EFS issues payment to the contractor for Project B upon receipt of the completion transmittal for Project B. EFS transfers Loan B to NYSERDA. EFS' data export to Concord will include a reference to the associated Loan A that closed previously.
13. The first payment due date and last payment due date provided in the data export will reflect the payment date preference indicated by the customer on the *Payment Schedule Request Form*.
14. The project will be counted as 2 completions for the contractor and the HPwES program production.
15. Both installations must be completed by the application date + 180 days; all loans must close within 365 days from the date of initial application.

Energy Finance Solutions
431 Charmany Drive
Madison, WI 53719
Fax: 608-249-5788

NYSERDA Residential Financing

Payment Schedule Request Form

By signing below, I acknowledge that my project through the *New York State Energy Research and Development Authority's (NYSERDA) Residential Financing* will be completed in two phases. I agree to fund some, or all, of this project through two separate Smart Energy Loans offered through e NYSERDA's. I understand that each loan will be funded after I sign a Certificate of Completion covering the applicable portion of the project and that each loan will enter repayment within approximately 30 days of the date that the contractor is funded for that portion of the project.

I understand that, for my convenience, NYSERDA's loan servicer, Concord Servicing Corporation, will attempt to schedule payments for the two loans based on the preference that I have stated below.

Please Select One of the following:

____ I prefer to have both loan payments due on the same day of the month

___ I prefer to have the due dates of my two loan payments set per the terms of the loan agreement
(payment due 30 days after the contractor is funded).

_____
Customer Name (Please Print)

_____
Property Address City State Zip Code

_____
Loan Number

_____ _____
Customer's Signature Date

_____
HPwES Contractor's Name and Email

HPwES Contractors:
Submit to CLEAResult with initial project submittal.

Revised August 2016

NYSERDA Residential Financing

C/O **Energy Finance Solutions** **431 Charmany Drive ❖ Madison Wisconsin 53719 ❖ (800) 969-9322**

August 10, 2016

Name
Address

Loan A #
Loan B #

Dear MR & MRS SAMPLE:

Your application for a loan through the *New York State Energy Research and Development Authority (NYSERDA) Residential Smart Energy Loan Program* has been approved. Per your request, the work for which you have contracted will be funded through two separate loans. One loan will be in the amount of $XX.XX ($XX.XX project cost + $150.00 processing fee) and the other loan will be in the amount of $XX.XX. Both loans will have terms of XX years and will have interest rates of X.XX%. Enclosed are the following forms: two sets of the Notice of Right to Cancel, two sets of the Smart Energy Notice to Borrower, and two sets of the Loan Agreement (Note).

Before you sign any of the documents, please review them carefully. All signatures must be made in black ink and signed <u>exactly as written</u> under each signature line. You, as the borrower(s), are required to sign the Notice of Right to Cancel, the Smart Energy Notice to Borrower (acknowledging receipt), as well as the Loan Agreement (Note). Please initial the Loan Agreement (Note) at the bottom of pages 1, 2 & 3 and sign in the space provided on page 4.

Please keep one copy of each document for your records and return the following:

- One original signed Notice of Right to Cancel,
- One original signed Smart Energy Notice to Borrower and,
- One original signed Loan Agreement (including your initials at the bottom of pages 1, 2 & 3 and signature in the space provided on page 4).

Please send these documents **within 10 days from the date of this letter <u>to Energy Finance Solutions, 431 Charmany Dr, Madison WI 53719</u>.** Make sure you have included your signed and dated Notice of Right to Cancel with the returned documents.

If after you sign the documents and return them to our office, you change your mind about taking out the loan, you have 5 days to cancel the loan transaction. If you wish to cancel the transaction, please sign the enclosed Right to Cancel form below "I wish to cancel" in the *How to Cancel* box, and send it to the address noted on the form.

Once we receive your signed documents and the 5 days Right to Cancel has passed, we will contact your contractor to schedule your installation. **Your installation must be fully completed by <240 Days from Approval Date>.** If your project is not completed by that time, and you have not requested a time extension from us, we will consider your loan application to have been withdrawn.

Conditions: (If Applicable)

NYSERDA Residential Financing

C/O **Energy Finance Solutions** **431 Charmany Drive ❖ Madison Wisconsin 53719 ❖ (800) 969-9322**

Once the work associated with your first contract is complete, your contractor will ask you to sign a form indicating that the work has been completed and you are satisfied with the work. Your contractor will submit a copy of this form to us with their invoice. Once approved for payment, we will issue a check directly to Contractor A for $XX.XX. At that time, you will be notified regarding loan repayment for your first loan.

Once the work associated with your second contract is complete, your contractor will ask you to sign a second form, indicating that all work associated with the final phase of the project has been completed and that you are satisfied with the work. Your contractor will submit a copy of this form to us with their invoice. Once approved for payment, we will issue a check directly to Contractor A or B for $XX.XX.

At that time, you will be notified regarding loan repayment on your second loan. The timing of the payments on your two loans will be arranged based on the instructions you provided on the Payment Schedule Request Form.

Thank you for your participation in *NYSERDA's Residential Smart Energy Loan Program*. Should you have any questions, please contact me at (800) 361-5663 extension XXXX.

Sincerely,

EFS Loan Specialist (Name varies)
Energy Finance Solutions

Enclosures: Loan Agreement/Note (2)
Notice to Borrower (2)
Notice of Right to Cancel (2)

Electronic Signature Policy

NYSERDA recognizes the value of electronic signatures in improving the efficiency of services and is carefully in implementing these new procedures, and limit liability risks to contractors and the programs. Some use of electronic signatures has been approved and NYSERDA has developed electronic PDF versions of these forms for use in the field. While new procedures are in development it is critical that contractors ensure the integrity of the signature process, as follows:

1. Signatures are a declaration that a customer or contractor understands and accepts the statements above the signature. In some cases they serve as an attestation that a contractor has taken responsibility for the statements in the document. As such:
    a. It is inappropriate to transfer one signature to another document.
    b. Altering documents by changing dates of signature or pricing is not allowable. It is unlawful to alter a document after a customer has signed it.
    c. Changing pricing or signature dates after the signature was obtained will be cause for disciplinary actions from NYSERDA.
2. Authentic signatures are critical. Currently the only acceptable processes for obtaining signatures are as follows:
    a. The customer's physical signature on a paper document (a "wet signature").
    b. An electronic signature created by the customer directly on the specific document, after the document has been completed. Staff must ensure that no data points above the signature are modified after the signature has been executed.
    c. If a customer is in incapable of providing a signature according to the above, please document the reason on the form.
    d. For the Combined Residential Application, please see the acceptable signature process below.
3. Cutting and pasting a signature from another document, or forging a signature can result in disciplinary action from NYSERDA.

If you have questions about what is acceptable, please contact your Account Manager/Field Representative.

Combined Residential Application

The following outlines the acceptable methods for securing customer authorization on the Combined Residential Application. When uploading to the Salesforce Application Portal, the entire application should be uploaded, not just the signature pages.

For applications initiated by the homeowner/renter, the signature options are as follows:

1. Customer utilizes Docusign to electronically sign their application within the Salesforce Application Portal itself. Docusign is a native functionality within Salesforce and an approved method of collecting electronic signatures.
2. Customer prints a copy of the application, applies a wet signature to the application, and uploads an electronic copy of the signed application to the Salesforce Application Portal.
3. Customer prints a copy of the application, applies a wet signature to the application, and mails the physical copy of the signed application to NYSERDA for manual processing.

For applications initiated by a participating contractors or CEAs, the signature options are as follows:

Note: The application should be initiated from the contractor or CEA's Salesforce Portal Account and ***not*** from the Combined Residential Application landing page.

1. A contractor or CEA prints a copy of the application, presents the application to the customer for a wet signature, and uploads an electronic copy of the signed application to the Salesforce Application Portal.
2. A contractor or CEA prints a copy of the Application, presents the application to the customer for a wet signature, and mails the physical copy of the signed application to CLEAResult for manual processing.
3. A contractor or CEA downloads a PDF version of the application, using their mobile device, obtains an electronic signature from the customer using either Adobe electronic signature or equivalent product, and uploads an electronic copy of the signed application to the Salesforce Application Portal.
4. A contractor or CEA downloads a PDF version of the application, creates an electronic signature block using their Docusign, Adobe, or equivalent product, and emails the PDF to the customer. The customer would then open the PDF on their own device, electronically sign, and email the electronically signed application to the contractor. The contractor would complete the application by uploading the electronically signed PDF to the Salesforce Application Portal and submitting the application.

Electronic signatures streamline the application process by allowing for a much quicker turnaround in reviewing and approving the final incentive for the applicant. The Combined Residential Application can be found on NYSERDA's website at https://www.nyserda.ny.gov/ny/ahp-empower. For an overview of the application process, please visit https://knowledge.nyserda.ny.gov/pages/viewpage.action?pageId=81855392.

For any questions, please reach out to your account manager or support.residential@nyserda.ny.gov.

NY Residential Existing Homes Program
Effective Useful Life of Energy Efficient Measures

The NY Home Performance with ENERGY STAR and EmPower New York Programs are designed to improve the energy performance, durability, comfort and safety of existing one- to four-family homes in New York State. To estimate the expected total lifetime savings of a project both the annual energy savings and effective useful life (EUL) at the measure level are required. The annual energy savings can be obtained from authorized energy modeling software, and the list below provides the EUL of incentivized measures.

Measure	Minimum Efficiency Requirements	EUL
Furnace – Natural Gas or LP	AFUE 95% (as long as not prohibited by local codes). Furnaces with ECM Motor allowed.	20
Furnace – Fuel Oil	AFUE 85%	20
Boiler – Condensing - Gas	AFUE 90%	25
Boiler – Condensing - Oil	AFUE 87%	25
Boiler – Non-Condensing	AFUE 85% (project must include boiler reset control)	25
Boiler – Steam	AFUE 82% (size must be matched to cumulative capacity of connected radiators, per Institute of Boilers & Radiator Mfrs (IBR) standards)	25
Boiler Reset Controls	Programmed properly per manufacturer's specifications and site conditions. Maximum price of $500.	15
Air Source Heat Pump (electric split systems)	See Air Source Heat Pump Program manual for requirements	20
Wood Stove	EPA certified for particulate matter output of 4.5 grams per hour or less	20
Distribution Improvements (NG or Electricity Heated Homes)	Installed in accordance with all applicable state and local codes.	20
Distribution Improvements in Oil or Propane Heated Homes	Installed in accordance with all applicable state and local codes	20
Duct Sealing	UL 181B mastic or tape; use of "duct tape" is disallowed	20
Duct Insulation	Installed in accordance with all applicable state and local codes	20
Pipe Insulation	R-3	11 (gas), 13 (elec)
Central Air Conditioner (split system)	AHRI Certificate Required. 14.5 SEER / 12 EER.	15
	Air Source Heat Pump (for Cooling). See Air Source Heat Pump Program manual for requirements.	20
Programmable Thermostat	5+2 day programmable thermostat including smart thermostat.	11
Insulation (attic, wall, floor, band joist, basement, crawl space)	See "Insulation Policy" for eligible insulation. Must be accompanied by blower door assisted air sealing per BPI and program guidelines.	30
Air Sealing	Supervised by professional; blower door assisted per BPI and program guidelines	20

Measure	Minimum Efficiency Requirements	EUL
Replacement Windows	ENERGY STAR for climate/region. May be subject to SHPO review.	20
Storm Windows and Storm Doors	No minimum efficiency requirement. May be subject to SHPO review.	20
Exterior Doors	ENERGY STAR for climate/region	20
Movable Window Insulation	R-3	20
Water Heater - Tank, Natural Gas or LP	ENERGY STAR Qualified. 40-100 gallons.	15
Water Heater – On-Demand, Natural Gas or LP	ENERGY STAR Qualified. Must replace a conventional 40 or 50 gallon tank.	20
Water Heater – Tank, Electric	ENERGY STAR Qualified	15
Water Heater – Tank, Oil	20-100 gallons, UEF >= 0.68	15
Water Heater - Indirect-Fired Tank	UL Approved	13
Heat Pump Water Heaters, Tank	≤ 55 gallon tank, UEF > 2.0 | > 55 gallon tank, UEF >=2.2, ENERGY STAR Certified. Must be installed in an unconditioned space.	10
Pipe Insulation	R-3	11 (gas), 13 (elec)
Hot Water Tank Insulation – Electric	R-10	20
Faucet Aerator	No minimum efficiency requirement	10
Low Flow Showerhead	Maximum flow rate of 1.5 gallons per minute. Aerating type showerheads not eligible.	10
Refrigerator	CEE Tier 2 or 3	17
Freezer	ENERGY STAR Qualified	15
Dishwasher	ENERGY STAR Qualified	15
Clothes washer	ENERGY STAR Qualified	15
Dehumidifier	ENERGY STAR Qualified	15
Room Air Conditioner	ENERGY STAR Qualified	9
CFLs	ENERGY STAR Qualified. Refer to Lighting Guidelines in Contractor Resource Manual (CRM).	7
LEDs	ENERGY STAR Qualified. Refer to Lighting Guidelines in CRM.	15
Light Fixtures	ENERGY STAR Qualified for compact fluorescent, or electronic ballast for fluorescent tubes	20

NOTE: NYSERDA reserves the right to modify the eligible measures and the minimum efficiency requirement and the effective useful life for any measure during the term of the Home Performance with ENERGY STAR Participation Agreement.

Policy for Households Affected by Severe Weather Events

The New York Home Performance with ENERGY STAR® and EmPower New York Programs are not emergency-services programs. The Programs do, however, attempt to respond to emergency situations within the constraints of program guidelines and the existing infrastructure for the provision of services. As such, NYSERDA has established the following policy to help facilitate the submittal of projects that address property damage as a result of a severe weather event or other priority response as declared and activated by NYSERDA.

Participating Contractors in areas affected by a declared event will be notified should this policy be activated. These guidelines apply to only those homes in the affected area, during the time period specified in the activation notice. The activation notice may include further guidance and requirements specific to a particular declared event.

The Program cannot provide funding for repairs paid for by the Federal Emergency Management Agency (FEMA), private insurance or other programs. However, in situations where FEMA, private insurance, and other program reimbursement do not cover the full cost of repair or the additional cost for high efficiency equipment, the Program can provide customer incentives to cover the additional cost when it is provided by a Participating Contractor. At no time will the Program provide incentives that, when combined with funds from FEMA, insurance or other programs, exceeds 100% of the total project cost.

1. Complete a Storm Damage Audit using the procedure below:
    - **a. Document Program Eligibility**
      In addition to the audit application, customers requesting program assistance for storm damage must submit a **Storm Relief Application**. This application must be complete at the time of the Storm Damage Audit.
      Low-Income qualified households will be referred to a Participating EmPower New York Contractor as per program guidelines.
    - **b. Complete Storm Damage Audit**
      Contractors are required to assess and document storm related damage to the home using the **Storm Damage Assessment Form**. The Storm Damage Audit mirrors the Comprehensive Energy Assessment with the exception of waiving test-in requirements where home condition does not support testing or where health and safety issues prevent the safe execution of the testing.
        i. Evaluate <u>all insulation</u> in the home, including area and depths as per program guidelines. Record findings and any storm-related insulation concerns, paying careful attention to moisture and mold concerns.
        ii. Evaluate the condition of the heating system and water heater. If functioning, conduct a combustion efficiency test. Make note of any and all secondary heating systems such as electric space heaters, wood stoves, gas-fired kitchen stoves and kerosene space heaters.
        iii. Evaluate the home's smoke alarm(s) and CO detector(s) and test the ambient air for CO if a combustion appliance is present.

iv. If the odor of natural gas is present, and gas is in use in the dwelling, conduct gas leak testing. Follow Program gas leak procedures.
v. For income-eligible homeowners, complete Electric Reduction measures per program guidelines.
    1. Evaluate Refrigerators and Freezers for replacement. If the primary refrigerator in an income-eligible home is deemed non-functional, it may be replaced through EmPower. If it is determined that refrigerators or freezers must be replaced, the contractor must complete the **Appliance Exchange Agreement**.
        a. If the original refrigerator is not on the premises, the size of the replacement will be determined based on family size.
            i. 1-3 family member: 18 cu. ft. or smaller
            ii. 4 or more family member: 21 cu. ft. or smaller
        b. In all cases, the contractor must measure available space to ensure that the replacement appliances will fit.
        c. Freezers and secondary refrigerators must meet program guidelines for replacement. In the event that a home is without power at the time of inspection, consult the kouba-cavallo refrigerator and freezer guide at http://www.kouba-cavallo.com/refmods.htm . If the model is not in the guide, document the make, model, exterior size and general condition for consideration for replacement. EmPower will not fund replacement of freezers or secondary refrigerators that are no longer on the premises.

c. Model the project and print out a Comprehensive Assessment Report for the customer.
i. The existing condition for damaged equipment and appliances for the purpose of calculating energy savings will be code minimum efficiency (e.g. gas furnace 80% AFUE). The R-Value and/or U-Factor of exterior surfaces shall be modeled as closely as possible to pre-event condition accounting for degradation following BPI guidelines.
ii. The value of health and safety measures and accessories that are allowed to be excluded from the savings-to-investment calculation remains 15% of the total project cost with a cap of $2,000.

d. Have customer sign contract and Storm Assistance Agreement
i. Upload all project documents to NY HP Portal as per program guidelines.
ii. Work is permitted prior to receiving work-scope approval. Full project submission and completions documentation will need to be received by the program in a reasonable amount of time after the completion of work for incentives to be processed.
iii. The loan approval process remains unchanged and a contractor proceeding with work without a signed loan agreement does so at their own risk.

e. Health and Safety Concerns
i. The Participating Contractor must ensure that installed measures do not create moisture-related damage to the structure or stimulate mold growth.

1. Test of moisture content of the wood in areas adjacent to cavities where insulation is to be installed.
    a. This test must be completed in at least 4 places, low in the cavity
    b. Prior to insulation or air sealing the moisture content of the wood must be no greater than 17%
    c. Photographic documentation of testing must be completed
2. Test the relative humidity of the lowest level in the structure
    a. Prior to insulation or air sealing the relative humidity must be no greater than 60%
3. Visually inspect to ensure than any mold problems have been mitigated.
4. When installing below-grade wall insulation:
    a. Closed cell foam must be used
    b. Insulation must either be fire-retardant or arrangement must be made to ensure that the property owner is covering the material with a thermal barrier.
5. When installing above-grade wall insulation in areas where walls have been damaged by the storm:
    a. Tear-out must be complete prior to insulation.
    b. Prior to insulating walls, contractor must attempt to remove any old insulation in wall cavities that remains after tear-out. Contractor must check to ensure that any remaining drywall is in good condition to allow for dense packing of adjacent cavities.
    c. If drywall has not yet been installed, contractor may include installation of mold-resistant drywall in an itemized cost of re-insulating damaged areas.

ii. Project completion documents must be submitted as per project guidelines. The home must be habitable at the time of test-out.

iii. Gas leak testing, CAZ testing and other BPI mandated test-out procedures must be completed prior to invoicing.

f. **If a delay is anticipated** in providing insulation and air sealing due to the condition of the dwelling, the contractor may submit a partial invoice of the energy audit and any measures initially installed, indicating to the Program Implementer that the request is for partial completion.

Handling Emergency Situations

The EmPower New York and Home Performance with ENERGY STAR Programs are not emergency-services programs. The programs do, however, attempt to respond to emergency situations within the program guidelines and the existing infrastructure for the provision of services.

Prior to providing services it is important to:

A. *Verify that home is owned by the applicant* (NOTE: In some cases, "Life Use" situations may be honored with appropriate documentation.) **Emergencies occurring in rental situations must be referred to the landlord, unless the emergency involves a tenant-owned appliance.**
B. Attempt to gain a first person understanding of the situation from the household, or an appropriate representative of the household, such as an assisting family member.
C. Contact the Program Implementer as soon as possible to gain approval. Contractors may proceed, at risk, prior to approval. The guidance below explains what the Program consider to be an emergency situation.

Evaluate whether a true emergency exists. Only the measures below meet criteria for emergency considerations.

A. Heating System
    a. Emergency: Suspect natural gas leak**:** When natural gas leaks are found or suspected in the dwelling, the Participating Contractor **MUST** contact, or ensure that the household contacts the local Utility IMMEDIATELY.
        i. The Participating Contractor must ensure that the household understands potential hazards and acts appropriately. **It is the Participating Contractor's responsibility to become familiar with hazards related to natural gas leaks and other hazards and take appropriate actions in situations where life-threatening conditions exist.** If, for example, a life-threatening situation exists, such as a significant natural gas or propane leak, the Participating Contractor must instruct the family to leave the home immediately and not turn off or on any light switches or other electronic devices if the risk of sparks is a concern.
        ii. For low-income customers - If the heating system is shut down due to health risks, the Participating Contractor must refer the household to the Department of Social Services (DSS) for the Office of Temporary and Disability Assistance Heating Emergency Repair and Replacement (HERR) program prior to referral to EmPower. See "Gas Leak Safety Procedures" in Section 13. If minor gas leaks are found, please refer to the Material and Installation Guide (MIG) for Program guidance (Section 9).
    b. Emergency: Suspect Carbon Monoxide CO leak/poisoning:
        i. **It is the Participating Contractor's responsibility to become familiar with hazards related to Carbon Monoxide leaks and other hazards and take appropriate actions in situations where life-threatening conditions exist.** If a life-threatening

situation exists, the Participating Contractor must instruct the household to call the local fire department, or 911.

ii. When a Carbon Monoxide (CO) leak is suspected in the dwelling, please refer to the BPI Technical Standards for the Building Analyst Professional for guidance on appropriate testing procedure; (http://www.bpi.org/Web%20Download/BPI%20Standards/Building_Analyst_Professional_1_4_12.pdf).

c. Emergency: Heating system failure/inadequate heat for health reasons**:**
   i. Contact the Program Implementer as soon as you can to discuss the situation and the proposed upgrades to determine eligibility.
   ii. Low-Income customers:
      1. Participating Contractor must refer household to HERR program prior to referral to EmPower.
      2. If an income-eligible household is rejected for service by HERR, household may be referred for services to EmPower if documentation of the rejection by HERR is provided. Referral to and coordination with the local Weatherization Assistance Program (WAP) Agency may be explored by the Program Implementer whenever the household is eligible for WAP.

d. Non-Emergency: In situations where the heating system is functioning and providing inadequate heat but the household expresses concerns about mild discomfort and/or inconvenience, the household shall follow the normal procedures for Home Performance with ENERGY STAR.

B. Water Heater
   a. Emergency: In situations where the current water heater is not functional and there is a need for immediate replacement (such as health risks), the household can be offered the Home Performance with ENERGY STAR Program.
      i. Water heaters may only be replaced through EmPower in situations where the current water heater poses a health risk due to venting problems. See Section 13 – ***Tips and Solutions to Solve Water Heating Venting Issues*** for more information.
   b. Non-Emergency: In situations where the current water heater is not functional but there is no need for immediate intervention, the household can be offered incentives provided through Home Performance with ENERGY STAR. In these situations, the household's needs will be evaluated according to normal, non-emergency procedures.

C. Refigerator
   a. Emergency: In situations where the refrigerator is not functioning well enough to cool food or medicine safely, household may apply to the Program.
      i. For EmPower eligible customers: The Program Implementer will attempt to provide services as soon as possible. However, immediate replacement cannot be guaranteed.
   b. Non-Emergency: In situations where the refrigerator is functioning but the household expresses concerns about a refrigerator, such as concerns

about the age of the refrigerator, the household's needs will be evaluated according to norma,l non-emergency procedures.

D. Air Conditioner
    a. Emergency: In situations where the air conditioning unit is not functional and poses medical risks, household can be offered Home Performance with ENERGY STAR and served on an emergency basis.
    b. Non-Emergency: In situations where the air conditioning unit is not functional and creates discomfort in the home, the household's needs will be evaluated according to non-emergency procedures.

After identifying an emergency and determining that the emergency services can be provided within the design of the Program:

A. Submit the application to determine incentive eligibility.
B. A full, comprehensive audit is not required to happen first to address the emergency situation provided that the necessary testing is completed. Program audits should be performed within 2 weeks if the customer intends to move forward with energy efficiency services through the Program.
C. Submit the work-scope, and complete the required testing for the applicable measure.

Coordination of Assisted Home Performance with ENERGY STAR® And EmPower New York

Households with incomes at or below 60% of State median (i.e. HEAP eligibility) are eligible to be served by both EmPower New York (EmPower) and Assisted Home Performance with ENERGY STAR (Assisted). This document provides guidelines that are intended to aid contractors in determining how best to coordinate services between programs.

1.0 Energy Finance Solutions (EFS) screens loan and Assisted subsidy applicants for EmPower income eligibility.

- 1.1 Income eligible households are notified in writing by EFS of the potential for receiving free services through EmPower; and
- 1.2 Are given the option of receiving free services from EmPower without any further obligations to accept partially funded services through Assisted.
- 1.3 Customers can also apply directly to EmPower. However, if they wish to install any measures through AHP, then the customer must also fill out the AHP application.

2.0 Coordination of services: Households who have not yet received home performance measures through EmPower may be considered for combined EmPower-Assisted services in the following situations:

- 2.1 If a household participating in EmPower requests measures, which are eligible in Assisted, but are not approved through EmPower;
- 2.2 The contractor wishes to propose additional measures to household that are beyond the limits of EmPower funding; or
- 2.3 If a household is found to be receiving services independently from both programs, NYSERDA will work with both Implementation Contractors (currently CLEAResult and Honeywell) to determine the best approach based on the guidelines for “Customer Referrals to Assisted Home Performance with ENERGY STAR and EmPower New York”.

3.0 Energy Audit and Modeling:

- 3.1 If the customer is approved for EmPower, then the audit fee should be billed by the participating contractor to the EmPower program.
- 3.2 If the customer chooses to opt out or is not eligible for EmPower services, then please have them fill out the GJGNY Audit application. The contractor will be paid upon claiming the reservation number and submitting a copy of the audit report.
- 3.3 AHP measures MUST be modeled in TREAT or RHA. Other approved software is not currently accepted for EmPower-Assisted coordinated projects. However, if a contractor wishes to use another approved tool for

the AHP component, they may do so and submit EmPCalc for the EmPower portion.

3.4 EmPower measures CAN be modeled in TREAT, RHA, or EmpCalc. One advantage of using EmpCalc for EmPower is that it generates an invoice automatically.

4.0 Work scope development and incentives:

4.1 Current NYSERDA funding levels for projects:

4.1.1 For single-family homes the combination of EmPower funding and 50% NYSERDA subsidy for Assisted measures may be no greater than $11,000 for a single family home, as follows:

- $7,000 from EmPower
- $4,000 Assisted 50% subsidy (assuming a $4,000 customer contribution)

4.1.2 Measures in one-to-four unit buildings funding will be funded according to the attached guidelines (Attachment A).

4.1.3 Funding levels are subject to change.

4.2 EmPower-funded eligibility:

4.2.1 Energy efficiency measures: meet program cost-effectiveness requirements of a standalone 1.1 SIR for each measure

4.2.2 Health and safety measures: approved by EmPower Program Implementation Contractor

4.2.3 All measures funded through EmPower must be provided at EmPower contractor pricing

4.3 Assisted 50% Incentive Eligibility[1]:

4.3.1 Assisted Incentive/No Loan

- Energy efficiency measures: included on the prequalified measures list
- Health and safety: no incentives

4.3.2 Assisted Incentive/Smart Energy Loan

- Energy efficiency measures: prequalified measures list Loan may include up to 15% of the Assisted project value for other eligible measures, accessories, or health and safety

4.3.3 Assisted Incentive/On-Bill Loan

- The total loan obligation must be less than the estimated savings from the combined EmPower and Assisted measures over the expected life of the improvements. The

[1] **Please consult the "NY Home Performance with ENERGY STAR® Eligible Measures and Accessories" document for details.**

monthly loan installment payments may not exceed 1/12th of the estimated average annual energy savings over the term of the loan.

4.4 Audit fees are charged to EmPower when EmPower measures are approved.

The most successful path for the approval of Combined EmPower and Assisted workscope review has been as follows:

- EmPower Income eligibility is determined by EFS and the EmPower referral disclaimer letter is sent to the customer and copied to the contractor and Honeywell.
- A comprehensive workscope proposal based on one of the approved modeling tools is emailed to Honeywell by the contractor.
    - If EmPower audit incentives are being claimed, appropriate EmPower paperwork must be included.
- Honeywell reviews and approves the eligible EmPower measures and notifies CLEAResult and EFS.
- If any measures remain that the customer is still interested in; they can then be uploaded to CLEAResult through normal AHP processes.
- CLEAResult issues approval for the full project and work can commence through normal AHP processes.

5.0 Customer commitment and completion of work:

5.1 The contractor receives determination of eligibility for both EmPower and Assisted work from Assisted Program implementation Contractor. The contractor must then propose to the household the option of either:
5.1.1 A work scope through EmPower only; or
5.1.2 A workscope that includes funding from Assisted and EmPower.

5.2 The contractor must clearly advise the household that the services provided through EmPower are at no cost to the household, and with no obligation to proceed with the Assisted measures;

5.3 The customer must then choose whether to proceed with one or both work scopes; and

5.4 The contractor must then notify both Program Implementation Contractors of the final decision by household.
5.4.1 If the customer indicates a lack of interest in partially-funded measures, contractor will proceed according to EmPower guidelines.
5.4.2 If the customer indicates an interest in both programs the Contractor will complete work accordingly and provide each Program Implementation Contractor with appropriate program documents and invoices.

Attachment A

Assisted Home Performance and EmPower New York
Combined Subsidy Amounts for One-to-Four Unit Properties

		Total Number of Building Units			
Number of Income Eligible Units	**Funding Source**	**1**	**2**	**3**	**4**
	Assisted				50% up to $8,000
	EmPower				$14,000
4	**Maximum**				**$22,000**
	Assisted			50% up to $8,000	40% up to $6,000
	EmPower			$14,000	$12,600
3	**Maximum**			**$22,000**	**$18,600**
	Assisted		50% up to $8,000	40% up to $5,820	30% up to $4,000
	EmPower		$14,000	$11,200	$8,400
2	**Maximum**		**$22,000**	**$17,020**	**$12,400**
	Assisted	50% up to $4,000	30% up to $3,400	20% up to $2,700	15% up to $2,000
	EmPower	$7,000	$6,300	$5,600	$4,200
1	**Maximum**	**$11,000**	**$9,700**	**$8,300**	**$6,200**

*If a unit is owner occupied, and the owner is income-eligible for both programs, the owner qualifies for $4,000 from Assisted and $7,000 from EmPower. Measures may be installed anywhere in the building without additional income eligible households.

In all other situations, the energy efficiency improvements are limited to those that benefit the income eligible household.

Customer Referrals to Assisted Home Performance with ENERGY STAR® and EmPower New York

These guidelines cover referrals of households who have an income below 60% of State median (i.e., HEAP eligibility), and who are otherwise eligible for services from both EmPower New York (EmPower) and Assisted Home Performance with ENERGY STAR (Assisted).

1.1 Referrals from Offices for the Aging and Weatherization agencies of HEAP eligible households must be to EmPower first.

1.2 GJGNY CBOs may only refer a household to one of the two programs.

1.2.1 If the GJGNY CBOs can confirm that the household is HEAP eligible, the household will be referred to EmPower. If the household is served through EmPower, the GJGNY CBOs (who are approved to provide services through an EmPower New York Outreach Agreement) will be reimbursed $20 for the referral.

1.2.2 In all other instances the household will be referred to Home Performance with ENERGY STAR.

1.3 A household that applies to EFS for an Assisted Subsidy will be screened for income eligibility for EmPower. EFS may request that Honeywell verify whether the household has been found to be eligible for EmPower within the last 12 months, is currently in process with EmPower, or if the household has received prior EmPower services in excess of $4,000.

1.3.1 If the household is over income or ineligible for EmPower, EFS will process the Assisted application following the usual Assisted procedures and notify CLEAResult of Assisted eligibility.

1.3.2 If EFS determines that the household is EmPower-eligible, EFS will:

- Refer household to Honeywell for services through EmPower.
- If an Assisted contractor was in contact with the household, EFS will provide the name of the contractor to Honeywell and Honeywell will assign EmPower work to this contractor when feasible and appropriate.
- Notify CLEAResult to cancel audit reservation number by sending an email to HPwES-Audit@clearesult.com.

1.4 Honeywell

1.4.1 If EmPower-eligible, Honeywell will send a letter to the household notifying them of the free services through EmPower. If no Assisted or EmPower application has yet been received, Honeywell will send an EmPower application to the household.

1.4.2 If the income eligible household cannot be served by EmPower, Honeywell will refer the household to Assisted by sending a letter with information about Assisted. EFS may invoice NYSERDA a $20 fee for each household income-qualified by Honeywell.

1.4.3 If a household needs additional services, or is interested in measures beyond EmPower, Honeywell will, whenever possible, assign the work to a contractor working in both programs, and notify the contractor of the need to proceed with coordinated services according to "Coordination of Assisted Home Performance with ENERGY STAR® and EmPower New York" guidelines. If a contractor has established contact with the household through Assisted, Honeywell will, whenever possible, refer the work back to the original Assisted contractor.

- If the contractor is not already active in EmPower, Honeywell and NYSERDA will fast-track their Contractor Agreement and related documents to EmPower. **This does guarantee acceptance**, but Program Staff will commit to a timely review.
- If the contractor is unwilling to work through EmPower, the work will be reassigned.
- If the household is found to be working independently with two different contractors in the two programs, Honeywell will work with CLEAResult to reassign as appropriate.

EmPower New York / Assisted Home Performance with ENERGY STAR® Frequently Asked Questions

Assisted Home Performance component of NY Home Performance with ENERGY STAR® offers incentives to moderate income households with incomes below 80% of state or area median. The program offers homeowners a comprehensive, whole-house approach to improving energy efficiency and home comfort while saving money. Participating Home Performance contractors accredited by the Building Performance Institute (BPI) conduct energy assessments and upgrades.

NYSERDA's EmPower New York program offers no-cost energy efficiency services to low-income households with incomes below 60% of state median (HEAP eligible). These services include electric reduction and home performance measures. On-site energy education offers customers additional strategies for managing their energy costs. The services are provided by contractors accredited by the Building Performance Institute.

CLEAResult formerly Conservation Services Group (CSG) is the Home Performance with ENERGY STAR Program Implementation Contractor.

Energy Finance Solutions (EFS) is the loan originator for NY Home Performance with ENERGY STAR Program and income verification provider for the Assisted Home Performance subsidy.

Honeywell is the EmPower New York Program Implementation Contractor.

A. General Referrals

1. Q: Why are the new requirements regarding EmPower and Assisted Home Performance (AHP) being put in place?
   A: In screening applicants for the AHP subsidy EFS previously referred applicants that appeared income eligible for free services to the Weatherization Assistance Program. The coordination of EmPower and Assisted now offers a contractor the ability to offer the low income families additional measures, if they are willing and able to pay 50% of the cost of these additional measures. When EmPower measures are provided, the customer's obligation for the AHP project is significantly reduced.

   The coordination of these two programs is a challenge, as one provides free services and the other is market-based with a partial subsidy and each is managed on NYSERDA's behalf by separate Implementation Contractors, with different program requirements. Despite the challenges, NYSERDA is confident that the end result will benefit low-income households and provide contractors with additional opportunities. We will be making adjustments as we learn more. Please share your recommendations with us.

2. Q: What if a customer applies for AHP and EFS determines the household is eligible for EmPower?
   A: EFS will evaluate the following:
   a. EFS will determine if the household previously received EmPower services costing $4,000 or more. If not, a letter will be sent to the customer and the contractor advising of the referral for free services through EmPower. The letter will instruct the customer to fill out the accompanying waiver form and return it to EFS if they wish to decline EmPower services.
   b. If the customer has already been served through EmPower, chooses to opt out, or is otherwise ineligible, the customer may be served through AHP.
   c. If the contractor or referral entity indicates that the project includes additional funding, such as through the Green and Healthy Homes Initiative, that will fully fund the customer's 50% contribution, the project will remain in AHP.

3. Q: If co-funding or other grant funds are available to cover the AHP customer share, how should this be documented?
   A: Any co-funding opportunities should be noted and documented on the AHP application or in a separate note attached to the application. This will help avoid confusion regarding program service to customers.

4. Q: Is there any way for me to tell in advance what measures Honeywell may approve for EmPower?
   A: If you are developing a workscope for a household that provides income information that indicates that the household is HEAP eligible, you may submit the entire comprehensive workscope to Honeywell for preliminary-approval. The proposed workscopes must include electric reduction measures where appropriate (see C-2., below). If you request such a review, please notify EFS by e-mail. EFS will then withhold the customer notification letter until the review is complete. Once the review is complete, Honeywell will share the determination with both the contractor and EFS. Final approval will be contingent upon confirmation of income-eligibility.

5. Q: It can be difficult for us if our sales team spends time developing a project for Assisted only to have it turned over to EmPower. How can we avoid this?
   A: Contractors can help improve the communication, and help the overall efficiency of the process, by doing some initial screening of the household prior to the audit. By identifying households who appear to be eligible for EmPower during your initial discussions, you can help ensure that customers are appropriately served in the best way possible.

6. Q: How can I find out the status of a referred EmPower customer?
   A: A referral entity may request status updates for specific customers by contacting Honeywell directly at **800-263-0960**. Honeywell can also provide further information regarding EmPower.

7. Q: Will our CLEAResult project coordinator be able to answer EmPower questions or guide us in the direction of EmPower if they see a client who should be eligible, but we missed that fact during our interview process?
   A: The CLEAResult team can offer limited guidance, but it is recommended that Honeywell be contacted directly regarding EmPower eligibility and procedures.

8. Q: If a HPwES contractor not participating in EmPower has started work on a project and then the customer is accepted into EmPower, will they be given the EmPower work?
   A: EmPower will attempt to work with contractors who have initiated contact with a household through Assisted whenever possible, under the following conditions:
   a. The contractor must be in good standing with AHP.
   b. If the contractor is new to AHP, and has not yet been reviewed by the Quality Assurance team, further references and evaluation of competency may be required, such as references for completed work and descriptions of trainings attended.
   c. The contractor must sign an Empower Contractor Agreement and agree to complete work according to EmPower pricing and program requirements
   d. The contractor must meet with the Program Implementer and be trained in program procedures.

9. Q: When a job is referred to EmPower from AHP what is the expected length of time it will take to receive EmPower approval?
   A: Upon receipt of a comprehensive workscope and proof of eligibility, review and approval of the proposed workscope will occur within 5 business days. If it is an emergency situation (i.e. no heat), then it will be handled ASAP. If no income documentation is in place, or the comprehensive workscope is not received, the approval may take longer; how long will depend on the contractor providing documentation.

10. Q: Once the customer is accepted, is the contractor contacted by EmPower?
    A: Yes, contractors are notified by e-mail when a job is put into the EmPower CRIS database.

11. Q: If an AHP customer is referred to EmPower, will it be an "HP" (heating and shell measures) job or just an ER (electric reduction only) job?
    A: Jobs referred from AHP to EmPower will be assigned as HP jobs.

12. Q: If a customer signs the EmPower waiver stating that they would like to do work through AHP at this time, does that prevent them from ever being able to use EmPower?
    A: No, a waiver form is specific to a project and does not prevent a customer from participating in EmPower in the future.

13. Q: What if a customer applies for EmPower and Honeywell determines that the household is over-income?
    A: Over-income customers are handled as follows:
    - If a customer applies directly to EmPower, and no contractor is yet involved, Honeywell will send a letter to the customer advising their ineligibility for EmPower and instruct them how to begin the AHP application process.
    - If a contractor refers a household directly to EmPower and Honeywell finds that the customer is over-income, Honeywell sends a letter to the customer and notifies the contractor.
    - If EFS determines that a customer is over-income for EmPower, the customer is not referred to Honeywell. EFS notifies the customer that they can proceed with AHP only.

B. Referrals from CBOs

1. Q: Will the CBO be required to submit all of the intake materials to Honeywell or simply refer the customer to Honeywell?
   A: To obtain reimbursement for the referral the CBO is required to submit a fully completed application (income documentation is not required, but welcome). Referrals without a completed application, such as providing the Honeywell phone number to a household, are also welcome, but will not be tracked as referrals and will not be eligible for compensation.

   For CBOs not participating in the referral program, please direct customers to Honeywell and Honeywell will complete all intake forms.

   If there are co-funding opportunities that can match AHP funds these should be noted and documented on the AHP application or in a separate note attached to the application. This will help avoid confusion regarding program service to customers.

2. Q: Will EmPower referrals be counted toward the CBO's Home Performance with ENERGY STAR performance goals?
   A: No, these remain separate.

3. Q: What is the role of the CBO once a customer referral is made to EmPower?
   A: If a customer contacts a CBO regarding their referral, a CBO may either direct the customer to Honeywell, OR may contact Honeywell on the customer's behalf. Honeywell will close the loop with the CBO on any resolution and/or copy the CBO on any email correspondence.

4. Q: Can a CBO use their vetted list of contractors to direct referrals to contractors that do EmPower work?
   A: No, Honeywell is responsible for distribution of work through EmPower.

5. Q: Is it the CBO's role to educate customers on the availability of the AHP/EmPower coordinated project?
   A: CBO's should be familiar with the coordination opportunity, but will only need to refer the customer to one program or the other. EFS is responsible to refer income-eligible households to EmPower that are encountered during income review for the AHP subsidy.

6. Q: Can the CBO acquire the audit information to help the customer determine if they need additional measures?
   A: EmPower/AHP staff and contractors will drive the workscope and coordination effort. However, if the CBO is listed on the application as the referral source and can assist the household in deciding whether to accept additional measures through Assisted. They may discuss any concerns about the workscope with the Program Implementers.

C. Developing Projects in EmPower

1. Q: How can I learn more about EmPower pricing and guidelines, and sign up? How long does it take?
   A: Contact Elizabeth Lazarou at NYSERDA (518-862-1090 x 3427; el3@nyserda.ny.gov). Liz can forward a PDF that includes the Contractor Agreement, including pricing, the EmPower New York Guidelines and Procedures Manual, and instructions. Liz can also answer questions regarding the program and how to become a participating contractor.

2. Q: What are Honeywell's criteria for approving measures?
   A: The criteria for approval are:
   a. The measures must meet SIR and optimize energy savings for the household.
   b. Approved measures typically include:
      - Attic insulation where low R-values exist
      - Wall insulation where little or none exists
      - Strategic air sealing
      - Heating system upgrades where cost-effective or where an emergency exists.
   c. Approved electric reduction measures include LEDs to replace incandescent bulbs; replacement of inefficient refrigerators and freezers found by metering to be inefficient. Electric reduction measures are not be funded through NYSERDA in PSEG territory.
   d. Measures must be proposed at EmPower pricing, where applicable

3. Q: Is the EmPower insulation pricing all-inclusive?
   A: No. If an insulation project entails additional work, such as installation of wind baffles or attic hatches, or where particular challenges exist, such as excessive fire stops in wall cavities, a contractor may propose an additional charge.

4. Q: Is there is fixed pricing for HVAC work?
   A: No, pricing for HVAC work is determined on a case-by-case basis.

5. Q: If my sales staff develops a project for Assisted, and the customer is moved to EmPower, can I get reimbursed for the time spent developing the project?
   No, the current EmPower pricing accounts for an acquisition fee.

6. Q: What about measures not included on the price list, such as extensive foam insulation?
   A: Contractors may propose custom measures to EmPower. The contractor must demonstrate the measure's cost effectiveness, and must provide Honeywell with the data that supports the estimated savings. The implementation staff will consider whether these measures are the most

appropriate and cost effective, or whether a lower cost strategy may provide the household with equal benefit.

7. Q: Are EmPower guidelines based on 60% of area median income or 60% of state median income?
   A: EmPower guidelines are based on 60% of **State** median income. Please note that, in many areas, this is a lower income level than 60% of area median income.

8. Q: How much funding is available through EmPower?
   A: EmPower is funded at an average cost of $3,800 per unit to a **maximum** of $7,000 per unit. EmPower measures must meet an SIR of 1.1 on a per-measure basis.
   The Program does not approve expenditures of $7,000 on every project; the Implementation Contractor determines what measures meet cost-effectiveness guidelines, ensures that a workscope is appropriate to the customer's level of energy use, and approves accordingly.

   This funding includes an average of $600 for electric reduction measures. For this reason it is critical that contractors consider opportunities for providing ER measures to program participants. (Please note, however, that electric reduction measures may not be charged to EmPower in PSEGLI territory).

9. Q: What is the expected turn-around time for contractors to complete work in EmPower?
   A: Once assigned, a contractor has 10 days to accept the project. Audit and work is expected to be completed within 60 days for ER projects and 120 days for HP projects. Events such as natural disaster relief may create the need to adjust these timelines.

10. Q: Sometimes we sign a contract with a homeowner to provide services through AHP, but EmPower denies the measures that the customer wants. Why can't NYSERDA just honor the agreement between the homeowner and the customer, and pay the contractor the amount in the contract?
    A: Where the customer is fully funding the measures, such agreements would be honored. However, EmPower and AHP are funded through New York ratepayers. Our goal, and obligation, is to provide cost-effective energy efficiency measures that will reduce customer energy usage and costs, thereby helping New York meet its overall goal of reducing energy use statewide. To reach these goals, the programs must choose the most effective measures and support a network of contractors who are effective in installing the measures at a cost that allows the optimum amount of work to be completed. While these choices are not always the measures that the customer asks for, or that the contractor wishes to sell, it is important that NYSERDA, implementers and participating contractors support these goals through our work, and help the customers understand the value of approved measures.

11. Q: Why do we have to fill out the EmPower audit paperwork?
    A: The paperwork serves a number of purposes. (1) It provides the auditor with a data collection tool and guidance to ensure that all of the options for energy savings that may be available to a low income household through EmPower are properly evaluated. (2) Program staff use these forms to evaluate the costs of measures proposed. (3) The forms help staff understand how well the contractor is performing, and whether additional training is needed. (4) QA inspectors use these forms to locate measures installed, such as CFL, smoke alarm and CO detector locations, and the various attic and wall cavities that may exist in a home. (5) The Appliance Data Collection and Exchange Agreement is a signed document that can be forwarded to a vendor and used as the basis for deliveries. The signature ensures that the household understands exactly what is being offered. (6) The "Clean and Tune" and Combustion Appliance forms helps us ensure that the heating system is thoroughly examined and treated.

12. Q: How are no-heat emergencies handled under EmPower?

A: During the heating season, HEAP-eligible households should be referred to the Heating Repair and Replacement Program (HERR) administered by OTDA. Contractors interested in providing service to HERR can contact the county Department of Social Service for information on how they can participate in that program. If that program is closed, or if HERR determines a customer ineligible for services, the contractor should propose replacement to Honeywell.

13. Q: How does EmPower deal with heating system replacements?
A: EmPower will replace heating systems under one of the following conditions:
    - If the heating system meets SIR requirements on a measure basis, it may be approved for replacement under EmPower. Please note that kWh savings for an ECM motor may be factored into overall measure cost-effectiveness. EmPower sometimes obtains additional bids in order to ensure competitive pricing.
    - If the low income household experiences a no-heat emergency (see #13, above)
    - Heating system replacements that do not make SIR, and that are not no-heat emergencies, may be considered as AHP measures in a coordinated AHP/EmPower project.

14. Q: We are a heating-only contractor. Do we need to get shell certification to participate in the EmPower program?
A: BPI accreditation is required. Shell certification is not required, but highly recommended. EmPower contractors are expected to recommend the most cost-effective measures. Most often these include insulation, air sealing and ER measures. These services may be provided by the EmPower contractor directly, or through subcontractors, but all measures must meet the standards of BPI and the Program. If you are only interested in providing heating measures, please notify NYSERDA and Implementation staff that this is the case. You may then be invited to offer bids on heating systems only, as the need arises.

15. Q: How are EmPower jobs distributed to contractors?
A: When referrals are available from other sources than the contractors themselves, priority in distributing these jobs is given the contractors who have achieved "Full" status by demonstrating competency in QA scoring and overall program performance. If the number of referrals exceeds the Full status contractor's capabilities, the work is offered to new "Provisional" status contractors. Consult the EmPower New York Guidelines and Procedures Manual for further information.

16. Q: Is Total Resource Cost (TRC) a consideration when using EmPower or is it just SIR, or both?
A: Measures proposed under EmPower must meet an SIR of 1.1, with the exception of hardwired fixtures, which must meet a TRC of 1.0. Consult the EmPower Manual for guidance.

17. Q: Are contractors required to take on EmPower customers?
A: No. Please notify NYSERDA and Honeywell if you choose not to accept referrals, and are only interested in providing AHP/EmPower coordinated projects.

D. Developing Coordinated Projects

1. Q: When we go out to the home we usually create an estimate of the measures. Without knowing whether the customer is eligible for EmPower, it will be difficult to propose a project to a customer. How can the contractor advise the customer of their out-of-pocket expenses if it is not yet determined what each program will pay?
A: If the customer has not yet been accepted into EmPower during the initial visit, the contractor might express the customer's out-of-pocket expense as 50% of the eligible AHP measures. Once accepted in EmPower, the contractor can then share the good news that the customer's out of pocket expense will be less. Customers must not, however, be promised free services through

EmPower until they have been approved. Once approved, the customers must be given the choice of only free services through EmPower or a combined project where the customer will be responsible for partial payment for AHP measures.

2. Q: What if the customer has already given me a down payment, but NYSERDA approves free measures through EmPower?
   A: Contractors must ensure that customers are not billed for measures funded by EmPower. In the event that the customer has made a down payment, and the funding provided by NYSERDA through EmPower and Assisted results in a project in which the customer contribution is less than the down payment, the contractor must make arrangements with the customer for repayment. The arrangement must be made prior to invoicing and documented on the Certificate of Completion. However, the actual reimbursement to the household may occur within 30 days after the contractor is paid by EFS.

3. Q: Can I offer EmPower measures as an incentive for AHP Measures?
   A: No. The low income household must be given the option of only free service through EmPower or a combined project of EmPower and Assisted measures. The household must not be put under obligation to accept AHP measures in order to receive EmPower services.

4. Q: If we have a customer that was previously approved for subsidy and is now approved for EmPower, will we be able to change the contract and install more measures so that they can take advantage of the EmPower funding?
   A: Yes; contact the Implementation Staff at CLEAResult and Honeywell to discuss this.

5. Q: What energy modeling software is required?
   A: For coordinated projects model measures in TREAT, RHA or other approved software and provide EmPCalc for any recommended measures not included in the other software or lacking adequate detail. For EmPower only projects, measures must be entered into EmPCalc. This simple audit program takes approximately 15 minutes to complete, and generates an invoice.

6. Q: Can I split measure costs between AHP and EmPower?
   A: No. Program rules related to funding and evaluation require that each measure be billed to a single program.

7. Q: If EmPower reduces the eligible cost of any particular measure, can I bill the customer for the difference, add the cost to some other measure, or include that in the GJGNY financing?
   A: No. Participating EmPower contractors are expected to install the approved measures according to the EmPower pricing guidelines, with no additional cost to the customer.

8. Q: If I am serving a 2-4 family project, and some or all of the tenants are eligible for EmPower, which program do I use?
   A: The building may be served as follows:
   - If the tenants pay the heat, the building may be served as a combined project.
   - If the tenants pay only electric, EmPower can provide electric reduction measures to all EmPower eligible units. The remaining services must be provided through AHP.
   - If the landlord pays both heat and electricity, the building may only be considered for AHP.

9. Q: Do I have to submit a signed contract in order to get an approval?
   A: No, the project could be reviewed for AHP/EmPower coordination and a conditional approval issued, pending the final signed contract. However, no loan docs can be generated until the contract is signed and any changes made from the original workscope must be reviewed for coordination again. You also have the option of requesting that Honeywell pre-

screen the work for EmPower before the contract is signed.

10. Q: What if I have a change order after the approval was issued?
    A: Submit a revised workscope to CLEAResult along with the Field Change Order or revised contract.
    The project may need to be reviewed by Honeywell again, if the changes impact the measures approved for EmPower. It will also be determined whether any added work could be covered by EmPower. CLEAResult will then issue a new coordinated approval letter to both the contractor and EFS.

11. Q: Do HPwES contractor incentives apply to EmPower funded measures?
    A: No.

12. Q: Once the work is completed, how do I get paid?
    A: The coordinated project completion must be submitted to CLEAResult and Honeywell separately.

For EmPower:

- Completed EmPower audit paperwork
- Final TREAT TPG file or EmPCalc
- Invoice, which may be generated by EmPCalc. The invoice must include the customer's name and address, and an itemized list of measures and costs. Please include the note "The charges on this invoice are unique to the EmPower New York program, and are not charged to any other NYSERDA program."
- The project's Certificate of Completion
- If air sealing was completed, please detail the air sealing activities on the invoice.

For HPwES:

- Upload final AHP/Loan TREAT package with the status of 'Complete'. If using RHA, enter test-out data and flag measures as installed.
- Completion Signature Page signed by both the customer and contractor and Post-Installation Health & Safety Test Result.
- CLEAResult will issue a completion transmittal to EFS, who will then disburse the AHP and Loan funds to the contractor.

13. Q: Is the contractor required to coordinate EmPower with AHP or can the contractor choose to complete EmPower measures independently first and then refer the customer to AHP after the customer's EmPower project is completed?
    A: Coordination is an important goal, as it improves the efficiency of the project, and permits the entire project to be considered in screening for loan eligibility. However, AHP and EmPower services can also be provided sequentially. If this instance, each set of measures will be evaluated independently, according to each program's guidelines.

14. Q: Is there going to be a new subsidy application that we need to have customers fill out?
    A: The AHP application is accepted by EmPower; customers do not need to fill out both applications.

15. Q: Will the total amount of free services be used to calculate Pro forma?
    A. Yes, the entire project, both EmPower and AHPwES measures and savings are used to calculate Pro Forma.

16. Q: Is an SIR of 1.0 required on the project in its entirety (EmPower and AHP measures combined)?

A: EmPower measures must meet measure level SIR and TRC requirements, as noted above. AHP incentives will only be paid for pre-approved measures (See "NY Home Performance with ENERGY STAR Eligible Measures and Accessories") not covered in full by EmPower.

17. Q: When calculating loan amounts, are the EmPower and AHP measures combined or just AHP?
A: The loan amount may be up to the balance of approved workscope costs not covered by the AHP subsidy (excluding free services provided by EmPower). The entire project savings, including those created by EmPower measures, are used in calculating the cost-effectiveness for loan eligibility purposes.

19. Q: What is the Quality Assurance process for coordinated projects?
A: A single inspection is done by the lead program's QA contractor. The inspector follows the lead program's QA protocol and scoring scale. The lead program is determined by the dollar value of the measures going through each program.

E. Audit Fees

1. Q: What audit fees can be charged?
A: Audit fees may be charged as follows:
   a. **For AHP-only projects**: the GJGNY Audit fee of $250 or $400 for a larger or 2-4 unit home
   b. For EmPower-only projects: Audit fees according to the terms of the EmPower York Contractor Agreement
   c. For AHP/EmPower coordinated projects:
      - If the GJGNY reservation number was claimed already: $250 from AHP for the GJGNY audit
      - Invoiced to EmPower: $125 for additional ER evaluation, mileage, and reporting of EmPower measures on EmPower audit forms; $55 additional if the EmPower energy education process is integrated into the work
      - If GJGNY reservation number not claimed for AHP, then invoice fully to EmPower, and the GJGNY reservation number will be cancelled.

2. Q: How will coordination work if the auditor is different than the contractor performing the work? Who is reimbursed for the audit?
A: If the audit has been completed, and the work goes to an alternate contractor, the original auditor will be reimbursed.

3. Q: What happens if the customer applies for the AHP subsidy after audit completion, EFS determines the customer to be eligible for EmPower, but CLEAResult cannot retract the audit incentive?
A: If the audit fee was already paid through Assisted, it will not be retracted. EmPower will then only reimburse the difference between AHP and EmPower audit fees.

4. Q: One of my customers has now been approved for EmPower. When I completed the audit I did not include ER measures. Will I need to go back and redo the audit?
A: Typically, no. While EmPower procedures typically call for certain measures to be installed and appliance evaluations to be conducted during the initial visit, the Contractor can complete these tasks when returning to home to do work. However, if no additional HP work is approved through either AHP or EmPower, and the contractor must return to the house only to complete ER measures, an additional reimbursement will be provided for this return visit.

F. Primary Contacts:

NYSERDA EmPower: Dave Friello: 518-862-1090 Ext. 3374; david.friello@nyserda.ny.gov

NYSERDA HPwES: Erik Gilbert: 518-862-1090 Ext. 3562; erik.gilbert@nyserda.ny.gov

CLEAResult: 800-284-9069, contractorsupport@clearesult.com

EFS: 800-361-5663; EFS@energyfinancesolutions.com

Honeywell: Nathan Yehle: 315-463-7208; nathan.yehle@honeywell.com

OTDA Funding for Heat Pump Projects

Background

NYSERDA is pleased to announce that the Office of Temporary and Disability Assistance (OTDA) has released $26.7 million in funding to be available immediately to help Home Energy Assistance Program (HEAP) customers move their homes towards Beneficial Electrification. This additional funding will allow for eligible HEAP households statewide to participate in EmPower, New York (EmPower) with work scopes up to $20,000 per home for insulation, air sealing and the installation of heat pump technology. Projects must be completed by September 15, 2023. As a supplement to this guidance, a frequently asked questions (FAQ) document has been drafted to provide additional information.

Contractor Requirements

This offering is open to EmPower participating contractors. The installer of the heat pump must be a NYS Clean Heat participating contractor. A contractor that participates in both EmPower and the NYS Cleat Heat program can apply for utility incentives, submit the project to NYSERDA, and install the heat pump. Otherwise, the participating EmPower contractor can utilize a sub-contractor who participates in the NYS Clean Heat program to install the heat pump equipment.

Customer Requirements

To be eligible, customers will need to be EmPower eligible and have a valid HEAP award letter (dated October 1, 2021, or later) with a Customer Identification Number (CIN) or Case Number. If a HEAP award letter is not available, a copy of the HEAP Guarantee of Payment Letter (for Program Year 2021-2022) may be submitted providing the Case Number is referenced on the letter. The Case Number is found in the "Applicant Information" section.

When processing Combined Residential Applications, CLEAResult will include a note when a customer is approved and is eligible for this funding. The note will appear in the NY HP Portal and the Participating Contractor will see it in the notes field when accepting the project. This offering is available for Long Island and municipal electric customers as well as those regularly served by EmPower. Municipal electric customers must check with their provider to ensure they are able to install electric heating equipment, which could lead to increased electric load of the home.

Project Requirements

Heating Systems

Under this offering, heat pumps will be pre-qualified measures for households heating with oil, propane, kerosene, electric, or wood but the entire project would still need to show positive bill savings for the customer.

1. For natural gas heating homes, the efficiency of the equipment being replaced cannot exceed 80% and the total project for a natural gas heated home must have positive bill savings.

2. For heating equipment, the proposed heat pump(s) must cover 90-120% of the building load. The existing heating system may remain; however, these funds do not support hybrid systems with fossil fuel furnaces and heat pumps combined. Cases where the existing heating system can remain include:
    a. Installing ASHP split system in a home with hydronic heat where radiator and boiler removal is cost prohibitive.
    b. A situation in which the heat pump can cover at least 90% of the load of the home but for technical reasons cannot attain 100%. In these cases the contractor should verify the project appropriateness with the program and outline steps taken so the existing system will only be used in emergency situations.
3. Below are the minimum requirements for heat pump equipment installed though this offering:
    a. Air Source Heat Pump- NEEP Cold Climate Rated
    b. Ground Source Heat Pump- ENERGY STAR certified

Insulation Requirements

To ensure the efficiency of the heat pump equipment, the project home must meet the following minimum insulation levels by the end of the project:

Area	Required Insulation Level
Walls	**R-14[1]**
Attic	**R-30 Average[2]**
Attic Hatches	**R-20**
Pull-Down Stairs	**R-13**
Air Tightness	**7 ACH[3]**
Mobile Home Walls	**R-6**
Mobile Home Attic	**R-24**
Mobile Home Belly	**R-21**

[1] 2x4 Cavity filled to capacity.
[2] Average insulation of total attic area- some areas might have less than R-30 if the total average of the combined attics is R-30.
[3] Houses should be tightened to at least 7 ACH to ensure proper heating from heat pumps. If the contractors cannot perform a blower door test, they must use EmPCalc to estimate the air leakage.

Distribution System/Panel Boxes

Any additional work needed for panel box upgrades or distribution systems should be itemized and included in the workscope proposal for the heat pumps.

The current distribution system should be considered when selecting a system. In some homes, major distribution improvements will have to be made. Incentives will have to be balanced with the overall system cost (for instance, it may be more economical to install mini splits rather than a central system

with duct improvements). In addition, the homeowner's preference should be considered when making these decisions.

As the program moves to electrify older homes, installers will encounter older panel boxes with insufficient amperage for heat pumps when coupled with existing electric stoves and dryers. Preliminary information indicates that panel boxes 100 Amps and smaller should be upgraded. If an existing panel box is ≤ 100 Amps, it is prequalified for replacement through the program. If the home requires greater than 100 Amp service, then a NEC worksheet must be completed indicating the need for the larger service. Project submission documentation must provide a photo of the pre-existing panel box and an invoice for the replacement panel box. Panel box work may include risers and other measures associated with the main electrical supply, including permits. Individual supply lines and boxes for the heat pump should be included in the cost of the heat pump.

Heat Pump Water Heating

Heat Pump Hot Water Heaters should be installed in an unconditioned space, such as a basement, as long as space allows in accordance with manufacturer's installation guidelines. In some homes, such as slab on grade and mobile homes, this may not be possible at this time. Electric resistance water heaters should only be installed when the current system is non-functioning and installation of a HPWH is not possible. Heat Pumps must meet the following minimum requirements:

1. Heat Pump Water Heater ≤ 55 Gallon UEF >2.0, > 55 Gallon UEF ≥ 2.2

Cooling

With more extreme weather from climate change there is also a large health benefit in preventable heat related illness with heat pumps. One of the main benefits of adding heat pumps to a home is the addition of highly efficient cooling. There may be operating cost increases for homes with no cooling, which the Participating Contractor should educate the customer on. In most cases there will be economic and health benefits in replacing old window unit air conditioners with heat pumps. Mandatory recycling to EPA guidelines of existing window units is required when installing heat pumps.

Health and Safety

All health and safety measures should be presented for review and will be included toward the $20,000 project cap

Incentive Structure

It is expected that the project will take advantage of NY Clean Heat funding in addition to the EmPower/OTDA funding. These projects are not eligible for the Assisted Home Performance with ENERGY STAR® subsidy.

In the event that costs exceed established caps, the contractor should consider the viability of the project upgrade to heat pump technology. NYSERDA incentives will cover projects up to 60,000 Btu/heating and can be used in conjunction with utility incentives through NY Clean Heat program

but cannot be greater than the total project cost.

NYSERDA incentives will be paid to the EmPower participating contractor. Below is a table of incentive caps, based upon location, equipment installed, and program type. For EmPower measures not listed below, standard pricing and program requirements apply.

Description	Incentive Type	EmPower
Upstate/Downstate ASHP	$/10,000 btu	$3,000
Upstate/Downstate GSHP	$/10,000 btu	$3,800
HPWH	$/unit	$3,000
Ancillary Service-	Panel Box Upgrade/ Distribution Improvement	$2,000

Downstate Counties: New York, Bronx, Kings, Queens, Richmond, Orange, Rockland,Westchester, Putnam, Sullivan, Dutchess, and Ulster

Project Submission

In addition to the standard EmPower project completion paperwork, projects must also include the following required documents as part of the project submission process:

- Heat Pump Installation Acknowledgement Form (Attachment 1)
- LMI Heat Pump Certificate of Completion (Attachment 2)
- Panel Box Photo (Required if Panel Box Upgraded)
- Panel Box Invoice (Required if Panel Box Upgraded)
- Heat Pump Equipment Invoice(s)
- NEC calculation sheet if panel box being upgraded is >100 Amps (Attachment 3)

Additional Information

For additional information on this offering including a webinar and Frequent Asked Questions documentation, please visit https://hpwescontractorsupport.com/otda-heat-pump-funding/.

ATTACHMENT 1

Heat Pump Installation Acknowledgement Form

ATTACHMENT 2

LMI Heat Pump Certificate of Completion

Certificate of Completion

OTDA Heat Pump Funding

□ EmPower New York

Customer Name:_____ Contractor Name:_____

EmPower ID#:_____

Contractor: I,_____ attest that all measures completed by my company for EmPower New York adhere to current standards defined by the Building Performance Institute (BPI) and the current EmPower New York Program Guidelines. I further attest that for all Home Performance designated projects, I have conducted the appropriate Combustion Appliance Zone (CAZ) testing and left the home in a safe condition as per BPI Standards.

I attest that I have educated the customer on the use of their heat pumps and any effect they may have on their utility bills. The customer has signed the NYSERDA Heat Pump Installation Acknowledgement Form, and it will be completed in project completion paperwork.

I attest that this project adheres to the NY Clean Heat program Guidelines, that a Manual J has been performed for this home, and that I or the NYS Clean Heat contractor will be applying for a reimbursement from the NY Clean for a utility heat pump rebate.

I attest that my company is responsible for collecting the utility rebate for this project and I will not hold the customer responsible for the contractor's failure to collect these funds. I will also not place a lien on the customer's property for outstanding funds that were promised as a utility rebate.

Company Authorized Signatory:_____ Date:_____

HOME PERFORMANCE WITH ENERGY STAR

NEW YORK STATE OF OPPORTUNITY. NYSERDA

ATTACHMENT 3

NEC Calculations Sheet

NEC Standard Electrical Load Calculation for Single Family Dwellings

(Only for Service Ratings of 120/240V, 225 Amps Max)

Owner:_____Location:_____

Total Floor Area of Dwelling(NEC 220.12)_____SQFT.

Factor	Quantity		Volt Amperes(VA)
"General Lighting"			
1. General Lighting (SQFT X 3 VA/SQ FT (Table 220.12)	3 X sqft.		
2. Small Appliance Circuits (1500 VA per circuit) (NEC 220.52(A)) (minimum 2)	1500 X		
3. Laundry Circuit (1500 VA per circuit) (NEC 220.52(B))	1500 X		
4. Total General Lighting Load (Add lines 1, 2 & 3):			
5. First 3000 VA @ 100%:			3000
6. Total General Lighting Load – 3000 =_____@ 35%=			
7. **Net General Lighting Load** (Per NEC 220.42) **(Add lines 5 & 6):**			
***Fixed Appliances(if insufficient space, use back):**	YES	NO	
• Garbage Disposal			
• Bathroom Fan			
• Microwave			
• Dishwasher			
• Other:			
• Other:			
		Total	
8. 3 or less Appliances, Total Appliance VA; 4 or more Appliances, 75% of Total Appliance VA (NEC 220.53):			
***Other Loads (including motors, EV charger(s), etc.)**	YES	NO	Nameplate Rating(VA)
9. Electric Range (8000VA or Nameplate)**			
10. HVAC			
11. Electric Oven			
12. Electric Dryer (5000 VA minimum)**			
13. Electric Vehicle Charger	✔		
14. Other:			
15. Other:			
16. 25% of largest motor (NEC 430.24)			
Total Service Load Volt-Amperes (VA) (Add lines 7, 8 & 9 thru 16) =			
Total Service Load Volt-Amperes / 240-volts = Amperes			
***Service Rating (Amperes)=**			

* For every "YES" answer, indicate VA rating of equipment

** Nameplate rating must be used if larger

*** Service Rating shall be greater than or equal to the Service load

Guidance for Not For Profits/ Land Trusts for Assisted Home Performance with ENERGY STAR / EmPower New York eligible households

The purpose of this document is to outline the project submission procedures for a Not-for-Profit/Land Trust or similar organization (entity) to participate in Assisted Home Performance with ENERGY STAR or EmPower New York when one of the conditions outlined below is met:

1. A Not For Profit/Land Trust owns a property, rehabilitates the residence, and sells or rents it to an income-eligible buyer.
2. A Not-For-Profit provides housing to disadvantaged residents, who are income eligible and/or are otherwise unable to maintain independent housing.

Combined Residential Application

The first step is to apply for incentives through the submission of a Combined Residential Application. A completed Combined Residential Application in the name of the non-profit/Land Bank (entity) is required to be submitted for consideration for Empower and Assisted Home Performance incentives. The Combined Residential Application and additional information regarding the application process, is accessible at www.nyserda.ny.gov/ny/ahp-empower. It is recommended to complete and mail in a paper version of the application along with a letter indicating the targeted household income of the household that will be served. The program guidelines and income requirements for both EmPower and Assisted Home Performance Projects are listed below. Current income thresholds for EmPower and Assisted Home Performance can be found in Section 3.4 of the Contractor Resource Manual.

1. Entity Selling or Renting Property to Income-Eligible Household

Where an entity is rehabilitating a residence and selling or renting it to a low-to-moderate income household, the below outlines the processes the entity must follow for Program compliance. It is understood that residence must enter into a purchase or rental agreement with an income-eligible household within 180 days of the completion of energy efficiency work. The prospective buyer/renter of the residence must be eligible for the program the entity participated in. For example, if the entity participated in EmPower New York, the residence must be sold or rented to a household eligible for EmPower New York. Failure to enter into a purchase or rental agreement on the home with an income qualified household within 180 days of the project completion date may result in the entity forfeiting the NYSERDA project incentive and/or the prohibition of submitting future projects under these guidelines.

Submission Procedures

Submit a Combined Residential Application along with a letter on entity's letterhead.

- For EmPower eligible households: Letter should indicate the home will be rented/sold to a household earning less than 60% of the State Median Income within 180 days of the project completion date

- For Assisted Home Performance eligible households: Letter should indicate the home will be rented/sold to a household earning less than 80% of the AMI/SMI within 180 days of the project completion date.

Program Implementer will review documentation and if complete, approve. In the event a contractor has been identified, Program Implementer will refer the project to the identified contractor. If a project contractor has not been identified, Program Implementer will assign a contractor through the standard contractor assignment process.

For Assisted Eligible Households Only

- Financing is not available for entities looking to sell the home to an income qualified household. In the event the entity is looking to rent long-term to an income-eligible household, there may be finance opportunities through the Small Business/Commercial Loan. For more information on this Program please send an inquiry to gjgnysbnfp@nyserda.ny.gov.

For Assisted and EmPower Eligible Households:

- Utility bills for each unit, when available, should be made available to the Program contractor; however, are not required for a project to receive incentives.
- It is the entity's responsibility to provide access to the project contractor to perform work. At the end of the project an authorized representative of the entity must be made available to sign any required Program completion paperwork. For these projects, a completed Rental Property Energy Efficiency Services Agreement must be completed.
- If selling the property, the entity must provide the buying household with information regarding the energy efficiency measures installed at the residence. In addition, NYSERDA will extend the warranty to the buying household for the work performed for one year following the completion date.

2. Entity is a Not-for-Profit Providing Housing to Disadvantaged Individuals

In the instance where an entity is providing housing to income-eligible disadvantaged individuals, the below outlines the processes the entity must follow for Program compliance.

These guidelines apply to 1-4 family homes and not larger dormitory style buildings. Program understands that some of these residences have been renovated to serve as group homes and not individual, standalone apartment units. For group home settings, each floor level with one or more bedrooms, a bathroom, and a full kitchen can be considered a separate unit. Under these guidelines, projects are limited to no more than four units.

Submission Procedures

Submit a Combined Residential Application along with a letter on entity's letterhead.

- For EmPower eligible individuals: Letter should indicate the entity provides housing to individuals earning less than 60% of the State Median Income.
- For Assisted Home Performance eligible individuals: Letter should indicate the entity provides housing to individuals earning less than 80% of the AMI/SMI within 180 days of the project completion date.

Program Implementer will review documentation and if complete, approve. In the event a contractor has been identified, Program Implementer will refer the project to the identified contractor. If a project contractor has not been identified, Program Implementer will assign a contractor through the standard contractor assignment process.

For Assisted Eligible Households Only:

- An entity is not eligible for financing through NYSERDA's Residential Loan Program; however, there may be finance opportunities through the Small Business/Commercial Loan. For more information on this Program please send an inquiry to gjgnysbnfp@nyserda.ny.gov.

For Assisted and EmPower Eligible Households:

- It is the entity's responsibility to provide access to the project contractor to perform work. At the end of the project an authorized representative of the entity must be made available to sign any required Program completion paperwork. For these projects, a completed Rental Property Energy Efficiency Services Agreement must be completed.
- Utility bills for each unit, when available should be made available to the Program contractor. Utilities do not need to be in the occupant's names to qualify for services through EmPower.

Pellet Stove Guidance

The Combined Residential Application determines program eligibility for incentives based on household income. Households identified as Tier 1, are considered low-income households and are eligible to receive incentives through EmPower New York. Tier 3 households are considered moderate income households and are eligible to receive incentives through Assisted Home Performance with ENERGY STAR®.

With the sunsetting of NYSERDA's Renewable Heat NY - Residential Pellet Stove program, NYSERDA is providing access to pellet stove incentives and financing for Tier 1 and Tier 3 households .

Eligible Project Requirements

- Residential sites used as a full-time residence (primary residence) that are not currently using natural gas are eligible.
- Incentives are to be used for the replacement of existing equipment.
- Resident must be either Tier 1 or Tier 3 income-eligible.
- Residence must be served by a non-municipal electric utility and pay into the Systems Benefit Charge (SBC).

Incentives

Two incentive options, determined by income, are available to homeowners. Incentives are only available for primary residences.

- For Tier 1 income-eligible households:
  - $2,000 for the purchase of a new pellet stove
  - An additional $500 if an existing wood stove, pellet stove, or insert (with firebox) is recycled
- For Tier 3 income-eligible households:
  - 50% of the cost of a qualifying pellet stove capped at $2,000
  - An additional $500 if an existing wood stove, pellet stove, or insert (with firebox) is recycled

Financing

Pellet stoves can be financed to assist eligible Tier 1 and Tier 3 households with the remainder of the project cost. NYSERDA offers two loan options, through EFS/Slipstream, to assist eligible residents, the On-Bill Recovery Loan or the Smart Energy Loan.

To apply for financing, residents should work with their Participating Contractor.
The following sites provide guidance on the application process:

- https://www.nyserda.ny.gov/All-Programs/Programs/Residential-Financing-Options
- Energy Finance Solutions

Contractor Requirements

- Access to incentives and financing are reserved for participating EmPower and Assisted Home Performance contractors only.
- The pellet stove must be installed by a participating contractor or their sub-contractor meeting the certification requirements outlined in the current NY Residential Existing Homes Program Contractor Participation Agreement.

General Project Requirements

- Pellet Stoves must have a particulate matter output of 2.0 grams per hour (PM 2.0 g/h) or less, an actual measured efficiency of 70% efficient or greater, and be compliant with Step 2 of the EPA's New Source Performance Standards. Please see the US EPA Certified Wood Stoves list for eligible equipment.
- All components installed as part of an approved pellet stove system must be new. The use of used or refurbished equipment is not permitted under program rules.
- The Participating Contractor is responsible for determining that a building is structurally capable of supporting the addition of a pellet stove at the specified location inside the home. The installation of the pellet stove should not over stress the structure and/or increase the dead load beyond acceptable limits as described in all relevant national and New York State codes and standards.
- All pellet stove equipment and accessories shall be installed in a neat and professional manner according to manufacturers' specifications and instructions. Any manufacturer warranties for workmanship and/or materials that are compromised and/or voided as a result of work performed by Participating Contractor will become the responsibility of the Participating Contractor. Labeling equipment and related controls is encouraged to ensure propermaintenance and design specifications. As with all heating systems, it is important that installation of all equipment is performed to manufacturer specifications to allow for routine maintenance to be conducted by other heating technicians.
- Participating Contractors are required to make homeowners aware of the level of noise associated with their selected pellet stove and its associated parts.
- Battery backup systems are permitted for the purpose of resiliency when grid electric power is not available. Where available, battery backup systems for a specific brand or series of stoves are the recommended option.

Permitting Requirements

- The Participating Contractor is responsible for ensuring that all approved pellet stoves, accessories, and installations comply with any and all manufacturers' installation requirements, applicable laws, regulations, codes, licensing, and permit requirements, including but not limited to, the New York State Building Code and the National Electric Code (NEC), and all applicable state, city, town, or local ordinances or permit requirements.
- All permits must clearly reference installation of the approved pellet stove equipment at the installation site. If permit(s) are not needed for installation, each Participating Contractor is encouraged to obtain a signed letter from the Town Code Officer or Authority Having Jurisdiction (AHJ) stating that no building permit is required. The permit, an AHJ or third-party inspection certificate should be maintained on file with the Participating Contractor and shared with NYSERDA prior to or as part of any Quality Assurance inspection.

Venting Requirements

- Qualifying components and materials used in the installation of the venting or flue system must meet existing New York State Code and the National Fire Protection Association (NFPA 211) standards for solid fuel residential combustion units. Stove-specific venting systems and parts areallowable.
- Sealed combustion is the recommended installation design. Whenever possible the system should be installed with a combustion air intake that is connected directly to outside air. The only exception to this installation is when the distance to outside combustion air and the associated angles of venting to the exterior, would exceed manufacturer's recommendations. When a "skuttle" air intake is installed to bring in combustion air, this air intake must not be installed directly below the flue or on the windward side of the home, where during exceptionally cold days, the stove's emitted combustion byproducts from the flue/chimney, may be taken back into the fresh air of the household.

Pellet Storage Requirements

- Wood pellets can produce high levels of dust and off-gas carbon monoxide (CO) during storage that present health and safety concerns. CO is a colorless, odorless gas that has health effects below the levels at which common CO detector alarms are triggered. Due to concerns regardingCO exposure and the absence of a documented effective ventilation strategy for pellet storage, all bulk pellet storage must be outside of the home (Figure 1).

Figure 1. This 4.5-ton outside residential bulk wood pellet storage bin has a ventilated soffit and two ports for pellet delivery.
(Photo courtesy of Vincent's Heating and Fuel Service LLC)

- Bagged pellets must be kept dry to burn properly. Do not store pellet bags directly on concrete, as most concrete can wick large quantities of water (and even the smallest holes in bagged pellets can allow added moisture. Excess moisture can condense from air when pellets are in contact with cold concrete or the ground.

Warranty

- All Participating Contractors must warranty their complete installation including parts and labor for one full year from the date the project is approved for payment by NYSERDA. The warranty must cover the full costs, including labor and repair or replacement of defective components or systems. The warranty includes venting, and where an existing vent system is used, it is up to the Participating Contractor to deem the existing venting system as passing for applicable use for one full year into the future. If the venting does not pass the quality assurance review, the Participating Contractor will be responsible for covering the cost and labor of any repairs or upgrades deemed necessary. The system as a whole as installed and approved by the Participating Contractor must be able to function for one full year from the approval of the installation.
- The Participating Contractor must share a copy of the manufacturer's warranty of the pellet stove with the Customer. If the manufacturer needs to be notified to initiate the warranty, the Participating Contractor will be responsible for to submitting verification of the installation and initiation of the warranty.
- If the installation includes a battery backup, the battery system must be covered by a full one-year warranty including labor and repair or replacement of the battery to the Customer. If the manufacturer needs to be notified to initiate the warranty, the Participating Contractor will be responsible for submitting verification of the installation and initiation of the warranty.

Recycling Requirements

For projects retiring an old heating unit, proof that the retired unit was properly recycled is required. The Participating Contractor must recycle the old unit at a regional recycling center. The Participating Contractor is responsible for ensuring that destructive recycling of all materials is performed. The Participating Contractor must attach a receipt from the recycling centers that clearly states the following:

- Recycling center name
- Recycling center address
- Recycling date
- Name of Customer

The recycling incentive for proper retirement of the old heating unit will be paid directly to the Participating Contractor and must be passed on in the full amount to the Customer. NYSERDA reserves the right to follow-up with the recycling center/scrap yard to confirm the unit was properly destroyed. NYSERDA may request photos of a pre-existing installation at any time or as a part of Quality Assurance review for any project where recycling is required or applied. This proof would include:

- A photo of the old unit in working condition at the residence/business, noting thelocation of the stove/unit in the home
- A photo of the old unit at the recycling center/scrap yard, especially if proof ofdestructive recycling can be displayed
- A close-up photo of the name-plate photos that would aid in identifying the stove or its age in years.

Project Submission Requirements

- The following energy tools can be used to model the submission of pellet stoves: EmPCalc, SnuggPro, or OptiMiser (TREAT should not be used).
- Due to current NY HP Portal data checks, the existing heating system must be modeled as a wood pellet stove, even if the existing system is a wood stove in SnuggPro and OptiMiser. Notes should be added in the NY HP Portal when submitting to specify that the existing system is a wood stove, if applicable.
- The full equipment cost must be entered in the modeling tool. Program staff will apply the incentive(s). The customer will be responsible for any amount not covered by the Program. The recycling incentive for proper retirement of the old heating unit will be paid directly to the Participating Contractor and must be passed on in the full amount to the Customer as well.
- Use the customer's actual fuel costs when possible. If none are available, refer to the latest NY HPwES Energy Pricing document on the Contractor Support website.

- At project submission notes should be added in the NY HP Portal to
    - specify that the existing system is a wood stove, if applicable
    - indicate if the replaced unit is being recycled

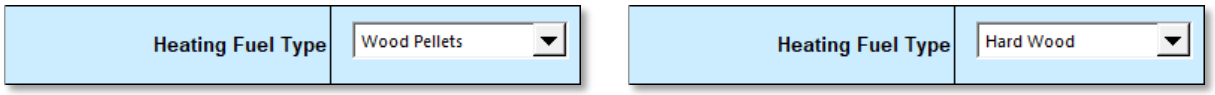
For projects with NYSERDA financing:

- Prior to the start of work, participating contractor must provide a copy of the contract and Proforma to EFS/Slipstream.
    - Contractors should be using the latest version of the Proforma tool found here.
- At project completion, a signed copy of the certificate of completion must be provided to EFS/Slipstream.

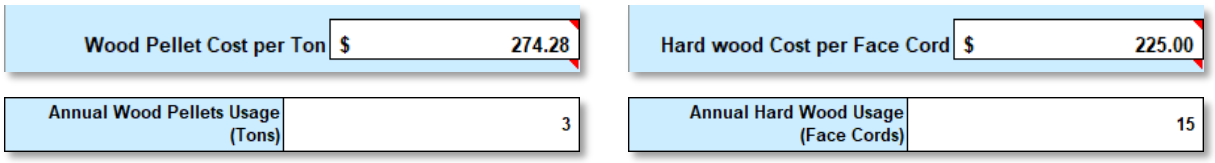
Modeling

EmpCalc Procedures:

On the Cover tab, model Wood Pellets or Hard Wood for Heating Fuel Type:

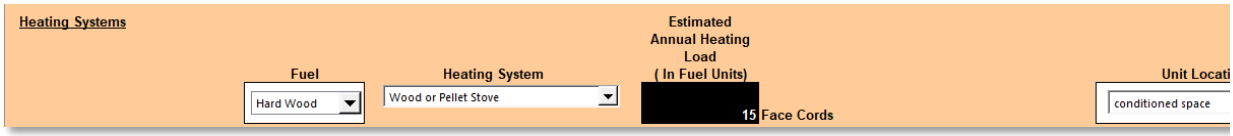


Enter the Usage and Price per Ton for Wood Pellets or Face Cord for Hard Wood:



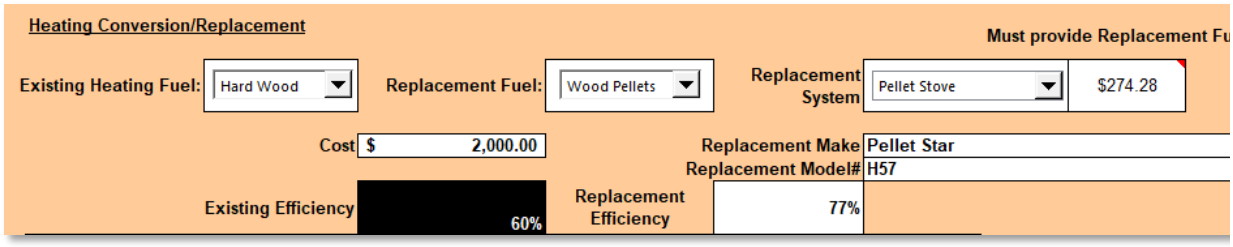
On the Heating System tab fully complete both the Heating System and Conversion/Replacement sections

Heating Systems:



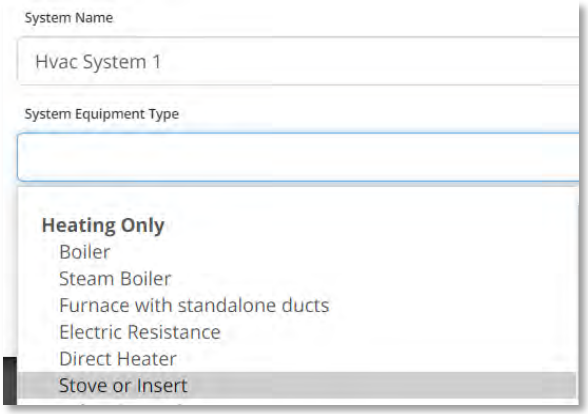
EmpCalc Procedures cont.:

Heating Conversion/Replacement:

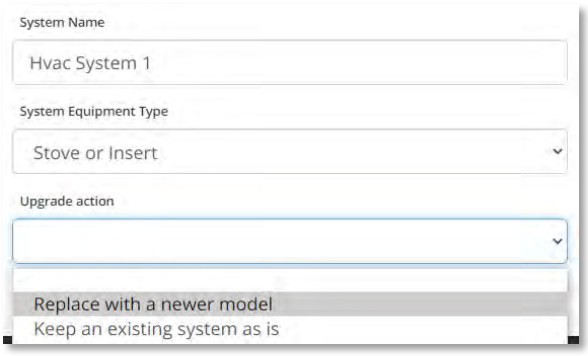


SnuggPro Procedures:

1. Select “Stove or Insert” for System Equipment Type



2. Select Replace with a newer model

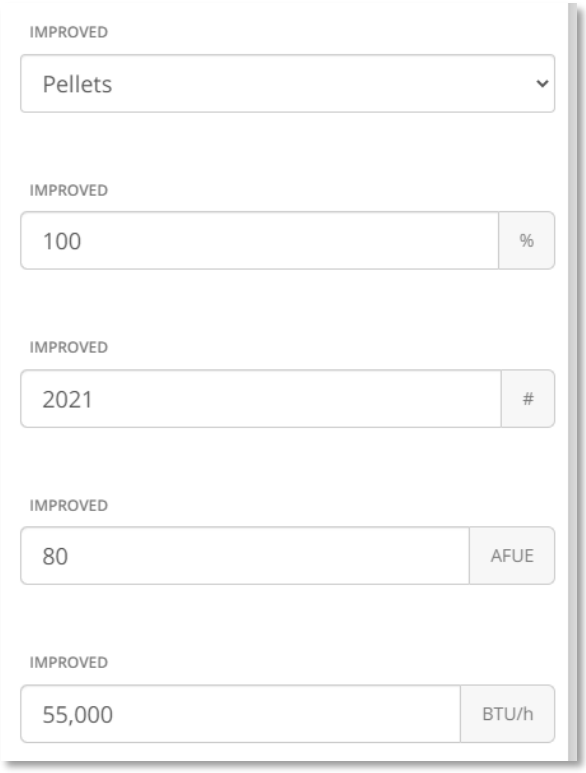


SnuggPro Procedures cont.:

3. Select Fuel Type Pellets*

**Remember due to a HP Portal data check "Pellets" must be selected not "Wood"*

4. Model the proposed Heating System using specifications from manufacturer



No Heat Guidelines

The Combined Residential Application determines program eligibility for incentives based on household income. Households identified as Tier 1, are considered low-income households and are eligible to receive incentives through EmPower New York. Tier 3 households are considered moderate income households and are eligible to receive incentives through Assisted Home Performance with ENERGY STAR®.

The Assisted Home Performance with ENERGY STAR and EmPower New York programs are not emergency-services programs. The programs do, however, attempt to respond to emergency situations within the constraints of program guidelines and the existing infrastructure for the provision of services. As such, NYSERDA has established the following guidelines for the submittal of "No-Heat" projects that address heating systems that have failed, during the designated heating season.

Heating Season

For the purposes of this guidance, the heating season is defined as the time period beginning October 1 and continuing through to May 31 of the following year.

No-Heat Project Eligibility

A no-heat project is when the primary heating system fails or is determined unsafe to operate and is non-repairable, resulting in the need of a replacement primary heating source. This failure occurs during the current heating season, at a primary residence, and the replacement/repair would not be considered through HERR or other assistance program.

The following are not considered as eligible no-heat projects under this guidance and should follow the standard project submission and review process.

- The primary heating system has been disabled for 12 months or more and there is an alternative heating source in place.
- There is no immediate need for heat (i.e. replacement request occurs outside of the heating season)
- There are no immediate health and safety concerns
- Dwelling does not have an existing heating system
- The home was purchased/rented without an operational heating system
- Home is rental unit and landlord is not income eligible.

- The customer is a customer of National Fuel Gas (NFG)
    a. NFG customers should reach out first to NFG in the event of a "No-Heat" situation at 716-686-6123 M-F 7am-6pm or call the emergency line at Emergency line at 1-800-444-3130 which is available 24/7

These guidelines should be implemented only in situations where the EmPower or Assisted Home Performance project meets the following criteria.

Tier 1 Households:

- The household has applied to the Heating Equipment Repair and Replacement (HERR) and has provided a denial letter ***or***
- The household is Tier 1 income eligible and meets one or more of the following criteria (the below are conditions that ***would*** trigger a HERR denial letter):
    1. Applicant has lived in the home less than 12 months preceding the month of application
    2. Applicant has owned the home less than 12 months preceding the month of application
    3. Dwelling is a 3- or 4-unit home
    4. Heating equipment is inoperable due to flood, fire, or other natural disasters

Tier 3 Households:

- The household meets the No-Heat Project Eligibility

Additional Project Requirements

In addition to the criteria listed above, the project must also meet the following:

- Residence must be served by an eligible utility and pay into the Systems Benefits Charge (SBC)
- The project involves the installation of heating equipment identified on the current eligible measures list.
- All No-Heat projects must be submitted to the program and approved prior to work taking place in accordance with the project submission process outlined below. This is to ensure the project meets the qualifying criteria and the household meets the three-year prior services criteria.

Other Project Considerations

- When submitting No-Heat projects, the cost of replacing the existing fossil fuel equipment should be balanced against upgrading the heating system with heat pump technology. In the event heat pump technology is cost prohibitive or otherwise infeasible, the existing fossil fuel heating equipment can be replaced with fossil fuel heating equipment meeting the requirements on the eligible measures list.

- No-heat projects are subject to the program heating incentive caps for Tier 1 and Tier 3 projects referenced below.

    1. Tier 1 - $4,000 per heating system
    2. Tier 3- $2,000 per heating system

- In the event program incentives do not cover the cost of the heating system replacement, the household may be eligible for NYSERDA financing to cover the additional cost.

Project Submission Process

Tier 1 Households

- Evaluate whether the situation meets the Program's definition of an emergency.
    1. Review CRM Section 5.4 Handling Emergency Situations
    2. Call your Account Manager
- Contractors must refer customers to the HEAP HERR program first and must follow all the HEAP HERR requirements (https://otda.ny.gov/programs/heap/#emergency-benefit)
    1. If HEAP HERR denies services, then the denial letter must be submitted to Program staff prior to the Program approving the project.
    2. Weatherization Assistance Program may be explored if customers are also eligible for WAP services.
- Complete the online Combined Residential Application. Note the application #.
- Submit a Case to notify Program of No Heat Emergency.
    1. Email support.residential@nyserda.ny.gov, use subject: ***No Heat – Application #***
    2. The Program will prioritize reviewing the project.

Tier 3 Households

- Evaluate whether the situation meets the Program's definition of an emergency.
    1. Review CRM Section 5.4 Handling Emergency Situations
    2. Call your Account Manager
- Customer should be informed of the HEAP HERR program first and should apply for benefits, if they qualify (https://otda.ny.gov/programs/heap/#emergency-benefit)
- Complete the online Combined Residential Application. Note the application #.
- Submit a Case to notify Program of No Heat Emergency.
    1. Email support.residential@nyserda.ny.gov, use subject: ***No Heat – Application #***
    2. The Program will prioritize reviewing the project.

Heat Pump Installation Requirements

The Combined Residential Application determines program eligibility for incentives based on household income. Households identified as Tier 1, are considered low-income households and are eligible to receive incentives through EmPower New York. Tier 3 households are considered moderate income households and are eligible to receive incentives through Assisted Home Performance with ENERGY STAR®.

The following outlines the eligibility and project requirements for heat pump installations, which include air-source heat pumps (ASHP), ground-source heat pumps (GSHP), and heat pump water heaters (HPWH) in existing low-to-moderate income 1-to-4 family homes. Heat pump equipment must meet the minimum program efficiency requirements referenced in the Eligible Measures list found in Section 6.3. Households seeking to install heat pump equipment should work with their Participating Contractor to leverage additional funding through utility rebates and other offerings if available.

Customer Requirements:

To be eligible for incentives, the home must be a 1-4 family with the residents/tenants paying the utility bills. The project must be located in SBC territory (municipal electric and PSEGLI customers are not eligible). In addition, the household must be either Tier 1 or Tier 3 income eligible.

Minimum Project Requirements:

To be eligible for heat pump equipment incentives, the following criteria must be met:

1. Incentive funding is available.
2. The home must meet the building envelope standards outlined in Table 1. below.
3. The existing primary HVAC system must be older than 5 years.
4. The heat pump should cover 90-120% of the building load. Whenever possible, the existing heating system should be removed. Cases where the existing heating system can remain include:
    a. Installing ASHP split system in a home with hydronic heat where radiator and boiler removal is cost prohibitive.
    b. A situation in which the heat pump can cover at least 90% of the load of the home but for technical reasons cannot attain 100%. In these cases the contractor should verify the project appropriateness with the program and outline steps taken so the existing system will only be used in emergency situations.
5. Only the first 60,000 Btus of the heating system will be subsidized.
6. For homes that heat with oil, propane, coal, electrical resistance, kerosene, pellets, and wood the project does not have to pass a total project savings for approval.
   For homes that heat with natural gas, the existing equipment must be 80% efficient or below and the project should show a net utility bill savings of 10% or greater for approval.

Building Envelope Standards:

The program will use the below levels as the minimum level of insulation a house should have prior to the installation of a heat pump. In the event the home cannot be insulated to these levels, a heat pump

should not be considered for installation through the program at this time; however, the insulation work should proceed in anticipation of a future heat pump installation.

Table 1.

Area Required	Insulation Level
Walls	R-14[1]
Attic	R-30 Average[2]
Attic Hatches	R-20
Pull-Down Stairs	R-13
Air Tightness	7 ACH[3]
Mobile Home Walls	R-6
Mobile Home Attic	R-24
Mobile Home Belly	R-21

[1] 2x4 Cavity filled to capacity.

[2] Average insulation of total attic area- some areas might have less than R-30 if the total average of the combined attics is R-30.

3 Houses should be tightened to at least 7 ACH to ensure proper heating from heat pumps. If the contractors cannot perform a blower door test, they must use EmPCalc to estimate the air leakage.

Project Considerations:

Any additional work needed for panel box upgrades or distribution systems should be itemized and included in the workscope proposal for the heat pumps.

Distribution System

The current distribution system should be considered when selecting a system. In some homes, major distribution improvements will have to be made. Incentives will have to be balanced with the overall system cost (for instance, it may be more economical to install mini splits rather than a central system with duct improvements). In addition, the homeowner's preference should be considered when making these decisions.

Panel Boxes

As the program moves to electrify older homes, installers will encounter older panel boxes with insufficient amperage for heat pumps when coupled with existing electric stoves and dryers. Preliminary information indicates that panel boxes 100 Amps and smaller should be upgraded. If the home requires greater than 100 Amp service, then a NEC worksheet must be completed indicating the need for the larger service. Project submission documentation must provide a photo of the pre-existing panel box and an invoice for the replacement panel box. Panel box work may include risers and other measures associated with the main electrical supply, including permits. Individual supply lines and boxes for the heat pump should be included in the cost of the heat pump.

Heat Pump Water Heating

Heat Pump Water Heaters (HPWH) should be installed whenever practicable regardless of the existing system fuel source. Heat Pump Hot Water Heaters should be installed in an unconditioned space, such as a basement, as long as space allows in accordance with manufacturer's installation guidelines. In some homes, such as slab on grade and mobile homes, this may not be possible at this time. Electric resistance water heaters should only be installed when the current system is non-functioning and installation of a HPWH is not possible.

Cooling

With more extreme weather from climate change there is also a large health benefit in preventable heat related illness with heat pumps. One of the main benefits of adding heat pumps to a home is the addition of highly efficient cooling. There may be operating cost increases for homes with no cooling, which the Participating Contractor should educate the customer on. In most cases there will be economic and health benefits in replacing old window unit air conditioners with heat pumps. Mandatory recycling to EPA guidelines of existing window units is required when installing heat pumps.

Project Submission:

In addition to the standard project completion paperwork, Heat Pump projects must also include the following required documents as part of the project submission process:

1. Heat Pump Installation Acknowledgement Form (Attachment 1)
2. LMI Heat Pump Certificate of Completion (Attachment 2)
3. Panel Box Photo (Required if Panel Box Upgraded)
4. Panel Box Invoice (Required if Panel Box Upgraded)
5. Heat Pump Equipment Invoice(s)
6. NEC calculation sheet if panel box being upgraded is >100 Amps (Attachment 3) (Required if Panel Box Upgraded)

Participating Contractors must inform program if additional rebates are being utilized on the project.

ATTACHMENT 1

Heat Pump Installation Acknowledgement Form

ACKNOWLEDGMENT FORM
Heat Pump Installation

I, _____ residing at _____ acknowledge the following regarding the installation of a heat pump system in my home:

1. Overall energy cost reductions are not guaranteed, and my energy bills may increase following the installation of a heat pump system. Energy costs depend on a variety of factors, including usage, annual temperature variations, and how well my home is insulated/air sealed. I understand my energy bills may increase; however, I choose to have a heat pump system installed for one or more of the following reasons (please initial all that apply):

_____ My home does not have pre-existing full house air conditioning and adding full house air conditioning could add extra utility expenses.

_____ A heat pump would alleviate a health and safety concern in my home.

_____ I'm interested in having a heating system with a low carbon footprint.

_____ Other: _____

2. If I receive bill payment assistance through my utility or the Home Energy Assistance Program (HEAP), the shift in primary heating fuel source from a fossil fuel to electric may impact the level of bill payment assistance received. I will notify my utility and county Department of Social Services that I have installed a heat pump and have changed my primary fuel to electricity.

3. Heat pumps operate differently from traditional boilers and forced air furnaces. In order to maintain comfort in my home I may have to learn how to operate my thermostat differently. I understand that my HVAC contractor will instruct me in the proper use of the heat pump and its thermostat.

Home Owner (Printed) Date

Home Owner (Signature) Date

Contractor (Signature) Date

ATTACHMENT 2

LMI Heat Pump Certificate of Completion

Certificate of Completion

LMI Heat Pump Projects

□ EmPower New York □ Assisted Home Performance with ENERGY STAR®

Customer Name:_____Contractor Name:_____

EmPower ID#:_____AHP ID: _____

Contractor: I,_____attest that all measures completed by my company for EmPower New York/ Assisted Home Performance adhere to current standards defined by the Building Performance Institute (BPI) and the current EmPower New York/ Assisted Home Performance Program Guidelines. I further attest that for all Home Performance designated projects, I have conducted the appropriate Combustion Appliance Zone (CAZ) testing and left the home in a safe condition as per BPI Standards.

I attest that I have educated the customer on the use of their heat pumps and any effect they may have on their utility bills. The customer has signed the NYSERDA attestation, and it will be completed in project completion paperwork.

I attest that this project adheres to the NY Clean Heat program Guidelines, that a Manual J has been performed for this home, and that I or the NYS Clean Heat contractor will be applying for a reimbursement from the NY Clean for a utility heat pump rebate.

I attest that my company is responsible for collecting the utility rebate for this project and I will not hold the customer responsible for the contractor's failure to collect these funds. I will also not place a lien on the customer's property for outstanding funds that were promised as a utility rebate.

Company Authorized Signatory:_____Date:_____

ATTACHMENT 3

NEC Calculations Sheet

NEC Standard Electrical Load Calculation for Single Family Dwellings

(Only for Service Ratings of 120/240V, 225 Amps Max)

Owner:_____Location:_____

Total Floor Area of Dwelling(NEC 220.12)_____SQFT.

Factor	Quantity		Volt Amperes(VA)
"General Lighting"			
1. General Lighting (SQFT X 3 VA/SQ FT (Table 220.12)	3 X sqft.		
2. Small Appliance Circuits (1500 VA per circuit) (NEC 220.52(A)) (minimum 2)	1500 X		
3. Laundry Circuit (1500 VA per circuit) (NEC 220.52(B))	1500 X		
4. Total General Lighting Load (Add lines 1, 2 & 3):			
5. First 3000 VA @ 100%:			3000
6. Total General Lighting Load – 3000 =_____@ 35%=			
7. **Net General Lighting Load** (Per NEC 220.42) **(Add lines 5 & 6):**			
***Fixed Appliances(if insufficient space, use back):**	YES	NO	
• Garbage Disposal			
• Bathroom Fan			
• Microwave			
• Dishwasher			
• Other:			
• Other:			
		Total	
8. 3 or less Appliances, Total Appliance VA; 4 or more Appliances, 75% of Total Appliance VA (NEC 220.53):			
***Other Loads (including motors, EV charger(s), etc.)**	YES	NO	Nameplate Rating(VA)
9. Electric Range (8000VA or Nameplate)**			
10. HVAC			
11. Electric Oven			
12. Electric Dryer (5000 VA minimum)**			
13. Electric Vehicle Charger	✔		
14. Other:			
15. Other:			
16. 25% of largest motor (NEC 430.24)			
Total Service Load Volt-Amperes (VA) (Add lines 7, 8 & 9 thru 16) =			
Total Service Load Volt-Amperes / 240-volts = Amperes			
***Service Rating (Amperes)=**			

* For every "YES" answer, indicate VA rating of equipment

** Nameplate rating must be used if larger

*** Service Rating shall be greater than or equal to the Service load

Fossil Fuel Conversion Policy

The Combined Residential Application determines program eligibility for incentives based on household income. Households identified as Tier 1, are considered low-income households and are eligible to receive incentives through EmPower New York. Tier 3 households are considered moderate income households and are eligible to receive incentives through Assisted Home Performance with ENERGY STAR®.

Eligibility Criteria

1. Households with existing propane, kerosene, and oil heating equipment are only eligible to receive incentives in the following situations:
    a. Equipment is being replaced as part of a no heat situation (see Section 5.9)
        i. Tier 3 customers -incentive is capped at $2,000 per heating system
        ii. Tier 1 customers – incentive capped at $4,000 per heating system
    b. Equipment is being replaced with an air source heat pump
    c. Equipment is being replaced with a ground source heat pump and meets cost effectiveness criteria
2. Households with existing natural gas heating equipment are eligible to switch to heat pumps in the following situations:
    a. Equipment is being replaced with an air source heat pump and meets cost effectiveness criteria
    b. Equipment is being replaced with a ground source heat pump and meets cost effectiveness criteria
3. The full cost of installation for a fuel conversion must be submitted as part of the workscope submission for review and approval.
4. Fuel conversions of secondary heating systems are not allowed.

Fuel conversion projects not covered under this policy must be submitted to the Program Implementor and will be evaluated on a case-by-case basis. For additional information, please see Section 5.15 of the Contractor Resource Manual, Eligible Measures List.

Combined Residential Application Project Assignment Process

The Combined Residential Application determines program eligibility for incentives based on household income. Households identified as Tier 1, are considered low-income households and are eligible to receive incentives through EmPower New York. Tier 3 households are considered moderate income households and are eligible to receive incentives through Assisted Home Performance with ENERGY STAR®.

Upon receipt of a completed Combined Residential Application, implementation staff will review the application and based upon the provided income documentation, assign the project as either Tier 1 or Tier 3. Once a program tier has been assigned, the household is only eligible for services and incentives provided to that Tier.

Applicants submitting a Combined Residential Application are able to select a Participating Contractor during the application process. If the household has selected a Participating Contractor, implementation staff will prioritize the project assignment to that contractor. If a contractor was not selected during the application process, implementation staff will select the next available Participating Contractor serving that geographic region. Once a household has been approved for services, the program implementation staff sends a correspondence to the household, informing them of program approval and providing the name and contact information of the Participating Contractor and NYSERDA's program implementor.

Participating Contractors are responsible for checking program assignments through NYSERDA's Project Management Workflow system (currently Uplight / NY HP Portal) on a routine basis. Projects assigned to the Participating Contractor must be accepted within 10 days or program implementer staff may refer the household to a different Participating Contractor.

Upon accepting a household, the Participating Contractor must review provided customer documentation and, when available, energy usage information, directly from the NY HP Portal. Prior to the visit, the Contractor should review this data to identify energy usage patterns and potential measures.

The Participating Contractor must then contact the household to schedule a visit. During this contact, the Participating Contractor may:

A. Verify interest
B. Schedule an audit
C. Clarify directions
D. Use this opportunity to identify the make and model of appliances under consideration for replacement (for Tier 1 eligible households)
E. Discuss the need to gain full access to the dwelling
F. Request copies of utility bills (if not provided at the time of application submission)
G. Provide a brief overview of the audit process and the anticipated timeframe for completion.

The Participating Contractor must make at least three attempts to contact the household at various times of the day and evening using provided contact information. Participating Contractor should try multiple types of contacts (i.e. if email and phone number is provided, send an email and call the household). If no response is received, the Participating Contractor must send a letter to the household requesting contact from the household by a given deadline and providing appropriate phone numbers including program implementation's number, 877-697-6278. In the event that the household does not respond by the deadline, the Participating Contractor should document their outreach efforts in the NY HP Portal.

If an appointment is scheduled more than a week in advance, Participating Contractor must contact the household a day or so before to remind them of the appointment, thus reducing the likelihood of a no-show appointment.

Project Assignment

For Participating Contractors, the number of referrals/project assignments will fluctuate month-to-month based on the volume of referrals and applications received and the contractor capacity of the Participating Contractor's service territory. NYSERDA and its program implementor cannot guarantee assignments to Participating Contractors.

1. **Contractor Capacity:** It is the responsibility of the Participating Contractor to manage their work assignments accordingly. Additionally, Participating Contractors with a maintained backlog of production may have referrals reassigned to a Participating Contractor in need of additional work.

2. **Program Compliance:** Participating Contractors that follow program guidelines will be eligible to receive referrals. Participating Contractors demonstrating a lack of knowledge about program guidelines, have a high rejection rate of project workscopes or invoices, or are non-responsive to NYSERDA or the Program Implementer's requests will be considered out of compliance with the Program. The Participating Contractor will be notified in writing and required to correct the problem as prescribed. During this time Program referrals may be limited until the issue is satisfactorily rectified.

3. **Contractor Assignment:** The ability of a Participating Contractor to receive referrals/project assignments may be impacted if that contractor is under disciplinary action as established through terms of Probation or has been Suspended or Terminated from the program.

Tier 1 Referrals

NYSERDA receives referrals from multiple organizations including, but not limited to, utilities, The Office of Temporary and Disability Assistance (OTDA) Offices for the Aging (OFA), other Participating Contractors, and other local community groups. NYSERDA's program implementer staff will distribute these referrals based upon geographic location of the referred household to the next available Participating Contractor.

Guidelines for Heating Systems Replacement

The Combined Residential Application determines program eligibility for incentives based on household income. Households identified as Tier 1, are considered low-income households and are eligible to receive incentives through EmPower New York. Tier 3 households are considered moderate income households and are eligible to receive incentives through Assisted Home Performance with ENERGY STAR®.

Eligibility Criteria

- Propane, Kerosene, Oil Heating Equipment
  1. Not eligible for incentives unless the home is in a no-heat situation during the heating season and the customer has been denied for the Heating Replacement Repair and Replacement benefit. See Section 5.9 of the Contractor Resource Manual for additional information.
  2. Customers should be informed on clean heating options through heat pump technology. See Section 5.10 of the Contractor Resource Manual, Heat Pump Installation Requirements, for additional information.
- Natural Gas Heating Equipment
  1. Replacement heating equipment must be a minimum of 96% efficient **and**
  2. Existing natural gas heating system must be 80% or less efficient **or**
  3. The home is in a no-heat situation during the heating season and the customer has been denied for the Heating Replacement Repair and Replacement benefit. See Section 5.9 of the Contractor Resource Manual, No Heat Guidelines, for additional information.
  4. For manufactured homes, the replacement heating equipment must be at least 95% efficient and the existing equipment must have an efficient level below 80%.
- Pellet Stoves
  1. The pellet stove offering is outlined in Section 5.8 of the Contractor Resource Manual, Pellet Stove Guidance.
- In addition to the above, please refer to Section 5.15, Eligible Measures and Accessories, for additional information on eligibility requirements.

Available Incentives:

- Incentives for heating systems, including no-heat projects, are subject to the program heating incentive caps for Tier 1 and Tier 3 projects referenced below.
  1. Tier 1 - $4,000 per heating system
  2. Tier 3 - $2,000 per heating system

- Costs above the measure or program caps must be paid directly by the household and may be financed through available NYSERDA sponsored loan options or private lenders.
- Incentives for the heating system conversion includes necessary distribution repairs, gas-piping inside the home, tank decommissioning and removal.
    1. Incentives shall not cover the costs of meter hookups, or any cost related to installing or upgrading gas lines before the meter.
- Participating Contractors with Tier 1 eligible rental units should also reference Section 7.6-Services to Rental Properties in the Contractor Resource Manual.

Project Documentation

- It is advantageous to the household if the sizing of the heating system takes into consideration shell measures installed through the program. All projects receiving an incentive must include documentation of attic and wall insulation levels and approximate square footage of un-insulated areas in additional to any required program documentation.

Considerations in Developing a Workscope

- When possible, heat pump technologies should be considered as an alternative for the replacement of a heating system.
- Participating Contractor must consider the household's ability to maintain the installed system according to manufacturer's recommendations, including filters, valves, etc. when proposing high efficiency equipment.
- A two-stage furnace installation may be considered in situations where insulation work will not be completed immediately after heating system installation.
- NYSERDA reserves the right to obtain additional bids for all proposed work.
- Contractor must consider options for the homes hot water heater. For example, but not limited to:
    1. Ensuring that an atmospheric water heater that is orphaned due to the installation of a high efficiency heating system drafts into a lined chimney and drafts properly according to the current BPI standards.
    2. Water heaters that are dependent on or connected to the heating system (side-arms, etc.) are considered part of the heating system and incentives for replacement are subject to the heating system caps.
    3. Incentives are available for Heat Pump Water Heaters (HPWH) and electric resistance hot water heaters

a. Electric resistance hot water heaters should only be considered in the following instances:
    - A HPWH cannot be installed
    - The existing hot water heater is non-functional

Special Considerations for the National Fuel Gas (NFG) Conversion Program:

- National Fuel Gas is providing funding for heating system conversions to natural gas to a limited number of Tier 1 customers (60% SMI or less) in their utility territory. All program guidelines apply as above, with the exceptions noted below:
- Eligible customers must be a **property owner or renter**;
- Landlords must sign a Rental Property Energy Efficiency Services Agreement and will be responsible to pay 25% of the costs of the heating unit for each rental unit; and
- Participating Contractors must prioritize services to these households over other Tier 1 program referrals.
- Participating Contractors should call (716) 686-6123 (Monday-Friday 7am-6pm) or for after hour emergencies (800) 444-3130 for NFG offerings.

Direct Install Measures

The Combined Residential Application determines program eligibility for incentives based on household income. Households identified as Tier 1, are considered low-income households and are eligible to receive incentives through EmPower New York. Tier 3 households are considered moderate income households and are eligible to receive incentives through Assisted Home Performance with ENERGY STAR®.

Customer Eligibility

To receive Direct Install measures, customers will need to complete a Combined Residential Application found here and be determined a Tier 1 or Tier 3 customer provided their dwelling has not received similar measures previously from another participating contractor within the last 3 years.

Customers receiving electric service through a municipal electric provider may **not** be eligible for direct install measures. Participating Contractors should check with program implementation staff if they have questions regarding household eligibility. The table below represents the pre-qualified direct install measures, max install quantity and pricing.

Eligible Measures and Pricing

Measure	Limit	Pricing	
		Upstate	Downstate
TRM Tier 1- Advanced Power Strip	Limit 2 per home[2]	$30.00	$30.00
TRM Tier 2 Advanced Power Strip- *AV Use Only*	Limit 2 per home[2]	$70.00	$70.00
CO Detector	1 per home	$81.32	$87.56
Combination CO/Smoke Detector	1 per home in place of a single Smoke & CO detector	$98.91	$105.54
DHW Safety Discharge Pipe	1 per DHW	$25.00	$25.00
Energy Education	1 per home	$55.00	$55.00
Furnace filter Slot Cover[1]	1 per home	$27.66	$28.70
Furnace Filter[1]	1 per home	$33.86	$35.23
LEDs	16 standard/unlimited candelabra (can include 1 nightlight)	$11.00	$11.00
Pipe wrap	Per linear ft, 9 ft max (limited to 6' max hot side and 3' max cold side)	$2.18	$2.42
Showerheads (handheld or regular)[1]	Quantity not to exceed the # of people in the home	$39.10	$43.50
Smoke Detector	1 per home	$42.66	$47.35
Sweep Only	As needed, per door; to exterior or unconditioned space	$28.99	$32.43
Thermostats (programmable)[1]	1 per zone	$136.94	$148.18
Weather-stripping and Sweep	As needed, per door to exterior or unconditioned space	$77.08	$82.76

[1] For renters, the installation of these measures require landlord permission through the submission of a Rental Property Energy Efficiency Service Agreement found in Section 3.9 of the Contractor Resource Manual.

[2] No more than 2 total Advanced Power Strips can be installed per home (i.e. 2 Tier 1s or 2 Tier 2s or 1 Tier 1 and 1 Tier2)

***Upstate**: For contractors with business addresses in counties north of and including Sullivan, Delaware, Green, and Columbia counties. **Downstate:** For contractors with business addresses in counties south of and including Dutchess and Ulster counties.*

Direct Install Additional Measure Requirements

Participating Contractors must evaluate and install select measures where appropriate during an energy audit - at no cost to the household. Measure requirements can be found in Section 5.15 and Section 5.18 of the Contractor Resource Manual.

Project Submission Guidelines.

For Tier 3 Direct Install projects, eligible measures are modeled in EmPCalc (v5.6 or later, CRM Section 11.2) and the incentive is claimed in the Express Audit workflow of the NY HP Portal. Direct Install measures are not deducted from the AHP subsidy caps. EmPCalc has been updated to include a Direct Install program type on the Cover tab. Follow the steps below to enter the eligible measures.

- Select the AHP Direct Install program type on the Cover tab - enter data in all highlighted cells
- Go to the AHP Direct Install tab – Check off or enter the measure or installed quantities
- Click on the "Export CSV File" and save the CSV file to your computer

Submission Process

Contractors should follow existing submission requirements as described in the NY HP Portal User Guide (CRM Section 11.1b) to claim the CHA audit incentive. To claim the Direct Install incentive, contractors should answer "Yes" to the Direction Install question and provide the following documentation.

- Signed Certification of Completion (CRM Section 8.2c)
- CSV upload from EmPCalc (v5.6 or later, CRM Section 11.2)

Incentive Payment

Payment of AHP Direct Install Measures will be added to the current Audit incentive payment process and will not impact the current payment timeline. Additional AHP work can be done by creating an Express Contract project and following the existing submission process described in the NY HP Portal User Guide (CRM Section 11.2b).

For Tier 1 Projects

For Tier 1 projects, please refer to Section 11.1c for project submission and invoicing procedures.

EmPower NY & Assisted Home Performance with ENERGY STAR®
Eligible Measures List

The Combined Residential Application determines program eligibility for incentives based on household income. Households identified as Tier 1 are considered low-income households and are eligible to receive incentives through EmPower New York. Tier 3 households are considered moderate income households and are eligible to receive incentives through Assisted Home Performance with ENERGY STAR®.

This is a general guide to measures eligible for incentives available for Tier 1 and Tier 3 households. Eligibility may vary based on the energy efficiency requirements for each upgrade type, results of the comprehensive home assessment, fuel type, energy utility, and funding source availability.

Subject to the terms described on pages 1-6, measures marked with a "✓" below are "Prequalified" and eligible for Tier 1 and Tier 3 incentives for income-eligible households and contractor incentives for Tier 3 projects. Tier 1 and Tier 3 projects marked as "Prequalified" below require no additional cost-effectiveness screening. Items on this list without a checkmark, "Standard" measures, may have limited, or not be eligible for, incentives. If the project includes one or more "Standard" upgrades, the project is subject to a project lifetime savings review as described on page 6. For Tier 3 projects, "Prequalified" measures are eligible for contractor incentives. NYSERDA also offers several financing options through NYSERDA's Green Jobs Green New York (GJGNY) Residential Loan Fund: Smart Energy Loan, On-Bill Recovery (OBR) Loan, Renewable Energy Tax Credit Bridge Loan, Companion Loan. Review the GJGNY Residential Financing Implementation Manual for Participating Contractors for loan descriptions and requirements. All items listed are eligible for financing, subject to cost-effectiveness requirements.

No-Heat Situations

With the exception of natural gas HVAC equipment, the program will no longer subsidize fossil fuel HVAC equipment unless the home is in an emergency no-heat situation and the customer has either applied for the Heating Equipment Repair and Replacement (HERR) benefit and received a denial letter or discussed the project with implementation staff and the project has been determined ineligible for HERR. Please refer to Section 5.9 of the Contractor Resource Manual (CRM) for No-Heat Guidelines.

Table 1. Eligible Measures List ❗ - No Heat Emergency Only

	Eligible Measures	Minimum Efficiency Requirements	Prequalified	Incentive Cap (Tier 1/Tier 3)
Primary Heating and Cooling System [1,2,3]	Air Source Heat Pump (electric split systems)[4]	Listed on NEEP Cold Climate and ENERGY STAR Qualified. Waiver required if dollar savings are not positive.		
	Ground Source Heat Pump	See NYS Clean Heat Program for requirements.		
	Furnace[5,6] – Natural Gas	AFUE 96% with ECM (Mobile Home: AFUE 95% with ECM). Only replacing existing Natural Gas furnace with efficiency of 80% or less.	✓	$4,000/2,000
	Furnace[5,6,7] – LP	❗ AFUE 95%		$4,000/2,000
	Furnace[5,6,7] – Fuel Oil, Kerosene	❗ AFUE 85%		$4,000/2,000
	Boiler – Natural Gas Condensing	AFUE 90%. Includes combi-boilers. Only replacing existing Natural Gas boiler with efficiency of 80% or less.	✓	$4,000/2,000
	Boiler – LP Condensing[7]	❗ AFUE 90%		$4,000/2,000
	Boiler – Fuel Oil/Kerosene Condensing[7]	❗ AFUE 87%		$4,000/2,000
	Boiler – LP/Natural Gas Non-Condensing[7,8]	❗ AFUE 85%. Project must include boiler reset control.		$4,000/2,000
	Boiler – Steam[7]	❗ AFUE 82% (size must be matched to cumulative capacity of connected radiators, per Institute of Boilers & Radiator Mfrs (IBR) standards).		$4,000/2,000
	Pellet Stove[9]	EPA certified for particulate matter output of 2.0 grams per hour or less. Replacement of existing less efficient pellet or wood stove model.	✓	$2,000/1,000

	Eligible Measures	Minimum Efficiency Requirements			Prequalified	Incentive Cap (Tier 1/Tier 3)
	Pellet Stove-Recycling Fee[9]	An additional $500 incentive is available if an existing wood stove, pellet stove, or insert (with firebox) is recycled.			✓	$500
	Central Air Conditioner (split system)[10,11]	AHRI Certificate Required. 14.5 SEER and ENERGY STAR Qualified.				No Incentive
	Room Air Conditioner[12]	ENERGY STAR Qualified. Health & Safety only with a doctor's note.				$0/$250
	Clean & Tune (Gas, Oil)[23]	As needed to correct high smoke or CO issues.			✓	$200-$300/$0
	Distribution Improvements[13]	Installed in accordance with all applicable state and local codes.				
	Heat Pipe Insulation	R-3			✓	
	Duct Sealing	UL 181B mastic or tape; use of "duct tape" is disallowed.				
	Duct Insulation	Installed in accordance with all applicable state and local codes.				
	Retrofit Electronically Commutated Motor (ECM)	Separate measure for blower fan replacement only. Installed in accordance with all applicable state and local codes.				
Building Shell [14]	Insulation – Cellulose, Fiberglass	See Table 1A for specific R-value requirements. Must be accompanied by blower door assisted air sealing per BPI and program guidelines.			✓	
	Insulation – Spray foam, Foam board[15]	See Table 1A for specific R-value requirements. Must be accompanied by blower door assisted air sealing per BPI and program guidelines.				
	Air Sealing[16]	Supervised by professional; blower door assisted per BPI and program guidelines. Some measures not prequalified.			✓	
	Exterior Doors	ENERGY STAR Qualified. May be subject to SHPO review.				
	Replacement Windows	U Value 0.28, SHGC .032, Air Leakage ≤ 0.3 CFM/ft^2. Including Jalousie window. May be subject to SHPO review.				
	Movable Window Insulation	R-3				
Water Heater [2,3,17,18]	Heat Pump Water Heaters[4]	ENERGY STAR Qualified.			✓	$3,000/1,500
	Electric Resistance Storage Tank[18]	Replacement for Health & Safety only. As high an efficiency (UEF) as possible based on product availability.				$1,250/625
	Natural Gas or Propane Power Vented Storage Tank[18]	Replacement for Health & Safety only.				$2,000/1,000
		Draw pattern dependent.	≤ 55-gallons	> 55-gallons		
		ENERGY STAR Qualified.	≥ 0.64/0.68 UEF	≥ 0.78/0.80 UEF		
	Mobile Home Storage Tank[18]	Replacement for Health & Safety only. Electric: 0.92 UEF, Mobile Home Rated. Sealed Combustion (Direct Vent): Mobile Home Rated				$2,000/1,000
Appliances [2,3,19]	Refrigerator	Existing appliance greater than 10 years old. ENERGY STAR Qualified.			✓	NA/$400
	Freezer	Existing appliance greater than 10 years old. ENERGY STAR Qualified.			✓	NA/$400
	Dehumidifier	ENERGY STAR Qualified. Can only be installed in basement/crawlspace.			✓	$400/200
	Air Purifier[20]	Replacement of existing appliance or determined to be medically necessary (Doctor's note required). AHAM Verifide®. Follows EPA Guidance. ENERGY STAR Qualified.				$250/125
Direct Install [3,21]	LEDs	ENERGY STAR Qualified. Refer to Lighting Guidelines in CRM.			✓	
	DHW Pipe Insulation	R-3. 9' maximum length (3' Cold and 6' Hot) for Direct Install.			✓	NA/$500
	Low Flow Showerhead	EPA WaterSense: 2.0 gallons per minute. Aerating type showerheads not eligible. Limit one per household member.			✓	
	Advanced Power Strip[22]	Up to 2 Tier 1 or Tier 2 APS replacements that need to provide 1 primary and 3 secondary outlets with at least 1,000 joules of surge protection.			✓	
	DHW Pressure Relief Valve Discharge Pipe				✓	$25
	Door Sweep	Exterior doors (including to unconditioned spaces (*i.e.*, basement).			✓	NA/$500
	Weatherstrip	Exterior doors (including to unconditioned spaces (*i.e.*, basement).			✓	NA/$500
	Detectors - CO & Smoke	UL Listed. When one isn't already present. Limit one per dwelling.			✓	
	Furnace Filter				✓	
	Furnace Filter Slot Cover	When not present or malfunctioning.			✓	
	Programmable Thermostat	5+2 day programmable thermostat including smart thermostat. Limited to one thermostat installed per zone.			✓	

[1] Defined as the primary heating system for the space being conditioned. Addition/replacement of secondary heating systems is not eligible. The new unit must be the primary heat for the space being served.

[2] Costs beyond caps are responsibility of customer.

[3] Specific requirements for ENERGY STAR Qualified products can be found by visiting: https://www.energystar.gov/products.

[4] Measures only require positive dollar savings when replacing electric, propane, oil, kerosene, or wood units. Natural gas units require the project lifetime savings to be greater than the Program incentive and have positive energy savings. The home where the heat pump is being installed (heating/cooling only) must meet the minimum insulation level specification set by NYSERDA (see Contractor Resource Manual Section 5.10).

[5] When ECM is part of a new furnace, savings must be included in that new unit.

[6] Furnace humidifier costs are required to be included in the new furnace installation costs.

[7] Only eligible for Tier 1 customers in no-heat emergency with Heating Equipment Repair or Replacement (HERR) denial or implementation staff has determined the project ineligible for HERR.

[8] In instances where venting conditions require the installation of a non-condensing boiler, boiler reset controls must be included in the project; tank-less coil DHW is not allowed.

[9] Pellet stove must supply a primary portion of heat. Listed on EPA-Certified Wood Stove Database or manufacturer documentation showing that the unit meets requirements.

[10] Not eligible for program incentives but measure savings can be used to determine project lifetime savings.

[11] Measure is only eligible when there is a replacement of an existing appliance or existing cooling system.

[12] Tier 1 customers must be referred to OTDA Cooling for assistance. If denied, full cost of unit may be covered.

[13] In instances where an area of a home lacks adequate distribution, installation of new distribution to serve the area is eligible. The area lacking adequate distribution must be located within the pre-existing thermal boundary.

[14] Moving objects on behalf of the customer costs are required to be included in the insulation installation costs.

[15] Rim joists and cantilever foam measures are Prequalified.

[16] The following air sealing measures are NOT Prequalified: Glass block and hopper windows in unconditioned basement space and window glass repair. Incentives for these measures have a per window cap at $400 for Tier 1 projects $200 for Tier 3 projects. Measures require project lifetime savings to be greater than the Program incentive. Note that glass block in conditioned space is not an eligible measure and hopper windows in conditioned space must be entered as windows and meet minimum efficiency requirements.

[17] Use manufacturer's sizing guidelines or visit https://www.energy.gov/energysaver/water-heating/sizing-new-water-heater. For ENERGY STAR criteria, including UEF ratings and draw patterns, visit energystar.gov/products/water_heaters/residential_water_heaters_key_product_criteria

[18] Incentivized only to correct Health & Safety issues in situations where a HPWH is not a feasible option. Acceptable Health & Safety issues for water heater replacement include: non-operational, leaking and not passing BPI test procedures. Existing fuel type must be used; fuel conversions not allowed. Electric units with burned out electric elements must be replaced with Heat Pump Water Heaters unless the space doesn't allow for one. Measure will require project lifetime savings to be greater than the Program incentive.

[19] Only the base price of the appliance plus applicable tax is eligible; delivery, set-up, warranties or appliance accessories, and any associated taxes on these items are not eligible for incentives.

[20] Utilize AHAM's Room Air Cleaner Certification Program. CADR ≥ 2/3 of the room's area.

[21] See CRM Section 5.14 for additional details on Direct install pricing and procedures.

[22] Tier 1 APS must be replacement for AV and/or IT equipment plugged in a standard power strip. Tier 2 APS must be replacement for AV equipment only plugged in a standard power strip or Tier 1 APS.

[23] For Tier 1 households, Clean and Tune pricing is capped at $300 for oil-fired heating systems and $200 for natural gas/propane-fired heating systems.

Table 1A. Insulation Requirements

Insulation Measure	Minimum Efficiency Requirements		
	R-Value	Cellulose / Fiberglass	Spray Foam / Foam board
Attic Entry – Hatch	R-20		Fireproofing when required.
Attic Entry – Pull-Down Stairs	R-13		Fireproofing when required.
Attic Open	R-49		N/A
Attic Floored	Attic Average R-30	Maximum depth of cavity.	N/A
Attic Knee Wall	R-15	Dense packed with air barrier.	Fireproofing when required.
Attic Slopes	Attic Average R-30	Maximum depth of cavity.	Fireproofing when required.

Insulation Measure	R-Value	Minimum Efficiency Requirements	
		Cellulose / Fiberglass	Spray Foam / Foam board
Attic Gable End Walls	R-14	N/A	Fireproofing when required.
Exterior Walls	R-14	Maximum depth of cavity.	
Band Joist	R-14	Maximum depth of cavity.	
Rim Joist	R-14	N/A	
Cantilever	R-21	Maximum depth of cavity.	Fireproofing when required.
Garage Ceiling	R-21	Maximum depth of cavity.	Fireproofing when required.
Crawl Space Ceiling	R-21	Maximum depth of cavity.	Crawlspace must not contain any mechanicals or distribution work. Space must be rendered inaccessible after insulation. Fireproofing when required.
Crawl Space Walls	R-14	N/A	Fireproofing when required.
Foundation (Basement) Walls	R-14	N/A	Down to 2' below grade; Area is not heated, and/or finished as a living space, No Drywall; Fireproofing when required.
Mobile Home Belly	R-21	See specific technical guidance document.	

Eligible Health & Safety Measures and Accessories

All Health and Safety Measures and Accessories must be itemized for the purposes of determining incentive eligibility and a project's cost effectiveness. When projects with the following Health and Safety amounts and all other measures are pre-qualified the projects will be approved without having to pass project level cost effectiveness: Tier 1-$1,000, Tier 3-$500.

The costs associated with the installation of certain measures can be included in the related energy saving measure. Items such as high hat covers, weather stripping, and outlet gaskets can be included with air sealing. Baffles, insulation dams, and creating access to the attic can be included with attic insulation.

Table 2. Eligible Health & Safety Measures and Accessories

Eligible Measures		Program Requirements	Prequalified
Health and Safety	Bath Fan: New, Replacement and Venting	Insulated duct in unconditioned space. Vent to exterior in all cases. Installation as needed by signs of moisture.	
	Dryer Vent Repair	Vent to exterior in all cases.	
	Combustion Appliance Zone (CAZ) Corrections: Measures to provide sufficient combustion air and prevent CAZ depressurization, spillage, or inadequate draft	Maximum incentives: Tier 1 $500, Tier 3 $250.	
	Fuel (gas/oil) Leak Repair	Gas leaks require confirmation with bubble solution.	
	Moisture Barriers, Crawlspace/Vapor Barrier	Required on dirt floors.	
	Heat/Energy Recovery Ventilator	ENERGY STAR Qualified.	
	Ventilation Fans	Make-up air needs to meet ventilation requirements. Whole house fans or similar attic exhaust fans are not eligible.	
	Knob and Tube Wiring Upgrade to install insulation	Performed by licensed electrician. Not cost prohibitive.	
	Chimney Liners and Caps	Only to correct Health & Safety issues.	
	Heating/DHW System Repairs/Upgrades (including power venting kits) to correct spillage, inadequate draft, carbon monoxide failures	Includes repairs only to exterior wood boilers, not upgrades.	
	Home Repairs: Due to water damage, molds and mildew, ice dams or other symptoms of poor building performance, if the cause(s) of building performance-related damage are addressed	Includes gutter repair/replacement and roof repair. Mold/mildew abatement must be completed according to New York State law and EPA guidelines.	
	Gas Oven Repair/Replacement	Only to correct Health & Safety issues (CO can't be corrected with a Clean & Tune). Costs beyond caps are responsibility of customer.	

	Eligible Measures	Program Requirements	Prequalified
Health and Safety	Oil Tank Removal or Replacement	Tier 1 only. Removal or replacement only when required by Code or to solve a Health & Safety issue.	
	Sump Pump: New or Replacement	As needed by signs of moisture.	
	Asbestos Abatement	Work must be completed according to New York State law and EPA guidelines. Not cost prohibitive.	
	Lead Abatement[1]	Work must be completed according to New York State law and EPA guidelines.	No Incentive
	Radon Abatement	Work must be completed according to New York State law and EPA guidelines.	No Incentive
Qualified Accessories	Attic Access	Cutting access and patching or adding insulated hatch only (not stairs).	✓
	Attic Insulation Damming	All hatches where loose fill insulation will be installed, areas adjacent to chimneys, chases, storage, and mechanical platforms.	✓
	Attic Ventilation: baffles, soffit, gable, or ridge vents	Installed in accordance with all applicable state and local codes.	✓
	Attic Storage Platform / Mechanical Access	Storage platform limited to two 8x4 sheets (64 ft^2).	
	Drywall Repairs	Includes reinforcing existing surface for dense packing.	
	Thermal Barriers for Spray Foam (drywall/intumescent paint)	Required if area is not permanently sealed or contains mechanicals.	
	Insulation/Debris Removal	As needed to insulate to Program minimum standards. Measure prequalified up to $500 (Tier 1) or $250 (Tier 3).	
	Small Job Set Up Fee	Only for project where a total of less than 500 sq ft of insulation is blown.	
	Main Panel electrical service upgrade necessary when installing new ASHP/GSHP heat pump equipment	Completed NEC worksheet required to demonstrate upgrade need. Repairs due to Health & Safety issues.	
	Furnace Humidifier		
	Fuel Conversion Accessories		
	Oil Burner Replacement	No heat emergency only.	
	Boiler Reset Controls	No heat emergency only. Programmed properly per manufacturer's specifications and site conditions.	
	Well Pump Replacement		

[1] Minor remediation under health and safety may be considered at program's discretion to facilitate energy efficiency work.

INCENTIVES

Tier 1 or Tier 3 income-qualified customers are eligible for incentives toward the energy efficiency work scope for single-family and 2 to 4-family homes per the table below. In the event the Tier 1 cap is exceeded or for the balance of the project cost for Tier 3 projects, the project may be eligible for financing through a Smart Energy or On-Bill Recovery Loan.

Program	Income Qualification	Work Scope Incentive*	Incentive Amount
EmPower NY (Tier 1)	< 60% State Median Income	100%	Up to $10,000 for a single-family home w/ $5,000 per unit for 2-4 family homes
Assisted HPwES (Tier 3)	60-80% Area Median Income	50%	Up to $5,000/single-family home or up to $10,000/2-4 family home

**Unless limited by measure eligibility or price caps.*

Incentive Eligibility

Tier 1 and Tier 3 measure incentives and Tier 3 contractor incentives are available for customers in the following electric utility territories: Central Hudson, Con Edison, National Grid (NYC and Upstate), NYSEG, Orange & Rockland, and Rochester Gas and Electric. Limited Regional Greenhouse Gas Initiative (RGGI) funds are available for eligible measures for customers of municipal electric utilities.

Contractor Incentive

For Tier 3 projects, contractors can claim an Advanced Modeling Incentive (AMI). The incentive is 5% of the total prequalified measure costs and is capped at $500.

PROJECT LIFETIME SAVINGS REVIEW

Projects with non-"Prequalified" measures require the project's lifetime dollar savings to be greater than the Tier 1 or Tier 3 incentive. Annual Energy Savings and Effective Useful Life determined by the New York State Technical Resource Manual (TRM).

$$Sum\ of [Annual\ Energy\ (\$)\ Dollar\ Savings \times Effective\ Useful\ Life\ (EUL)] > NYSERDA\ Program\ Incentive$$

FINANCING OPTIONS

GJGNY Residential Financing is available statewide for all eligible measures that meet the cost-effectiveness standards of the loan product. The GJGNY Residential Financing Program offers GJGNY Loans (Smart Energy, On-Bill Recovery and Renewable Energy Tax Credit Bridge Loan) which are unsecured loans up to twenty-five thousand ($25,000) dollars for one- to four-family residential energy efficiency improvements or renewable energy system projects. NYSERDA also administers Companion Loans which are funded by the New York Green Bank, a division of NYSERDA. The Companion Loan will be available to Customers that fully utilized the GJGNY Loan for their energy efficiency or renewable energy system project and need additional loan funding to pay for remaining project costs.

For additional information about GJGNY Residential Financing including terms and conditions see the GJGNY Residential Financing Program Manual.

Determination of Tier 1 and Tier 3 Workscopes and Incentive Caps

The Combined Residential Application determines program eligibility for incentives based on household income. Households identified as Tier 1, are considered low-income households and are eligible to receive incentives through EmPower New York. Tier 3 households are considered moderate income households and are eligible to receive incentives through Assisted Home Performance with ENERGY STAR®.

Overview

A. Tier 1 households are eligible for no-cost energy efficiency measures with project incentive caps of $10,000 for single-family homes and $5,000 per unit for 2-4 family homes.
B. Tier 3 households are eligible for 50% of the cost of the eligible measures capped at $5,000 for a single-family home and up to $10,000 for a 2-4 family home.
C. Program caps are subject to a three year look back.
D. Fossil Fuel heating equipment, when allowed, is capped at $4,000 per heating system for Tier 1 eligible households and $2,000 per heating system for Tier 3 eligible households. These incentives are included as part of the overall incentive cap.
E. For projects with all pre-qualified measures, health and safety measures are capped at $1,000 per project for Tier 1 eligible households and $500 per project for Tier 3 eligible households with no additional project level cost effectiveness requirements. For all other scenarios, health and safety measures will be considered as part of the overall project level cost effectiveness.
F. Program implementation staff will ensure that incentive caps are maintained, and that proposed workscopes are consistent with current guidelines and the needs of the home.
G. In situations where a Tier 1 project workscope is deemed reasonable, but exceeds funding or timing limits, implementation staff will work with the participating contractor and NYSERDA to review project options, which may include coordinating the project with a Weatherization Assistance Program (WAP) contractor or a program rule exception may be granted at NYSERDA's discretion to allow for program funding above project caps. A program rule exception does not guarantee the same exemption will be approved on similar future projects.

Direct Install

For all Participating Contractors approved to provide energy efficiency services to Tier 1 and Tier 3 households, at the time of the audit, the household must be evaluated for Direct Install

Measures. Please refer to Section 5.14 of the Contractor Resource Manual for Direct Install procedures.

Additional Measures

A. Participating contractors are required to provide audit reports and workscopes for further recommended measures to the program implementer for approval using an approved audit instrument to determine which measures are most cost effective .
B. In situations where variations in procedure are required, the participating contractor must first discuss and document potential changes with the program implementer.

Home Energy Assessments

The Combined Residential Application determines program eligibility for incentives based on household income. Households identified as Tier 1, are considered low-income households and are eligible to receive incentives through EmPower New York. Tier 3 households are considered moderate income households and are eligible to receive incentives through Assisted Home Performance with ENERGY STAR®.

For both Tier 1 and Tier 3 households, Program requires that home energy assessments and recommendations for energy efficiency measures be conducted in accordance with all relevant standards published by the Building Performance Institute (BPI). To be eligible for Program incentives and/or financing, recommendations made for proposed energy efficiency measures must meet or exceed the efficiency or eligibility criteria specified by the Program in Section 5.15 Eligible Measures and Accessories, of the Contractor Resource Manual.

The Program has adopted the published BPI-1100 Home Energy Audit Standard. The BPI-1100 Standard describes all elements necessary for a Comprehensive Energy Assessment.
The BPI-1200 standard complements the BPI-1100 standard and provides the protocols for achieving the requirements of the BPI-1100 standard (i.e. BPI-1100 describes what a comprehensive assessment is, and the BPI-1200 standard describes how to complete the assessment.).

For more information, visit BPI.org.

General Notes Regarding Home Energy Assessments

A. Participating Contractor must carry an ID and display it to an appropriate household member prior to entering the home for the first time.
B. If the Participating Contractor is utilizing a sub-contractor to perform the audit, the household must be informed, and sub-contractor must carry an ID and display it to an appropriate household member prior to entering the home for the first time.
C. Participating Contractors must provide and carry with them all necessary tools.
D. If an adult is not home at the time of the audit, the Participating Contractor must not enter the home, but should attempt to contact the customer by close of business that day.
E. Participating Contractors are not obligated to continue in any situation in which they feel their personal or staff's health or safety is at risk. In situations where a Participating Contractor decides not to proceed with work, all dealings with the household must be courteous and professional. The Participating Contractor must provide the Program with details on why they are not moving forward with the project in a timely manner.

F. It is very important that the Participating Contractor work directly with the residents of the building. The household is familiar with how the building performs and can provide valuable data as to how well the heating system functions, whether the hot water system satisfies the needs of the family, etc. This contact also provides the opportunity for in-home energy use management education. See Section 7.15 and 7.16 of the Contractor Resource Manual for further details.

G. To proceed with a Home Energy Assessment:
   a. **In Owner-Occupied households:** The Participating Contractor must attest to the review of documentation that proves home ownership (deed, mortgage book, tax bill, etc.)
   b. **In Rental properties**: The Participating Contractor must ensure that the building owner signs a Rental Property Energy Efficiency Services Agreement prior to completing any invasive work and attest to the review of documentation that proves home ownership (deed, mortgage book, tax bill, etc.) Otherwise, measures are limited to non-invasive direct install/electric reduction measures and tenant owned appliances.

H. The Participating Contractor must evaluate the home for the opportunity to provide Direct Install measures in accordance with Section 5.14 of the Contractor Resource Manual.

I. Section 5.18 of the Contractor Resource Manual includes audit related information regarding appliances, CO/smoke detectors, hot water heater adjustments, air-sealing/insulation, and lighting measures.

J. For all projects, households are provided with documentation on what measures are approved for incentives by NYSERDA and what if any customer contribution is required. Households can deny any measure from being installed; however, if a household denies a measure required for health and safety requirements, they must be informed that the project cannot proceed if this measure is denied.

K. Work performed must comply with BPI health and safety standards.

L. The Participating Contractor must take digital photos to document pre-existing conditions as follows:
   i. All exterior sides of dwelling
   ii. Refrigerator
   iii. Freezer (if present)
   iv. HVAC (Heating and Cooling Systems, Water Heater)
   v. Pre-existing attic insulation levels
   vi. Other targeted measure(s) for replacement
   vii. Exception requests

Home Energy Assessments must also consist of the following as appropriate:

A. Completion of appropriate signoffs and permissions.
   i. If a Tier 1 household owns an appliance that is being considered for replacement through EmPower, the Participating Contractor must obtain a signed Appliance Exchange Agreement completed with all required

information, including documentation of available spacing for the new appliance.

ii. For additional information on Tier 1 incentives for renters, please see section 7.6 of the Contractor Resource Manual.

B. Energy education, with a goal of identifying energy-saving actions which the household will commit to completing. (See Section 7.15 and 7.16 for further details).

C. The installation of direct install measures.

D. Test of the ambient air for CO if a combustion appliance is present or if the building has an attached garage.

E. For Tier 1 households, the following electric reduction measures must be evaluated through the use of an approved audit tool:

i. Replacement of refrigerators or freezers

ii. Opportunity to reduce or eliminate electric space heater use by enhancing or repairing the main heating system's distribution system, air sealing or insulating.

iii. A motion sensor light or timer for a high-wattage outdoor light that is currently left on all night.

iv. Repairs to well pump systems that cycle continuously due to a leak in the system

v. Heat tape that runs continuously.

vi. Leaking hot water pipes or faucets.

vii. Occasionally, a Participating Contractor may encounter a home that has been converted from a two family to a one family, but still retains two meters and two accounts. This means that the household is paying two basic service charges instead of one, and probably a higher overall cost per kWh than if the whole house was on one meter. In these situations, Contractor should explore the option of switching the house to one set of meters.

viii. Provide advanced power strips for TVs or other appliances to prevent continuous run times.

F. Any measures/items not on the eligible measures list must be reviewed and approved by program implementation staff prior to installation

Comprehensive Home Energy Assessments must conform to BPI Standards 1100 and 1200 and consist of all of the above, as well as the following:

A. In the event that multiple units exist in the dwelling, and access is available, Participating Contractor must test all units if possible. Notification to the landlord prior to audit can help in obtaining access.

i. If the additional unit cannot be tested, Participating Contractor must decide whether to go forward with measures that impact air movement in the dwelling. Contractor should consult with account manager and make notes regarding situation in the NY HP Portal (Uplight).

Measures and Installation Criteria

The Combined Residential Application determines program eligibility for incentives based on household income. Households identified as Tier 1, are considered low-income households and are eligible to receive incentives through EmPower New York. Tier 3 households are considered moderate income households and are eligible to receive incentives through Assisted Home Performance with ENERGY STAR.

All measures must be installed per program guidelines and BPI standards. Participating Contractors must install measures to manufacturers specifications and measures must meet the minimum efficiency requirements and SIR requirements indicated in the eligible measures list found in Section 5.15 of the Contractor Resource Manual.

Advanced Power Strips

1. NYSERDA will subsidize up to two advanced power strips that need to provide one primary outlet and at least three standby outlets with at least 1,000 joules of surge protection, program encourages using advance poser strips with the highest joule rating available.
    a. TRM Tier 1 are standard primary-controlled advanced power strips where the primary device controls the secondary outlets.
    b. TRM Tier 2 – For AV equipment only (home theater components, gaming consoles, computers) These advanced power strips reduce active and standby energy waste by monitoring user engagement and cutting power to all devices when a set period of inactivity is detected. This is accomplished through the use of infrared sensing and motion sensing technology, in addition to the primary/ secondary switched capability of a TRM Tier 1 advanced power strip.

Appliances

Refrigerator and Freezer Replacement-Evaluate for Tier 1 and Tier 3, Direct Install only available for Tier 1 Projects

Criteria for replacement

a. Pre-existing refrigerator must be at least ten years old.
b. For Tier 1 projects coordinating with a weatherization agency, WAP criteria for replacement may be followed.
c. Household agrees to give up the old appliance in exchange for the new one.
d. For renters, the owner of the appliance must complete a Rental Property Energy Efficiency Services Agreement.
e. Circuit must be safe.
f. The appliance is under a rent-to-own contract and most of the payments are still outstanding (SIR requirements are waived)
g. Side-by-side refrigerators and bottom freezer units may only be installed in households where access issues are present, such as wheelchair bound individuals who have difficulty reaching upper compartments of appliances.
h. For Tier 1 projects, ice makers and water taps are not funded, In situations where they exist, please notify the household that they will not be provided.

Please note the presence of active ice makers or water taps on the appliance application. Also note whether there is a water line to the current appliance and whether the line has a shut-off valve.

2. Evaluation of appliance energy use

   a. The primary tool for calculating appliance energy usage can be found at: https://www.energystar.gov/products/appliances/refrigerators/flip-your-fridge. In addition this tool is built into EmPCalc Versions 8 and later.

   b. Units kept in unheated areas such as garages or porches are unsuitable for replacement. Such locations must be noted on data collection forms. Please note that installation of new refrigerators and freezers into unconditioned spaces may void the product warrantee.

3. Procedures

   a. The Participating Contractor must evaluate all refrigerators and freezers on premises.
   b. The Participating Contractor must look for opportunities to:
      i. Downsize appliance
      ii. Unplug and remove a second appliance instead of replacing it
      iii. Replace two appliances with one larger refrigerator.
   c. The Participating Contractor must evaluate the location of the refrigerator in relation to the following: stove and other heat sources; heating system ducts and radiators; freezer on sun porch; etc. The Participating Contractor must consider opportunities to relocate the refrigerator to a more appropriate location, if available and discuss this with the household.
   d. The Participating Contractor must identify the appropriate appliance size for the family. As a general rule, a similar size as the current refrigerator is to be installed. Size may be determined in the following ways:
      i. Use of www.kouba-cavallo.com/refmods.htm.
      ii. Sticker on door/nameplate
      iii. Size is sometimes a part of the model number
   e. Complete the entire Appliance Exchange Agreement found in Section 8 of the Contractor Resource Manual.
      i. To determine cubic feet, measure in inches and multiply the length, width and depth of the freezer and refrigerator section interiors. Add the two totals and divide this number by 1728.
      ii. Contractor must measure the space available for appliance installation and verify that recommended appliance will fit in terms of height, width and depth. It is important that care be taken to check the back of the cavity, because sometimes kitchen counters or walls may be irregular in dimension, and narrower in the back. Be sure to measure the depth and consider any obstacles that would interfere with the door opening all the way.
      iii. Contractor must check egress to ensure that appliance can be safely installed and note any obstacles for delivery. Issues regarding ingress/egress must be noted.
      iv. All relevant refrigerator data must be completed. Regardless of whether an

appliance is recommended for replacement, an Appliance Exchange Application must be completed and submitted to the program.

v. The Participating Contractor must review the Appliance Exchange Agreement with household and confirm measurements, ingress/egress concerns, proposed replacement size, and other data.

Please be sure to instruct the appliance owner, if the program approves a replacement appliance, it is their responsibility to complete and send in the warranty cards.

Carbon Monoxide Detectors

1. In dwellings served in which the customer is the owner of the dwelling, which have either a combustion appliance or attached garage, the Participating Contractor must ensure that a working CO detector is present. Household must be instructed in its use and be provided with instruction manual and warranty information. CO detectors that are provided by the Participating Contractor must meet the following criteria:
   a. Comply with UL-2034
   b. Employ an electro-chemical sensor
   c. Be powered by a lithium battery
   d. Conform to all local codes

Domestic Hot Water Measures

Hot Water Heating

1. Temperature adjustment
   a. Criteria
      i. Tested hot water temperature is greater than 120 degrees
      ii. The household is amenable to temperature change
      iii. For rental units, owner permission to perform minor measures, such as changing the hot water temperature, must be obtained.
      iv. Whenever possible, the household member participating in the audit should be present, shown how to make the adjustments and encouraged to perform the adjustment themselves.
   b. Procedures for electric hot water heaters
      i. The Participating Contractor must first ensure that the circuit breaker to the water heater has been turned off.
      ii. If the electric heater contains two heating elements, both heating elements must be adjusted.
      iii. The Participating Contractor must ensure that the circuit breaker to the water heater has been turned back on after the adjustments have been completed.
   c. Procedures for natural gas/propane hot water heaters
      i. Temperature settings are typically not identified on the dial. The Participating Contractor must turn down the dial an estimated amount based on the original reading and teach the household member how to make further adjustments if necessary. It is helpful to mark the original setting with a marker to guide further adjustments.

ii. During the energy audit, the Participating Contractor must inspect the water heater and evaluate draft considerations, such as size of flue, lining of chimney, and additional length of pipe required if relocation is necessary. If The Participating Contractor is uncertain about technical aspects of retrofit decisions, The Participating Contractor should notify program implementation staff that further evaluation by a heating professional is necessary.

iii. CAZ and gas leak testing must be completed as required by BPI.

- Gas or oil hot water heating systems must meet venting codes of the National Fire Protection Association (NFPA) as applicable:
  1) NFPA 54: The National Fuel Gas Code
  2) NFPA 31: Standard for the Installation of Oil-Burning Equipment
  3) NFPA211: Standard for Chimneys, Fireplaces, Vents, and Solid-Fuel Burning Appliances.

Pipe Wrap

1. Criteria- For electric hot water heaters only
   a. A water heater change-out is not under consideration
   b. Pipes are not currently insulated or are insulated poorly
   c. No pipe leaks exist
   d. If the water heater has heat traps, insulation of the intake pipe is not required.
   e. Pipes are not part of a tankless system.
2. Procedures
   a. All installed pipe insulation should be of a size that is correct for the pipe: i.e., no exposed pipe due to using pipe insulation that is too small. Corners must be mitered, and insulation secured with tape.
   b. First 6 feet of hot water pipe and 3 feet of intake water pipe must be insulated.
   c. Pipe insulation must be at least R3.

Showerhead Replacement

1. Criteria
   a. Pre-existing showerhead has a flow rate greater than 3 gallons per minute (GPM)
   b. Current showerhead is not required for medical reasons
   c. Showerhead may be installed without damaging the plumbing.
   d. Showerhead to be installed is acceptable to household

2. Procedures
   a. The participating contractor must test the water flow if the existing shower head does not have water GPM listed on the fixture. New shower head must be installed per manufacturer specifications.
   b. Shower-massager or hand-shower models are acceptable but install type must be discussed with the customer before installation.
   c. The new showerhead must have a flow rate in the range of 1.7-2.5 GPM.

Heat Pump Water Heater/Electric Water Heater Conversions

1. Criteria:

a. Only heat pump water heater (HPWH) and electric resistance domestic hot water equipment will be incentivized. Fossil fuel water heaters are not eligible for incentives except in instances where there are health and safety reasons where a mobile home rated, or power vented natural gas/propane water heater is the only viable option. It is recommended that electric resistance heaters only be used in those cases when a HPWH cannot be installed, and the existing water heater is non-functioning.
b. Household must be homeowner unless a Rental Property Energy Efficiency Services Agreement is completed.
c. Heat pump water heaters should be installed in unconditioned spaces and in accordance with manufacturers recommendations.
d. The existing panel box must have sufficient capacity to meet the households needs in addition to the replacement electric hot water heater
e. Please see Section 5.10 and 5.15 in the Contractor Resource Manual for additional information on heat pump equipment installation requirements.

2. Procedures
   a. The Participating Contractor must discuss option with the household and verify their interest in converting to electric. The household must be informed that in a "fuel-switch" scenario, the electricity costs will increase, but the new water heater will decrease the cost of the existing fuel type.

Inspection and Service to Water Heaters Fueled by a Fossil Fuel

1. Criteria:
   a. Unless a health and safety issue, incentives are not available for the replacement of water heaters fueled by natural gas, oil or propane. Program will incentivize heat pump water heaters (HPWH) and electric resistance domestic hot water equipment. It is recommended that electric resistance heaters only be used in those cases when a HPWH cannot be installed, and the existing water heater is non-functioning.
   b. Replacement or repair is the only option to ensure that dwelling meets CAZ testing requirements. Prior to making this recommendation, contractor must first explore lower-cost alternatives.
   c. Conditions in dwelling are appropriate for change-out. (i.e., no flooding in basement, adequate space etc.)

2. Procedures:
   a. Contractor must perform combustion efficiency and safety tests and safety checks on all gas, propane or oil-fired water heaters as required by BPI.
   b. Contractor shall consider options to reduce usage and ensure the health and safety of the occupants. These retrofits may include, but are not limited to:
      i. Cleaning of burner assembly
      ii. Repair or replacement of faulty venting system
      iii. Repair of leaking hot water lines
      iv. Repair or replacement of faulty fuel lines.

Heating Equipment Measures

Heating System Repair and Replacement

1. Criteria for installation:
    a. For Tier 1 households, heating system replacements will only be considered as a last resort in situations in which Participating Contractor has documented attempts to obtain assistance from the Heating System Repair and Replacement (HERR) Program, the Weatherization Assistance Program, and other appropriate funding sources have been rejected. Please see Section 5.9, 5.10, and 5.15 of the Contractor Resource Manual for additional information on heating system replacement requirements.
    b. Air Source Heat Pumps are prequalified measures for Tier 1 and Tier 3 projects when replacing propane, oil, kerosene, electric resistance, and wood fueled equipment. Air source heat pump must pass cost effectiveness when used for replacing natural gas heating equipment. Ground source heat pumps must pass cost effectiveness regardless of existing fuel type. See Sections 5.10 and 5.15 of the Contractor Resource Manual for addition information on heat pump equipment.
    c. Pellet Stoves are eligible for incentives for Tier 1 and Tier 3 households. Please refer to Section 5.8 of the Contractor Resource Manual for additional information.
    d. Unless in a no-heat situation, fossil fuel heating systems, inclusive of propane, heating oil, and kerosene, are not eligible for incentives through the program.
    e. Natural gas furnaces must have electric savings from ECM motors included in the work scope, be 96% efficient, and replace a furnace that is 80% efficient or less.
        i. Mobile Homes may use 95% mobile home rated furnaces.
    f. Ownership by household has been established and written owner permission has been obtained.
    g. If the household is a tenant, and the building owner is not eligible for Tier 1 incentives, major heating system repairs or replacement is the responsibility of the landlord/building owner and will not be considered for Tier 1 incentives.

2. General Procedures:

    a. All work performed must comply with all State and local codes and must be completed in accordance with BPI standards, manufactures recommendations, and program requirements. Any new heating system equipment installed must comply with the National Fire Protection Agency (NFPA), the National Fuel Gas Code (NFGC) and York State Building construction codes.
    b. Contractor must discuss the heating system operation with an appropriate household member to:
        i. Identify problems and concerns expressed by the household
        ii. Educate the household on appropriate use and maintenance of the heating system.
    b. Adjustments to the heating system that are deemed to be cost effective may be part of the inspection/servicing. Such measures may include replacement of a

furnace filter, opening of restricted ductwork, bleeding an air-bound radiator, or adjustment of a gas burner.

c. Furnace filter slots must be covered. A magnetic tape strip or garage-door-type rubber gasket, secured with screws, may be acceptable options if they provide a reasonably tight seal.
d. Contractor may not proceed with home performance measures in a home unless the heating system is deemed to be in safe and operable condition.
e. Major repairs or replacement must be submitted to program implementation staff for prior approval. Program implementation staff may obtain second bids from alternative contractors.
f. Upon completion of any heating system work which affects the efficiency of the heating system, another steady-state efficiency test must be performed. Final documentation, descriptions of specific repairs completed, and specific costs must be provided along with invoices.
g. Warranty, instruction manual and Contractor contact information must beprovided to the household.

3. Procedures related to Clean and Tunes on Tier 1 projects:

   a. A Clean and Tune can be proposed when any of the following occur:
      - There is any evidence of smoke in a natural gas system's flue gas; or
      - A smoke reading of #1 or greater in an oil system's flue gas; or
      - CO levels are greater than 400 ppm or above manufacturer's allowable limits in the air free flue gas: or
      - Evidence of flame roll-out in a natural gas heating system.
   b. Technicians with the appropriate certifications performing clean and tunes must complete the Clean and Tune Checklist and Certification Form.
4. Procedures related to secondary heating systems must be performed in accordance with BPI standards.

Insulation Measures

Participating Contractors can reference Section 5.15 of the Contractor Resource Manual to identify what air sealing and insulation measures are prequalified and outlines the minimum efficiency requirements for each.

Air Sealing Methodology

1. Criteria:
   a. Blower door testing must be performed, when feasible, at the time of the audit and in accordance with BPI standards.
   b. Participating Contractors must test in accordance with BPI standards outlined in ANSI/BPI-1200-S-2017 "Standard Practice for Basic Analysis of Buildings".
2. Procedures:
   a. During the audit, the Participating Contractor will conduct a blower door test and use pressure diagnostic techniques to identify major sources of infiltration.
   b. The Participating Contractor will make a list of specific air sealing tasks to be performed. For Tier 1 projects, these tasks are to be based on the current

hourly rates in Section 7.7 of the Contractor Resource Manual. For example:
Air seal attic chases prior to insulation: $XX
Seal holes in foundation: $XX
Weather-strip three doors: $XX

3. For Tier 1 projects only
    a. If the Participating Contractor is required to obtain prior approval:
        - The list of air sealing tasks and costs must first be submitted to program implementation staff, along with a projected goal for post air infiltration levels.
        - Program implementation staff must then select and approve specific air sealing strategies.
        - The Participating Contractor may provide up to one hour of additional air sealing without prior approval if further leaks are discovered during work.
    b. If the Participating Contractor has been given authority to determine workscopes without prior approval, the Participating Contractor may proceed with air sealing.
    c. Upon completion of work, the Participating Contractor must provide program implementation staff with list of specific air sealing tasks completed and both pre-andpost- air infiltration readings. Contractor must enter into EmPCalc the final blowerdoor number in order to ensure accurate representation of savings.
    d. If the Participating Contractor does not provide appropriate air sealing as part of the workscope, written explanations must be provided to program implementation staff.

Insulation

Participating Contractors can reference Section 5.15 Table 1A of the Contractor Resource Manual for the insulation requirements for each measure. Contractors should prioritize insulating the whole home with cost effective measures over a high-cost single location measure.

1. Criteria:
    a. No significant structural deficiencies exist (such as leaking roof) which would impede the effectiveness of the insulation. Such deficiencies must be corrected prior to insulation.
        - Participating Contractor should consult with program implementation staff for minor repairs and/or accessories that can be included as part of the project cost.
    b. Structure is sound enough to support the weight of the insulation and installer(s).
2. General Procedures:
    a. All insulation must be installed in a manner that is consistent with BPI Standards, NYSERDA program guidelines, and local codes.
    b. Participating Contractor must inspect premises for presence of knob and tube wiring andnote location. If knob and tube wiring is present in the attic the Participating Contractor may:
        - Insulate attic but ensure that no insulation is in direct contact withknob and tube wiring.

- Propose removal of knob and tube wiring in order to fully insulate attic
  1) The Participating Contractor must provide photographs of pre-existing knob and tube wiring a detailed description of the remediation plan, and remediation costs to implementation staff for review.
  2) For Tier 1 projects, the Participating Contractor must receive authorization from program implementation staff prior to proceeding with knob and tube remediation.

3. Procedures specific to attic insulation:
   a. Participating Contractor must ensure that insulation levels are sufficient to allow for anysettling that may occur in an open blow. At the time of installation, the installed insulation must be at least 1" higher than the invoiced level.
   b. Stairway accesses to attics must receive wall insulation and stair tread high-density cellulose to ensure a complete thermal boundary. The access door must receive weatherstripping and a door sweep and must be secured to prevent air leakage.
   c. If attic hatches exist or are installed in a dwelling, the Participating Contractor must weatherstrip and insulate the hatches **but not permanently seal**.
   d. In the event that a Participating Contractor creates an access to the attic that must be permanently sealed (such as access through drywall, or situations where the Participating Contractor insulates the attic through a vent), the Participating Contractor must provide pre-and post-photos of the installed insulation.
   e. In situations where objects stored in attic impede the Participating Contractor's ability to adequately insulate attic, the Participating Contractor may require the household move objects within a given time frame.
      - For Tier 1 projects, in rare instances, such as situations in which the household is disabled, the Participating Contractor may propose a charge for moving objects to program implementation staff, prior to installation. In other situations, additional resources from outside of the program may be required.
   f. When a floored attic exists, the Participating Contractor must remove and replace flooring in a manner that provides minimum damage, and which provides access to all areas. Broken and split boards must be replaced with a like product and fastened appropriately. If a drill-and-plug method is used, the finished plugs must be flush with existing surfaces.
   g. In situations where the knee walls are insulated, the Participating Contractor must adequately block the thermal bypass at the attic floor/knee wall intersection.
   h. Ventilation must be installed in accordance with all applicable building codes,BPI standards, and program requirements. All openings must be sealed in a weathertight manner and must not greatly detract from the aesthetics of the structure.
   i. Vent openings shall be cut in such a manner as to allow maximum airflow through the vent.

4. Procedures specific to sidewall insulation:

    a. Participating Contractor must make every effort to determine the presence of pre-existing insulation. Acceptable methods include:
        - Probing outside of electrical outlets but inside outlet covers with a non-conductive probe such as a plastic knitting needle.
        - Drilling holes in exterior facing walls in discrete areas such as closet walls. Any penetrations made by the Participating Contractor should be sealed following the inspection.
        - Probing gaps or holes in the interior surface of the exterior wall;
        - Consulting with the occupant;
        - Pulling, drilling, checking under siding. Any penetrations made by the Participating Contractor should be sealed following the inspection;
        - Infrared scans.
    b. If pre-existing cellulose wall insulation is found and there is reason to believe that significant settling has occurred, re-insulation may be considered as follows:
        - Contractor must notify program implementation staff.
        - An infrared scan must be used to identify the extent of voids.
        - Square footage of the void space must be documented.
        - Contractor may then propose an adjusted wall price, based on higher labor cost/ft^2.
        - Participating Contractor must work with implementation staff to calculate the SIR and proceed as appropriate.
    c. For Tier 1 projects, if pre-existing fiberglass wall insulation is found, Participating Contractor must consult with program implementation staff. Additional insulation may only be installed with prior approval.
    d. When insulating walls:
        - If pre-existing wall insulation is present, crew must accurately document location of added wall insulation. Notes and pictures regarding situation are recommended.
        - Siding must be removed in all cases and reinstalled to match the original condition. Damaged siding must be repaired and replaced with like material and color, as necessary and must be watertight. Only paintable caulk acceptable for sealing replaced siding.
        - Drilling directly into exterior siding or drilling into the interior walls of the home is prohibited unless Participating Contractor obtains written permission from the homeowner and approval to proceed from program implementation staff. As part of the written permission, the Participating Contractor must a detailed description of the expectations for sealing the holes (i.e. plugged and 1 coat of spackle and or ready to paint.)

5. Procedures specific to miscellaneous insulation measures:
    a. Insulation of floors or crawlspaces may be acceptable measures provided that these measures:
        - Are cost effective
        - Do not create the potential for freezing of pipes

1) Are consistent with an appropriate thermal boundary for the home.Floor insulation between a warm basement and a heated space above, for example, is not appropriate.

- Address any air leakage issues with appropriate air sealing

b. Floor insulation must be installed in such a manner that insulation is in contact with the sub-floor, with kraft or foil face applied towards the sub-floor. A minimum R-19 must be installed.

Dirt-floor crawlspaces require a continuous air/moisture barrier. This mayconsist of plastic sheets of a minimum 4 ml thickness, overlapped at least one foot. This barrier must extend at least 10-16" up the foundation wall and sealed.

c. Exhaust fans that terminate into crawlspaces or attic spaces must be rerouted to the outside. Ductwork must be rigid.

Lighting Measures

The following guidelines will assist Participating Contractors with the creation of reasonable lighting retrofit packages, and modeling of the associated savings. This guidance is for Direct Install, Tier 1 and Tier 3 projects.

LED INSTALLATION GUIDELINES

1. Existing light bulbs must be 60 watts or greater to be eligible for replacement.
2. LEDs must be installed in high use areas. The installation of LEDs in low use areas such as closets, unfinished basements, attics, garages or utility rooms is not permitted.
3. LEDs must be rated for the light fixture, switch type, environment, etc. in accordance with the manufacturer's recommendation.
4. Participating Contractor must physically replace the existing lighting with LEDs during the course of completing the direct install/project workscope for Tier1 or Tier 3 projects. It is not permissible for the contractor to provide the customer with LEDs for the customer to install.
5. Candelabra LEDs
   a. The chandelier must be in use for an average of three or more hours per day.
   b. The household must be willing to accept the appearance of the bulb.
   c. In instances where more than 20 LEDs will be installed at the project, a lighting schedule may be required per bullet 7. below.

6. To ensure adequate lighting, contractors must, whenever possible, replace incandescent bulbs with LEDs as indicated in the table below:

Pre-existing Incandescent	Light Output	Replacement LED Max
60 watts	750-1049 lumens	8 watts
75 watts	1050-1489 lumens	13 watts
100 watts	1490-2600 lumens	20 watts

Pre-existing Incandescent	Light Output	Replacement LED Max
150 watts	2601-2800 lumens	28 watts

7. In instances where a project includes more than 20 LEDs, Participating Contractors must submit an LED installation schedule detailing the pre and post bulb wattage, location, and burn time. Projects where more than 20 LEDs are specified may be considered eligible but will be reviewed and considered on a case by case basis. If a detailed schedule (e.g. pre/post wattage, location, burn time) has been modeled in the program software, a separate lighting schedule is not required.

Programmable Thermostats

1. Criteria for installation:
   a. Participant owns the home, or a Rental Property Energy Efficiency Services Agreement has been submitted to the program
   b. Household displays the ability to properly understand and has a lifestyle that will effectively utilize the thermostat.
   c. Thermostat voltage is appropriate.
   d. Maximum one per zone
2. Required thermostat specifications:
   a. In situations where home has a central air conditioning unit in use, thermostat has the capability to adjust cooling temperatures
   b. Battery back-up
   c. Large, easy to read display. In situations where household is visually impaired, Contractor must ensure that display is appropriate to household'sneeds.
   d. A minimum of a 5/2-day program schedule (full 7-day program schedule is preferred)
   e. Programming should be easy and intuitive, and must allow adequate time for inputs
   f. Participant should be able to override program easily
   g. Thermostat should include at minimum of a full one-year warranty
   h. Installed thermostats must be compatible with existing heating system

3. Procedures for installation of thermostats for fossil-fuel systems:

   a. Thermostats may be installed during initial audit visit.
   b. Installation must include training of an appropriate family member.
   c. Contractor contact information must be left with the household in case questions arise.
   d. Thermostat must be fully operational and programmed according to the family's needs before the Participating Contractor leaves the home.
   e. Replaced thermostats that contain mercury must be disposed of in accordance with program guidelines.

4. Procedures regarding thermostats for electrically heated homes:

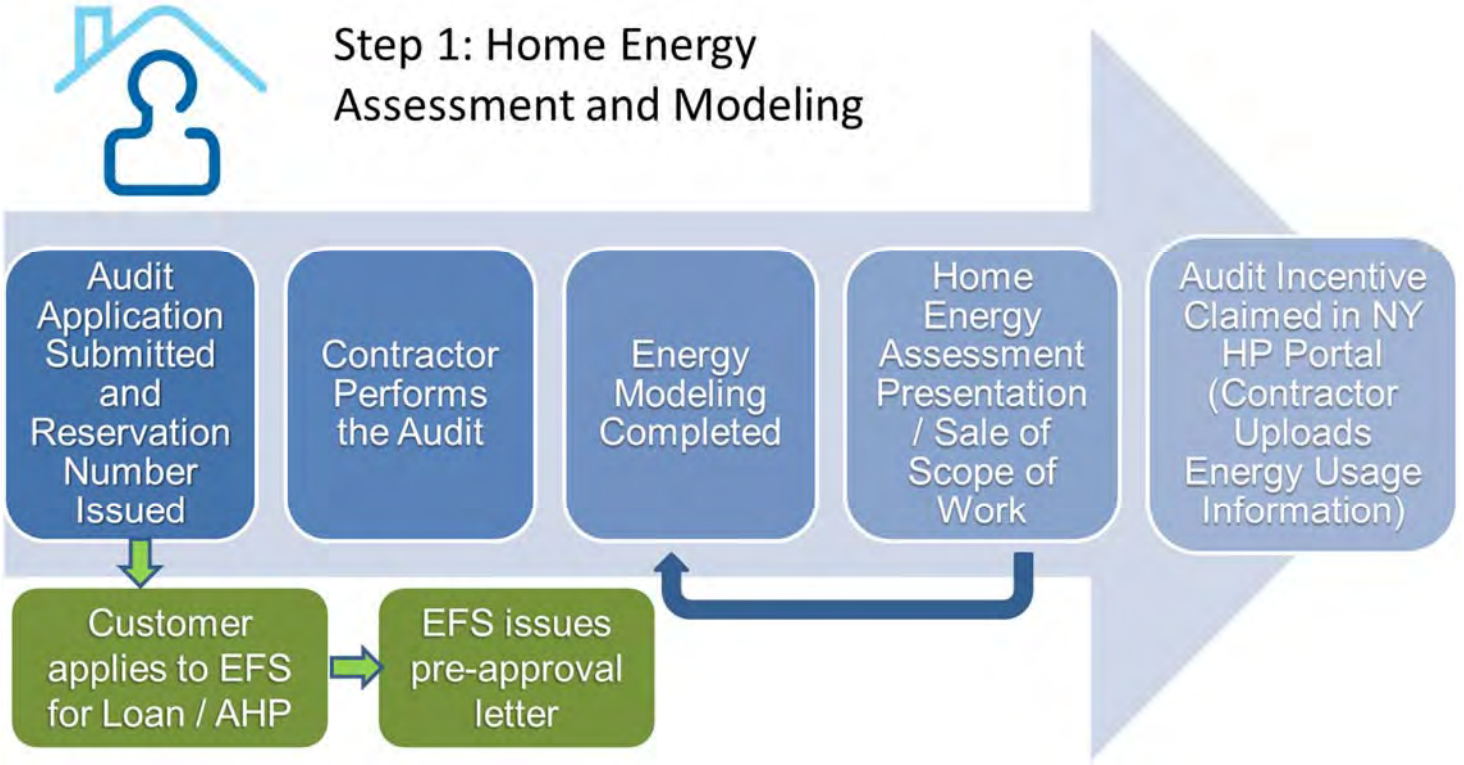
a. Programmable thermostats maybe very effective at reducing electricity costs; however, electrically heated homes often require thermostats in each room. Nevertheless, the cost may be moderated by replacing only the thermostats in the areas that are most frequently used; a set of 3 to 5 “line-voltage” thermostats in these areas maybe an appropriate and effective application. If such an opportunity arises, Participating Contractor may consult with program implementer for guidance.

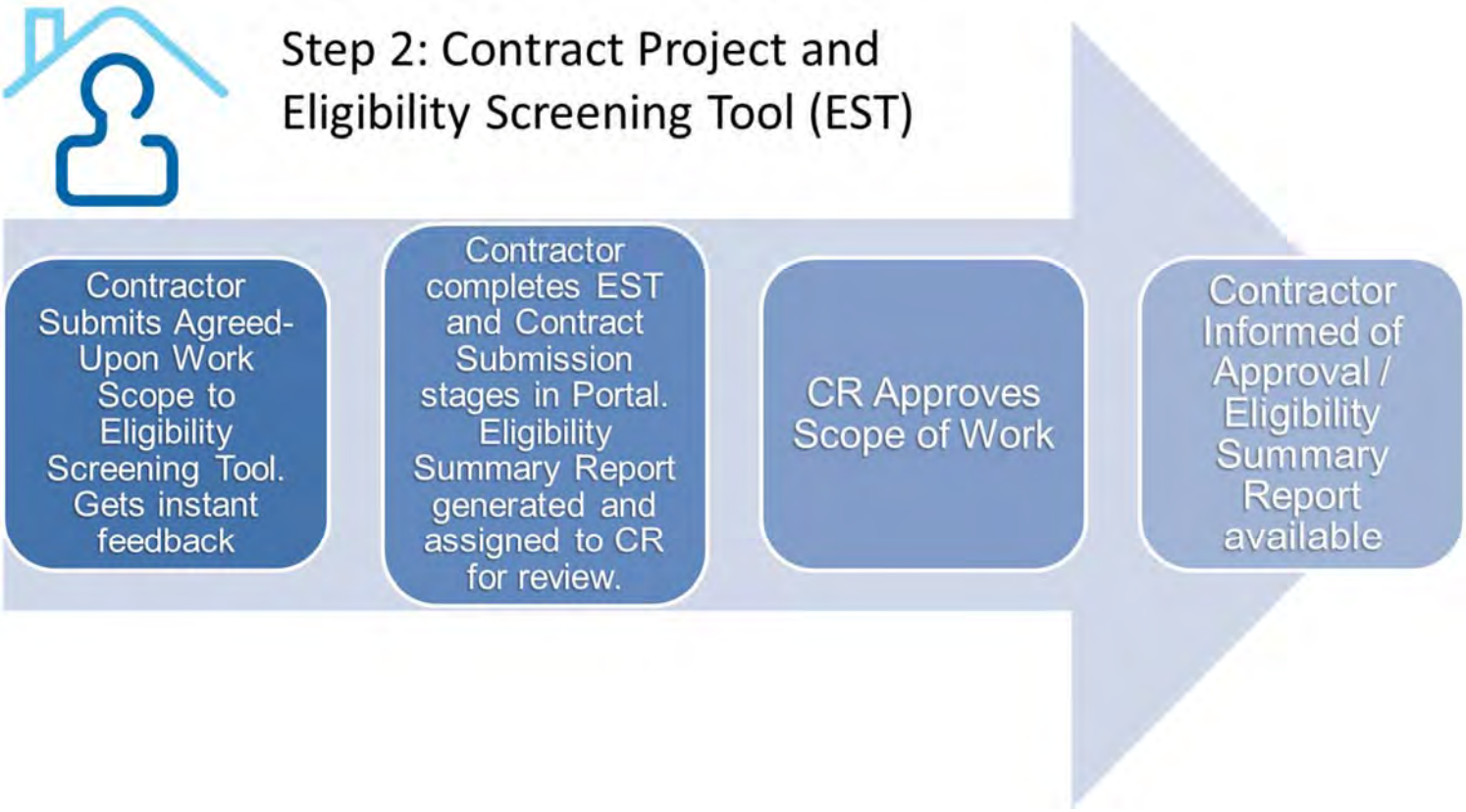
HPwES Operational Procedures Overview
Guide to Paperwork and Procedures

Event	Description	Documentation	Submit to:
A. Customer Intake and Application	Claim GJGNY Free Reduced-Cost Audit Reservation Number (If application is not yet submitted, work with the customer to submit)	See NY HP Portal User Guide (CRM Section 11). Refer to CRM Section 3 for Audit Application.	**CLEAResult** Claim reservation number using NY HP Portal. Customers can apply on-line at: https://nyserda.energysavvy.com/start-your-project/hpwes/ Or applications can be emailed to: HPwES-Audit@clearesult.com Or Faxed to (866) 335-6306, OR mailed to: HPwES Energy Audit, PO Box 12129, Albany, NY 12212
	GJGNY Financing offered by Energy Finance Solutions (EFS).	Refer to CRM Section 4 for Credit Application.	**Energy Finance Solutions (EFS)** Can be faxed to (608) 249-5788, phoned in to (800) 361-5663, or filled out online at www.energyfinancesolutions.com.
	Assisted Home Performance with ENERGY STAR subsidy for 1 to 4 unit buildings.	Assisted HPwES Application with income documentation and owner's agreement (if applicable). Refer to CRM Section 3.	**Energy Finance Solutions (EFS)** Can be faxed to (608) 249-5788, phoned in to (800) 361-5663, or filled out online at www.energyfinancesolutions.com.
B. Comprehensive Energy Assessment Report/develop eligible workscope	Follow Comprehensive Energy Assessment guidelines.	Enter Data into approved modeling software and print out Comprehensive Energy Assessment Report.	**CLEAResult** Claim the HPwES audit reservation number, upload audit file to NY HP Portal and follow instructions as detailed in User Guide NY Home Performance Portal (CRM Section 11). Customer's utility bills must be submitted, or if unobtainable, the Energy Usage History Waiver Form.
	Provide customer with What to Expect brochure.	What to Expect brochure. Refer to CRM Section 8.	

Event	Description	Documentation	Submit to:
C. Complete Sale	Negotiate workscope and prices for eligible measures.	Create a package in approved modeling software that includes the measures and prices that have been negotiated.	**CLEAResult** Upload workscope package (signed contract optional to upload at this time) to NY HP Portal and follow instructions as detailed in User Guide NY Home Performance Portal. CLEAResult will forward the approval transmittal (EST Report) to all appropriate parties (EFS). If there are issues with the job submission, the project will be placed on hold and the project is rolled back in the Portal workflow.
	Customer to sign approval transmittal (EST Report) after approval but before work begins.	Signed contract with customer and contractor signatures. Signed EST Report with customer and contractor signatures.	
D. Workscope changes	Negotiate change in workscope with customer	Create amended package in the approved modeling software that includes the changes in measures and prices.	**CLEAResult** Upload applicable documents including Workscope contract and if applicable Change Order Form (CRM Section 8) to NY HP Portal and follow instructions as detailed in User Guide NY Home Performance Portal. **CLEAResult** Upload revised package to NY HP Portal or make appropriate changes in RHA and follow instructions as detailed in the "Change Orders" section in User Guide NY Home Performance Portal. CLEAResult will issue a new approval and forward it to the appropriate party (EFS).
		Change Order Form with customer and contractor signature. Refer to CRM Section 8.	
E. Complete Work	Complete work satisfactorily and perform necessary tests.	Update completion package with test out information.	**CLEAResult** Upload the signed EST Report, signed contract, Post Installation Health & Safety Test Results, and completion package to the NY HP Portal and follow instructions as detailed in the "Final Project Submission" section of the User Guide NY Home Performance Portal. CLEAResult approves Completion or contractor is rolled back in Portal workflow if there are issues with completion. For jobs using Program Financing or Assisted Home Performance, CLEAResult forwards completion to EFS for disbursement of funds to contractor. CLEAResult also approves the project level contractor incentives and submits an invoice to NYSERDA for disbursement of funds to the contractor.
		Signed contract with customer and contractor signatures.	
		Signed section 6 of the EST Report with customer and contractor signatures.	
		If applicable, update RHA with test out information. Flag improvements as 'installed'.	

Guide to Program Procedures and Paperwork Flow Charts





Step 3: Final Project Submission

Customer Information Form & Loan Documents Signed Before Work Begins

Work is Completed

Last Page of Eligibility Summary Report Signed by Customer (Replaces Certificate of Completion)

Contractor Uploads the Signed Eligibility Summary Report, Signed Contract, Post Installation Health & Safety Test Results, Completion Package from Modeling Tool & Signed Customer Information Form

Step 4: Final Project Submission

Contractor Submits Completion Information to CR via NY HP Portal

CR Approves Project and Incentives

Project is Considered Final: Contractor Notified, Payments Issued, Savings Reported

Some Projects Selected for Data QC Review

Some Projects Selected for QA Inspection

EFS Notified and Disburses Loan Payment (~48 hrs)

Assisted Home Performance Direct Install (AHP DI)

Assisted Home Performance with ENERGY STAR® Direct Install (AHP DI) allows contractors to install select measures during a Comprehensive Home Assessment (CHA) at no cost to the homeowner. Measures are modeled in **EmPCalc** (v5.6 or later, CRM Section 11.2) and the incentive is claimed in the Express Audit workflow of the NY HP Portal. Direct Install measures are not deducted from the AHP Subsidy total.

Customer Eligibility

To receive AHP DI measures, customers will need to complete an application for a CHA (audit) and receive a reservation number. Customers approved for a CHA through the Assisted Home Performance with ENERGY STAR® Program are eligible for direct install measures provided their dwelling has not received similar measures through EmPower NY or AHP DI measures previously from another participating contractor. Customers receiving electric service through a municipal electric provider are **not** eligible for direct install measures.

CRM Section 3.2: http://hpwescontractorsupport.com/wp-content/uploads/2018/08/HPwES-Assessment-Application.pdf

Eligible Measures and Pricing

Measure	Limit	Pricing	
		Upstate	Downstate
Energy Education	1 per home	$ 55.00	$ 55.00
CO Detector	1 per home	$ 72.38	$ 77.36
Smoke Detector	1 per home	$ 38.19	$ 42.21
Combination CO/Smoke Detector	1 per home in place of a single Smoke & CO detector	$ 87.88	$ 93.32
Furnace Filter	1 per home	$ 24.80	$ 25.80
Furnace filter Slot Cover	1 per home	$ 25.80	$ 24.80
LEDs	16 standard/candelabra (can include 1 nightlight)	$ 11.00	$ 11.00
Showerheads (handheld and regular)	Quantity not to exceed the # of people in the home	$ 36.32	$ 40.54
Pipe wrap	Per linear ft, 9 ft max (limited to 6' max hot side and 3' max cold side)	$ 1.92	$ 2.12
Thermostats (programmable)	1 per zone	$ 123.90	$ 134.20
Weather-stripping and Sweep	As needed, per door to exterior or unconditioned space	$ 69.20	$ 74.30
Sweep Only	As needed, per door; to exterior or unconditioned space	$ 25.80	$ 28.90

Upstate: For contractors with business addresses in counties north of and including Sullivan, Delaware, Green, and Columbia counties.

Downstate: For contractors with business addresses in counties south of and including Dutchess and Ulster counties.

Modeling in EmPCalc (v5.6 or later)

EmPCalc has been updated to include a Direct Install Program Type on the Cover tab. Follow the steps below to enter the eligible measures.

- Select the AHP Direct Install Program Type on the Cover tab - enter data in all highlighted cells
- Go to the AHP Direct Install tab – Check off or enter the measure or installed quantities
- Click on the "Export CSV File" and save the CSV file to your computer

Submission Process

Contractors should follow existing submission requirements as described in the NY HP Portal User Guide (CRM Section 11.2b) to claim the CHA audit incentive. To claim the Direct Install incentive, contractors should answer "Yes" to the Direction Install question and provide the following documentation.

- Signed Certification of Completion (CRM Section 8.2c)
- CSV upload from EmPCalc (v5.6 or later, CRM Section 11.2)

Incentive Payment

Payment of AHP Direct Install Measures will be added to the current Audit incentive payment process and will not impact the current payment timeline. Additional AHP work can be done by creating an Express Contract project and following the existing submission process described in the NY HP Portal User Guide (CRM Section 11.2b).

NY Home Performance with ENERGY STAR®
Eligible Measures and Accessories

This is a general guide to eligible incentives and financing options available through NYSERDA's Home Performance with ENERGY STAR (HPwES) Program. Eligibility may vary based on the energy efficiency requirements for each upgrade type, results of the comprehensive home assessment, fuel type, energy utility, and funding source availability.

Subject to the terms described on pages 2 and 3, the upgrades marked with an "✓"below on the "Prequalified List" are eligible for the 50% Assisted Subsidy for income-eligible households and contractor incentives for market rate and Assisted projects. NYSERDA also offers two financing options through NYSERDA's Residential Loan Fund: a Smart Energy Loan and an On-Bill Recovery (OBR) Loan. A Smart Energy Loan project for up to $13,000 that includes only the upgrades on the "Prequalified List" below requires no additional cost-effectiveness screening. If the project includes additional eligible upgrades below that are not on the Prequalified List, the loan is subject to cost-effectiveness standards as described on page 4. Items on this list without a checkmark are eligible for financing, subject to cost-effectiveness standards, but not eligible for the 50% Assisted Subsidy or contractor incentives.

Table 1. Eligible Measures – Prequalified List

	Eligible Measures	Minimum Efficiency Requirements	Prequalified
Primary Heating and Cooling System [1,5,7]	Furnace[2] – Natural Gas or LP	AFUE 95% (as long as not prohibited by local codes). Furnaces with ECM Motor allowed.	✓
	Furnace[2] – Fuel Oil	AFUE 85%	✓
	Boiler – Gas Condensing	AFUE 90%	✓
	Boiler – Oil Condensing	AFUE 87%	✓
	Boiler – Non-Condensing[3]	AFUE 85% (project must include boiler reset control)	✓
	Boiler – Steam	AFUE 82% (size must be matched to cumulative capacity of connected radiators, per Institute of Boilers & Radiator Mfrs (IBR) standards)	✓
	Boiler Reset Controls	Programmed properly per manufacturer's specifications and site conditions. Maximum price of $500.	✓
	Air Source Heat Pump (electric split systems)[2,7]	See Air Source Heat Pump Program manual for requirements	
	Wood Stove[4]	EPA certified for particulate matter output of 4.5 grams per hour or less	
	Distribution Improvements in Natural Gas or Electrically Heated Homes[5]	Installed in accordance with all applicable state and local codes	
	Distribution Improvements in Oil or Propane Heated Homes[5]	Installed in accordance with all applicable state and local codes	✓
	Duct Sealing	UL 181B mastic or tape; use of "duct tape" is disallowed	✓
	Duct Insulation	Installed in accordance with all applicable state and local codes	✓
	Pipe Insulation	R-3	✓
	Central Air Conditioner (split system)[6,9]	AHRI Certificate Required. 14.5 SEER / 12 EER.	✓
		Air Source Heat Pump (for Cooling). See Air Source Heat Pump Program manual for requirements.	✓
	Programmable Thermostat	5+2 day programmable thermostat including smart thermostat. Limited to one thermostat installed per zone.	✓
Building Shell	Insulation (attic, wall, floor, band joist, basement, crawl space)	Refer to Insulation Program Policy for homes heated with natural gas or electricity. Must be accompanied by blower door assisted air sealing per BPI and program guidelines.	✓
	Air Sealing	Supervised by professional; blower door assisted per BPI and program guidelines.	✓
	Replacement Windows	ENERGY STAR for climate/region. May be subject to SHPO review.	
	Storm Windows and Doors	No minimum efficiency requirement. May be subject to SHPO review.	
	Movable Window Insulation	R-3	

	Eligible Measures	Minimum Efficiency Requirements			Prequalified
Water Heater [7,8]	Natural Gas, Propane	Tank	ENERGY STAR Qualified. 40-100 gallons.		✓
		On-Demand	ENERGY STAR Qualified. Must replace a conventional 40 or 50 gallon tank.		✓
	Electric	Tank	ENERGY STAR Qualified		
	Oil	Tank	20-100 gallons, UEF ≥ 0.68		✓
	Indirect-Fired Tank	UL Approved			✓
	Heat Pump Water Heaters	Tank	≤ 55 gallon tank	>55 gallon tank	✓
			UEF > 2.0	UEF ≥ 2.2	
			ENERGY STAR Qualified, Must be installed in an unconditioned space.		
	Pipe Insulation	R-3			✓
	Hot Water Tank Insulation - Electric	R-10			
Conservation	Faucet Aerator	No minimum efficiency requirement			✓
	Low Flow Showerhead	Maximum flow rate of 1.5 gallons per minute. Aerating type showerheads not eligible.			✓
Appliances & Lighting [10]	Refrigerator	CEE Tier 2 or 3			✓
	Freezer	ENERGY STAR Qualified			✓
	Dishwasher	ENERGY STAR Qualified			
	Clothes washer	ENERGY STAR Qualified			
	Dehumidifier	ENERGY STAR Qualified			✓
	Room Air Conditioner	ENERGY STAR Qualified			✓
	CFLs	ENERGY STAR Qualified. Refer to Lighting Guidelines in Contractor Resource Manual (CRM).			✓
	LEDs	ENERGY STAR Qualified. Refer to Lighting Guidelines in CRM.			✓
	Light Fixtures	ENERGY STAR Qualified for compact fluorescent, or electronic ballast for fluorescent tubes			

[1] Defined as the primary heating system for the space being conditioned. Addition/replacement of secondary heating systems is not eligible. The new unit must be the primary heat for the space being served.

[2] Specific requirements for ENERGY STAR Qualified products can be found by visiting: https://www.energystar.gov/products.

[3] In instances where venting conditions require the installation of a non-condensing boiler, boiler reset controls must be included in the project; tank-less coil DHW is not allowed.

[4] Wood stoves must supply a primary portion of heat. List of EPA Certified Wood Stoves: https://www.epa.gov/compliance/list-epa-certified-wood-stoves.

[5] In instances where an area of a home lacks adequate distribution, installation of new distribution to serve the area is eligible. The area lacking adequate distribution must be located within the pre-existing thermal boundary.

[6] Not eligible for the Assisted Home Performance subsidy.

[7] Refer to the Fuel Conversion Policy for eligibility of fuel switches.

[8] Use manufacturer's sizing guidelines or visit https://www.energy.gov/energysaver/water-heating/sizing-new-water-heater. For ENERGY STAR criteria, including UEF ratings and draw patterns, visit energystar.gov/products/water_heaters/residential_water_heaters_key_product_criteria

[9] Measure is only eligible for incentive when there is a replacement of an existing appliance or existing cooling system.

[10] Maximum Assisted Subsidy for each appliance is: $300 for refrigerators and freezers; $75 for dehumidifiers; and $50 for room air conditioners. Only the base price of the appliance plus applicable tax is eligible; delivery, set-up, warranties or appliance accessories, and any associated taxes on these items are not eligible for incentives.

Eligible Health & Safety Measures and Accessories

Non-prequalified measures and Health and Safety Measures and Accessories are not eligible for the 50% Assisted Subsidy or contractor incentives.

Smart Energy Loan:
Up to 15%, not to exceed $2,000, in non-prequalified measures listed in Table 1 and eligible Health & Safety Measures and Accessories in Table 2 may be included in a Smart Energy Loan without additional cost-effectiveness screening.

On-Bill Recovery:
Up to 15%, not to exceed $2,000, in eligible Health & Safety Measures and Accessories in Table 2 may be included in an On-Bill Recovery Loan subject to cost-effectiveness requirements.

Table 2. Eligible Health & Safety Measures and Accessories

Health and Safety	Asbestos abatement	Ventilation Fans (Whole house fans or similar attic exhaust fans are not eligible)
	Electrical service upgrade necessary when installing a new heating/cooling unit	Repairs/upgrades to heating and/or DHW systems (including power venting kits) to correct spillage, inadequate draft, carbon monoxide failures
	Upgrade of knob and tube wiring in order to install insulation	Measures to provide sufficient combustion air and prevent Combustion Appliance Zone (CAZ) depressurization, spillage or inadequate draft
	Radon and lead abatement work	Gas leak repair
	Cost of removing an oil tank or replacing a faulty oil tank when done in connection with a heating system replacement	Dryer vent repair
	Repairs to the home due to water damage, molds and mildew, ice dams or other symptoms of poor building performance, as long as the cause(s) of building performance-related damage are addressed	Heat/Energy Recovery Ventilator
Qualified Accessories	Attic soffit, gable, or ridge vents	Furnace humidifier
	Attic storage areas / mechanical access	Chimney liners and caps
	Attic pull-down stairs	Germicidal UV lights or HEPA filters
	Drywall as thermal barrier for spray foam or air sealing	AC coil when not installed with condenser
	Thermal barriers for spray foam	Fuel conversion accessory items
	Air Cleaners	Oil burner replacement
	Additional thermostats	Moisture barriers

All Health and Safety Measures and Accessories costs must be itemized for the purposes of determining incentive eligibility and loan cost effectiveness. These costs are eligible for incorporation into a Smart Energy Loan or On-Bill Recovery Loan, but are not eligible for the Assisted Subsidy or contractor incentives.

The costs associated with the installation of certain measures can be included in the related energy saving measure. Items such as high hat covers, kneewall wrap, weather stripping, and outlet gaskets can be included with air sealing. Baffles, insulation dams, and creating access to the attic can be included with attic insulation.

INCENTIVES

The Assisted HPwES Program offers income-qualified customers a 50% work scope subsidy of up to $4,000 for single-family homes and up to $8,000 for 2 to 4-family homes. The balance of the project cost is eligible for financing through a Smart Energy or On-Bill Recovery Loan.

Incentive Eligibility

The 50% Assisted Subsidy and contractor incentives are available for customers in the following electric utility territories: Central Hudson, Con Edison, National Grid (NYC and Upstate), NYSEG, Orange & Rockland, and Rochester Gas and Electric. Limited Regional Greenhouse Gas Initiative (RGGI) funds are available for eligible measures for customers of municipal electric utilities.

The 50% Assisted Subsidy may not be combined with any other utility incentive.

FINANCING OPTIONS

Program Financing is available statewide for all eligible measures that meet the cost-effectiveness standards of the loan product.

The maximum loan amount for the Smart Energy and On-Bill Recovery Loans is $13,000 per applicant; up to $25,000 if the payback period is 15 years or less. The minimum loan is $1,500.

The calculation of cost-effectiveness for the Smart Energy and On-Bill Recovery Loans is based on the amount borrowed by the consumer, net of any customer incentives, including the 50% Assisted Subsidy or utility incentives. Financing charges are included in the cost effectiveness calculation. Customers have the option to "buy down" the project cost so that the financed amount meets the cost effectiveness criteria. The loan terms are 5, 10, or 15 years, but the term may not exceed the average useful life of the financed measures.

Smart Energy Loan

The Smart Energy Loan is available with automatic (ACH) payment, and is repaid in installments to NYSERDA's loan servicer.

Up to 15%, not to exceed $2,000, in non-prequalified upgrades listed in Table 1 and eligible Health and Safety Measures and Accessories in Table 2 may be included in a Smart Energy Loan without additional cost-effectiveness screening. For those projects where more than 15% of the cost is for items other than those on the Prequalified List, a Savings to Investment Ratio (SIR) greater than .8 is required.

On-Bill Recovery Loan

The On-Bill Recovery Loan is repaid through an installment charge on the customer's utility bill. Upgrades listed in Table 1 and Table 2 may be included in the loan, however the monthly loan installment payment may not exceed $1/12^{th}$ of the estimated annual energy cost savings for the improvements over the loan term. Measures and accessories listed in Table 2 are capped at 15% of the total prequalified measure cost, not to exceed $2,000.

Additional Energy Technologies

Additional technologies may be included in a Smart Energy Loan or an On-Bill Recovery Loan through NYSERDA's NY-Sun, Renewable Heat NY, and Ground Source Heat Pump Programs. Additional details are available at: https://www.nyserda.ny.gov/All-Programs/Programs/Residential-Financing-Options

To coordinate a loan that includes energy measures of more than one NYSERDA program, please contact support.residential@nyserda.ny.gov.

*Interest rates and loans terms are subject to change. Full details about all Program Financing are available at http://www.nyserda.ny.gov/residential-financing and in Section 4 of the Contractor Resource Manual.

Comprehensive Energy Assessments Procedures And Installation of Energy Efficiency Measures

The Home Performance with ENERGY STAR® Program requires that Comprehensive Energy Assessments and recommendations for energy efficiency measures be conducted in accordance with all relevant standards published by the Building Performance Institute (BPI) and in accordance with Materials & Installations Guidelines (Section 9). To be eligible for Program incentives and/or financing, recommendations made for Energy Efficiency Measures proposed must meet or exceed the efficiency or eligibility criteria specified by the Program (see Eligible Measures and Accessories List and Program Rules for Insulation documents for details).

In addition to the currently applicable standards (e.g. Building Analyst) the Program has adopted the recently published BPI-1100 Home Energy Audit Standard. The BPI-1100 Standard describes all elements necessary for a Comprehensive Energy Assessment.

The BPI-1200 standard complements the BPI-1100 standard and provides the protocols for achieving the requirements of the BPI-1100 standard (i.e. BPI-1100 describes ***what*** a comprehensive assessment is, and the BPI-1200 standard describes ***how*** to do it).

For more information, visit BPI.org.

Home Performance with ENERGY STAR® Program Rules for Insulation

For Homes Heated with Natural Gas or Electricity

These rules are used to determine eligibility for the Assisted Home Performance Subsidy and contractor incentives for homes heated with natural gas or electricity.

Determining & Documenting Pre-Existing Insulation Conditions:

Contractors should refer to the chart titled Effective R-values for Batt Insulation located in the BPI Building Analyst Professional Standard to determine the effective R-value of pre-existing batt insulation in attics and walls. Based on recent Program impact evaluations, the Effective R-value should not be degraded below "Fair".

Modeling Pre-Existing Insulation Levels in Program Software:

Contractors should indicate insulation levels that most closely represent the effective R-value of pre-existing insulation per BPI, and either the auditor or the software should account for the other components in the assembly (e.g. drywall, sheathing, air film, house wrap).

Insulation Rules Summary:

Insulation measures outside the parameters of the rules below will be loan only and the project must pass loan cost-effectiveness rules.

Installation of insulation must be accompanied with blower door assisted air sealing as per BPI and Program guidelines.

Contractors should not shift costs from insulation to air sealing.

The tables below provide the Maximum Pre-Existing Effective R-value and Post Installation Insulation levels; these numbers include an average of R-2 for typical assembly components:

ATTIC FLAT- OPEN		
Insulation Type	Maximum Existing Effective R-value	Maximum Post Nominal R-value
Fiberglass	R-27 Statewide	R-60 Statewide
Cellulose	R-27 Statewide	R-60 Statewide
Foam	R-22 Statewide	R-49 Statewide

ATTIC SLOPES: OPEN or ENCLOSED Areas Beneath Roof Deck *		
Insulation Type	Maximum Existing Effective R-value	Maximum Post Nominal R-value
Fiberglass	R-7 Statewide	R-30 Statewide
Cellulose	R-7 Statewide	R-30 Statewide
Foam (Closed Cell)	R-7 Statewide	R-30 Statewide

* See Guidance for Attic Slope insulation practices per the HPwES Technical Bulletin – Dense Packing of Roof Assemblies.

ATTIC FLOOR w/DECKING; OR FLOORS, OVERHANGS and CRAWL SPACES over NON-CONDITIONED SPACE.*		
Insulation Type	Maximum Existing Effective R-value	Maximum Post Nominal R-value
Fiberglass	R-14 Statewide	R-30 Statewide
Cellulose	R-14 Statewide	R-30 Statewide
Foam	R-14 Statewide	R-30 Statewide

* This excludes insulating basement ceilings, where the basement is tied to moderated earth temperatures (i.e. semi-conditioned). Insulation of conditioned floors over garages, ventilated crawlspaces, and floors, overhangs, and cantilevers over non-conditioned space is permitted.

EXTERIOR WALLS including BASEMENT WALLS		
Insulation Type	Maximum Existing Effective R-value	Maximum Post Nominal R-value
Fiberglass	R-9 Statewide	R-18 Statewide
Cellulose	R-9 Statewide	R-18 Statewide
Foam	R-9 Statewide	R-21 Statewide

RIM JOISTS and BAND JOISTS		
These are considered Air Sealing measures however pre and post insulation criteria apply to the insulation types.		
Cellulose	R-7 Statewide	R-30 Statewide
Foam	R-7 Statewide	R-21 Statewide

NY Home Performance with ENERGY STAR®
Lighting Guidelines

The following guidelines will assist contractors with the creation of reasonable lighting retrofit packages, and modeling of the associated savings.

CFL & LED INSTALLATION GUIDELINES

- As it is expected that the average hourly usage of CFLs & LEDs diminishes as additional CFLs and LEDs are installed. When developing energy simulation models the daily hours of operation input for CFLs and LEDs must be in accordance with the table below:

Hours of CFL and LED Usage Based on Number of CFLs and/or LEDs Installed	
Number of Installed	**Daily Hours of Operation**
1 - 5	3.2
6 - 10	2.4
11 - 15	2.0
16 - 20	1.7
21+	Provide lighting schedule

- Existing light bulbs must be 60 watts or greater to be eligible for replacement.
- CFLs and LEDs must be ENERGY STAR qualified and must replace an incandescent bulb.
- CFLs and LEDs must be installed in high use areas. The installation of CFLs and LEDs in low use areas such as closets, unfinished basements, attics, garages or utility rooms is not permitted.
- If installed outdoors CFLs and LEDs must be rated for operation in year round exterior temperature conditions.
- CFLs and LEDs must not be installed in a light fixture operated by a dimmer unless designed to do so.
- Contractor must physically replace the existing lighting with CFLs and LEDs during the course of completing the HPwES project. It is not permissible for the contractor to provide the customer with CFLs and LEDs for the customer to install.
- To ensure adequate lighting, contractors must, whenever possible, replace incandescent bulbs with CFLs and LEDs as indicated in the table below:

Pre-existing Incandescent	Light Output	Replacement CFL Max	Replacement LED Max
60 watts	750-1049 lumens	18 watts	8 watts
75 watts	1050-1489 lumens	22 watts	13 watts
100 watts	1490-2600 lumens	30 watts	20 watts
150 watts	2601-2800 lumens	55 watts	28 watts

- In instances where a project includes more than 20 CFLs and/or LEDs, contractors must submit a CFL/LED installation schedule detailing the pre and post bulb wattage, location, and burn time. Projects where more than 20 CFLs and/or LEDs are specified may be considered eligible, but will be reviewed and considered on a case by case basis. If a detailed schedule (e.g. pre/post wattage, location, burn time) has been modeled in the program software, a separate lighting schedule is not required.

Home Performance with ENERGY STAR®
Fuel Conversion Policy

These rules are used to determine the eligibility for a project involving a fuel conversion.

1. There must be net positive energy savings for the measures converted, except where the existing heating fuel is electricity;
2. The measures installed must be eligible for the incentive you are seeking. (Example: Converting from a gas furnace to geothermal is not eligible for a Subsidy because geothermal is not eligible for cash back incentives.) Refer to the eligible measures list in Section 6 for incentive eligibility.
3. The full cost of installation for a fuel conversion must be submitted;
4. Fuel conversions of secondary heating systems are not allowed; and
5. The types of fuel conversions that are allowable and the incentives they are eligible for are detailed in the matrix below:

		New Fuel Source					
Existing Fuel Source		**Natural Gas**	**Oil**	**Propane**	**Wood**	**Electric**	**Air Source or Ground Source Heat Pump**
	Natural Gas		Not Eligible	Not Eligible	Not Eligible	Not Eligible	GJGNY Loan
	Oil	Contr. Inc. Subsidy GJGJNY Loan		Contr. Inc. Subsidy GJGNY Loan	Not Eligible	Not Eligible	GJGNY Loan
	Propane	Contr. Inc. Subsidy GJGJNY Loan	Not Eligible		Not Eligible	Not Eligible	GJGNY Loan
	Wood	Contr. Inc. Subsidy GJGJNY Loan	Contr. Inc. Subsidy GJGJNY Loan	Contr. Inc. Subsidy GJGNY Loan		Not Eligible	GJGNY Loan
	Electric	Contr. Inc. Subsidy GJGJNY Loan	Contr. Inc. Subsidy GJGJNY Loan	Contr. Inc. Subsidy GJGNY Loan	Not Eligible		GJGNY Loan
	Air Source or Ground Source Heat Pump	Contr. Inc. Subsidy GJGJNY Loan	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Air source heat pump to ground source heat pump GJGNY Loan

Fuel conversion projects not covered under this policy must be submitted to CLEAResult and will be evaluated on a case-by-case basis.

Cost Effectiveness Requirements

Cash Back Incentives

50% Assisted Home Performance Subsidy and contractor incentives:

- A list of pre-approved eligible measures can be found in Section 6 of the Contractor Resource Manual (CRM).
- Insulation measures for natural gas or electric heated homes must meet the HPwES Program Rules for Insulation, found in section 6 of the CRM.

Financing

On-Bill Recovery Loan:

- The monthly loan payment may not exceed 1/12th of the estimated annual energy cost savings over the loan term. (1/12th rule)
- Savings to Investment Ratio (SIR) of 0.80 or greater, as calculated by the Portal or ProForma worksheet.
- Non-energy saving measures (such as health & safety repairs and qualified accessories) are capped at 15% of the total project cost, not to exceed $2,000.
- Average measure life must be greater than or equal to the loan term.

Smart Energy Loans less than or equal to $13,000:

- For projects with more than 15%, not to exceed $2,000, in non-prequalified measure costs, a Savings to Investment Ratio (SIR) of 0.80 or greater is required, as calculated by the Portal or ProForma worksheet.
- Average measure life must be greater than or equal to the loan term.

Smart Energy Loans greater than $13,000:

- Savings to investment ratio (SIR) of 0.80 or greater, as calculated by the Portal or ProForma worksheet.
- Simple payback period less than or equal to 15 years.
- Average measure life must be greater than or equal to the loan term.

Home Performance with ENERGY STAR®
State Historic Preservation Requirements

As a result of an agreement between NYSERDA and the US Department of Energy, effective September 15, 2011, Home Performance with ENERGY STAR (HPwES) projects has screened for compliance with the National Historic Preservation Act. In general, most HPwES projects will not be impacted; however, projects which include window and door measures, on residences greater than 50 years old, where the work will be visible from a public right of way, will require review from the New York State Historic Preservation Office (SHPO) prior to project approval.

Upon submission of a project to CLEARESULT for approval, Contractors will be required to answer three screening questions related to the project:

- *Is the building greater than 50 years old?*
- *Will original windows, replacement windows older than 45 years old or doors be replaced as part of the scope of work?*
- *Are the windows or doors to be replaced visible from a public right of way?*

If a Contractor answers "yes" to all three questions, a Project Cover Form must be completed and submitted for the project (see section 8). This form can be submitted to CLEAResult separately, ahead of time, or up-loaded to the Project Portal during the Contract Submission stage. CLEAResult will forward the Project Cover Form to NYSERDA for review prior to submission to SHPO. All projects that include windows or doors will be flagged by CLEAResult and a hold will be placed on the project until either a negative pre-screening response is received by CLEAResult or a SHPO letter of "no impact" is received. There will be no "auto-approve" option for projects requiring SHPO review. Following review and acceptance of the project work scope by SHPO, NYSERDA will forward CLEAResult a copy of the SHPO "no impact" letter, releasing the project for work to commence. In the event the project work scope is denied, the contractor will need to revise the work scope in accordance with SHPO requirements.

While window and door replacements are the measures most likely to trigger a SHPO review, all contractors should review NYSERDA's list of undertakings, which are activities which have been determined to be exempt from SHPO review. NYSERDA's list of exempt undertakings includes any activity referenced in either Appendix A or Appendix B from NYSERDA's Programmatic Agreement with the US Department of Energy. If a proposed work scope on a given HPwES project cannot be performed in accordance with NYSERDA's list of exempt undertakings, a Project Cover Form should be completed and submitted to the Program.

Exemptions from State Historic Preservation Office (SHPO) Review

NYSERDA's list of undertakings which are consider to be exempt from SHPO review include any activity referenced in either Appendix A or Appendix B below. If a proposed work scope on a given HPwES project cannot be performed in accordance with NYSERDA's list of exempt undertakings, a Project Cover Form should be completed and submitted to NYSERDA.

APPENDIX A – WAP UNDERTAKINGS EXEMPT FROM SECTION 106 REVIEW

All undertakings will be done in accordance with applicable local building codes or the International Building Code, where applicable. In accordance with 36 CFR 800.3(a)(l), the following undertakings have been determined to have no potential to cause effects on historic properties:

A. Exterior Work

1. Air sealing of the building shell, including caulking, weather-stripping, and other air infiltration control measures on windows and doors, and installing thresholds in a manner that does not harm or obscure historic windows or trim.
2. Thermal insulation (excluding foam insulation), including but not limited to cellulose and non-toxic fiberglass foil wrapped must fill cavity in walls, floors, ceilings, attics, and foundations (excluding exposed masonry walls) in a manner that does not harm or damage historic fabric and ensures free air movement if the space allows for ventilation.
3. Blown in wall insulation where no holes are drilled through exterior siding, or where holes must be filled with wooden plugs, sanded smooth, and primed and painted to match surrounding siding finish.
4. Removable film on windows (if the film is transparent), solar screens applied in a manner that does not harm or obscure historic windows or trim.
5. Reflective roof coating applied where similar products have previously been applied.
6. Storm windows or doors, and wood screen doors in a manner that does not harm or obscure historic windows or trim.
7. In-kind replacement or repair of primary windows, doors and door frames that closely resemble existing substrate and framing.
8. Repair of minor roof and wall leaks prior to insulating attics or walls, provided repairs closely resemble existing surface composite.
9. Replacement of non-original windows installed within the past 45 years.

B. Interior Work

Special Note: Undertakings to interior spaces where the work will not be visible from the public right of way; no structural alterations are made; no demolition of walls, ceilings or floors occurs; no drop ceilings are added; or no walls are leveled with furring or moved, should be automatically excluded from **SHPO** review. This work includes:

1. **Energy efficiency work within the building shell:**
    a. Thermal insulation (excluding foam insulation), including but not limited to cellulose and non-toxic fiberglass foil wrapped must fill cavity in walls, floors, ceilings, attics, and foundations (excluding exposed masonry walls) in a manner that does not harm or damage historic fabric and ensures free air movement if the space allows for ventilation.
    b. Blown in wall insulation where no decorative plaster is damaged.
    c. Plumbing work, including installation of water heaters where existing venting is used.
    d. Electrical work that does not directly impact historic fabric, including improving lamp efficiency.

e. Sealing air leaks using weather stripping, door sweeps, and caulk and sealing major air leaks associated with bypasses, ducts, air conditioning units, etc.
f. Repair or replace water heaters.
g. Adding adjustable speed drives such as fans on air handling units, cooling tower fans, and pumps.
h. Install insulation on water heater tanks and water heating pipes.
i. Install solar water heating systems, provided the structure is not visible from the public right of way. (See Solar Installation Note)
j. Install waste heat recovery devices, including desuperheater water heaters, condensing heat exchangers, heat pump and water heating heat recovery systems, and other energy recovery equipment.
k. Repair or replace electric motors and motor controls like variable speed drives.
l. Incorporate other lighting technologies such as dimmable ballasts, day lighting controls, and occupant controlled dimming.

2. Work on heating and cooling systems:

a. Clean, tune, repair or replace heating systems, including furnaces, boilers, heat pumps, vented space heaters, and wood stoves using existing flues and/or exhaust systems and air intakes.
b. Clean, tune repair or replace cooling systems, including central air conditioners, window air conditioners, heat pumps, and evaporative coolers using existing air intakes and exhaust systems.
c. Install insulation on ducts and heating pipes.
d. Conduct other efficiency improvements on heating and cooling systems, including replacing standing pilot lights with electronic ignition devices and installing vent dampers.
e. Modify duct and pipe systems so heating and cooling systems operate efficiently and effectively, including adding return ducts, replace diffusers and registers, replace air filters, install thermostatic radiator controls on steam and hot water heating systems.
f. Install programmable thermostats, outdoor reset controls, UL listed energy management systems or building automation systems and other HVAC control systems.

3. Work on heating and cooling systems:

a. Convert incandescent lighting to fluorescent where historic fixtures will not be adversely affected.
b. Add reflectors, LED exist signs, efficient HID fixtures, and occupancy (motion) sensors.
c. Replace refrigerators and other appliances.

4. Work on heating and cooling systems:

a. Installing fire, smoke or carbon dioxide detectors/alarms.
b. Repair or replace vent systems on fossil-fuel-fired heating systems and water heaters to ensure that combustion gasses draft safely to outside using existing flues and/or exhaust systems and air intakes.
c. Install mechanical ventilation, in a manner not visible from the public right of way, to ensure adequate indoor air quality if house is air-sealed to building tightness limit.

APPENDIX B - SEP AND EECBG UNDERTAKINGS EXEMPT FROM SECTION 106 REVIEW

A. Category 1 – No Consultation required

In addition to the undertakings provided in *Exhibit A (WAP Undertakings exempt from Section 106 Review),* DOE and the SHPO have concluded that the following undertakings do not have the potential to cause effects on historic properties per 36 CFR § 800.3(a)(1):

1. **General efficiency measures not affecting the exterior of the building:**
   a. Energy audits and feasibility studies.
   b. Weatherization of mobile homes and trailers.
   c. Caulking and weather-stripping around doors and windows in a manner that does not harm or obscure historic windows or trim.
   d. Water conservation measures -like low flow faucets, toilets, shower heads, urinals - and distribution device controls.
   e. Repairing or replacing in kind existing driveways, parking areas, and walkways with materials of similar appearance.
   f. Excavating to gain access to existing underground utilities to repair or replace them, provided that the work is performed consistent with previous conditions.
   g. Ventilating crawl spaces.
   h. Replacement of existing HVAC equipment including pumps, motors, boilers, chillers, cooling towers, air handling units, package units, condensers, compressors, heat exchangers that do not require a change to existing ducting, plumbing, electrical, controls or a new location, or if ducting, plumbing, electrical and controls are on the rear of the structure or not visible from any public right of way.
   i. Adding or replacing existing building controls systems including HVAC control systems and the replacement of building-wide pneumatic controls with digital controls, thermostats, dampers, and other individual sensors like smoke detectors and carbon monoxide detectors (wired or non-wired).
   j. New installation of non-hard wired devices including photo-controls, occupancy sensors, carbon dioxide, thermostats, humidity, light meters and other building control sensors, provided the work conforms with applicable state and local permitting requirements and does not adversely impact historic interior finishes.
   k. Adding variable speed drive motors.
   l. Insulation of water heater tanks and pipes.
   m. Furnace or hot water tank replacement that does not require a visible new supply or venting.

2. **Insulation measures not affecting the exterior of the building:**
   a. Thermal insulation installation in walls, floors and ceilings (excluding spray foam insulation).
   b. Duct sealing, insulation, repair or replacement in unoccupied areas.
   c. Attic insulation with proper ventilation; if under an effective R8 - add additional R-19 or R-30 up to R-38 or R-49 as applicable. (fiberglass bat only)
   d. Band joist insulation - R-II to R19 as applicable.
   e. Water heater tank and pipe insulation.

3. **Electric base load measures not affecting the exterior of the building:**

    a. Appliance replacement (upgrade to ENERGY STAR appliances)
    b. Compact fluorescent light bulbs
    c. Energy efficient light fixtures, including ballasts (Replacement)
    d. LED light fixtures and exit signs (Replacement)
    e. Upgrade exterior lighting (replacement with metal halide bulbs, LEDs, or others) along with ballasts, sensors and energy storage devices not visible from any public right of way.

B. Category 2 - No Consultation Required if SOI Standards are Adhered to and Verified by Qualified Staff, if Applicable

1. **Efficiency and repair measures*:***
    a. Painting over previously painted exterior surfaces, provided destructive surface preparation treatments are not used (such as water-blasting, sandblasting and chemical removal).
    b. Installation or replacement of downspout extensions provided that the color of the extensions is historically appropriate for the period and style of the property.
    c. Repairing or upgrading electrical or plumbing systems and installing mechanical equipment, in a manner that does not permanently change the appearance of the interior or exterior of the building.
    d. Installation of new HVAC equipment (such as pumps, motors, boilers, chillers, cooling towers, air handling units, package units, condensers, compressors, or heat exchangers) in a manner that does not permanently change the appearance of the building.
    e. Integrated shingle-style or thin film solar systems on the rear roof of the structure, behind the parapet or not visible from the public right of way. (See Solar Installation Note)
    f. Solar systems (including photovoltaic and solar thermal) not visible from the public right of way and if ground-mounted can be installed without ground disturbance (See VI.D) and if roof-mounted will not require new building reinforcement.
    g. Wind system additions to existing wind power facilities that will not require ground disturbance and if building mounted will not require building reinforcement.
    h. Lead-based paint abatement in accordance with the Standards and Preservation Brief #37.
    i. Building cleaning in accordance with the SOI Standards and NPS Preservation Brief s Numbers 1, 6 and 10.
    j. Repairing masonry, including re-pointing and rebuilding chimneys in accordance with the SOI Standards and NPS Preservation Brief Number 2.
    k. New lighting controls including photo-sensors and shading elements if not visible from the public right of way.
    l. New metering devices in a manner that does not permanently change the appearance of the interior or exterior of the building, or if the addition is on the exterior of the structure and is not visible from the public right of way.
    m. New water efficient fixtures and fittings in a manner that does not permanently change the appearance of the interior or exterior of the building.

Solar Installation Note:
1. Buildings less than 50 years old located within a National Register Listed/National Register eligible or Locally Designated Historic District where the application is confined to roof elevations other than the primary façade meets the requirements of Section B – Category 2.
2. Buildings more than 50 years old where the Recipient, in conjunction with Section I.D. and VI.B. of this agreement, has determined that the building is not eligible for inclusion in the National Register of Historic Places meets the requirements of Section B – Category 2.
3. Placement of solar arrays on flat roof with parapets meets the requirements of Section B – Category 2.

2. **Installation or repair of roofing, siding, and ventilation:**
    a. White Roofs, Cool Roofs, Green Roofs, Sod or Grass Roofs not visible from the public right-of-way.
    b. Rainwater catches and/or gray water systems not viewable from the public right of way.
    c. Repair or replacement of existing exterior siding provided that new siding closely resembles the existing siding in dimension, profile and texture.
    d. Flat or shallow pitch roof replacement (shallow pitch is defined as a pitch with a rise-to-run ratio equal to or less than 3" to 12") with no part of the surface of the roof visible from the ground.
    e. Roof repair with materials that closely resemble the historic materials.
    f. Roof replacement where the original roofing material had previously been replaced. New roofing material will be chosen to complement the historic building and should not alter or change the roof line character defining features of the building.
    g. Installing vents (such as continuous ridge vents covered with ridge shingles or boards, roof vents, bath and kitchen vents, soffit and frieze board vents or combustion appliance flues) if not located on a primary roof elevation or not visible from the public right-of-way.
    h. Installing foundation vents, if painted or finished to match the existing foundation material.

3. **Windows and doors:**
    a. Installing storm windows, storm doors or wood-screen doors in a manner that does not harm or obscure historic windows, doors or trim.
    b. Installing insulated exterior replacement doors where the door openings are not altered and are not visible from the public right-of-way.
    c. Routine maintenance of existing windows, including but not limited to painting, glazing treatments (including in-kind glass replacement), weather-stripping or replacing glazing putty that does not change the appearance of the interior or exterior of the building.

Procedures for Referring Households into EmPower New York

Potential participants must complete an EmPower New York Program Application. This application includes a signed household authorization allowing NYSERDA and its Program Implementer to obtain household information and energy usage data relevant to provision of services in the program. All such information is kept confidential to the extent allowable by law.

Referrals of eligible households may be made into EmPower in one of the following ways:

A. Utility Referrals: Customers participating in utility low-income payment assistance programs may be referred electronically from the utility to EmPower through a secure server. If a specific customer requires urgent assistance, the utility must supplement the referral with an email to the Program Implementer explaining the circumstances of the emergency. Non-emergency customers referred by a utility will be sent an EmPower New York Program Application. If the customer is a verified participant of the utility's low-income payment program or received regular HEAP assistance within the last twelve months, no income documentation is required. If no such verification is provided by the utility, income documentation must be provided by the customer.

B. Agency Referrals: Offices for the Aging, participating WAP Agencies, and other organizations approved by NYSERDA may also refer households to EmPower. Interested organizations may be provided with flyers and copies of the application describing the program upon request. The organization may verify that the household is eligible by one of the following the guidelines on EmPower New York Program Application.

   The organization may email or mail the completed application to the Program Implementer.

   a. If a WAP Agency or an Office for the Aging has income documentation for the household on file at the agency, the agency need not provide copies of the income documentation.
   b. In all other situations, a copy of the appropriate income documentation must be provided to the Program Implementer along with the application.
   c. If the Agency is not able to verify income and provide such documentation, the household will be required to provide such documentation to the Program Implementer in order to be considered for energy services. Applications may be obtained from the Program Implementer.

C. Contractor Referrals: Participating Contractors other than those listed in section B above under Agency Referrals may refer customers to EmPower on a limited basis, and within the contractor/self-referral goal established by the Program. The potential participants must complete an EmPower New York Program Application and list the referring contractor's name on the application. Income may be documented according to the instructions on application.

EmPower New York Project Assignment Process

Once a household has been approved for services, the Program Implementer sends a letter to the household, informing them of approval and providing the name and contact information of the Contractor and the Program Implementer.

Referrals to Contractors are made via the Internet. The Program Implementer sends an e-mail message to the email account designated by the contractor to receive such messages. The Contractor must ensure that the recipient is the correct designee. The Contractor is then required to log into the EmPower tracking system, CRIS, where detailed referral information is provided.

The Contractor is given ten days in which to accept the referral. Once this deadline has past, the Program Implementer may refer the household to a different Contractor.

Upon accepting a household, the Contractor must download contact information and, when available, energy usage information, directly from CRIS. Prior to the visit, the Contractor should review this data to identify energy usage patterns and potential measures.

The Contractor must then contact the household to schedule a visit. During this contact, the Contractor may:

A. Verify interest
B. Schedule an audit
C. Clarify directions
D. Use this opportunity to identify the make and model of appliances under consideration for replacement
E. Discuss the need to gain FULL access to the dwelling and the length of the inspection.

The Contractor must make at least three phone call attempts to contact the household at various times of the day and evening. If no response is received, the Contractor must send a letter to the household requesting contact from the household by a given deadline and providing appropriate phone numbers. The Program Implementer's 800- number must be included. In the event that the household does not respond by the deadline, the Program Implementer must be notified. The Program Implementer may then choose to drop the household from the program, or initiate further contact attempts.

If an appointment is scheduled more than a week in advance, Contractor must contact the household a day or so before to remind them of the appointment, thus reducing the likelihood of a no-show appointment.

Assignment Process

NYSERDA receives referrals to its low-income residential program from multiple organizations including, but not limited to, Utilities participating in the Clean Energy Fund, Offices for the Aging, Participating Contractors, and other local community groups. NYSERDA's Program Implementer will distribute these referrals to Participating Contractors for energy efficiency services based on the criteria below.

Participating Contractors approved to provide low-income energy efficiency services will be offered the opportunity to receive referrals from the program. However, the number of referrals received and customers approved to move forward in the Program may fluctuate month-to-month. NYSERDA or the Implementation Contractor cannot guarantee assignments to Participating Contractors.

1. **Geographic Territory:** Low-income communities and households are located throughout the State and NYSERDA is committed to balance the number of households served as equitably as possible among the ratepayers of participating Utility territories. Additionally, on occasion, NYSERDA receives supplemental funding from other sources to serve low-income households with energy efficiency services within a certain territory. Participating Contractors in these regions may receive additional referrals.

2. **Participating Contractor Status in the Program:** Contractors with Full status will be prioritized to receive referrals first. Participating Contractors that are Provisional or on Probation will receive only enough referrals to meet the terms of their participation status or an individual Probation Action Plan. Contractors that are Suspended or Terminated from the Program are not eligible to receive customer referrals from the program.

3. **Participating Contractor Quality Assurance (QA) Score:** Contractors with the highest QA scores will be prioritized to receive referrals first over Participating Contractors with the lowest QA scores. QA scores are typically reviewed monthly. Under the current guidelines, Participating Contractors with an overall Job Score Report (JSR) score of 80 or greater is considered in good standing.

4. **Production Lifecycle Time (Acceptance of Referral to Date of Approved Invoice):** Participating Contractors that perform work in a timely manner and achieve an average of completing Electric Reduction projects within 60 days or less and Home Performance projects within 120 days or less will be prioritized to receive referrals first. Participating Contractors are responsible for providing written justification to the Program Implementor for all projects not meeting the established deadlines. Over-due projects may be reassigned to another Participating Contractor.

5. **Contractor Capacity:** Participating Contractors will be assigned production targets over a given period of time, based on the availability of funds, QA scores, and production lifecycle time. It is the responsibility of the Participating Contractor to manage their work assignments accordingly. Additionally, Participating Contractors with a maintained backlog of production may have referrals reassigned to a Participating Contractor in need of additional work.

6. **Program Compliance:** Participating Contractors that follow program guidelines will be prioritized to receive referrals. Participating Contractors demonstrating a lack of knowledge about program guidelines, have a high rejection rate of project workscopes or invoices, or are non-responsive to NYSERDA or the Program Implementer's requests will be considered out of compliance with the Program. The Participating Contractor will be notified in writing and required to correct the problem as prescribed. During this time Program referrals may be limited until the issue is satisfactorily rectified.

7. **Contractor Referrals:** Participating Contractors may refer households to receive services from the Program. The Program Implementer will make every effort to assign the project back to the referring contractor. However, self-referrals may be assigned to another Participating Contractor if the referring contractor has poor QA scores (JSR Score less than 80), has reach Contractor capacity, as prescribed by production goals or established through Probation, or has been Suspended or Terminated from the Program.

Evaluation of Potential for Energy Services through EmPower New York

Households are evaluated for measures on the basis of the EmPower New York Program Application and energy usage data. In situations where heating usage was not provided with the application, the project will be assigned for Electric Reduction services until/unless usage can be provided.

A. EmPower home performance (HP) services will be limited to households with high to moderate energy usage, as follows:
    1. Natural gas heat and hot water: at least 750 therms/year
    2. Natural gas heat with electric hot water: at least 550 therms/year
    3. Propane heat and hot water: at least 700 gallons/year
    4. Propane heat with electric hot water: at least 525 gallons/year
    5. Oil heat: at least 525 gallons/year
B. Projects that do not reach the thresholds above, will be limited to Electric Reduction (ER) services.
C. If a household usage is low due to heating system failure, lack of funds to heat the dwelling adequately, small dwelling size, etc, an exception may be allowed. In these situations, please document the circumstances to the program implementers for further review.
D. These thresholds are subject to change according to changes in the price of fuel and heating season temperature variations.
E. If household is selected for participation in energy services, the Program Implementer assigns the household to an approved Participating Contractor.
F. Participating Contractor must perform an ER or HP energy assessment as assigned by the Program Implementer, unless prior approval has been given by the Program Implementer.
G. In-Home Energy Education must be provided in all homes visited.

Households not selected for energy services may be mailed a packet of energy education materials, and a letter indicating that no further energy services will be provided.

EmPower New York Energy Audit Procedures

General Notes Regarding Provision of Energy Services

A. All measures are voluntary. Households are given choices and the information necessary to assist them in choosing these measures.
B. Contractors are not obligated to continue in any situation in which they feel their personal health or safety is at risk. In situations where a Contractor decides not to proceed with work, all dealings with the household must be courteous and professional.
C. Contractor must carry an ID and display it to an appropriate household member prior to entering the home for the first time.
D. Contractors must provide and carry with them all necessary tools, including at least two wattage meters for use in evaluating appliances.
E. If an adult is not home at the time of the audit, the Contractor must not enter the home, but should leave a note for the adult household member(s) requesting that they contact the contractor to reschedule the visit.
F. Contractor must represent the Program in a manner that is professional and courteous. Failure to do so may result in suspension or termination from the program.
G. In the event of a no-show due to the household's negligence, the Contractor may submit an invoice for reimbursement for time spent, provided that the Contractor has followed the scheduling procedures as outlined in Section 7.
H. A household may be referred to a Contractor for either Electric Reduction (ER) services alone, or for a combination of ER and Home Performance (HP) services. If a household is referred to a Contractor for ER services, and no real opportunities for substantial electric reduction are found, the Contractor should explore opportunities for Home Performance measures that may benefit the household and present to the Program Implementer for approval.
I. It is very important that the Contractor work directly with the residents of the building. The household is familiar with how the building performs and can provide valuable data as to how well the heating system functions, whether the hot water system satisfies the needs of the family, etc. This contact also provides the opportunity for in-home energy use management education. See Section 7.15 and 7.16 for further details.
J. Work performed must be in compliance with BPI health and safety standards.
K. The Contractor must take digital photos to document pre-existing conditions as follows:
    i. Pre-existing attic insulation (HP only);
    ii. Failing DHW tanks;
    iii. Asbestos-like material deemed friable (HP only);
    iv. Heating systems recommended for replacement;
    v. Windows or doors recommended for replacement (HP only); or
    vi. Other situations requiring custom measures.

Electric Reduction Audits must consist of the following as appropriate:

A. Completion of appropriate signoffs and permissions.
   i. If the household is the property owner, the Contractor must ensure that the household signs a Homeowner's Agreement prior to completing any invasive work. The Contractor must review a document that proves home ownership (deed, mortgage book, tax bill, etc.)
   ii. If the household owns an appliance that is being considered for replacement through EmPower, the Contractor must obtain a signed Appliance Exchange Agreement.
   iii. If the household is a renter, see section 7.6.

B. Energy education, with a goal of identifying energy-saving actions which the household will commit to completing. (See Section 7.15 and 7.16 for further details).
C. The installation of cost-effective measures, as detailed in Section 7.
D. Test of the ambient air for CO on either a HP or ER job if a combustion appliance is present or if the building has an attached garage.
E. The following ER measures must be evaluated through the use of an approved audit instrument:
   i. Replacement of refrigerators or freezers
   ii. Electric dryer conversion to natural gas
   iii. Electric hot water heater conversion to natural gas
   iv. Other household-specific opportunities for elimination of high-energy consumption, such as removal of electric space heaters.

Home Performance Audits must conform to BPI standards and consist of all of the above, as well as the following:

A. The presence of Presumed Asbestos Containing Material (PACM) does not necessarily preclude the use of a blower door in a dwelling. However, blower door tests must not be conducted if PACM is present that is damaged or in a deteriorating condition and there is a risk that PACM materials will be drawn into the living space by the test. It is the responsibility of the Participating Contractor to determine whether it is appropriate to run a blower door. Prior to blower-door testing, the Participating Contractor must inspect premises for the presence of asbestos-like material. If found and deemed friable, the Participating Contractor must:
   i. Consider the material "Presumed Asbestos Containing Material" (PACM)
   ii. Document its location with photographs.
   iii. Inform the occupant that asbestos-like material exists in the dwelling. Participating Contractors may use the optional form, "Notification of Possible Presence of Asbestos."
   iv. Document workscope decisions made in light of the presence of PACM.
B. A comprehensive analysis of conductive heat loss, taking into account the interaction among the measures considered for installation, as well as issues such as household comfort and indoor air quality.
C. Steady-state combustion efficiency test of the heating system, along with evaluation of the system's overall performance. A tag or sticker with the test results, contractor name and date must be left on or near the heating system tested. In the event that

such testing is not performed, the Contractor must document reasons for not doing so in the notes section of CRIS.

D. Analysis of the domestic hot water heating system and any and all secondary heating systems such as electric space heaters, wood stoves, gas-fired kitchen stoves and kerosene space heaters. Inspection and measurement of insulation options, providing square footage, existing levels of insulation and house temperatures.
E. If wall insulation is a consideration, Contractor must take steps to determine presence of wall insulation:
    i. Ask household and:
        a) Probe wall outlets or drill holes and probe (at least 3 places);
        b) Check siding outside for signs of previous insulation;
        c) If available, use boroscope or scan with infrared camera
        d) Document where and how determinations were made
        e) Draw locations of pre-existing insulation on the insulation diagram
F. Evaluation of the thermostat.
G. The use of blower-door technology to determine pre-existing air exchange rates, locations of air infiltration and exfiltration, and building tightness limits. It is expected that all participating Home Performance Contractors own a blower door test kit and are familiar with the operation of this essential tool.
H. Health and safety checks on all combustion appliances to determine proper venting and levels of CO, according to BPI Standards.
I. In the event that multiple units exist in the dwelling, and access is available, Contractor must test all units if possible. Notification to the landlord prior to audit can help in obtaining access.
    i. Contractor may invoice NYSERDA for additional time spent, consistent with Program policies. In these instances, prior approval on an acceptable cost must be obtained.
    ii. If the additional unit cannot be tested, Contractor must decide whether to go forward with measures that impact air movement in the dwelling. Contractor should consult with EmPower Regional Representative and make notes regarding situation in CRIS.
J. If natural gas or propane is in use in the home, gas leak testing of the gas lines according to BPI standards.
K. Evaluation of the home's smoke alarm(s) and CO detector(s).
L. Evaluation of Home Performance measures through the use of an approved audit instrument.

Determination of EmPower New York Workscopes

Direct Install

For all Participating Contractors approved to provide low-income energy efficiency services through EmPower, the following measures have been deemed cost-effective and may be installed at the time of the energy assessment without prior approval from the Program Implementer, as per the EmPower Eligible Measures Pricing List in Section 7.7.

A. ENERGY STAR® LED lightbulbs
B. High efficiency showerheads
C. Setback thermostats as follows:
    a. For homeowners only.
    b. If home is heated with electricity, up to 4 setback thermostats may be installed on both HP and ER jobs.
    c. If home is heated by combustion fuels, such as gas or oil, 1 setback thermostat may be installed for HP jobs ONLY. Additional thermostats may be installed for zone equipment with approval from the Program Implementer.
    d. Prior approval of the model and price is required.
D. Water pipe insulation (up to 9 feet, including 3 feet of "cold" supply pipe above hot water tank).
E. One CO detector and/or one smoke detector (UL listed only. Pre-approved models and prices are required).
F. Other Health & Safety measures where total cost does not exceed $100.
G. Replacement of one incandescent nightlight with a LED nightlight in an area where the light is left on all night. (Pre-approved pricing required.)
H. Furnace filter replacement (HP only)

Additional Measures

Participating Contractors are required to provide audit reports and recommended workscopes for further measures to the Program Implementer for approval.

A. The Participating Contractor must use an approved audit instrument (currently EmPCalc, TIPS, or TREAT) to determine which measures are most cost effective, and present these results to the Program Implementer.
B. The Program Implementer will ensure that project cost averages are maintained, and that proposed workscopes are consistent with guidelines EmPower. The average HP workscope is $3,200 and ER is $600, or $3,800 when combined.
C. In situations where a Home Performance (HP) workscope (including electric reduction measures) is to exceed $6,500 or an Electric Reduction (ER) workscope is to exceed $2,500, the Program Implementer will first obtain approval from NYSERDA.
    a. The Program Implementer will obtain approval from NYSERDA for National Fuel Gas Conversation Incentive Program for HP workscopes, including ER measures, is to exceed $6,500.

D. In situations where variations in procedure are required, the Participating Contractor must first discuss potential changes with the Program Implementer and note such changes on CRIS.
E. In all instances incentives may not exceed $7,000 per unit for Home Performance measures or $3,000 per unit for Electric Reduction measures.
F. NYSERDA is piloting a streamlined process for more automated approval of workscopes. Additional information will be available at a later date.

Services to EmPower-Eligible Rental Properties
Frequently Asked Questions

Program guidelines for Rental Properties can be found on the Contractor Support website in the Contractor Resource Manual, Section 7 – Low Income (EmPower New York) Operational Procedures.

The Rental Property Energy Efficiency Services Agreement can be found in the Contractor Resource Manual, Section 3 – Customer Participation. This agreement should be utilized for both EmPower and Assisted Home Performance projects.

The following are frequently asked questions (FAQs) program receives from contractors serving rental properties through EmPower New York (EmPower). If you have additional questions or special circumstances that are not covered in the Contractor Resource Manual or this FAQ document, please contact contractor support at support.residential@nyserda.ny.gov or by calling 800-284-9069. Project specific questions can also be directed to your Account Manager.

Can additional work be done on a unit that has received prior services?

Yes, the unit may receive additional services up to the current funding cap. Program will look back three years and the project may be eligible for additional measures up to the remaining amount of available incentive.

Do all tenants in the building need to be income-eligible?

No, if 50% or more of the tenants are income-eligible the entire building may be served through EmPower.

If only one unit is income-eligible, only that unit can be served through EmPower and the work scope is capped at $5,000.

What if the Landlord resides in one of the units and isn't income-eligible?

If the building is owner-occupied and the landlord is not income-eligible, the landlord may be eligible for assistance, including incentives toward heating systems and water heaters, through the Assisted Home Performance with ENERGY STAR program for the unit they occupy and central building systems.

If each unit is considered a separate project and costs exceeded $5,000 on each unit would a landlord contribution be required for each project?

The program will seek to accommodate insulation/shell work, but on a case-by-case basis where costs are extreme, we reserve the right to request a landlord contribution. In instances where multiple units are being served, the Program will evaluate the overall cost of services for the building. Program may require, at its discretion, a landlord investment of at least 25% of the cost of the additional measure(s).

Can vacant units be served?

Yes, if units are unoccupied, the Owner may seek authorization for the rehabilitation of unoccupied housing units with the understanding that the unit will be rented to an income-eligible household within 90 days after the date a job completion form is submitted to NYSERDA's implementation contractor by the participating contractor. The Owner may be liable for the full amount of the NYSERDA incentive if the unit is not rented to an income-eligible tenant. Please refer to the Rental Property Energy Efficiency Services Agreement for detailed requirements. Contact your Account Manager for assistance in submitting these projects.

How can a project move forward if repairs are necessary for the safe operation of the heating system or hot water heater?

Approval for comprehensive project measures (other than ER/Direct Install measures) will be placed on hold until the repairs have been completed. A written statement (i.e., email, NYSERDA Portal Salesforce case, HP Portal note) from the contractor stating that the repairs are complete, and the system is safe to operate is required before work can proceed.

If a heating system serving an EmPower eligible tenant fails, the owner is EmPower income-eligible, and the project has been denied services through the Heating Equipment Repair and Replacement (HERR) Program, NYSERDA will consider funding up to 75% of the replacement heating system and associated costs through EmPower. NYSERDA will require a landlord investment of at least 25% towards the cost of the heating system and associated costs. Owners/Landlords that are not eligible for EmPower may be eligible for incentives through Assisted Home Performance with ENERGY STAR.

Since tenants are not eligible for HERR, does the language referring to being denied benefits refer to the landlord?

Yes, that is correct. Tenants are not eligible to participate in the HERR program. If the landlord is income-eligible and occupies the building, they may apply for assistance. Landlords that do not occupy the building would be ineligible for HERR.

Heating Replacements are considered if the system has failed and the landlord is denied for HERR. All heating replacements require a 25% landlord contribution.

How should projects be submitted for 2-4 family rental units in which the thermal/air boundaries overlap? For example, 1 apartment on 1st floor and apartments on second floor?

The goal should be to treat the entire house. When possible, all units should be assessed for eligibility (until it is determined that 50% of the tenants are eligible for EmPower) and audits conducted so a comprehensive solution can be determined for the building. Contractors should submit all projects in the same building at one time and include notes indicating the other project IDs, total number of units and their eligibility.

EmPower New York Services to Rental Properties

Rental Unit Funding

A. For single-family rental properties, funding from EmPower is capped at $10,000, including electric reduction funding.
B. For 2-4 family rental units, funding from EmPower New York is capped at $5,000 per unit, including electric reduction funding.
C. NYSERDA, at its discretion, may cap the total incentives a landlord or property owner receives through EmPower on an annual basis.
D. All measure approvals are subject to program policy, cost, and energy savings requirements.
E. Income eligible tenants, with landlord authorization, are eligible to receive comprehensive home performance measures through EmPower, regardless of whether the tenant or landlord pays the utility bill.

Tenant-Owned Measures

The Program Implementer may authorize the Contractor to proceed with the following tenant-owned measures:

A. Installation of LED bulbs in existing high-use lamps and fixtures;
B. Metering and replacement of tenant-owned refrigerators and freezers;
C. Energy Education;
D. Installation of smoke alarms or CO detectors. Please note in most jurisdictions, it is the landlord or property owner's responsibility to provide smoke and CO detectors in tenant occupied living spaces;
E. In situations where tenant energy usage is low, the Program Implementer may mail to the tenant a packet of energy saving materials, including LEDs, energy education materials, and a letter indicating that no further energy services will be provided.

Landlord Authorization

A. The following measures may be offered at no cost to the tenant, but require landlord authorization and a signed landlord agreement:
    a. Attic and/or wall insulation, if both cannot be completed due to EmPower caps, then whichever achieves greater savings.
    b. Air sealing measures.
    c. Replacement of landlord-owned refrigerators.
    d. Installation of high efficiency showerheads.
    e. Pipe insulation.
    f. Heating system testing
B. Any repairs necessary for safe operation of the furnace or hot water heater are the responsibility of the property owner. No home performance work can be performed until necessary landlord repairs/replacements are made.
C. Property owners and landlords may apply for assistance with additional measures, including heating systems and water heaters, through the Assisted Home Performance with ENERGY STAR program.

Landlord Contribution

A. In instances where additional insulation may be recommended, causing the project to exceed EmPower incentive caps, Program may require, at its discretion, a landlord investment of at least 25% of the cost of the measure(s).

B. If a heating system serving an EmPower eligible tenant fails, the owner is EmPower income eligible, and the project has been denied services through the Heating Equipment Repair and Replacement (HERR) Program, NYSERDA will consider funding up to 75% of the replacement heating system and associated costs through EmPower. NYSERDA will require a landlord investment of at least 25% towards the cost of the heating system and associated costs. Owners/Landlords that are not eligible for EmPower may seek additional incentives through Assisted Home Performance with ENERGY STAR.

Weatherization Assistance Program (WAP) Coordinated units:

If the household is being served in coordination with WAP, the participating Agency shall follow WAP policies and procedures regarding landlord authorization, negotiations, and measure installation. The Agency must provide the NYSERDA Program Implementer a copy of the WAP approval letter for the project.

Procedures

The Program Implementer will send a Landlord Agreement and cover letter to the landlord. This agreement allows for a complete energy audit, including heating system inspection and installation of energy efficient measures at no cost to landlord.

A. If such agreements are signed and returned by the landlord with appropriate documentation, the Program Implementer will refer the household to a Contractor for an energy audit.
B. Upon completion of the audit, the Contractor will propose a workscope to the Program Implementer.
    a. If appliance meets NYSERDA replacement criteria and services are limited to replacement of a landlord-owned refrigerator, the Program Implementer will refer the project to a vendor who will arrange delivery.
    b. If Home Performance services are considered, the Program Implementer will evaluate proposed measure and authorize a workscope.
C. If the Landlord Agreement is not returned after two attempts within 60 days, the Program Implementer may assign the project for a non-invasive Electric Reduction audit where services outlined above may be performed.
D. The Participating Contractor is required to notify the landlord or property owner of their portion of the approved project cost.
E. The Participating Contractor is responsible to invoice and collect payment of any partial landlord or property owner investment.

EmPower New York Contractor Pricing
Effective July 1, 2022

For contractors with business addresses in counties south of and including Dutchess and Ulster counties.

Energy Audit & In-Home Education			
Electric Reduction (ER) Audit, including:	**$**	**224.68**	plus Mileage per site
Appliance Survey and CO detection			
EmPCalc or other accepted audit report			
Onsite Energy Education*			*If Onsite Energy Education not performed: -$55.00
Comprehensive Home Performance Audit, including:	**$**	**355.35**	plus Mileage per site
Blower Door Test*			*If Blower Door Test not performed: -$50.00
Combustion Efficiency and Safety Test, inc. CO detection			
Appliance Survey			
EmPCalc, TREAT, or other accepted audit report			
Onsite Energy Education*			*If Onsite Energy Education not performed: -$55.00
Comprehensive Home Performance Audit, including:	**$**	**326.03**	plus Mileage per site
All of the above, excluding ER Measures Audit			
No-show Fee	**$**	**65.00**	plus Mileage per site
Mileage (from business location)	**$**	**0.625**	per mile
Lighting Measures			
ENERGY STAR® rated LED and/or candelabra LED, including:	**$**	**11.00**	per bulb incl. labor & materials
up to 16 bulbs maximum, including 1 nightlight			
Domestic Hot Water Measures			
Hot Water Pipe Insulation	**$**	**2.42**	per linear foot incl. labor & materials
High Efficiency Showerhead, includes handheld	**$**	**43.50**	labor & materials
Heating Equipment Measures			
Programmable Thermostat	**$**	**148.18**	labor & materials
Prior approval of make and model by Program Implementor is required			
WiFi Enabled Thermostat		**$233.55**	labor & materials
Prior approval of make and model by Program Implementor is required			
Standard Furnace Filter	**$**	**35.23**	labor & materials
If the furnace manufacturer requires a more expensive model, propose price to Program Implementor			
Furnace Filter Slot Cover	**$**	**28.70**	labor & materials
Air Sealing Measures			
Air-Sealing	**$**	**111.35**	per hour plus materials
Door Weather-stripping and Sweep	**$**	**82.76**	per door
Door Sweep ONLY	**$**	**32.43**	per door
Health & Safety			
Smoke Detector with Lithium Battery	**$**	**47.35**	labor & materials
Prior approval of make and model by Program Implementor is required			
CO Detector with Lithium Battery	**$**	**87.56**	labor & materials
Prior approval of make and model by Program Implementor is required			
Combination CO/Smoke Detector with Lithium Battery	**$**	**105.54**	labor & materials
Prior approval of make and model by Program Implementor is required			
Vapor Barrier	**$**	**1.63**	per square foot incl. labor & materials
Total sq. ft. of coverage including the floors, walls, and around columns			
Insulation Measures			
Sidewall 4" (Dense pack)			
Wood Shingle, Clapboard, Vinyl, & Other Siding	**$**	**3.45**	per square foot
Aluminum Siding	**$**	**3.71**	per square foot
Asbestos-like Siding	**$**	**4.08**	per square foot
Sidewall 6" (Dense pack)			
Wood Shingle, Clapboard, Vinyl, & Other Siding	**$**	**3.90**	per square foot
Aluminum Siding	**$**	**4.20**	per square foot
Asbestos-like Siding	**$**	**4.56**	per square foot

Insulation Measures (continued)				
Attic (open)	6" Settled Depth Cellulose or 8" Blown Fiberglass or 7" Blown Rockwool*	$	**2.14**	per square foot
	8" Settled Depth Cellulose or 10" Blown Fiberglass or 10" Blown Rockwool*	$	**2.52**	per square foot
	10" Settled Depth Cellulose or 13" Blown Fiberglass or 12" Blown Rockwool*	$	**2.81**	per square foot
	12" Settled Depth Cellulose or 16" Blown Fiberglass or 15" Blown Rockwool*	$	**3.25**	per square foot
	14" Settled Depth Cellulose or 18" Blown Fiberglass or 17" Blown Rockwool*	$	**3.37**	per square foot
				*Insulation depths calculated per BPI standards.
Attic (floored)	4" Dense Pack Cellulose	$	**2.53**	per square foot
	6" Dense Pack Cellulose	$	**2.79**	per square foot
	8" Dense Pack Cellulose	$	**3.15**	per square foot
Knee walls	3.5" Fiberglass	$	**2.87**	per square foot
	Netted Cellulose	$	**3.23**	per square foot
Slope	4" Cavity	$	**2.75**	per square foot
	6" Cavity	$	**3.12**	per square foot
Band Joist Insulation		$	**7.58**	per linear foot
Foam Insulation	1" Board	$	**4.35**	per linear foot
	2" Board	$	**6.03**	per linear foot
	3" Board	$	**7.26**	per linear foot
	4" Board	$	**8.18**	per linear foot
	5" Board	$	**9.00**	per linear foot
	6" Board	$	**11.12**	per linear foot
	1" Closed Cell	$	**5.88**	per linear foot
	2" Closed Cell	$	**7.82**	per linear foot
	3" Closed Cell	$	**9.23**	per linear foot
	4" Closed Cell	$	**11.50**	per linear foot
	5" Closed Cell	$	**13.38**	per linear foot
	6" Closed Cell	$	**14.96**	per linear foot
	4" Open Cell	$	**7.47**	per linear foot
	5" Open Cell	$	**9.41**	per linear foot
	6" Open Cell	$	**11.45**	per linear foot
Set-up fee (Only for projects where a total of less than 500 sq. ft. of blown insulation is installed)		$	**130.50**	
Rim Joist Set-up fee (Only for projects where less than 150 ln. ft. is installed and no other HP measures approved)		$	**130.50**	
Rim Joist Insulation				
	1" Foam	$	**5.21**	per linear foot
	2" Foam	$	**8.36**	per linear foot
Ventilation Measures				
Ridge Vent		$	**29.78**	per linear foot
Soffit Vent		$	**28.63**	per vent
Gable Vent		$	**153.05**	per vent
Roof Vent		$	**151.86**	per vent
Baffles		$	**5.92**	per baffle
Existing Bath fan to Roof (Insulated)				
	Less than 4'	$	**240.12**	per vent
	4' or more	$	**332.01**	per vent
Exhaust Un-vented Clothes Dryer to Outside		$	**158.03**	per vent

In situations calling for additional materials or labor due to special circumstances, or custom measures, additional costs must be recommended to the Program Implementor for prior-approval.

For contractors with business addresses in counties north of and including Sullivan, Delaware, Green, and Columbia counties.

Energy Audit & In-Home Education			
Electric Reduction (ER) Audit, including:	**$**	**205.33**	plus Mileage per site
Appliance Survey and CO detection			
EmPCalc or other accepted audit report			
Onsite Energy Education*			*If Onsite Energy Education not performed: -$55.00
Comprehensive Home Performance Audit, including:	**$**	**334.65**	plus Mileage per site
Blower Door Test*			*If Blower Door Test not performed: -$50
Combustion Efficiency and Safety Test, inc. CO detection			
Appliance Survey			
EmPCalc, TREAT, or other accepted audit report			
Onsite Energy Education*			*If Onsite Energy Education not performed: -$55.00
Comprehensive Home Performance Audit, including:	**$**	**303.98**	plus Mileage per site
All of the above, excluding ER Measures Audit			
No-show Fee	**$**	**60.00**	plus Mileage per site
Mileage (from business location)	**$**	**0.625**	per mile
Lighting Measures			
ENERGY STAR® rated LED and/or candelabra LED, including:	**$**	**11.00**	per bulb incl. labor & materials
up to 16 bulbs maximum, including 1 nightlight			
Domestic Hot Water Measures			
Hot Water Pipe Insulation	**$**	**2.18**	per linear foot incl. labor & materials
High Efficiency Showerhead, includes handheld	**$**	**39.10**	labor & materials
Heating Equipment Measures			
Programmable Thermostat	**$**	**136.94**	labor & materials
Prior approval of make and model by Program Implementor is required.			
WiFi Enabled Thermostat	**$**	**215.93**	labor & materials
Prior approval of make and model by Program Implementor is required.			
Standard Furnace Filter	**$**	**33.86**	labor & materials
If the furnace manufacturer requires a more expensive model, propose price to Program Implementor.			
Furnace Filter Slot Cover	**$**	**27.66**	labor & materials
Air Sealing Measures			
Air-Sealing	**$**	**109.14**	per hour plus materials
Door Weather-stripping and Sweep	**$**	**77.08**	per door
Door Sweep ONLY	**$**	**28.99**	per door
Health & Safety			
Smoke Detector with Lithium Battery	**$**	**42.66**	labor & materials
Prior approval of make and model by Program Implementor is required.			
CO Detector with Lithium Battery	**$**	**81.32**	labor & materials
Prior approval of make and model by Program Implementor is required.			
Combination CO/Smoke Detector with Lithium Battery	**$**	**98.91**	labor & materials
Prior approval of make and model by Program Implementor is required.			
Vapor Barrier	**$**	**1.63**	per square foot incl. labor & materials
Total sq. ft. of coverage including the floors, walls, and around columns			
Insulation Measures			
Sidewall 4" (Dense pack)			
Wood Shingle, Clapboard, Vinyl, & Other Siding	**$**	**3.24**	per square foot
Aluminum Siding	**$**	**3.43**	per square foot
Asbestos-like Siding	**$**	**3.69**	per square foot
Sidewall 6" (Dense pack)			
Wood Shingle, Clapboard, Vinyl, & Other Siding	**$**	**3.70**	per square foot
Aluminum Siding	**$**	**3.93**	per square foot
Asbestos-like Siding	**$**	**4.14**	per square foot

Insulation Measures (continued)				
Attic (open)	6" Settled Depth Cellulose or 8" Blown Fiberglass or 7" Blown Rockwool*	$	**1.95**	per square foot
	8" Settled Depth Cellulose or 10" Blown Fiberglass or 10" Blown Rockwool*	$	**2.34**	per square foot
	10" Settled Depth Cellulose or 13" Blown Fiberglass or 12" Blown Rockwool*	$	**2.64**	per square foot
	12" Settled Depth Cellulose or 16" Blown Fiberglass or 15" Blown Rockwool*	$	**2.95**	per square foot
	14" Settled Depth Cellulose or 18" Blown Fiberglass or 17" Blown Rockwool*	$	**3.04**	per square foot
				*Insulation depths calculated per BPI standards.
Attic (floored)	4" Dense Pack Cellulose	$	**2.35**	per square foot
	6" Dense Pack Cellulose	$	**2.60**	per square foot
	8" Dense Pack Cellulose	$	**2.93**	per square foot
Knee walls	3.5" Fiberglass	$	**2.66**	per square foot
	Netted Cellulose	$	**3.04**	per square foot
Slope	4" Cavity	$	**2.60**	per square foot
	6" Cavity	$	**2.93**	per square foot
Band Joist Insulation		$	**6.48**	per linear foot
Foam Insulation	1" Board	$	**3.98**	per linear foot
	2" Board	$	**5.46**	per linear foot
	3" Board	$	**6.68**	per linear foot
	4" Board	$	**7.44**	per linear foot
	5" Board	$	**8.17**	per linear foot
	6" Board	$	**9.11**	per linear foot
	1" Closed Cell	$	**5.30**	per linear foot
	2" Closed Cell	$	**6.75**	per linear foot
	3" Closed Cell	$	**8.36**	per linear foot
	4" Closed Cell	$	**10.18**	per linear foot
	5" Closed Cell	$	**11.85**	per linear foot
	6" Closed Cell	$	**12.71**	per linear foot
	4" Open Cell	$	**6.67**	per linear foot
	5" Open Cell	$	**8.70**	per linear foot
	6" Open Cell	$	**10.38**	per linear foot
Set-up fee (Only for projects where a total of less than 500 sq. ft. of blown insulation is installed)		$	**130.50**	
Rim Joist Set-up fee (Only for projects where less than 150 ln. ft. is installed and no other HP measures approved)		$	**130.50**	
Rim Joist Insulation				
	1" Foam	$	**4.79**	per linear foot
	2" Foam	$	**7.54**	per linear foot
Ventilation Measures				
Ridge Vent		$	**27.71**	per linear foot
Soffit Vent		$	**26.73**	per vent
Gable Vent		$	**141.22**	per vent
Roof Vent		$	**139.59**	per vent
Baffles		$	**5.40**	per baffle
Existing Bath fan to Roof (Insulated)				
	Less than 4'	$	**221.65**	per vent
	4' or more	$	**272.34**	per vent
Exhaust Un-vented Clothes Dryer to Outside		$	**147.02**	per vent

In situations calling for additional materials or labor due to special circumstances, or custom measures, additional costs must be recommended to the Program Implementor for prior-approval.

EmPower New York Electric Reduction Measures and Criteria

All measures must be installer per the Materials & Installations Guidelines.

LED Lighting and Candelabra LEDs

1. Criteria for replacement
    a. Must meet all conditions in the Lighting Policy located in Section 6 of the Contractor Resource Manual.
    b. Socket is functional, and no hazardous conditions exist.
    c. Fixture is on participating household's utility meter/bill.
    d. Contractor may install and charge for up to 16 LEDs, or 15 LEDs and one LED nightlight. Candelabra LEDs for chandeliers are not included in this limit.

2. General Procedures for all lighting
    a. Contractor must install, or assist household in installation of all lighting provided by the Contractor at the time of the audit.
    b. Contractor must install lighting of comparable or higher luminescence. Care must be taken that adequate lighting is provided to households with visual impairments.
    c. Care must be taken to ensure that the color rendition of the installed bulbs is acceptable to the family and appropriate for their needs.
    d. All replaced incandescent bulbs must be removed from the premises and disposed of properly. Any damaged lightbulbs must be disposed of properly.
    e. During the lighting installation, the Contractor should also look for opportunities to downsize existing lighting, such as reducing the number of bulbs used.

3. Procedures--LED Lighting
    a. All LEDs must be ENERGY STAR compliant.

4. Procedures--Candelabra LEDs
    a. The chandelier must be in use for an average of three or more hours per day.
    b. The household must be willing to accept the appearance of the bulb.

Refrigerator and Freezer Replacement

1. Criteria for replacement
    a. Pre-existing refrigerator must be at least ten years old.
    b. SIR is 1.1 or greater. In the case of WAP-coordinated projects, WAP criteria for replacement may be followed.
    c. Household agrees to give up the old appliance in exchange for the new one.
    d. The owner of the appliance provides signed permission for the replacement.
    e. Circuit must be safe.
    f. The appliance is under a rent-to-own contract and most of the payments are still outstanding (requirement for a SIR of 1.1 is waived.)
    g. Icemaker installations or other accessories are not available through EmPower.
    h. Side-by-side refrigerators and bottom freezer units may only be installed in Special Needs situations, such as wheelchair bound households who have difficulty reaching upper compartments of appliances.
    i. Ice makers and water taps are not funded by EmPower. In situations where they exist, please notify the household that they will not be provided. Please note the presence of

active ice makers or water taps on the appliance application. Also note whether there is a water line to the current appliance and whether the line has a shut-off valve.

2. Evaluation of appliance energy use
    a. The primary tool for evaluating appliance energy usage is available at http://www.kouba-cavallo.com/refmods.htm.
    b. In order to get a good usage estimate, use of this database must be backed up by metering of the appliance, whenever possible.
    c. Refrigerators must be metered for at least one hour in the following situations:
        i. Make and model is not listed in the Calculator.
        ii. Appliance was bought used. Often in reconditioning old units, parts are interchanged in a way that diminishes efficiency.
        iii. Appliance is in a semi-conditioned space, such as a basement.
        iv. Unit is damaged or otherwise in poor condition.
    d. Metering must not be attempted if the Contractor's efforts to gain access to the plug for metering may result in damage to the home.
    e. When metering is not possible and the appliance is not listed in the Calculator, an auditor may propose replacement on the basis of evidence that the existing refrigerator is either over ten years old, or is in poor condition. Such situations must be documented with a digital photograph of the old refrigerator.
    f. Units kept in unheated areas such as garages or porches are unsuitable for replacement. Such locations must be noted on data collection forms. Please note that installation of new refrigerators and freezers into unconditioned spaces may void the product warrantee.

3. Metering guidelines
    a. If metering of refrigerators or freezers is included in the workscope, Contractor should install meter(s) as soon as possible after introduction and run meter for as long as possible in order to create the maximum length of meter run time.
    b. While the meter is running, the Contractor must return to the meter every 15 minutes to check the wattage in order to determine whether or not the refrigerator is in a defrost cycle. (Instructions on how to check wattage are typically included in meter instruction manuals.)
    c. If metering is performed on a warm day, metering results must be adjusted by 2.5% for every degree above the typical yearly temperature of the home. For example: If metering is done in a home where the typical yearly temperature is 70 degrees, and the temperature during the visit is 80 degrees (10 degrees above normal), the metering results should be reduced by 10 x 2.5%, or 25%.
    d. IMPORTANT NOTE: If the unit was unplugged for metering, make sure that the refrigerator is plugged in and functional before leaving the home. Generally, the refrigerator light is an easy way to verify that the unit has power.
    e. Units 10 years old or less will not be considered for replacement and do not need to be measured.

4. Procedures
    a. The Contractor must evaluate all refrigerators and freezers on premises.
    b. The Contractor must look for opportunities to:
        i. Downsize appliance
        ii. Unplug and remove a second appliance instead of replacing it
        iii. Replace two appliances with one larger refrigerator.
    c. The Contractor must evaluate the location of the refrigerator in relation to the following: stove and other heat sources; heating system ducts and radiators; freezer on sun porch;

etc. The Contractor must consider opportunities to relocate the refrigerator to a more appropriate location and discuss this with the household.

d. The Contractor must negotiate the appropriate appliance size for the family. As a general rule, a similar size as the current refrigerator is to be installed. Size may be determined in the following ways:
    i. Use of www.kouba-cavallo.com/refmods.htm.
    ii. Sticker on door
    iii. Size is sometimes a part of the model number
e. Measurement: measure in inches and multiply the length, width and depth of the freezer and refrigerator section interiors. Add the two totals, and divide this number by 1728.
f. Contractor must measure the space available for appliance installation and verify that recommended appliance will fit in terms of height, width and depth. It is important that care be taken to check the back of the cavity, because sometimes kitchen counters or walls may be irregular in dimension, and narrower in the back. Be sure to measure the depth and consider any obstacles that would interfere with the door opening all the way.
g. Contractor must check egress to ensure that appliance can be safely installed and note any obstacles for delivery. Issues regarding egress must be noted on the data collection forms.
h. All recommendations must be discussed with and accepted by the household. In situations where appliance replacement is determined by the Program Implementer, Contractor must make no commitment to the household regarding replacement but state that a recommendation is being made. It is important to emphasize that the old refrigerator must be given up in exchange for the new one, and that the old one is immediately decommissioned.
i. Replacement refrigerators must be ENERGY STAR® models.
j. All relevant refrigerator data must be filled out on Electric Reduction Audit Form. If a replacement is recommended, an Appliance Exchange Application must be filled out and signed, and an Appliance Q&A form left in the home. The Contractor must review the application with household and include hinge side, proposed replacement size, and other data.
k. Please be sure to instruct households who are to receive appliances that they must fill out and send in warranty cards. Caution them that failure to do so may void the warranty.

Hot Water Efficiency Upgrades (Temperature Adjustment, Pipe Insulation, Showerhead, and Timer for Electric Water Heaters)

1. Temperature adjustment
    a. Criteria
        i. Tested hot water temperature is greater than 120 degrees
        ii. The Household is amenable to temperature change
        iii. In the case of tenants, owner permission to perform minor measures, such as changing the hot water temperature, must be obtained.
    b. Procedure
        i. In the case of electric water heaters, the Contractor must first ensure that the circuit breaker to the water heater has been turned off.
        ii. Whenever possible, the household member participating in the audit should be present, shown how to make the adjustments and encouraged to perform the adjustment themselves.
        iii. In the case of electric hot water heaters, if the heater contains two heating elements, both heating elements must be adjusted.
        iv. In the case of natural gas or propane water heater, temperature settings are typically not identified on the dial. The Contractor must turn down the dial an estimated amount based on the original reading, and teach the household

member how to make further adjustments if necessary. It is helpful to mark the original setting with a marker to guide further adjustments.

v. In the case of electric water heater, the Contractor must ensure that the circuit breaker to the water heater has been turned back on after the adjustments have been completed.

2. Hot Water Pipe Insulation
   a. Criteria
      i. Water is heated by electricity or natural gas
      ii. A water heater change-out is not under consideration
      iii. Pipes are not currently insulated or are insulated poorly
      iv. No pipe leaks exist
      v. If the water heater has heat traps, insulation of the intake pipe is not required.
      vi. If the first foot of pipe insulation cannot be installed due to close proximity to the flue, pipe insulation must not be installed.
      vii. Pipes are not part of a tankless system.
   b. Procedures
      i. All installed pipe insulation should be of a size that is correct for the pipe: i.e., no exposed pipe due to using pipe insulation that is too small. Corners must be mitered and insulation secured with tape.
      ii. First 6 feet of hot water pipe and 3 feet of intake water pipe must be insulated.
      iii. Pipe insulation must be at least the thickness of the pipe diameter.
      iv. Combustible pipe insulation must not be installed within 6 inches of the flue.

3. Showerhead Replacement
   a. Criteria
      i. Water is heated by electricity or natural gas
      ii. Pre-existing showerhead has a flow rate greater than 3 gallons per minute (GPM)
      iii. Current showerhead is not required for medical reasons
      iv. Showerhead may be installed without causing damage to plumbing
      v. Showerhead is acceptable to household

   b. Procedures
      i. The Contractor must test the water flow. This can be done simply by using a gallon plastic jug with a hole cut out of the top that is large enough to fit the showerhead in. If the showerhead fills the jug in less than twenty seconds (i.e. has a flow rate of more than three gallons per minute) the showerhead is appropriate for replacement.
      ii. Plumbing tape should be used at joints.
      iii. Shower-massager or hand-shower models may be preferable, and can be inexpensive.
      iv. The new showerhead must have a flow rate in the range of 1.7-2.5 GPM.

4. Time-of-Use Timers for Electric Hot Water Tanks
   a. Criteria
      i. Water is heated by electricity
      ii. The household must have time of use (or on-peak/off-peak) rates. If time-of-use rates are in effect, or the Contractor must ensure that household is switched over to these rates as part of the process
      iii. Water tank must have an 80-gallon capacity or greater
      iv. Timer to be installed must have a battery backup

v. Written permission has been obtained by owner, and timer and rates must be acceptable to household
vi. Household must be willing and capable of adjusting the timer and replacing the batteries as needed

b. Procedures
i. Timer model must be reviewed and approved by Program Implementer
ii. Timer must be installed in accordance with all appropriate electrical codes
iii. Contractor must educate family on maintenance of timer.

Electric Water Heater Conversions

1. Criteria:
a. SIR of 1.1 or greater
b. High electricity consumption (greater than 10,000 KWh)
c. Household must be homeowner
d. House must not be for sale and household must indicate that they plan to stay in home
e. No flooding currently exists in basement and no evidence of a risk of future flooding.
f. If change-out to natural gas is being considered, natural gas must be in use in the home and available to an appropriate location for a water heater. Appropriate options for safe flue gas venting must be available.
g. Replacement of an electric water heater for another electric water heater will only be considered if day/night meter rates exist at the home, and a timer is being installed on the water heater. (In these cases, an 80-gallon tank is required.)
h. New natural gas water heater must have an energy usage rating of .63 or greater.
i. If the new water heater does not have integral heat traps, heat traps or u-shaped bends at least 12 inches high must be added to both the input and output pipes directly above the tank.

2. Procedures
j. Pre-existing conditions must be documented with digital photographs.
k. During the energy audit, the Contractor must inspect the water heater and evaluate draft considerations, such as size of flue, lining of chimney, and additional length of pipe required if relocation is necessary. If the Contractor is uncertain about technical aspects of retrofit decisions, the Contractor should notify the Program Implementer that further evaluation by a heating professional is necessary.
l. The Contractor must discuss option with the household and verify their interest in the retrofit. The household must be informed that, in a “fuel-switch” scenario, the electricity costs will go down, but the new water heater will increase the cost of the new fuel. It is important to inform the household that the electric reductions offset the increase in the new fuel costs. Data from EmPCalc or other instrumented audit tools can be helpful in this regard.
m. The Contractor must consult with the Program Implementer regarding the proposed change-out. This discussion should occur prior to sending Subcontractors to visit a home to provide estimates. Projected costs for repairs or replacements must include all necessary plumbing, venting, and structural costs associated with the change-out.
n. CAZ and gas leak testing must be completed as required by BPI.
o. Gas or oil hot water heating systems must meet venting codes of the National Fire Protection Association (NFPA) as applicable:
iv. NFPA 54: The National Fuel Gas Code
v. NFPA 31: Standard for the Installation of Oil-Burning Equipment
vi. NFPA211: Standard for Chimneys, Fireplaces, Vents, and Solid-Fuel Burning Appliances.

Electric Dryer Conversion to Natural Gas

1. Criteria
    a. Four or more people must live in home.
    b. Generally dryer usage must be 7 loads a week or greater.
    c. Natural gas must currently be in use in the home, with cost-effective availability of gas lines and venting.

2. Procedures
    a. The purpose of this measure is to reduce a household's energy costs. It is important to make clear to the household that the program is not a repair service.
    b. The Contractor must discuss conversion with household and verify their interest.
    c. Dryers that are installed through the program must have a sensor that turns off the dryer automatically when clothes are dry.
    d. The Contractor must evaluate the appropriateness of installation:
        vii. Location must allow dryer to be vented to the outside without an extensive dryer duct run.
        viii. Natural gas must be available to the location where the dryer is to be replaced.
        ix. If there are indications that the house is very tight, adding another combustion appliance may not be advisable. In these cases, Contractor should contact the Program Implementer and discuss the option of blower-door testing to ensure safe installation.
    e. Dryer installations must include aluminum vent ducts (not vinyl).
    f. CAZ and gas leak testing must be completed as required by BPI.

Other Electric Reduction Measures

1. In evaluating options for reducing energy use, it is important that the Contractor review household usage patterns to identify additional measures. Some examples are as follows:
    a. Opportunity to reduce or eliminate electric space heater use by enhancing or repairing the main heating system's distribution system, air sealing or insulating. NOTE: Use of electric space heaters may not be noted on the household's appliance sheet since households are sometimes reluctant to admit that they use them.
    b. Programmable thermostats may be installed on ER jobs in homes heated by electricity.
    c. A motion sensor light or time for a high-wattage outdoor light that is currently left on all night.
    d. Repairs to well pump systems that cycle continuously due to a leak in the system.
    e. Heat tape that runs continuously.
    f. Leaking hot water pipes or faucets.
    g. Occasionally, a Contractor may encounter a home that has been converted from a two family to a one family, but still retains two meters and two accounts. This means that the household is paying two basic service charges instead of one, and probably a higher overall cost per kWh than if the whole house was on one meter. In these situations, Contractor should explore the option of switching the house to one set of meters.
    h. Provide timers for TVs or other appliances left to run continuously.

2. All such measures must be reviewed and discussed with the Program Implementer.

Home Performance (HP) Measures and Criteria

Air Sealing Methodology

A. Criteria:
   a. Blower door testing must be performed during the audit. Contractors must test in accordance with BPI standards outlined in "Technical Standards for Building Analyst I-Building Airflow" and the NYSERDA Materials and Installation Guidelines.
   b. Air sealing strategies must be cost-effective, as measured by an accepted instrumented audit.
   c. All air sealing measures must be consistent with the above guidelines.

B. Procedures:
   a. During the audit, the Contractor will conduct a blower door test and use pressure diagnostic techniques to identify major sources of infiltration.
   b. The Contractor will make a list of specific air sealing tasks to be performed. These tasks are to be based on the current EmPower NY hourly rate. For example:
      Air seal attic chases prior to insulation: $XX
      Seal holes in foundation: $XX
      Weather-strip three doors: $XX
   c. If the Contractor is required to obtain prior approval:
      i. The list of air sealing tasks and costs must first be submitted to the Program Implementer, along with a projected goal for post air infiltration levels.
      ii. The Program Implementer must then select and approve specific air sealing strategies.
      iii. The Contractor may provide up to one hour of additional air sealing without prior approval if further leaks are discovered during work.
   d. If the Contractor has been given authority to determine workscopes without prior approval, the Contractor may proceed with air sealing provided that the estimated air leakage reduction meets the SIR goal of 1.1 or greater.
   e. Upon completion of work, the Contractor must provide the Program Implementer with list of specific air sealing tasks completed and both pre- and post- air infiltration readings. Contractor must enter into CRIS the final blower door number in order to ensure accurate representation of savings.
   f. If the Contractor does not provide appropriate air sealing as part of the workscope, written explanations must be provided to Program Implementer.

Insulation

A. Criteria:
   a. SIR of 1.1 or greater
   b. No structural deficiencies exist (such as leaking roof) which would impede the effectiveness of the insulation. Such deficiencies must be corrected prior to insulation.
   c. Structure is sound enough to support the weight of the insulation and installer(s).

B. General Procedures:
   a. All insulation must be installed in a manner that is consistent with BPI Standards. Refer to “Technical Standards for Certified Shell Specialist” and “Technical Standards for Certified Building Analyst I” and the NYSERDA Materials and Installation Guidelines.
   b. Whenever possible, material labels for material installed must be visibly attached to the structure in the area where they were installed.
   c. Contractor must inspect premises for presence of knob and tube wiring and note location. If knob and tube insulation exists in the attic the Contractor may:
      i. Propose removal of knob and tube in order to fully insulate attic; or
      ii. Insulate attic, but ensure that no insulation is in direct contact with knob and tube wiring.
      iii. If removal is proposed, the contractor must provide photographs of pre-existing knob and tube, and prior to installation, a detailed description of remediation. Prior approval of this proposal.

C. Procedures specific to attic insulation:
   a. Contractor must ensure that insulation levels are sufficient to allow for any settling that may occur in an open blow. At the time of installation the installed insulation must be at least 1” higher that the invoiced level.
   b. Stairway accesses to attics must receive wall insulation and stair tread high-density cellulose to ensure a complete thermal boundary. The access door must receive weather-stripping and a door sweep and must be secured against air leakage. The door must be insulated to a minimum of R-14.
   c. If attic hatches exist or are installed in a dwelling, the contractor must weatherstrip and insulate the hatches **but not permanently seal**.
   d. In the event that a contractor creates an access to the attic that must be permanently sealed (such as access through drywall, or situations where the contractor insulates the attic through a vent), the contractor must provide pre- and post-photos of the installed insulation.
   e. In situations where objects stored in attic impede the Contractor’s ability to adequately insulate attic, the Contractor may require household to move objects within a given time frame. In rare instances, such as situations in which the household is disabled, the Contractor may propose a charge for moving objects to the Program Implementer, prior to installation. In other situations, additional resources from outside of the Program may be required.
   f. When a floored attic exists, the Contractor must remove and replace flooring in a manner that provides minimum damage, and which provides access to all areas. Broken and split boards must be replaced with a like product and fastened appropriately. If a drill-and-plug method is used, plugs must be flush with existing surfaces.
   g. In situations where the kneewalls are insulated, the Contractor must adequately block the thermal bypass at the attic floor/kneewall intersection. This may be achieved by rigid foam insulation caulked to fit, or dense-packed cellulose.
   a. Ventilation must be installed in accordance with all applicable building codes and BPI standards. All openings must be sealed in a weathertight manner, and must not greatly detract from the aesthetics of the structure.
   b. Vent opening shall be cut in such a manner as to allow maximum airflow through vent.

D. Procedures specific to sidewall insulation:

a. Contractor must make every effort to determine the presence of pre-existing insulation. Acceptable methods include:
   i. Probing outside of electrical outlets but inside outlet covers with a plastic knitting needle;
   ii. Drilling holes on outside walls in areas such as closet walls, and spackling afterwards;
   iii. Probing gaps or holes in interior surface of the exterior wall;
   iv. Consulting with the occupant;
   v. outlets or drilling holes;
   vi. Pulling and checking under siding;
   vii. Infrared scans.
b. If pre-existing cellulose wall insulation is found and there is reason to believe that significant settling has occurred, re-insulation may be considered as follows:
   i. Contractor must notify Program Implementer.
   ii. An infrared scan must be used to identify extent of voids.
   iii. Insulatable square footage must be documented.
   iv. Contractor may then propose an adjusted wall price, based on higher labor cost/ft2.
   v. Program Implementer and Contractor must then calculate SIR; and proceed as appropriate.
c. If pre-existing fiberglass wall insulation is found, Contractor must consult with Program Implementer. Additional insulation may only be installed with prior approval.
d. When Insulating walls:
   i. If pre-existing wall insulation is present, crew must accurately document location of added wall insulation. Notes and pictures regarding situation are recommended.
   ii. Siding must be removed in all cases and reinstalled to match the original condition. Damaged siding must be repaired and replaced as necessary, and must be watertight. Unpaintable caulk is not acceptable for sealing replaced siding.
   iii. Drilling directly into exterior siding, or drilling into the interior walls of the home is prohibited unless Contractor obtains written permission from both the Homeowner and the Program Implementer.
   iv.

E. Procedures specific to miscellaneous insulation measures:
   a. Insulation of floors or crawlspaces with an SIR of 1.1 or greater may be acceptable measures provided that these measures:
      i. Do not create the potential for freezing of pipes
      ii. Are consistent with an appropriate thermal boundary for the home. Floor insulation between a warm basement and a heated space above, for example, is not appropriate.
      iii. Address any air leakage issues with appropriate air sealing
   b. Floor insulation must be installed in such a manner that insulation is in contact with the sub-floor, with kraft or foil face applied towards the sub-floor. A minimum R-19 must be installed.

c. Dirt-floor crawlspaces require a continuous air/moisture barrier. This may consist of plastic sheets of a minimum 4 ml, overlapped at least one foot. This barrier must extend at least 10-16" up the foundation wall.
d. Exhaust fans that terminate into crawlspaces must be rerouted to the outside. Ductwork must be rigid.

Heating System Repair and Replacement

A. Criteria for installation:
   a. Heating system replacements will only be considered as a last resort in situations in which Program Implementer has documented attempts to obtain assistance from the HEAP Heating System Repair and Replacement (HERR) program, the Weatherization Assistance Program, and other appropriate funding sources have been rejected.
   b. All heating system replacements, with the exception of no-heat emergencies, must have an SIR of 1.1 or greater. Heating system repairs, including clean and tunes, are not subject to this restriction.
   c. Prior approval by Program Implementer has been obtained if the cost of a natural gas or propane Clean and Tune is greater than $150, if an oil clean and tune exceeds $250, and/or the overall repair cost to EmPower is greater than $300.
   d. Ownership by household has been established and written owner permission has been obtained.
   e. If the household is a tenant, major heating system repairs or replacement is the responsibility of the landlord, and will not be covered by EmPower
B. General Procedures:
   a. All Contractors are expected to be familiar with, or to employ Subcontractors familiar with the wide variety of mechanical heating systems in use throughout New York State. The Building Performance Institute, the New York State Weatherization Directors' Association and other organizations provide training resources.
   b. All work performed must comply with all State and local codes, and must be completed in accordance with BPI standards, as outlined in "Technical Standards for Certified Heating Specialists" and "Technical Standards for Building Analyst I". Any new heating system equipment must comply with the National Fire Protection Agency (NFPA), the National Fuel Gas Code (NFGC), and New York State Building construction codes.
   c. All new heating systems must be ENERGY STAR® compliant unless, in an emergency situation, prior approval is obtained from the Program Implementer.
   d. Contractor must discuss the heating system operation with an appropriate household member to:
      i. Identify problems and concerns expressed by the household
      ii. Educate the household on appropriate use and maintenance of the heating system.
   e. Adjustments to the heating system that are deemed to be cost effective may be part of the inspection/servicing. Such measures may include replacement of a furnace filter, opening of restricted ductwork, bleeding an air-bound radiator, or adjustment of a gas burner.
   f. Furnace filter slots must be covered. A magnetic tape strip or garage-door-type rubber gasket, secured with screws, may be acceptable options if they provide a reasonably tight seal.

g. Contractor may not proceed with home performance measures unless the heating system is deemed to be in safe and operable condition.
h. Upon the completion of a combustion efficiency test, the Contractor must leave a tag on the heating system indicating test results and identifying tester, and document test results on EmPower audit paperwork.
i. Major repairs or replacement must be submitted to Program Implementer for prior approval. The Program Implementer may obtain second bids from alternative contractors.
j. Upon completion of any heating system work, which affects the efficiency of the heating system, another steady-state efficiency test must be performed. Final documentation, descriptions of specific repairs completed, and specific costs must be provided along with invoices.
k. Warranty, instruction manual and Contractor contact information must be provided to the household.

C. Procedures related to Clean and Tunes:
   a. A Clean and Tune can be proposed when any of the following occur:
      - There is any evidence of smoke in a natural gas system's flue gas; or
      - A smoke reading of #1 or greater in an oil system's flue gas; or
      - CO levels are greater than 400 ppm or above manufacturer's allowable limits in the air free flue gas: or
      - Evidence of flame roll-out in a natural gas heating system.
   b. Technicians performing clean and tunes must complete of the Clean and Tune Checklist and Certification Form.

D. Procedures related to secondary heating systems
   a. Contractor shall note the existence of all secondary heating systems on EmPower forms.
   b. Contractor shall test where appropriate the steady state efficiency and CO of all such combustion units in a dwelling.
   c. Contractor must consider the use of secondary heating systems in terms of their interconnectivity with other systems and the dwelling as a whole.
   d. Contractor shall make note of any health and safety concerns present, such as use of an unvented kerosene heater, or close proximity between electric space heater and flammable objects. Such concerns shall be discussed with household and remedial action taken if necessary to ensure the safety of the household.

Inspection and Service to Water Heaters Fueled by a Fossil Fuel

A. Criteria:
   a. Water heater is fueled by natural gas, oil or propane
   a. Replacement or repair is the only option to ensure that dwelling meets CAZ testing requirements. Prior to making this recommendation, contractor must first explore lower-cost alternatives. See Section 13 - Tips and Solutions to Solve Water Heater Venting Issues
   b. Conditions in dwelling are appropriate for change-out. (i.e., no flooding in basement, adequate space etc.)

B. Procedures:
   b. Contractor must perform combustion efficiency and safety tests and safety checks on all gas, propane or oil-fired water heaters as required by BPI.

c. Contractor shall consider options to reduce usage and ensure the health and safety of the occupants. These retrofits may include, but are not limited to:
    i. Cleaning of burner assembly
    ii. Repair or replacement of faulty venting system
    iii. Repair of leaking hot water lines
    iv. Repair or replacement of faulty fuel lines.
d. All gas, propane, or oil domestic hot water systems must meet criteria as outlined in Section 7.8.

Programmable Thermostats

A. Criteria for installation:
    a. Participant owns the home.
    b. Programmable thermostats may be installed on homes heated by electricity on any job, and on homes heated by a central fossil-fuel furnace or boiler on HP jobs.
    c. Household displays the ability to properly understand and has a lifestyle that will effectively utilize the thermostat.
    d. Thermostat voltage is appropriate.
    e. Maximum one per zone
B. Required thermostat specifications:
    a. ENERGY STAR® labeled
    b. In situations where home has a central air conditioning unit in use, thermostat has the capability to adjust cooling temperatures
    c. Battery back-up
    d. Large, easy to read display. In situations where household is visually impaired, Contractor must ensure that display is appropriate to household's needs.
    e. A minimum of a 5/2-day program schedule (full 7 day program schedule is preferred)
    f. Programming should be easy and intuitive, and must allow adequate time for inputs
    g. Participant should be able to override program easily
    h. Thermostat should include at minimum a full one-year warranty
    i. Installed thermostats must be compatible with existing heating system
C. Procedures for installation of thermostats for fossil-fuel systems:
    a. Models must first be presented to Program Implementer and NYSERDA for review and approval.
    b. Upon acceptance of model, thermostats may be installed during initial audit visit.
    c. Installation must include training of an appropriate family member.
    d. Contractor contact information must be left with the household in case questions arise.
    e. Thermostat must be fully operational and programmed according to the family's needs before the Contractor leaves the home.
    f. Replaced thermostats that contain mercury must be disposed of properly.
D. Procedures regarding thermostats for electrically-heated homes:
    a. Programmable thermostats may be installed in electrically-heated homes as part of an Electric Reduction or Home Performance work scope. These may be very effective at reducing electricity costs; however, electrically-heated homes often require thermostats in each room. Nevertheless, the cost may

be moderated by replacing only the thermostats in the areas that are most frequently used; a set of 3 to 5 “line-voltage” thermostats in these areas may be an appropriate and effective application. If such an opportunity arises, Contractor may consult with Program Implementer for guidance.

b. Homes with electric heat pumps require a special thermostat which steps up the temperature slowly. Contractor may consult with Program Implementer regarding options.

Other Home Performance Measures

A. Criteria:
   a. SIR of 1.1 or greater, or demonstrated health and safety concern
   b. Prior approval of Program Implementer
   c. Consent of home owner

B. Procedures:

   a. Additional custom home-performance measures which may assist family may be proposed by Contractor.
   b. Photos documenting pre-existing conditions will be generally required.
   c. Whenever possible, cost-effectiveness must be assessed through the use of an instrumented audit tool and analysis of household energy usage patterns.
   d. Prior to installation, Contractor must receive prior approval from Program Implementer.

EmPower New York Guidelines for Heating System Fuel Conversions to Natural Gas

I. **Eligibility Criteria**

a. EmPower New York will provide incentives for heating system fuel conversions of primary heating systems for households heating primarily with oil, propane, wood or electricity to natural gas if:

i. The customer must be the **property owner** and has resided in the dwelling to be served for at least 6 months.
ii. The household is documented to be a customer of a natural gas utility and has natural gas in the home, or natural gas service will be supplied to the home by the Utility prior to conversion.
iii. Dwelling is a 1-4 family residence.
iv. Heating system was operational at the time the dwelling was purchased.
v. There must be a net positive energy savings, except where the existing heating fuel is electricity.
vi. The dwelling must be free of unsanitary conditions or other health and safety concerns that pose risks to the contractor.

II. **Available Incentives:**

a. For Single Family Homes

i. Customers eligible for EmPower New York services will receive an incentive of up to $7,000 total for the entire eligible workscope, including other eligible Home Performance and Electric Reduction measures.
ii. Costs above the measure or program caps must be paid directly by the homeowner and may be financed through available NYSERDA sponsored loan options or private lenders.
iii. Incentives for the heating system conversion includes necessary distribution repairs, gas-piping inside the home, tank decommissioning and removal.
iv. Incentives shall not cover the costs of meter hookups, or any cost related to installing or upgrading gas lines before the meter.

b. For 2-4 Family Residences

i. A central heating system serving an eligible landlord in an owner occupied unit and additional rental units are eligible for incentives, with a cap of up to $7,000 including the heating system and $5,000 for eligible tenant units for other energy efficiency measures.
ii. A stand-alone heating system serving an eligible landlord in an owner occupied unit is eligible for incentives, with a cap of $7,000 including the heating system and $5,000 for eligible tenants for other energy efficiency measures.
iii. Rental units served by stand-alone heating systems are not eligible for incentives to convert heating equipment.

III. **Assignment of Work**

a. Work will be assigned to contractors based on criteria outlined in Section XX. Participating BPI Gold Star contractors must have BPI Heating System Specialist Certification or equivalent heating system manufacturer certification on staff.

IV. **Project Documentation**

a. It is advantageous to the household if the sizing of the heating system takes into consideration shell measures installed through the program. All projects receiving an incentive must include documentation of attic and wall insulation levels and approximate square footage of un-insulated areas.
b. The following must be provided to the Program:
    i. Photo documentation of existing equipment, including photos for any specific problems discovered;
    ii. A written detailed estimate using the Combustion Appliance Form; and
    iii. A signed Homeowner Agreement.

V. **Considerations in Developing a Workscope**

a. Contractor must consider the household's ability to maintain the installed system according to manufacturer's recommendations, including filters, valves, etc. when proposing high efficiency equipment.
b. Customer must be provided with all appropriate manuals and warrantees, and guidance on how to operate the system.
c. A two-stage furnace installation may be considered in situations where insulation work will not be completed immediately after heating system installation.
d. NYSERDA reserves the right to obtain additional bids for all proposed work.
e. Contractor must consider options for the homes hot water heater. For example, but not limited to:
    i. Ensuring that an atmospheric water heater that is orphaned due to the installation of a high efficiency heating system drafts into a lined chimney and drafts properly.
    ii. Water heaters that are dependent on or connected to the heating system (side-arms, etc.) are considered part of the heating system and incentives for replacement are subject to the caps outlined in Section II.
    iii. Proposing replacement of the water heater to the homeowner may be considered through the Assisted Home Performance program.

Change orders totaling less than $200 may be completed without prior approval. In these instances, the contractor must notify program implementation staff prior to invoicing.

If other energy efficiency measures are not completed immediately, contractor may provide an invoice for only the heating system work and audit fees prior to completion of the entire project.

Special Considerations for the National Fuel Gas (NFG) Conversion Program:

National Fuel Gas is providing funding for heating system conversions to natural gas to a limited number of low-income customers (60% SMI or less) in their utility territory. All program guidelines apply as above, with the exceptions noted below:

I. Eligible customers must be a **property owner or renter**;
II. Available incentives are up to $4,800 per household for the in-home gas line installation and equipment conversion costs;
III. Landlords must sign a Landlord Agreement and will be responsible to pay 25% of the costs for rental units; and
IV. Participating Contractors must prioritize services to these households over other EmPower New York program referrals.

EmPower New York Project Completion and Invoicing

Unless alternative agreements are reached with the Program Implementer, Home Performance jobs must be completed within 120 days of Participating Contractor referral acceptance and Electric Reduction jobs must be completed within 60 days of Participating Contractor referral acceptance.

The Participating Contractor must invoice within 30 calendar days of completion of all work by the contractor on the project.

Project test-out and sign-off

Upon completion of a project, the Participating Contractor must:

A. Review and correct all necessary EmPower New York forms. The Participating Contractor must make sure forms are complete and legible. Please note that the participant and the Participating Contractor signatures must be present on documents as required. If the participant of record is not at home to sign documents, the documents must be signed by another appropriate adult in the home; in THEIR OWN name, with a note of the relationship. For example, if the bills are in the name of Frank Smith, and his wife Emily signs, she should sign as follows: “Emily Smith (wife of Frank Smith). The use of unauthorized representations of a participant’s signature shall be cause for withholding of Participating Contractor invoice payments and/or termination of the Participating Contractor from the program.
B. Remove all tools, materials and debris from the building and grounds daily and upon the completion of work. The work site will be left in original or better condition at the completion of the work.
C. Post-inspect all subcontracted work to ensure that work was completed to the program standards.
D. If the Participating Contractor is proposing that further work be completed in the home by other contractors, the Participating Contractor must ensure that Program Implementer is provided with all appropriate information. It is especially crucial that the Appliance Exchange Agreement includes all relevant household data, and that all writing is legible--this form may be sent directly to the appliance vendor and used as the basis for their orders. If the household is in a trailer park, it is important to note the name of the trailer park as well.
E. If Home Performance measures have been installed, complete all test-out procedures as required by BPI.
F. Complete a Certificate of Completion. This form must include results of test-out procedures completed on all jobs, action items resulting from the energy education portion of the energy assessment, and must be signed by the applicant or other adult member of the household. Please note that CAZ testing need not be performed on electric reduction jobs in which no fossil-fueled clothes dryer or hot water tank has been added to the dwelling.
G. Provide the household with the Participating Contractor’s contact information.
H. If quality issues are identified by the Program Implementer or the Quality Assurance Contractor, the Participating Contractor must make all necessary repairs.

Invoicing Requirements

Invoices may be submitted upon completion of all work performed by the Participating Contractor and any subcontractors hired by the Participating Contractor to perform work in the dwelling. Invoices for partially-completed projects may only be submitted upon prior approval of the Program Implementer.

Upon submission of invoice, the Participating Contractor must provide:

A. Completed EmPower New York forms as follows (See CRM Section 8):
   a. All 1-4 family jobs
      i. Signed Homeowner Agreement (Owners only)
      ii. Certificate of Completion (all jobs in 1-to-4 family homes) signed by both applicant or other adult member of the household and the Participating Contractor
      iii. Signed Appliance Exchange Agreement, if appropriate
   b. Additional forms for 1-4 family HP jobs
      i. House Diagram Form
      ii. Combustion Appliance Form
      iii. Clean and Tune Checklist (only if Clean and Tune is performed)
      iv. Supplemental Data Form (only if a software other than EmPCalc is used)

B. Copy of instrumented audit report with costs and savings consistent with prior approvals and notes in CRIS.

C. WAP and Landlord investment amounts, or other leveraged funding, if applicable

D. Copies of subcontractor invoices, as requested by Program Implementer

E. NYSERDA encourages the use of the invoice that is generated by EmPCalc. All invoices must include the following:
   a. Individual invoice number
   b. Correct EmPower New York ID# ("D0", etc.)
   c. Customer name (consistent with CRIS referral) and address
   d. All Participating Contractors must include the following statement on the invoice: "The charges on this invoice are unique to the EmPower New York program and are not charged off to any other NYSERDA program".
   e. Agencies participating in WAP must also include the following statement on the invoice: "Projects completed in coordination with the Weatherization Assistance Program (WAP) follow approved WAP program income policy".
   f. Amount that agrees with prior approval.
   g. Line item details of measures performed, as follows:
      i. Electric reduction audit: $XXX
      ii. 7 LEDs: $ XX
      iii. 800 ft^2 open-blow attic insulation, 6"@ $X.XX per ft^2: $ XX
      iv. Etc.
   f. Number of audit miles billed, unit cost per mile and total cost. Mileage may only be charged for the initial audit.
   g. Make and model of replacement clothes dryers, refrigerators, or other appliances.

h. Make, model and AFUE ratings of installed heating systems and water heaters.
i. Digital images as required, such as; sealed spaces that have been treated and cannot be visibly inspected afterward, post-insulation levels with ruler, and attic air sealing.
j. Specific air sealing tasks itemized and a price listed for each task.

The following checklist is a guide for appropriate invoicing and may be used as a tool to ensure the Participating Contractor submits a complete invoice package.

Checklist for Invoicing EmPower New York Projects
For all completed jobs requiring prior approval

Updated: 4-2-2015

The following forms must be submitted at the time of invoicing

Document	Minimum Requirements for Processing Invoices Successfully	√
Contractor Invoice	Legible	
	Billed amount agrees with prior approval, CRIS-recorded change orders noted by Coordinator, and minor additions or deletions noted in CRIS by Contractor	
	Customer full name, address, D number	
	Contractor name, address, email	
	Make and model of all replaced heating systems, water heaters, refrigerators, dryers, other appliances. AFUE/EF of all replaced heating systems and water heaters	
	All charges include required cost details: type/description, location, measurements (sf, lf, depth), quantity, unit cost, measure cost, total cost	
	Invoice statement "The charges on this invoice are unique to the EmPower New York program and not charged off to any other NYSERDA program."	
	All billed air sealing is detailed: tasks itemized, cost per task	
Finalized Audit tool	Costs and savings match installed workscope and costs match invoice	
Supplemental Form (non EmpCalc Audits only)	Complete and legible (including energy usage and unit cost for all fuels in home)	
Certificate of Completion	Legible and complete	
	Signed and dated by contractor and customer at completion of job	
	Customer Education section completed by customer or not billed	
	CAZ testing completed (exceptions detailed on COC as follows: electric water heater or heat, COIL, roof vent, venting type)	
	If draft cannot be obtained by drilling, use appropriate exception code: PVC, B vent, Stainless, Wall Mount.	
	If a CAZ appliance does not fail spillage, PASS is circled.	
	Indicates dwelling meets BPI safety standards	
	Final Blower Door matches Audit Tool	
Photos (as appropriate based on workscope)	Sealed spaces that have been treated and cannot be visibly inspected afterward.	
	Post levels of attic insulation with ruler	
	Attic air sealing	
Supplemental documents	If required by the coordinator, as noted in CRIS	
Clean and Tune form (if billed on invoice)	Complete and legible	
	Signed by technician	
	Indicates unit is left in a safe condition, with no ambient CO	

EmPower New York Quality Control Procedures

All work funded by NYSERDA under the EmPower New York program shall be subject to inspection by the Program Implementer, NYSERDA's Quality Assurance Contractor, and NYSERDA staff. Quality Control (QC) and Quality Assurance (QA) are tools for ensuring that appropriate measures are installed and operate as designed, identifying training needs of Contractors, and ensuring program success.

The EmPower Program Implementer is responsible for providing the appropriate technical assistance to ensure Quality Control (QC) for all aspects of the program, and to develop a system of technical and program review tasks to ensure program procedures are followed properly and quality workscope are completed. These tasks include, but are not limited to:

- Assisting NYSERDA in ensuring that Contractors participating in the program maintain appropriate credentials (insurance, BPI certifications, etc.).
- Training Contractors on program policies and providing technical assistance.
- Providing clear instructions and guidelines.
- Conducting quality control phone calls and visits to homes at percentages prescribed by NYSERDA. The inspections include pre-, in-progress and post-inspections.
- Providing feedback to Contractors based on all QA and QC activities, and ensuring that any necessary remediation is completed. The Program Implementer is the primary contact with the Contractor regarding all Quality Control/Quality Assurance issues.
- Providing NYSERDA with reports and providing Quality Assurance Contractor with ratings from completed QC phone calls and ratings.

Quality Assurance (QA) is provided by a separate Contractor retained by NYSERDA for this purpose. The current Quality Assurance Contractor is CLEAResult. QA activities include a planned system of review procedures, conducted by the third party Contractor, to verify adherence to the adopted quality standards of the program. QA activities also include telephone surveys and on-site inspections of in-progress and completed projects. Contractors are responsible for becoming familiar with quality assurance procedures. A copy of the Quality Assurance procedures in included in Section 10 of the Contractor Resource Manual.

The Program Implementer coordinates with the QA Contractor as needed to ensure appropriate follow-up is taken Participating Contractors.

In all situations in which work is found to fall below BPI standards, or outside of the parameters of Program guidelines, the Contractor will be expected to provide timely and appropriate remedies. Failure to do so may result in rejection of invoices, suspension, or termination from the Program.

EmPower New York Procedures Related to Health and Safety

For all jobs:

A. Emergency situations must be treated as per Section 5.
B. Contractor is responsible to procure, maintain and calibrate Carbon Monoxide (CO) and natural gas/propane testing equipment. The Contractor must maintain calibration of instruments according to manufacturer specifications.
C. Prior approval must be obtained for any health and safety measures with a total cost greater than $150.
D. On all jobs in homes with combustion appliances or attached garages, the Contractor must test the ambient air for Carbon Monoxide, in accordance with BPI procedures.
E. In dwellings served by EmPower in which the customer is the owner of the dwelling, which have either a combustion appliance or attached garage, the Contractor must ensure that a working CO detector is present. Household must be instructed in its use, and provided with instruction manual and warranty information. CO detectors that are provided by the Contractor must meet the following criteria:
    1. Comply with UL-2034
    2. Employ an electro-chemical sensor
    3. Be powered by a lithium battery
    4. Conform to all local codes
    5. Make, model and price must be prior-approved by Program Implementer.
F. In homes where a non-venting dryer exists:
    1. Workscope must include a proposal to vent the dryer to the outside in the following situations:
        a. Customer owns home
        b. Customer is a tenant, and a Landlord Agreement exists which allows invasive measures.
    2. If customer is a tenant and no Landlord Agreement exists, contractor must recommend that tenant pursue venting of dryer with landlord.
    3. In situations where the cost of venting the dryer outside exceeds the Contractor Participation Agreement price, contractor must propose a plan and cost to the Program Implementer. Program Implementer must then determine whether to proceed.
G. In homes where the dryer is vented by a vent that is not code-compliant, the contractor must recommend to the household that the vent be replaced with a code-compliant vent.
H. If a contractor finds that the safety discharge pipe for the pressure relief valve on the water heater is not present, contractor must recommend that the safety discharge pipe be installed.
I. In homes in which the customer is the owner of the dwelling and no working smoke detector exists, Contractor may provide the household with a smoke detector. Household must be instructed in its use, and provided with instruction manual and warranty information. The smoke detector must meet the following criteria:
    1. Be powered by a lithium battery
    2. Conform to all local codes
    3. Make, model and price must be prior-approved by Program Implementer.
J. In homes where the customer is a tenant, and either a CO or smoke detector is needed, Contractor must make a recommendation to the tenant.
K. If the Contractor identifies Health and Safety concerns beyond the scope of EmPower New York the Contractor must notify the building owner the concerns exist. In presenting health

and safety concerns, it is crucial that Contractor state these concerns appropriately. Conditions must be described objectively; it is important that Contractors make no statements based on judgments beyond their own expertise.

On Home Performance jobs:

A. The Contractor must follow BPI procedures for Health and Safety as outlined in "Building Performance Institute Technical Standards for Certified Building Analyst I" (www.bpi.org). This includes, but is not limited to;
    1. Testing of gas lines for leaks. Exact locations of leaks must be noted on audit paperwork. Photographs can serve as useful documentation.

B. No Home Performance measures that reduce air movement may be implemented in a home with an unvented dryer. This includes air sealing and insulation.

C. In the event that an unvented space heater exists in the home:
    1. Contractor must follow BPI 1200 standards, Section 7.8.4 as follows:
        - Check appliance for *ANSI Z21.11.2 –Gas Fired Room Heaters-Volume II* (ANSI Z21.11.2) label.
        - Recommend removal of any unvented heater that is not listed to *ANSI Z21.11.2.*
        - Verify that the heater input is a maximum of 40,000 BTUh, but not more than 10,000 BTUh where installed in a bedroom, and 6,000 BTUh when installed in a bathroom.
        - Recommend removal of any unvented heater that exceeds the maximum allowable BTUh as specified in Section 7.8.4.3.
    2. Inhabitants must be educated as to the dangers of CO and the correct use of the space heater.
    3. The contractor should explore options for eliminating usage, such as installation of a vented space heater or repairs to a primary heating system. The viability of the project will then be evaluated on the basis of the combined health and safety and Home Performance costs.

On Electric Reduction jobs:

A. Gas leak testing is not required. However, if a gas leak is suspected, contractor must follow procedures as outlined in CRM Section 13.

B. Combustion Appliance Zone (CAZ) testing is only required in situations in which the contractor performs measures which impact air movement in the home, such as the installation of a natural gas-fueled hot water tank or dryer, or if a dryer has been vented to the outdoors. If such testing requires a return visit to the home, an additional fee may be charged. Prior approval from the Program Implementer must be obtained.

Weatherization Agency Participation in EmPower New York

EmPower 1-4 family households may be served either in coordination with Weatherization Assistance Program (WAP) or on a fee-for-service basis. A coordinated EmPower/WAP application is available for customers who wish to apply for assistance from both WAP and EmPower NY.

A. Units Coordinated with WAP:
    a. Work performed on coordinated units must conform to WAP policies and procedures.
    b. Agencies must follow WAP procedures for audit. In addition, Agencies must complete EmPower energy education procedures, and may install Electric Reduction measures allowed under EmPower without prior approval, such as LEDs, showerheads, etc.
    c. If any appliances are tenant-owned, agency must secure a signed EmPower Appliance exchange application, unless covered by a WAP agreement.
    d. EmPower will fund cost-effective Electric Reduction measures, such as refrigerator or freezer replacements, LEDs, and Home Performance measures, such as attic and wall insulation, and air sealing measures may be funded by EmPower.
    e. Audit fees may only be charged if EmPower funding is applied to energy efficiency measures. Home Performance Audit Fees may only be charged if EmPower funding is applied to Home Performance measures.

B. Fee-for-service units must be completed according to procedures outlined in this manual. Upon completion of work, NYSERDA reimburses the Agency according to the terms of their current agreement.

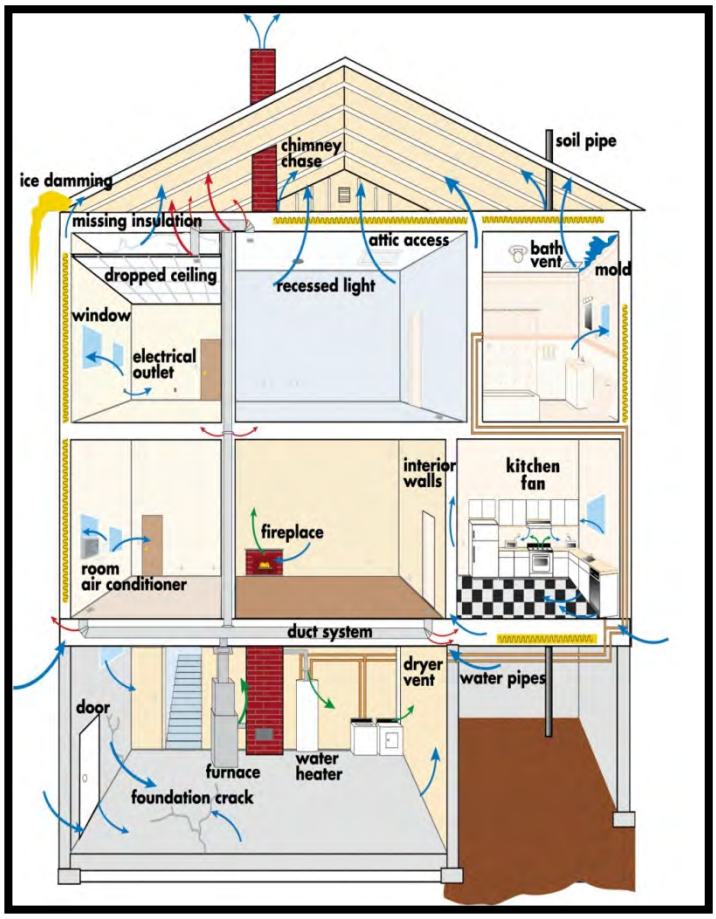
In Home - Customer Energy Education

Criteria

A. For EmPower New York projects, in-home energy education is mandatory for all audits unless household member is unwilling or unable to participate.
B. In-home energy education is not required for Home Performance with ENERGY STAR audits, but is an added value to the customer and is strongly encouraged.

Procedures

A. Prior to the visit, Contractor must review household information and clients' energy usage data to determine the clients' greatest reduction needs. In most circumstances, this information is available from the program database.
    a. During the audit, Contractor must work with the appropriate household member to identify three to five energy saving actions which the household member would be willing to undertake.
    b. At the end of the audit, Contractor must work with the household to implement an "Action Plan". Unless the household member is incapable, this action plan must be filled out by the household member, not the Contractor.
    c. The Action Items must be listed on the Certificate of Completion which must be left with the client, and a copy must be submitted to the Program Implementer by the Contractor.
    d. It is important that Contractor keep on hand contact information for relevant organization that may be able to offer further assistance in their area, such as the Weatherization Assistance Program, Utility Collections Departments, Offices for the Aging, etc., and provide them to the households when needed.
    e. Further details regarding the in-home energy education procedures may be found in the "In-Home Education Guide" located in the Contractor Resource Manual.



In-Home Energy Education Guide

Updated 7/31/16

New York State Energy Research and Development Authority

In-Home Energy Education Guide

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NOTE: Putting colorful reference tabs or dividers between sections of this binder will be helpful for quick reference to each section. Although this guide is meant to be read in its entirety, reference to certain sections before the audit and throughout the audit will help immensely. Large, bold headings are above each section, which starts at the top of the pages listed above are meant to help in finding each section more easily.

I. INTRODUCTION

This guide was developed as an energy education guide for energy auditors. It includes:

- A step-by-step guide through the energy education process
- Tips on education techniques
- Energy-saving strategies

The mission is to help families with high energy burdens manage their energy use and costs through energy efficiency education and services.

The goal of In-Home Education:

Assist the household in identifying 4 concrete actions that will reduce their energy use.

Success is based on the actions that the household takes as a result of your interaction, NOT on the amount of information you provide. So it's important that the education process be specific to each home--you will not do everything in this guide every time. As you become familiar with the concepts, you will learn to tailor the process to the household's needs and as you see fit. In doing so, you will increase the effectiveness of NYSERDA's work by helping households make better choices in the ways that they use energy.

This guide **does not** provide extensive technical training on Electric Reduction or Home Performance measures. Further information may be found in the Contractor Resource Manual, the Building Performance Institute website, the MIG (Materials and Insulation Guide) and other reliable sources.

Please consult with program staff for further assistance.

II. METHODOLOGY FOR IN-HOME EDUCATION

Before you begin this process, consider 6 important strategies for making this process more effective:

1. **Develop your expertise**

   Be knowledgeable about energy efficiency strategies, savings and issues. The better you prepare, the more effective you become at energy efficiency education—and your ideas will encourage the household members to trust you.

   If you don't know an answer, don't pretend that you do—just promise that you will find out and get back to them.

   Bear in mind that health and safety come first in NYSERDA recommendations.

2. **"Partner" with the household**

   Remember that the overall goal is to work with the household members to find ways to make energy more affordable. "Partner" with them in this process. If the household feels at ease and is involved in the problem-solving process, they are more likely to follow through.

   Your own friendly, respectful attitude will help immensely. Remember that while you may have a greater understanding of the technical aspects of energy efficiency, the household has a greater understanding of their home. Partner with them in solving problems. If you disagree, explore the question in a mutually respectful way.

   Hone your communication skills. Avoid using technical terminology that tends to keep households at a distance or communicates "superiority". Use straight-forward language. Review the technical terms that you typically use (such as "infiltration" or "50 pascals") and substitute simpler terms that are listener-friendly and easier to understand. If you find yourself stumbling over your words, write a script for the concept that you are explaining, and practice it until the words come naturally.

3. **Tailor the Inspection to the needs of the household**

   Conversations with the household can provide a great deal of useful information about their habits and needs. Review the household

information available on program database before you enter the home, so that you begin with some understanding of the situation.

Listen for their concerns. Think from their perspective, not yours. Be sure to ask them appropriate questions before you provide an answer. Always listen for cues that something is on their mind that they want to talk about. Don't waste time advocating for actions that the household clearly is not going to follow through on.

One key strategy is to ask "open-ended" questions. Open-ended questions are those that require more than a yes-or-no answer. For example, instead of asking, "Is your house comfortable in the winter?" you might ask, "Tell me about how comfortable the rooms are in your house." Open-ended questions lead to a discussion and signal interest in the household.

4. **Give the household choices, not obligations**

Rather than presenting the "right or wrong" ways of using energy, give the household alternatives that have real life consequences, such as money saved or increase comfort. This way the household can make informed choices that better suit their needs.

For example, instead of asking the household member, "would you like me to install this LED", you might present the choice as follows: "If you continue to use your old inefficient light bulb, you will pay about $100 for 10,000 hours of use, and probably buy 9 more light bulbs. If we install this high efficiency light bulb, it will last about 10,000 hours, and you will save about $75 over the life of the LED, which you can use to help in paying other bills, or to buy things for the kids."

5. **Identify incentives**

People need incentives to change behavior. Two principle incentives for change in energy usage behaviors are 1) helping the family feel more comfortable in the home and 2) lowering costs.

Dollar savings provide stronger motivation than kilowatt or therm savings. Estimate a dollar savings whenever possible. Use the energy usage information provided to you, utility bills and your instrumented audit tools to help your accuracy.

6. **Provide reinforcement for decisions made by the household**

If you find that the household is already taking some positive steps, applaud these actions. “I’m glad to hear that you turn down your thermostat at night—that really does help keep your bills down!”

Encourage them to believe that they really can follow through on their actions. “All you have to do is switch your washing machine to cold water and you will save on your bill.”

Avoid using the word “should” --it only produces guilty feelings. **Think mutual support.** Don’t play “gotcha” with the household; it makes you both look bad.

III. THE ACTION PLAN

As stated in the introduction, the purpose of the education process is to help households reduce energy use to a more affordable level. The “Action Plan” is a key to this process. It keeps the focus on concrete “do-able” actions, which will result in usage. It provides a written document that encourages commitment, and it is a simple list.

The homeowner should be strongly encouraged by their contractor to write down 4 energy saving actions in Action Plan, which is included in the Certificate of Completion. An example Certificate of Completion can be seen on the following page.

After each section of this guide, you will note lists of “Household energy actions” related to that section. Those household energy actions are great suggestions to the household members of what could be included in their action plan, depending what issues they have in their home. A compiled list of these energy actions will be included at the end of the guide.

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Certificate of Completion

Post-Installation Health and Safety Test Results

☐ EmPower New York ☐ Home Performance with ENERGY STAR® ☐ Coordinated AHP/EmPower New York

Customer Name: _____ Contractor Name: _____

EmPower ID #: _____ Office Location (if applicable): _____

Home Performance ID #: _____

Technician Name: _____ BPI ID #: _____

WAP Coordination: ☐ WAP work complete ☐ WAP work in-progress ☐ WAP will be completed within 12 months

EmPower ONLY

A. **Customer Education: Energy Savings Action Plan:**

To reduce my monthly energy costs, I will take the following actions:

Action 1: _____

Action 2: _____

Action 3: _____

Action 4: _____

If household opts out of Energy Education, have household initial here ____

All Projects

B. ~~CUSTOMER STATEMENT AND SIGNATURE~~

I, _____, attest that my home was left in good condition. I will make my best effort to complete the energy saving actions that I have listed above.

Customer Signature: _____ **Date:** _____

All Home Performance with ENERGY STAR projects, all EmPower HP projects, and all EmPower ER projects that include heating system, water heater or dryer replacements.

C. **CAZ TESTING** Test Out Date: _____

MVG: _____ CFM50 Building Leakage _____ CFM50 **Fan Ring:** ☐ Open ☐ A ☐ B ☐ C

Inside Temp: _____ F Outside Temp: _____ F House Pressure: _____ Pa Fan Pressure: _____ Pa

CAZ Test Venting Condition. Select the row that best describes the venting condition in the home and fill in the CAZ Worst Case Depressurization test result in that row.	**BPI Limit (PA)**	**CAZ Worst Case Depressurization (Net)** CAZ #1	CAZ #2
Orphan natural draft water heater (including outside chimneys).	-2		
Natural draft boiler or furnace commonly vented with water heater.	-3		
Natural draft boiler or furnace w/ vent damper commonly vented with water heater; Induced draft boiler or furnace commonly vented with water heater; Individual natural draft boiler or furnace.	-5		
Power vented or induced draft boiler or furnace alone.	-15		
Exhaust to chimney-top draft inducer; High static pressure flame retention head oil burner; direct vented appliances; or Sealed combustion appliances.	-50		

CAZ #1 Worst _____ -Base _____ =Net _____ Pa **CAZ #2 Worst** _____ -Base _____ =Net _____ Pa

CO Ambient (max.) In CAZ (during test): PPM **CO Ambient (max.) in living space:** PPM

Appliance Type	**Draft** Pascals (Pa)	**Spillage** (Worst Case)	**Spillage** (Natural)	**CO** (Worst Case)	**CO** (Natural)
Heating System 1	Pa	☐ Pass/Fail ☐	☐ Pass/Fail ☐	PPM	PPM
Heating System 2	Pa	☐ Pass/Fail ☐	☐ Pass/Fail ☐	PPM	PPM
Water Heater 1	Pa	☐ Pass/Fail ☐	☐ Pass/Fail ☐	PPM	PPM
Water Heater 2	Pa	☐ Pass/Fail ☐	☐ Pass/Fail ☐	PPM	PPM
Oven	☐ Electric	☐ Gas w/ no vent	☐ Gas w/vent	PPM	PPM

Contractor: I, _____, attest that all measures completed by my company for EmPower New York adhere to current standards defined by the Building Performance Institute (BPI) and the current EmPower New York Program Guidelines. I furthur attest that, for all Home Performance designated projects, I have conducted the appropriate Combustion Appliance Zone (CAZ) testing and left the home in a safe condition as per BPI Standards.

Technician Signature: _____ Date: _____

IV. PREPARING FOR THE VISIT

1. REVIEW HOUSEHOLD DATA BEFORE THE AUDIT

Prior to your visit to the home become familiar with available household information. Be sure to read any notes provided by the household, or referral sources.

Whenever possible, obtain energy usage information prior to the visit. If the data is not available beforehand, request that the household provide this information at the time of the audit. Study the patterns of energy use: does the electric use peak in the summer time? Is the natural gas use unusually high in the winter? Learning to read the patterns in the monthly usage can greatly enhance the decision-making process. Consult program staff if you need further training on this strategy.

If the household members are tenants, determine whether a landlord agreement is in place. Certain measures, such as LEDs, may be installed without landlord permission; others require it. Refer to program guidelines for details, or consult program staff.

3. CONTACT THE HOUSEHOLD TO ARRANGE A VISIT.

During the phone call:

- Confirm that at least one primary adult household member will be available, but encourage others to participate as well.
- Emphasize that the visit will be fun and interesting.
- Review the address and check for directions.
- Ask them to think about questions or issues that they may have, and write down any issues that they mention. Assure them that you will spend time answering their questions during the visit.
- Be sure to tell the household about how long the visit will take and emphasize that you will need their attention for the whole time.
- Be sure that they know the visit will include a tour of the home.
- Emphasize that there is **no cost to them** for the service. Keep in mind that many sales people make calls like yours; so don't be surprised if they are suspicious.
- Find out if they have a halogen or incandescent torchiere. If so, and if you carry an inventory, you can bring it along for replacement.
- Invite the household member to provide you with the refrigerator make and model numbers during the phone call. If it is provided, you may be able to evaluate replacement before the visit. However, if it is difficult for the household to find or read these numbers, hold off until the visit.

- Reassure them that you will be bringing along identification, and suggest that they ask to see this identification when you arrive.

If the audit was scheduled more that a couple of days in advance, be sure to call the household the night before to confirm the arrangements.

V. GET STARTED IN THE HOME

Carry appropriate referral and emergency numbers with you. Taping them to your clipboard is a great idea. **Be sure that you and the household member are clear as to which of you is going to make the referral.**

The first few minutes of the audit are crucial to setting the tone and establishing trust. Begin the visit by:

1. Display identification at the door, whether the household member asks for it or not.
2. Introduce yourself to all household members you encounter, and help the household member to be comfortable with your visit. The goal should be to begin to build trust, to create buy-in for the program and to establish a dialogue.
3. If refrigerator or freezer metering is to take place, ask if you can install the meter right away, and then do so.
4. Put a thermometer into the freezer and refrigerator compartments. They should stay in at least 10-15 minutes.
5. If there are distractions, such as a blaring TV, don't fight them. Ask politely that the TV be turned off while you are there.
6. Ask the household if you can sit with them for a few minute and discuss the program.

VI. THE INITIAL DISCUSSION

1. Give full focus to the household member.

2. Explain that the goal is “to help you to manage your energy use and costs.”

3. Describe the process that will occur during the visit, and the estimated time that it will take.

4. Reassure the household member that there will be no cost for the program (including the measures that you may install during the audit).

5. Initiate a discussion about the home by **asking what actions the household is already taking.** Reinforce their actions or clarify misconceptions.

   Questioning can be an uncomfortable process! You may find it less threatening if you begin with small talk, and then some questions that the household can easily answer. Then, move on to “open-ended” questions that call for elaboration rather than just yes-or-no answers.

   For this initial discussion, you may keep the questions general; but if the household brings up a specific concern, explore this in more detail. In some cases, you may want to get up and go to the location of the concern to continue the conversation.

   The Teachable Moment: One helpful education strategy is to focus on a household’s concern immediately: if some issue is on their mind, you may want to stop what you are doing and focus on the issue raised. If the household member says that they are worried about a leak in the bathroom, for example, you might want to stop the interview and go right to the bathroom, take a look and begin to discuss solutions. By doing so, you signal interest in the household’s concerns and may remove a distraction from their mind during your further conversations.

6. If the household has questions about their energy bill, ask them to take out their most recent bill. Identify key features for them such as account number, usage dates, consumption and cost amount, and where to call with questions. Share with the household the results of your analysis of their usage.

A metaphor for purchasing energy: Buying energy is like buying groceries from a supermarket where the goods have no price stickers, and the bill comes at the end of the month. By using energy saving estimates you will be helping the household to put price tags on all of the goods.

7. Explain the concept of the Action Plan: that, in addition to the energy measures provided through the program, you are asking them to participate in finding actions that they can take to reduce their energy use. Invite the household member to participate in the walk-through.

8. Provide a clipboard, blank paper and a pen, and invite them to write down ideas. The clipboard provides the household member with a tool for writing down possible actions without committing to them. It also helps them to feel competent and involved. As you tour the home, invite them to note actions in each area that may be good choices for them.

   NOTE: Be sure to look for clues that the household member may not be literate. If you suspect this to be the case, do not press the issue, and read information to them as appropriate.

9. If the household member is the homeowner, validate ownership by reviewing the appropriate documents. Be sure to have an Owner Agreement form signed.

10. During the discussion, household members may express frustration with their utility bill. Some families may express the belief that their high energy bills are due to faulty wiring or repairs completed on or near their home. In reality, high bills are very rarely due to such causes. If such concerns arise, it can be helpful to review the household's energy use patterns with them: show them the breakdown of their energy use patterns that you've complete prior to the visit. If the need arises, list the appliances in use in their home, and estimate the use of each, using the Energy Wheel or other tools. In many cases you will find that you can account for the usage through these techniques.

UTILITY RESPONSIBILITY: People sometimes feel that their utility has been unfair to them because the utility didn't come into the home and solve a problem. "They just looked at the meter and said that there was nothing that they could do!"

Most utility responsibilities really do stop at the meter. Some utilities are not allowed by law to become involved in electrical repairs in the home as it puts them in competition with private contractors. There are liability issues as well. Be careful to represent the utility responsibilities correctly. Consult with your local utility for further information.

VII. THERMOSTAT INSPECTION

1. In New York State, the highest energy use is typically for home heating. The thermostat is an important place to begin the energy education.

2. Identify for the household the part of the bill that is related to space heating. Breaking out the heating costs beforehand helps move the process along. If accurate usage is not available, work with the household to create a reasonable estimate.

3. Identify current temperatures and setbacks, and note these on the audit form.

   Many people still believe that it is best to keep the thermostat at the same temperature all the time. This is incorrect. It takes less money to warm up a house in the morning than it is to keep it at a higher temperature setting all night long.

4. Explore potential additional savings with day or night setbacks.

   As a general rule, a household will save about 3% of their heating bill for every degree lower the thermostat is set for 24 hours, and 1% for every degree lower the thermostat is set for 8 hours. Using this data, propose setbacks and estimate savings:

   - If the household is keeping the home at a temperature greater than 68 degrees, propose an overall lower setting. Estimate the savings (number of degrees above 68 times 3%)
   - If the household is out of the house all day, propose a daytime setback (number of degrees <u>below the new overall setting</u> times 1%).
   - If the household keeps the temperature higher at night, propose a nighttime setback (number of degrees <u>below the new overall setting</u> times 1%).

   Using the household's current energy bills and unit fuel costs, estimate the savings for these changes. Record this data on the audit form, and share it with the household.

   Caution: Seniors often require higher temperatures. Be careful to take health concerns into consideration before recommending setbacks.

5. Proceed to the thermostat and check its functionality:

   a. Put a thermometer on the wall to double check temperature.

b. Check the location. It should be:
- On an inside wall
- Not near a heat source such as a register, hot light or kitchen appliance
- Away from the sun.

6. Ask the household if they have any problems with the thermostat. Make notes and investigate as appropriate.

7. Consider installing a programmable thermostat. Review the functions of the thermostat**. DO NOT INSTALL A PROGRAMMABLE THERMOSTAT UNLESS: (1) YOU HAVE TAUGHT THE FAMILY HOW TO USE IT (2) THE FAMILY IS CLEARLY COMFORTABLE WITH THE CONTROLS AND (3) THE FAMILY INTENDS TO USE THE SETBACK FUNCTIONS.** If you plan to install the thermostat at a later date, bring a practice model and make sure that the household is comfortable using it before you commit to installing it. Here's one way to put to approach the subject:

"If you are comfortable programming a VCR, you will probably be comfortable with an energy saving thermostat. If you find VCR's frustrating, you will probably want to stick with your old one."

CAUTION: If the household has a HEAT PUMP heating system, a special programmable thermostat is required. Some older heating systems operate on a "mili-volt" system that also requires a special thermostat. Consult with your technical staff if these issues arise.

If thermostat setbacks, replacements, repairs or relocations are potential measures, either put them down as program actions, or invite the household member to write them down as household energy actions.

<u>Household actions related to the thermostat:</u>

- ✓ **Set the thermostat no higher than 68 degrees** when home and awake.
- ✓ **Turn down the thermostat at night** while sleeping. Put extra blankets on the bed if needed.
- ✓ **Turn down the thermostat when out of the house** for more than 4 hours.
- ✓ **Install a programmable setback thermostat.**

- ✓ **Wear comfortable layers of clothes instead of turning up the thermostat.**

- ✓ **Add rugs to areas with cold floors** in order to increase comfort without turning up the thermostat.

- ✓ **Apply for Weatherization** if household is determined to be low-income, or other helpful programs, if not already participating. Reassure the household that there is not cost to them.

VIII. HOT WATER TEST/ USAGE

1. Hot water temperature testing

Before going to the basement, suggest a hot water temperature test. If the household decides to lower the temperature, it can be done while in the basement.

A. Invite the household member to the kitchen sink. Explain that hot water heating is often the second biggest energy user in New York State. If the hot water temperature is higher, lowering the hot water temperature to around 120 degrees can save money.

CAUTION: Hot water set at 140 or 160 degrees is not only wasteful, but can also cause serious burns to young children.

B. Use an accurate thermometer (NOT a temperature card) with a range from at least 32 degrees to 180 degrees.

C. Have a household member put a cup or glass under the kitchen faucet. Run the water long enough for the water to become hot, and then, with the water running, put the thermometer in the glass. Note the temperature when it stabilizes.

D. Now ask the household member to adjust the water to the temperature at which they use hot water for bathing. If the household member says that they like a "really hot shower" invite them to demonstrate by setting the temperature at the faucet. Now do the same test and note the difference.

- You will often find that "a really hot shower" is about 108 degrees! Even if the temperature is set at 120 degrees, there is cold water mixed in. You may point out to the household that if they never run out of hot water and never use the hot unmixed, this is a clue that they can save money by turning it down. This is a good time to discuss the benefits of a water and energy saving showerhead.

2. Usage testing and measures

Examine hot water usage with the following tests and inspections. You may use household bill analysis or estimates to underscore the cost of a household's hot water use. As you complete the following audit tasks, include the household member in the evaluation.

- **Test the flow rate of the shower, using a one-gallon milk jug.** Consult the program guidelines for guidance. Install a high-efficiency shower head if

usage is greater than 3 gallons per minute, and the household is amenable to the installation.

- **Discuss faucet aerators** and install as appropriate.

- **Check faucets for leaks.** Hot water leak repairs may be an acceptable program measure. Use a "drip cup" to estimate losses from hot water leaks and document leak rate on audit paperwork.

Household energy actions related to water use:

- ✓ **Set water temperature to approximately 120 degrees.**

- ✓ **Take shorter showers**. If the kids are the culprits here, rewards for shorter showers can have an impact!

- ✓ **Rinse dishes in cold water in a pan, not under running water.**

- ✓ **Repair leaky hot water faucets (if not a program measure).** Repair to cold faucets can also help by reducing a household's water bills.

- ✓ **Install high efficiency showerheads (if not program measures.)**

- ✓ **Wrap electric hot water heaters in unconditioned spaces** (if not a program measure).

- ✓ **Insulate 3 feet of input ("cold") pipe leading into hot water heater, and 6 feet of output ("hot") pipe** (if not a program measure). Heat in the tank sometime siphons out of the tank into the input pipe as well as the cold pipe.

IX. BASEMENT INSPECTION

1. Continue the house tour with a visit to the basement, beginning with the heating system. If you are conducting a Home Performance audit, now is the time to inspect and test the heating system, examine the distribution system and foundation.

> **CAUTION: If you smell or suspect a natural gas leak have the household contact the local utility immediately.** Most utilities have a policy of quick response to reported natural gas leaks. Consult program guidelines for appropriate procedures for your program.

Households actions related to heating the home, found in the basement: (In some situations, these actions may be appropriate program measures; in others, the household may choose to undertake them as energy actions.)

- ✓ **Check the furnace filter every month and change as needed**. If the filter is dirty, you may replace it during the audit (if you have brought along the appropriate size). If the household will take responsibility for this action, show them how to replace the filter:

  - **Provide them with the correct size**, and make sure that they write down the filter size for future reference.
  - **Point out the arrow that indicates filter installation direction.**
  - **If the filter goes into a slot, encourage them to cover the slot with metal tape.** If the slot is left open, air is often drawn from the basement rather than through the return ducts.

- ✓ **Close furnace duct to basement.** Most often, unless the basement is a conditioned space, these ducts can be closed. This will improve heating upstairs.

- ✓ **Adjust duct dampers**. If household has expressed a concern about the distribution of heat to the various rooms (some too hot or too cold) in a house with a forced hot-air system, they may be able to adjust the balance by adjusting duct dampers. Not all systems have this feature so don't be surprised if you don't find it. Be sure to show the household member how to operate the dampers, rather than just doing it for them.

- ✓ **Have a clean-and-tune performed on burner**. If they are using oil it should be done every year; with natural gas, every two to four years. If it

hasn't been done in the last few years, it's an important measure to consider.

- ✓ **Seal gaps in ducts**. This is best done with mastic or metal tape, not duct tape. Caution the household member to wipe the dust off before applying the tape or mastic; otherwise it won't stick.

- ✓ **Eliminate electric heaters used to prevent freezing pipes.** If you find that the household is keeping an electric heater turned on in the basement to prevent pipes from freezing, there might be more low-cost options such as sealing foundation holes or broken windows that cause the freezing, or using heat tape.

2. Inspecting Water Heater:

- Examine the tank for leaks. If the water heater is leaking, there is likely to be big savings in replacing it.
- If appropriate, insulate the tank and wrap the hot water pipes.
- If you are conducting a Home Performance audit, you must test for back drafting.
- Explore the option of switching an electric water heater to natural gas, if appropriate
- If the household is on a time-of-use rate, explore the option of a timer.

Household actions related to the water heater:

- ✓ **Show the participating household how to turn down the water heater temperature, and have them do so if appropriate.** You could easily do this yourself; however, it is much better for the household member to learn how to do this. It may help some household members overcome a "block" about touching their heating appliances, and if at a later date they find the need to adjust the temperature again, they can do so without having to call you back.

CAUTION: If the water heater is electric, make sure that the circuit breaker is off before opening the panels on the tank.

4. You may encounter the following appliances in the basement. Repair to these appliances may be acceptable program measures, if energy savings can be documented. Consult program staff for guidance. If such measures are not accepted by the program, such actions may be appropriate household actions. Repair or replacement of the following appliances is very rare in program measures.

Sump pump: If the discharge hose is leaking, the pump may run continuously. In this situation, repairs to the discharge hose may be an acceptable program measure. (Replacement of failed sump pumps, however, is typically not an acceptable program measure.

Well pump: If the pump is running continuously, a repair may lower the electric bill and prolong the life of the pump.

Dehumidifiers: These devices are high energy users. While they are sometimes necessary due to moisture problems in the home, their use can be eliminated or reduced by resolving the moisture problems in the home.

Household energy actions related to these appliances:

- ✓ **Repair the discharge hose on a sump pump.**
- ✓ **Repair a well pump.**
- ✓ **Explore ways to solve moisture problems** that create the need for dehumidifiers, such as gutter repairs, bathroom vent use or repairs, or plastic over dirt in crawlspaces.

X. LAUNDRY

If the washer and dryer are in the basement, now is a good time to explore the options here.

1. Depending on energy costs, family size and program rules, replacement of an electric clothes dryer with a natural gas model may be an appropriate measure. If this measure is under consideration, be sure to identify the number of loads of laundry per week, and determine amount of gas line modification required.

2. Check the dryer exhaust duct. Make sure that it vents outside and is not constrained or clogged.

Household energy actions related to laundry:

- ✓ **Wash clothes in cold water:** Cold water cleans clothes well, and saves money. Recommend that a liquid detergent is used.

- ✓ **Run the washer through a second "spin" cycle:** A second spin cycle drives more moisture out of the clothes and reduces dryer run time.

- ✓ **Clean dryer lint filter after each use:** This protects the dryer and reduces run time.

- ✓ **Use a clothes line outside** in warm weather rather than running the dryer.

- ✓ **Clean dryer exhaust vent, replace vent, or vent dryer to the outside:** If a household member is capable, these may be appropriate actions for the household to undertake. If not, they may be completed though the program.

- ✓ **Wash and dry full loads**.

- ✓ **Do multiple loads—one load immediately after another—whenever possible** to take advantage of residual heat in the dryer.

XI: TOUR OF THE HOME: GENERAL HEATING AND COOLING

Continue your tour of the home upstairs. As you conduct your energy audit, keep an eye out for energy actions related to heating and cooling.

Household energy actions related to heating:

- ✓ **Remove obstructions, such as furniture or piles of clothes, from heating registers and radiators.** Air flow is important to efficient heating. In mobile homes, the vents are sometimes blocked with debris in the ducts below. Cleaning objects out can make a big difference in the air flow.
- ✓ **Make sure the fireplace damper is closed.**
- ✓ **DO NOT use an oven as a heat source.** As an auditor, look for alternatives—such as distribution repairs—that can eliminate this need.
- ✓ **Close off unused rooms in home.** Be sure do advise household to close heat registers and keep the door shut.
- ✓ **Install switch and outlet gaskets on exterior walls**. However, if the program will be installing wall insulation, this measure will not be necessary.

Household energy actions related to cooling:

- ✓ **Use fans instead of air conditioners.**
- ✓ **Apply for Weatherization** if the household qualifies as low-income (if not already done) to insulate walls and/or attic. These measures can reduce cooling load as well as heating load!
- ✓ **Close drapes on sunny days in summer.**
- ✓ **Set air conditioning thermostat no lower than 78 degrees in summer.**
- ✓ **Keep windows and doors closed while an air conditioner is running.**

XII: TOUR OF THE HOME: ELECTRIC SPACE HEATERS

Investigate all electric space heater use. Because the heaters are often small in size, households may believe that they are inexpensive to use. In fact, electric space heaters can add significantly to a household energy bill. If you have completed an analysis of the household electric use, you may be able to identify the winter "spike" in usage created by the space heaters; share this information with the household.

In some cases households resort to the use of electric space heaters because they are in debt to their fuel supplier, who may refuse to make a delivery. If you suspect this to be the case, be sure to counsel the household on the high cost of electric heat. Make sure that they are aware of assistance that may be available to them through HEAP and Emergency HEAP.

If the electric space heaters will continue to be used, review safety considerations: are the heaters positioned an appropriate distance from drapes, bedding and other flammable materials? Check the power cords for fraying and splitting.

If program measures such as insulation, air sealing or distribution repairs may have an impact on the electric space heater use, be sure that the high cost of electric space heat is taken into considerations when prioritizing measures. Look for alternatives that may keep an area warm without electric space heat.

Household energy actions related to electric space heater use:

- ✓ **Eliminate electric space heaters.**
- ✓ **Repairs or enhance the main heating system distribution system.**
- ✓ **Add rugs or wear warmer clothes.**

XIII. TOUR OF THE HOME: WINDOWS AND DOORS

Household energy actions related to windows:

- ✓ **Make sure all windows and storms are closed tightly in the winter.** Check a few while you are there, and show the household how best to close them up.
- ✓ **Repair broken windows.**
- ✓ **Use rope-caulk to seal cracks.** This action is especially useful to renters. Bring some along with you, and demonstrate its use.
- ✓ **Moving furniture away from drafty windows.**
- ✓ **Open south-facing drapes during the day.**
- ✓ **Close all drapes at night to keep the heat in.**
- ✓ **Remove or cover window air conditioners during the heating season.**
- ✓ **Use Plastic over windows in winter:** Plastic is as good as glass in reducing heat loss. Actually, the material doesn't matter here—it is the additional surfaces that create the insulation. Even thin plastic over the inside of the windows is as good as thick glass in saving energy. Plastic on the inside is as effective as on the outside, and lasts longer.

A note on replacement windows: Replacement windows often have a longer payback than other common energy efficiency measures. Be sure to guide your clients toward the program measures that are most cost-effective. If a household is in need of new windows, programs such as Assisted Home Performance with ENERGY STAR can provide a comprehensive home assessment to help prioritize the improvements. Financing may be available.

Household energy actions related to doors:

- ✓ **Door sweeps:** A "draft dodger" at the bottom of the door can be helpful, but a permanent door sweep is more effective.
- ✓ **Door weather-stripping:** Samples of quality material can help.

XIV. TOUR OF THE HOME: APPLIANCES

As you tour the home, explore appliance use. While you follow program guidelines for energy measures related to appliances, identify the high use appliances in the home, and look for household strategies for energy savings.

Household energy actions related to appliances:

- ✓ **Turn off the computer when not in use**. There is a common misconception that turning the computer on and off will damage the hard drive or cause data loss. Households also find it convenient to leave a computer running due to the long startup process. However, leaving a computer turned on over long periods of time can be costly—even in sleep mode.

- ✓ **Operate dishwasher only when full, and use the "no-heat" or "air-dry" settings.** Using a dishwasher once a day rather than washing dishes in the sink multiple times can actually save energy. However, many dishwashers have a heater for drying the dishes. This is typically unnecessary; households can save money by letting the dishes air dry.

- ✓ **If the TV is on for background noise, use a radio instead.** Keep in mind too that the new big-screen TV's use about twice the energy of the older ones!

- ✓ **If the TV is running all night long, install an inexpensive timer to shut it off when everyone is asleep.** (Newer TV's often have a timer feature for this.)

- ✓ **Use a microwave instead of a stove-top or oven to heat food.**

- ✓ **Keep the heated waterbed mattress covered.** First offer to replace the heated mattress with a conventional one sized to fit the waterbed frame. If the household insists on keeping it, encourage them to keep it covered.

- ✓ **If a swimming pool pump is in use, put it on a timer and run fewer hours.**

- ✓ **When replacing old appliances, choose an ENERGY STAR model.** These use up to 50% less energy than comparable appliances.

- ✓ **Use power strips to turn off all electronics on a computer or home entertainment setup.** Many of these appliances use electricity when plugged in but turned off. A power strip can eliminate this "phantom load".

Become familiar with the energy costs of appliances. Tools such as the Energy Wheel, energy usage worksheets used in EmPower and other data can be useful to quantify savings. Study this information.

Again, have the household write down energy actions they will consider.

Presenting Energy Savings: Putting the savings in terms of one year or 10 year savings can send a stronger message than daily or monthly savings. For example, you can say that on average a waterbed costs **53 cents** a day (at $0.13 cents a kWh). Or instead you can suggest that ten years of using a waterbed can cost the household **$1,950.** Invite the household to consider all of the other household needs that they could spend this money on.

XV. LIGHTING

1. If the household has purchased or received CFLs, but has not installed them, be sure to do so during the audit.

2. When installing LEDs, choose good locations, and be sure to share your reasoning with the household. They may purchase additional bulbs in the future, so it helps to teach them how and where to install them:

   - ❖ Install the LEDs where the lights are most frequently used.
   - ❖ CAUTION: Do not install the LEDs on circuits with dimmer switches, and caution the household not to do so.
   - ❖ If the household members are renters, remind them that the LEDs are for their benefit, and encourage them to take them away to their next apartment.
   - ❖ Some manufacturers have created LEDs that are very small but provide the same luminescence of the larger ones. Keep a supply of these with you for use in small fixtures.

3. **A HELPFUL FORMULA FOR ESTIMATING LIGHTING SAVINGS:** In all lighting change outs it is helpful to provide the household with an estimate of the savings created by the replacement. The formula for doing so goes like this:

   (WATTAGE OF OLD BULBS) - (WATTAGE OF NEW BULBS) x
   10,000 hours (average life of high efficiency bulbs) x
   .001 (conversion of Watts to KWH) x
   (current cost per kWh for electricity excluding the Service Charge.)

   Since 10,000 (hours) X .001 (conversion to kWh) = 10, this formula can be simplified to:

   (Old Wattage) - (New Wattage) x (Utility Factor: utility kWh unit cost times 10)

   A quick way, then, to provide the household with an estimate of savings is to subtract the post-wattage from the pre-wattage and multiply it by the household's Utility Factor.

   Below are Utility Factors developed for New York State. Source of utility KWh costs: NY Public Service Commission, 2010. Numbers based on average of the two periods. Keep in mind that these numbers are subject to change.

Utility Factors (Utility kWh cost times 10):

Central Hudson G&E:	1.4
ConEd:	1.6
NYSEG:	1.0
National Grid:	1.4
O&R:	2.0
RG&E:	1.1

For example: if a 75 Watt bulb is replaced by a 23 Watt bulb in a NYSEG household:

(75-23) x 1.0 = $52.00 = savings over the life of the bulb.

Household energy actions related to lighting:

- ✓ **Turning off lights that are left on.** Some households have been successful in getting their kids to turn off lights left on by a reward system, rather than nagging. "If I go in your room 3 times this month when you are out and the light is off, I will treat you to _____." The household can fill in the blank.

- ✓ **Downsize lighting.** Are there situations where there are more bulbs in use than are needed? Can fewer bulbs provide sufficient light?

- ✓ **Task lighting.** Look for places where a higher wattage overhead light can be replaced by a lower wattage light, such as a desk lamp, closer to the task being done.

- ✓ **Motion sensors for outdoor lighting.** These are inexpensive to buy, but may require an electrician to do the installation.

- ✓ **Install a night light if lights are left on all night.** Install it for them if this is an acceptable program measure. Calculating the savings with the above formula.

- ✓ **Discontinue the use of halogen torchieres. These lights are costly to use and have been known to cause fires.** If your program allows for replacement with fluorescent models, do so for the household.

XVI. REFRIGERATORS AND FREEZERS

1. If you are metering these appliances, it is important to let the meter run for as long as possible. If so, it makes sense to leave these appliances for last. As you evaluate them, be sure to include the household in the discussion, and communicate clearly regarding the options under consideration:

    a. Be sure to explain that appliances are replaced in EXCHANGE for the old appliances—the household must be willing to give up the old unit.
    b. When evaluating these appliances, take note of their location. Are they directly in the path of a heating vent? Is the freezer kept on a hot sun porch? Moving these appliances may increase their efficiency. On the other hand, if a fridge or freezer is kept in an unconditioned area, such as a garage, the energy use is likely to be very low; the unit should not be considered for replacement.
    c. Be sure to measure the space available and ensure that the proposed model will fit before recommending an installation.
    d. Discuss the proposed model with the household and make sure that they agree to the size to be installed.

Household energy actions related to refrigerators and freezers:

- ✓ **Unplugging a second refrigerator or freezer:** This is a simple, no cost option, and should be encouraged prior to offering an exchange. If the household uses the second appliance during a certain time of the year (for example, immediately after Thanksgiving) suggest that they unplug the appliance for part of the year, and use it only when they need it.

- ✓ **Adjust freezer temperatures:** Check the thermometer that you placed in the freezer: if the temperature is set below zero, adjust it upward to 0 degrees Fahrenheit or slightly higher. (The refrigerator setting should be between 35 and 38 degrees.)

- ✓ **Turn off anti-sweat switch:** Some refrigerators have a small heater to reduce humidity on the front surface. In New York State this is often unnecessary. Show the household how to turn this switch off.

- ✓ **Clean dirty coils**: If the cooling coils are dirty, the household may benefit from cleaning them—especially if they have pets that shed hair. Encourage the household to clean them while you are there, and to check and clean them periodically.

- ✓ **Keep freezer full** (plastic milk jugs full of water).

XVII. ENERGY EDUCATION WRAP UP

1. **Review and Reinforce:** Review with the household member the measures that you together have identified in the home as potential energy savers. Reinforce the concept of focusing on the big savers.

2. **Assure all concerns and questions have been dealt with:** Review the original list of household concerns and questions, and any issues raised during the audit. Make sure that they have all been dealt with, and ask if the household member has any other questions.

3. **Compete the Action Plan:** Invite them to choose 3 to 5 actions from the notes on their clipboard or from suggestions in this guide that will help them reduce energy and write them down in their Action Plan, located on the Certificate of Completion.

   NOTE: The household member should write down the actions, not the auditor.

4. **Be supportive:** Be supportive of their choices. Identify and write down the consequences of their actions. Be as specific as you can.

5. **Explain the next steps:** Explain what follow-through actions you will take through your program. Do not promise any measures—work through the audit and consult with program staff as needed first. If you have made any promises to follow-up with information, etc., be sure to do so.

6. **Leave your contact information:** Be sure to leave the household with your contact information and any appropriate referral information.

7. **Say "Thanks!" and pitch environmental value:** Thank the household for their time and support the good work done today by all of you! Now's also a good time to pitch for the environmental values of what you are doing. For example: "If everyone in the country installs one high-efficiency light bulb it will eliminate the need for one new power plant."

8. **Don't forget anything:** Make sure that all of your audit paperwork is completed. Check to make sure that all appliances and breakers are back on and that you have all of your tools and thermometers before you go!

9. **Reflect:** After you leave, spend a few minutes reflecting on the process. What worked? What didn't work? If there were concepts you had difficulty

understanding make a note to learn more about the issue. Discuss any concerns with program staff—they are there to help.

Energy education is like other professions: an ongoing active developing skill. Start by building a strong knowledge base and then adding to your abilities and skills as you go along. Always remember to have fun!

XVIII. COMPILED LIST OF HOUSEHOLD ENERGY ACTIONS

Household energy actions related to the thermostat:

- ✓ **Set the thermostat no higher than 68 degrees** when home and awake.
- ✓ **Turn down the thermostat at night** while sleeping. Put extra blankets on the bed if needed.
- ✓ **Turn down the thermostat when out of the house** for more than 4 hours.
- ✓ **Install a programmable setback thermostat.**
- ✓ **Wear comfortable layers of clothes instead of turning up the thermostat.**
- ✓ **Add rugs to areas with cold floors** in order to increase comfort without turning up the thermostat.
- ✓ **Apply for Weatherization** if household is determined to be low-income, or other helpful programs, if not already participating. Reassure the household that there is no cost to them.

Households energy actions related to water use:

- ✓ **Set water temperature to approximately 120 degrees.**
- ✓ **Take shorter showers**. If the kids are the culprits here, rewards for shorter showers can have an impact!
- ✓ **Rinse dishes in cold water in a pan, not under running water.**
- ✓ **Repair leaky hot water faucets (if not a program measure).** Repair to cold faucets can also help by reducing a household's water bills.
- ✓ **Install high efficiency showerheads (if not program measures.)**
- ✓ **Wrap electric hot water heaters in unconditioned spaces** (if not a program measure).
- ✓ **Insulate 3 feet of input ("cold") pipe leading into hot water heater, and 6 feet of output ("hot") pipe** (if not a program measure). Heat in the

tank sometime siphons out of the tank into the input pipe as well as the cold pipe.

Household energy actions related to these appliances:

- ✓ **Repair the discharge hose on a sump pump.**
- ✓ **Repair a well pump.**
- ✓ **Explore ways to solve moisture problems** that create the need for dehumidifiers, such as gutter repairs, bathroom vent use or repairs, or plastic over dirt in crawlspaces.

Household energy actions related to cooling:

- ✓ **Use fans instead of air conditioners.**
- ✓ **Apply for Weatherization** if the household qualifies as low-income (if not already done) to insulate walls and/or attic. These measures can reduce cooling load as well as heating load!
- ✓ **Close drapes on sunny days in summer.**
- ✓ **Set air conditioning thermostat no lower than 78 degrees in summer.**
- ✓ **Keep windows and doors closed while an air conditioner is running.**

Household energy actions related to electric space heater use:

- ✓ **Eliminate electric space heaters.**
- ✓ **Repairs or enhance the main heating system distribution system.**
- ✓ **Add rugs or wear warmer clothes.**

Household energy actions related to windows:

- ✓ **Make sure all windows and storms are closed tightly in the winter.** Check a few while you are there, and show the household how best to close them up.
- ✓ **Repair broken windows.**
- ✓ **Use rope-caulk to seal cracks.** This action is especially useful to renters. Bring some along with you, and demonstrate its use.

- ✓ **Moving furniture away from drafty windows.**
- ✓ **Open south-facing drapes during the day.**
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- ✓ **Door sweeps:** A "draft dodger" at the bottom of the door can be helpful, but a permanent door sweep is more effective.
- ✓ **Door weather-stripping:** Samples of quality material can help.

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- ✓ **Downsize lighting.** Are there situations where there are more bulbs in use than are needed? Can fewer bulbs provide sufficient light?

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- ✓ **Discontinue the use of halogen torchieres. These lights are costly to use and have been known to cause fires.** If your program allows for replacement with fluorescent models, do so for the household.

Household energy actions related to refrigerators and freezers:

- ✓ **Unplugging a second refrigerator or freezer:** This is a simple, no cost option, and should be encouraged prior to offering an exchange. If the household uses the second appliance during a certain time of the year (for example, immediately after Thanksgiving) suggest that they unplug the appliance for part of the year, and use it only when they need it.

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- ✓ **Turn off anti-sweat switch:** Some refrigerators have a small heater to reduce humidity on the front surface. In New York State this is often unnecessary. Show the household how to turn this switch off.

- ✓ **Clean dirty coils**: If the cooling coils are dirty, the household may benefit from cleaning them—especially if they have pets that shed hair. Encourage the household to clean them while you are there, and to check and clean them periodically.

- ✓ **Keep freezer full** (plastic milk jugs full of water).

New York State Office of Parks, Recreation and Historic Preservation
Division for Historic Preservation
PO Box 189, Waterford, NY 12188-0189
(518) 237-8643
recoveryact@oprhp.state.ny.us

AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009 PROJECT
NYSERDA ENERGY EFFICIENCY PROJECTS
REVIEW COVER FORM

Please complete this form and attach it to the top of any **and all information submitted to this office** for review. Accurate and complete forms will assist this office in the timely processing and response to your request.

☐ **PROJECT NUMBER** **PR** (only if a project was previously submitted)

☒ This is a **new** project (If checked, complete **ALL** the following)

1. **Project Address (See Note 1):**
   Include street number, street name and/or County, State or Interstate route number if applicable

3. **City/Town/Village:**
   List the correct municipality in which the project is being undertaken. If in a NON-INCORPORATED Hamlet/village, provide the name of the town.

4. **County:**

5. **Federal/State Agency Involvement**
   ☒ **This is a NYSERDA sponsored Energy Efficiency Project that is being funded in whole or in part through the *American Recovery and Reinvestment Act* of 2009.**

6. **Home Performance Contractor Contact Information**

Name: **Title:**
Address: **Town/City** **NY Zip:**
Phone: **E-Mail address:**

Response letters for this project will be returned to the project contact via-e-mail in PDF format when possible.

7. **Project Type**

This Home Performance project consists of weatherization activities impacting the exterior of a building which is greater than 50 years old. Portions of this project are visible from public-right of way[1] and/or the planned activities are not exempted from those listed in Appendix A and B from the Programmatic Agreement between the United States Department of Energy and NYSERDA.

8. Project Information

A. Check all that apply:

☐ **Work involves the replacement of original windows, replacement windows greater than 45 years old or doors.**

☐ **Work involves any activity which is not exempted from those listed in Appendix A and B of the Programmatic Agreement between the United States Department of Energy and NYSERDA.**

Describe proposed scope of work:

B. Photographs: Provide 1-2 clear images of the building involved in the project, showing the location of the work and 1-3 views looking out from the project across the street. Provide photographs of the existing windows and the proposed replacements.

9. Maps: Provide a map which clearly indicates the location of the project. If a street view map is provided, make sure the home indicated is the actual home the work is being performed on.

10. FOR NYSERDA USE ONLY

Is the building: ☐ **Individually listed in the National Register of Historic Places** ☐ **Individually designated a Local Landmark** ☐ **In a National Register Listed Historic District** ☐ **In a locally Designated Historic District** ☐ **NO**

TEXT NOTES

1. Visible from the public right of way: If the project can be seen in its *entirety* by a person driving, walking or standing on the sidewalk or street.

SUBMISSION INSTRUCTIONS

Submit using e-mail: Link completed version of this form, digital maps (or scanned maps), digital photographs and other relevant material and e-mail to: Steven.Smith@clearesult.com**,** enter **SHPO Review** in the SUBJECT line **OR**

Mail a copy of this form, photographs, maps and other relevant project material to:

Conservation Services Group (CSG)
2 Wall St.
Albany, New York 12205

Attn: Steve Smith

Please be aware that reviews undertaken by the New York State Historic Preservation Office (SHPO) relate only to Historic/ Cultural resources. They do not include potential environmental impacts to New York State Parkland that may be involved in or near your project. Such impacts must be considered as part of the environmental review of the project pursuant to the State Environmental Quality Review Act (New York Environmental Conservation Law Article 8) and its implementing regulations (6 NYCRR Part 617).

If your project involves or is adjacent to New York State parkland please contact the New York State Office of Parks Recreation and Historic Preservation's Environmental Management Bureau (EMB), Agency Building 1, Empire State Plaza, Albany, New York 12238, (518) 474-0409.

To determine the location of New York State parkland please use the GIS program (See **NOTE 1** above).

Field Change Order (FCO)

Home Performance with ENERGY STAR® FCO# _____

To Be Completed For Home Performance with ENERGY STAR Contract Changes

This agreement is made between _____(hereinafter called Home Performance Contractor) and _____(hereinafter called Homeowner), to allow for additions or subtractions to the services specified in the Home Performance Contractor's original estimate, also attached.
The agreed upon changes to scope of work and/or Home Performance Contractor charges are as follows:

Please specify efficiency level (e.g., AFUE, SEER, R-Value).

_____ **$** _____
_____ **$** _____
_____ **$** _____
_____ **$** _____
_____ **$** _____

Difference from Original Estimate: $ _____

All other terms of the attached estimate are also incorporated into this Field Change Order. In order to be eligible for program incentives, the additional work authorized by this Field Change Order **requires** Home Performance with ENERGY STAR Program approval prior to work being performed. Failure to notify program of change prior to work being performed will result in forfeiture of incentives covering the work authorized herein.

If the work is to be financed through NY Home Performance with ENERGY STAR Financing, the Customer must also complete and sign a revised **Loan Agreement for NY Home Performance with ENERGY STAR Financing.** The revised Loan Agreement will combine the original contract amount, as well as all Change Orders. Until and unless the revised Loan Agreement is executed, Contractor will only receive payment for work that received prior approval. Payment of any additional amount is the responsibility of the Customer.

IN WITNESS WHEREOF, the parties have executed this contract as of the date written below.

_____	_____
Homeowner	Home Performance Contractor
_____	_____
Address	Company Name
_____	_____
Date	Date

Please submit this form through NY HP Portal

NYSERDA

Project ID:
Customer Name:
Tier:

Certificate of Completion - Audit & Direct Install

Section 1. Customer and Contractor Information

Customer Name	
Customer Building Address	
Customer Mailing Address	
Project ID	
Contractor Name	

WAP Coordination ☐ WAP work complete ☐ WAP work in-progress ☐ WAP will be completed within 12 months

Section 2. Customer Education: Energy Savings Action Plan

To reduce my monthly energy costs, I will take the following actions:	
Action 1	
Action 2	
Action 3	
Action 4	

If household opts out of Energy Education, have household initial here: ☐

Section 3. Energy Saving Direct Install Measures

Measure Name *Installation Status >>*	**Yes**	**No**	**Measure Name** *Installation Status >>*	**Yes**	**No**
LEDs (standard or candelabra)	☐	☐	DHW Pressure Relief Valve Discharge Pipe*	☐	☐
Advanced Power Strips	☐	☐	Furnace Filter*	☐	☐
DHW Pipe Wrap Insulation	☐	☐	Furnace Filter Slot Cover*	☐	☐
Door Sweep	☐	☐	Showerheads (regular or handheld)*	☐	☐
Weatherstrip	☐	☐	Thermostat (programmable)*	☐	☐
CO Detector	☐	☐			
Smoke Detector	☐	☐			

Direct Install measures are provided at no cost to eligible customers.
Customers receiving electric service through a municipal electric provider may not be eligible for direct install measures.
*For renters, the installation of these measures require landlord permission through the submission of a Rental Property Energy Efficiency Service Agreement.

Section 4. Customer Statement and Signature

I, _____ attest that my home was left in good condition. I will make my best effort to complete the energy savings action that I listed above. As part of the comprehensive home energy audit, the contractor installed the energy saving and/or direct install measures listed above unless I declined or there was no opportunity to install the specific measures.

Customer's Name (Print) _____ SIGNATURE _____ Date _____

NYSERDA

Project ID:
Customer Name:
Tier:

Section 5. Building Leakage & Combustion Appliance Zone (CAZ) Testing

Blower Door Testing			
Test Out Date / /		Minimum Ventilation Guideline	CFM50
Inside Temperature	°F	Building Leakage	CFM50
Outside Temperature	°F	House Pressure	Pa
Worst Case Depressurization	Pa	Fan Ring ☐ Open ☐ A ☐ B ☐ C	
		Fan Pressure	Pa
Combustion Appliance Zone (CAZ) Testing			
Ambient CO (max in CAZ during test)	PPM	Ambient CO (max in living space)	PPM

Appliance Type	**Electric**	**Combustion Appliance Testing**			
	Testing NA	Spillage (Worst Case)	Spillage (Natural)	CO (Worst Case)	(CO) Natural
Heating System 1	☐	☐ Pass ☐ Fail	☐ Pass ☐ Fail	PPM	PPM
Heating System 2	☐	☐ Pass ☐ Fail	☐ Pass ☐ Fail	PPM	PPM
Water Heater 1	☐	☐ Pass ☐ Fail	☐ Pass ☐ Fail	PPM	PPM
Water Heater 2	☐	☐ Pass ☐ Fail	☐ Pass ☐ Fail	PPM	PPM
Oven	☐	☐ Gas w/ no vent	☐ Gas w/ vent	PPM	PPM

Note testing not completed and reasons why below. ☐ **No Blower Door Testing** ☐ **No CAZ Testing**

Contractor: I, _____ attest that all measures installed through AHP and/or EmPower adhere to current AHP/EmPower program guidelines. I further attest that, for all AHP/EmPower projects, I have conducted the appropriate Combustion Appliance Zone (CAZ) testing and left the home in a safe condition as per program requirements.

Technician Name (Print) _____ Technician SIGNATURE _____ Date _____

NY Home Performance with ENERGY STAR®

Project Incentives and Financing Eligibility Summary Report

Participating in NY Home Performance with ENERGY STAR (HPwES) is an important step to reducing your energy costs and creating a healthier, more comfortable home. This report provides a summary of your approved project, including the incentives you are eligible to receive and your selected financing package. Before signing, please review this entire report, including the terms and conditions.

Section 1. Customer and Contractor Information

Customer Name	John Smith	**Home Performance Contractor Name**	Acme Company
Customer Building Address	1 Main Street, City NY 00000	**Customer Mailing Address**	1 Main Street, City NY 00000
Project ID	1234567		

Section 2. Project Information and Scope of Work

HPwES Project Approval Valid Until	Sept. 12, 2016	**Existing Primary Heating Fuel Type**	Fuel Oil
Amount of Work Eligible for Incentives	$10,008.40	**Fuel Switch (Yes/No)**	No

Energy Efficiency Improvement	**Eligible for HPwES Incentives** (if applicable)	**Loan Eligible (if applicable)**
Insulation - Attic - R-Value Unqualified	Yes	No
Insulation - Exterior Wall - R-Value Unqualified	Yes	No
Insulation - Foundation Wall - R-Value Unqualified	Yes	No

Section 3. Customer Incentives

Available Customer Incentive	Total Amount
High Efficiency Measure Incentive	N/A
Assisted Home Performance Incentive	$5,000.00
PSEG Long Island High Efficiency Measure Incentive	N/A
Utility Rebate	N/A
Grant	N/A

Section 4. Financing Information (If Applicable)

Loan Type	N/A
Total HPwES Project Amount	$10,148.40
Amount of Total Incentives	$5,000.00
Customer Contribution/Out of Pocket Expense	$5,148.40
Loan Amount*	N/A

* This loan amount includes the $150 loan processing fee. The actual loan amount may vary.

Monthly Loan Payment Amount	N/A	**Interest Rate (APR)**	N/A
Monthly Dollar Savings	N/A	**Loan Term (in years)**	N/A
Monthly Cash Flow	N/A	**Simple Payback Period (in years)**	N/A
Savings to Investment Ratio (SIR)	N/A	**Average Measure Life of the Project (in years)**	N/A

OBR Charge to Appear on Utility Bill From: N/A

Section 5. Certificate of Completion - Read and Sign after Work is Completed

Note to Customer: Please read the following statements before signing. By signing this document, you are attesting that all work has been completed pursuant to your contract. If any part of the work has not been completed, please indicate below. If you have any questions or concerns about any aspect of the work performed, you should resolve them with your contractor BEFORE signing this form.

All work has been completed, with the exception of the following:

_____

_____

_____

Contractor agrees to complete these items and will notify CSG upon their completion. Job will not be credited fully as a completed until the Contractor and Customer sign a new Certificate of Completion that has no pending items.

Contractor Initials: _____

Warranty

Contractor warrants that the work and the equipment furnished in this installation job comply with the requirements as outlined in the Contractor Participation Agreement with NYSERDA. In the event that any defect in workmanship or equipment is discovered within one (1) year after payment authorization, the Contractor will remedy, repair, correct, or cause to be remedied, repaired, corrected, or replaced at Contractor's expense such defect in equipment or workmanship. The foregoing warranty survives any inspection NYSERDA may elect to make.

Lien Waiver

WORK AND EQUIPMENT COVERED BY Home Performance with ENERGY STAR Program FINANCING OR ASSISTED HOME PERFORMACE SUBSIDY: Contractor hereby waives and releases any and all lien or claim of, or right, to lien, under laws relating to mechanics liens with respect to and on the property referenced above.

WORK AND EQUIPMENT NOT COVERED BY HPwES FINANCING: Said waiver does not apply to any work and equipment furnished in this installation job that is not financed by the HPwES Loan or an Assisted Home Performance Subsidy. Any costs incurred by Customer exceeding the sum of the HPwES Loan and the Assisted Home Performance Subsidy, or financed by any means other than HPwES Financing or an Assisted Home Performance Subsidy, are subject to a mechanics lien or claim under applicable laws relating to mechanics liens with respect to and on the property referenced above.

Customer Affirmation

Customer's Acceptance of Work Scope

The energy efficiency upgrades to be installed in the property as well as any applicable incentives, loan, and/or subsidy stated on pages 1 and 2 herein have been explained thoroughly by the Contractor, are satisfactory, and are hereby accepted. This report accurately describes the work as agreed to through the contract between me and the Home Performance Contractor. The Home Performance Contractor is authorized to do the work as specified in the contract that has been provided to me by my contractor.

Program Quality Assurance and Evaluation

I agree to participate in program quality assurance and evaluation activities. The purposes of these activities are to provide the Program Administrators with an opportunity to ensure that the eligible measures are installed consistent with program standards, to assess energy savings and to evaluate program effectiveness. Program quality assurance and evaluation activities may include on-site visits, questionnaires and interviews.

As a value added service, the NY Home Performance with ENERGY STAR Program offers participants the option of having a post-completion inspection performed on their home. If you are interested in receiving this valuable, FREE service, please call 1-866-NYSERDA to schedule an appointment. Availability depends upon number of requests received.

Customer Statement

The undersigned hereby certifies personal ownership of the home specified above, that all materials and equipment included in the construction contract (work order, job order, bid summary, proposal, invoice, etc.) have been furnished and installed by the Contractor, and that the work has been completed pursuant to the contract. In addition, I have not obtained the benefit of and will not receive any cash payment, rebate, cash bonus, sales commission, or anything from the contractor as inducement to enter into the HPwES Agreement or to proceed with work. If there is a HPwES Loan agreement, I also agree to the terms specified in the HPwES Loan Agreement and authorize payment to the above Contractor.

❑ Yes, I have received a copy of the Comprehensive Home Energy Assessment report.

_____	_____	_____
Homeowner's Name (Print)	SIGNATURE	Date
_____	_____	_____
Contractor's Business Name (Print)	SIGNATURE	Date

Home Performance with ENERGY STAR®

Customer Information Form

Participating contractors in the NY Home Performance with ENERGY STAR Program are **independent** home improvement contractors. Participating contractors are required to be a Building Performance Institute GoldStar Contractor. BPI is a national resource for building science technology that sets standards for assessing and improving the energy performance of homes. The contractors who participate in the program are solely responsible to provide warranty of their work for one year. Neither NYSERDA, nor any of its designees, provide warranties on the products or services of participating contractors.

Section I. Contractor and Utility Account Holder Information

Customer Name

Customer Address:

City Zip

Contractor Company Name

Section II. Selected Customer Incentive

☐ Assisted Home Performance Incentive *(customer must meet income eligibility requirements).*

☐ Smart Energy Loan, originated by Energy Finance Solutions *(customer must meet all eligibility requirements).*

☐ On-Bill Recovery Loan, originated by Energy Finance Solutions *(customer must meet all eligibility requirements).*

I acknowledge that funding for the 50% Assisted Home Performance Incentive is limited and available on a first come, first served basis contingent upon funding availability.

Customer Initials

Section III. Customer Signature

Financial Incentive/Rebate Payment Coordination

I authorize NYSERDA, or its designee, to release my participant information (name, address, phone number, and installed eligible measure) to my utility(s) to verify program eligibility and to ensure proper payment/accounting of payments or incentives from similarly funded programs. Except in limited circumstances as provided by special agreement with PSEGLI, customers are not eligible to receive financial incentive rebates for the same eligible measure from NYSERDA and an electric or natural gas utility. However, a Green Jobs-Green New York loan may be utilized to finance work after all applicable NYSERDA and Utility incentives have been deducted from the contract cost.

Utility Information - Enter in electric utility territory & primary heating fuel information below

Electric Utility Territory

☐ Central Hudson G&E
☐ Consolidated Edison
☐ National Grid
☐ PSEGLI
☐ NYSEG
☐ Orange & Rockland
☐ Rochester G&E
☐ Other Electric Utility Name:

Gas Utility Territory

☐ Central Hudson G&E
☐ Consolidated Edison
☐ Corning Gas
☐ National Fuel
☐ National Grid - LI
☐ National Grid - NYC
☐ National Grid - Upstate
☐ NYSEG
☐ Orange & Rockland
☐ Rochester G&E
☐ St. Lawrence Gas

Electric Account Number:

Gas Account Number:

Other Heating Fuel Type:

Other Heating Fuel Provider:

Account Number:

I hereby authorize the energy suppliers named above to release information on my energy usage, including account number(s), to NYSERDA, or its designee, for two years prior to the application date and three years after the installation of an eligible measure. The information will be used for energy savings estimations and evaluation purposes only. Confidentiality will be protected to the full extent of the law.

I certify that the information contained above is accurate and complete and that I received the 4-page NYSERDA customer information packet titled, "So What's Next?" and have read and understand it.

Customer Signature:

Date:

Customer - please return this document to your participating contractor.

Contractor - submit through the NY HP Portal.

June 2015

NEW YORK STATE OF OPPORTUNITY. | NYSERDA

EmPower New York

Support.residential@nyserda.ny.gov

Request for Contractor Forms

Ship to:		
Company Name:		
Address:		
City:	**State:**	**Zip Code:**
Phone:	**Ext:**	**Fax:**

Fill out the form completely and email it back to EmPower New York at the email address listed above. All orders will be shipped via UPS Ground to the address listed above. Allow 2 weeks for delivery from the date of request.

PLEASE NOTE: All forms are bundled in SETS of 50.

When ordering, please indicate the number of SETS you require.

DESCRIPTION	**Number of Sets Requested (50)**
Appliance & Exchange Agreement- *Required all projects* *Fillable PDF's available on the Partner Portal	
EmPower Standard Application	
WAP/EmPower Application	
Fact Sheet	
Homeowner's Agreement	
House Diagram Form- *Required all projects*	
Combustion Appliance Form- *Required all HPs*	
Certificate of Completion- *Required all projects*	
Clean & Tune Checklist - *Required all projects with a C&T*	
Weatherization Assistance Program Agencies List	
Energy Cost Worksheet	
Energy Education Packet	
Supplemental Data Form- *Required for all non-EmPCalc projects*	
Asbestos Form- Optional	
Initial Interview Form - Optional	
Printable from Partner Portal: Data Collection Form- *Optional Field Collection Form*	

Notes:

EmPower New York

Appliance Exchange Agreement

Customer Name: _____ Contractor Name: _____

EmPower Project ID: _____ Date: _____

EXISTING APPLIANCE(S)	APPLIANCE 1 Refrigerator ☐	APPLIANCE 1 Freezer ☐	APPLIANCE 2 Refrigerator ☐	APPLIANCE 2 Freezer ☐	APPLIANCE 3 Refrigerator ☐	APPLIANCE 3 Freezer ☐
Make						
Model						
Age of Unit						
Dimensions	W: H: D:		W: H: D:		W: H: D:	
Cu. Ft. Capacity						
Calculated Usage						
Location						
Space Available	W: H: D:		W: H: D:		W: H: D:	
Ambient Temp						
Landlord Owns Appliance	Yes ☐	No ☐	Yes ☐	No ☐	Yes ☐	No ☐

INGRESS/EGRESS CONCERNS & NOTES

Are there stairs to the residence?	Yes ☐	No ☐	# Flights:		
Is there an elevator?	Yes ☐	No ☐	Dimensions:	W:	H:
Are there narrow hallways?	Yes ☐	No ☐	Dimensions:	W:	H:
Are there narrow doorways?	Yes ☐	No ☐	Dimensions:	W:	H:
Additional Notes:					

AUDITOR RECOMMENDATIONS FOR APPLIANCES OWNED BY THE EMPOWER PARTICIPANT

Final determination is made by the EmPower NY Program and may differ from Auditor's recommendations below.

Customer initials are required next to all auditor recommendations below:

	No replacement recommended.	Reason:
	Exchange appliance #(s): 1 ☐ 2 ☐ 3 ☐ with a brand-new white ENERGY STAR® appliance the same size.	
	Exchange two smaller appliances (appliance #s): , for one larger ENERGY STAR® appliance. (2 for 1)	
	Recommended Replacement Size:	Hinge Side Desired: LEFT ☐ RIGHT ☐
	Appliance owner agrees to downsize their appliance to a Cu. Ft. Capacity of:	
	Appliance owner declines appliance replacement.	

Customer: I am the owner of appliance #(s): 1 ☐ 2 ☐ 3 ☐ listed above. I hereby request that the New York State Energy Research and Development Authority (NYSERDA) proceed with the recommendation(s) that I initialed above. I understand that a final decision to replace an appliance will be made based on the potential to save energy based on the energy usage of my current appliance(s), availability of funding, and my eligibility for the program. I understand that the replacement size is based on the appliance(s) currently in use and the space available. I understand that no new appliance(s) will be provided unless I relinquish the old one(s). I understand that the manufacturer and vendor will provide appropriate warrantees on the new appliances. I understand that the participating vendors in the EmPower New York program are independent contractors and if any issues arise regarding the services provided, I will contact the manufacturer or participating vendor, and not NYSERDA.

Customer Signature: _____ **Date:** _____

Contractor Signature: _____ **Date:** _____

Last Updated: July 2019

EmPower New York

House Diagram Worksheet

Customer Name: _____ Contractor Name: _____

EmPower ID #: D0 Date: _____

House Diagram - **REQUIRED** for all **Home Performance** projects.

Indicate locations of pre-insulated wall areas AND identify attic areas to be insulated.

REQUIRED

CAZ Zone Locations - **Optional**

OPTIONAL

Zonal Pressure Diagnostics - **Optional**

Zone					
Pressure Difference (No Hole)	H/Z Z/0	H/Z Z/0	H/Z Z/0	H/Z Z/0	H/Z Z/0
Hole Added: New CFM					
Hole Added: Pressure Difference					
CFM Difference					
Multiplier From Chart					
Maximum Reduction					
Post Pressure Difference					

EmPower New York – Initial Interview Form

Applicant Name: _____ Date: _____

Technician Name & Company _____ EmPower ID: _____

Question & Answer Session – To be filled out with participation of the applicant

What fuel do you use for your cook stove and oven?	
Have you ever used your cook stove or oven for heat during the winter?	☐ Yes ☐ No
Does ice buildup in your attic or on your roof?	☐ Yes ☐ No ☐ Unsure
Does your roof leak?	☐ Yes ☐ No ☐ Unsure
How many people in your home are smokers?	
How many pets live here?	
Do your any of your pipes freeze during the winter months?	☐ Yes ☐ No ☐ Unsure

Are there any moisture issues in the home (such as condensation) including in your basement? Please explain.

List any areas where you are concerned about the presence of or have previously treated mold or mildew:

Health & Safety Concerns

Are there members of your household with any medical condition(s) that may be affected by common weatherization materials, such as insulation?

Contractors can provide further information regarding the materials to be used upon your request.

Other Concerns Noted by Contractor

Unvented combustion space heater	☐ Yes ☐ No
Peeling, cracked, or chipped paint in pre-1978 homes	☐ Yes ☐ No
Potential electrical concerns (i.e. knob and tube wiring, sparks, etc.)	☐ Yes ☐ No
Excessive debris or clutter	☐ Yes ☐ No
Other (describe below)	☐ Yes ☐ No

Please provide details for any "yes" answers or other observations that are relevant to the work to be performed:

I, _____ (applicant name) have participated in the Question & Answer Session of this form and confirm that the answers reported above are reflective of what was discussed with the contractor. I understand that in some instances, health or safety concerns may impact the availability of some measures and EmPower may deny or delay the measures where concerns exist. The technician has explained to me the proposed measures and I agree to allow these measures to be provided at no cost to me, if approved, through EmPower New York.

Applicant Signature: _____ Date: _____

Contractor Signature: _____ Date: _____

EmPower New York

Combustion Appliance Form

Customer Name: _____ Contractor Name: _____

EmPower ID #: D0 Date: _____

Heat Load Calculation

Yearly Usage _____ - Estimated Baseload/Year _____ = Heating Load/ Year _____

	Existing Appliances:	Primary System	Secondary System
HEATING SYSTEMS	Safe to Operate?	☐ Yes ☐ No	☐ Yes ☐ No
	Make		
	Model		
	Location		
	Age of Unit (Years)	☐ Estimated	☐ Estimated
	System Type		
	Fuel Type		
	BTU In/Out	In _____ Out _____	In _____ Out _____
	Outside Temperature		
	BPI CAZ Limit		
	Depressurization (Net) CAZ Measured		
	Draft/Spillage (Pascals)	_____ Pa ☐ Pass ☐ Fail	_____ Pa ☐ Pass ☐ Fail
	Carbon Monoxide (Flue)		
	Measured Efficiency		
	Net Stack Temperature		
	CO_2		
	Smoke Test (Oil)		
	Controls Functioning Properly?	☐ Yes ☐ No	☐ Yes ☐ No
	System Venting Correctly?	☐ Yes ☐ No	☐ Yes ☐ No
	Distribution Functioning Properly?	☐ Yes ☐ No	☐ Yes ☐ No
	Filter Cover Present (Forced Air ONLY)?	☐ Yes ☐ No	☐ Yes ☐ No
Hot Water	System Type		
	Draft/Spillage	_____ Pa ☐ Pass ☐ Fail	_____ Pa ☐ Pass ☐ Fail
	Carbon Monoxide (flue)		
	Currently Orphaned?	☐ Yes ☐ No	☐ Yes ☐ No
	Gas Oven: Carbon Monoxide		

Additional Diagonostic Notes:

Proposed Minor Repair Costs	
Programmable Thermostat(s)	$
CO and/or Smoke Detectors (Not Pre-existing)	$
Reconnect/Replace Ductwork	$
Ductwork Air-Sealed	$
Filter Cover Installed	$
Filter Replaced, Filter Size	$
Gas Leak Repairs	$
Clean & Tune (as per EmPower Clean and Tune Checklist)	$
Minor Repair Subtotal:	$

Customer Name: _____ EmPower ID #: D0

Proposed Appliance(s): | **Primary System** | **Secondary System**

Proposed Heating System Replacement

	Primary System	Secondary System
Make		
Model		
System Type		
Efficiency Rating		
Fuel Type	Conversion? ☐ Yes ☐ No	Conversion? ☐ Yes ☐ No
BTU In/Out	In _____ Out _____	In _____ Out _____
Will water heater be orphaned by heating upgrade?	☐ Yes ☐ No	☐ Yes ☐ No
Manufacturer's Warranty (Describe)		
Contractor Warranty (Describe)		

Equipment and parts in stock? ☐ Yes ☐ No Proposed Start Date: _____ Expected End Date: _____

Minor Repair Subtotal (from page 1) $ 0.00

PROPOSED WORKSCOPE AND COSTS

Heating System Repairs

Fuel Supply, Tank Leak(s), and repairs (Describe)	$
Flue Pipe & Chimney Repairs (Describe)	$
Parts (List)	$
Other (Describe)	$
Heating System Repair Subtotal:	$

Heating System Replacement

Replacement Heating System(s)	$
Heating System Base	$
Parts (List)	$
Parts (List)	$
Parts (List)	$
Other (Describe)	$
Heating System Replacement Subtotal:	$
Building Permits	$
Labor Cost	$
Labor & Permit Subtotal:	$
Total Proposed Costs:	$

EmPower New York

Notification of Possible Presence of Asbestos

EmPower ID: _____ Date: _____

Building Address: _____

_____

_____

During our inspection of this dwelling, we discovered materials that are consistent in appearance to asbestos in the following location(s):

_____

_____

Asbestos is a mineral fiber that in the past was added to a variety of products to strengthen them and to provide heat insulation and fire resistance. The US Consumer Product Safety Commission (CPSC) states that "from studies of people who were exposed to asbestos in factories and ship yards, we know that breathing high levels of asbestos fibers can lead to an increased risk of lung cancer." However, the Commission has also stated that "even if asbestos is present in our home, this is usually NOT a serious problem. The mere presence of asbestos in a home or a building is not hazardous. The danger is that asbestos materials may become damaged over time. Damaged asbestos may release asbestos fibers and become a health hazard" (CPSC Document #453).

Please note that our inspection did not include a test of the material. Therefore **we cannot conclude that it contains asbestos.** Nevertheless, according to our program rules, we must presume that asbestos is present, based on the appearance of the material. This way we err on the side of caution. Because there is a possibility that asbestos may be contained in this material, we will avoid certain measures that might cause asbestos particles to become airborne. For example, our workers will restrict movement in the immediate area of the presumed asbestos. We will not touch or remove materials that may contain asbestos. We will, however, complete other measures in the home that will not affect the suspected asbestos material.

We recommend that you learn more about asbestos risks before taking any action. For more information on asbestos, call the Consumer Products Safety Commission Hotline at 1-800-638-CPSC.

You may also visit the following website: **http://www.cpsc.gov/cpscpub/pubs/453.html**

_____ _____

Contractor Representatiave Name of Company

I, the undersigned, have received a copy of this document.

_____ _____

Occupant Date

EmPower New York

Optional Field Data Form

Customer Name: _____ ☐ Owner ☐ Tenant EmPower ID #: D0 _____

Customer Address: _____

Customer Phone: _____ (home) _____ (alternate) # in household: _____

Electric Company: _____ Annual Electric Usage: _____

Gas Company: _____ Annual Gas Usage: _____

Heating Fuel Type: _____ Cost _____ / _____ Annual Usage: _____

Contractor Name: _____ Contractor Phone: _____

Contractor Address: _____

Contractor Fax: _____ E-Mail: _____

Audit Type: _____ Education: ☐ Yes ☐ No Audit Date: _____

Dwelling Type: _____ Region: _____ Heated Sqft: _____

# of Stories: _____ Mileage: _____

Lighting:	Installed Qty	Location Description	Pre Watts	Post Watts
CFL's				
Torchieres				
Hardwired Fixtures				
Candelabra CFL's				
LED's				

Refrigerators & Freezers:	Existing Location	Pre-Usage	Age of Unit	Existing Size	Replacement Size	Replacement Usage
Refrigerator 1						
Refrigerator 2						
Refrigerator 3						
Freezer 1						
Freezer 2						
Two-for-one						
Refrigerator						
Freezer						

Showerheads & Aerators:	Installed Qty
Standard Showerhead	
Handheld Showerhead	
Aerator	

Existing Airconditioners:

☐ Central A/C?

☐ Window A/C? Qty: _____

	Qty to be Replaced	Cost/each
Water Beds:		$ -

EmPower New York

Optional Field Data Form

Customer Name: ☐ Owner ☐ Tenant EmPower ID #: D0

DHW tank: *Conversions only allowed to natural gas, otherwise replacement fuel should be the same as existing.

Existing DHW Fuel: Existing Fuel Cost/unit: $ - Replacement Fuel Cost/unit: $ -

Replacement Fuel: Replacement Cost: $ -

Replacement DHW Make: Replacement DHW Model: Replacement Energy Factor:

Tank Wrap Qty:

Tank & Vent Repair Costs: $ -

Pipe Wrap (Ln ft)

Repair Description:

Dryer Conversion - Electric To Natural Gas:

Est. Loads/Week: 6

Change Loads/Week:

Replacement Cost: $ -

New Dryer Make:

New Dryer Model:

Description / Addit'l Notes:

Heating Systems:

Existing Heating Fuel:

Heating System Type:

Existing Efficiency:

Replacement Fuel: Cost /

Replacement System Type:

Replacement Efficiency:

Replacement Make:

Replacement Model:

Must submit page 2 of the Combustion Appliance Form

	Cost	New Efficiency
Clean & Tune	$ -	

Must submit a Clean and Tune Check List!

	Installed Qty
Furnace Filter	
Filter Slot Cover	
Set-back Thermostat	

	Cost	Est. Therm Reduction
Distribution/Heating Repair	$ -	

Description:

EmPower New York

Optional Field Data Form

Customer Name: _____ ☐ Owner ☐ Tenant EmPower ID #: D0 _____

Insulation:

Surface Type	Siding Type	Existing Insulation	Sqft	Inches	Condition	Proposed Inches	Proposed Type

Other Description:

	Sqft	Inches

R-Value	Cost/sqft
	$ -

Vent Type	Qty/Ln Ft.
Gable/Roof	
Soffit	
Ridge	
Baffels	

Other Required for Insulation

Cost
$ -

Airsealing: ☐ Can't Reach CFM 50

# of bedrooms: _____ Exposure: _____ Pre-CFM: _____ @50 Fan Pressure: _____ Pa

Description of Measure and Material	Est. Hrs	Labor Rate	Labor $		Material $		Total Cost
		$ -	$ -	+	$ -	=	
		$ -	$ -	+	$ -	=	
		$ -	$ -	+	$ -	=	
		$ -	$ -	+	$ -	=	
		$ -	$ -	+	$ -	=	
		$ -	$ -	+	$ -	=	
		$ -	$ -	+	$ -	=	
		$ -	$ -	+	$ -	=	
		$ -	$ -	+	$ -	=	
		$ -	$ -	+	$ -	=	

TOTAL

EmPower New York

Optional Field Data Form

Customer Name: ☐ Owner ☐ Tenant EmPower ID #: D0

Health & Safety:	Qty Existing	Qty Installed	Location	Ambient CO
Smoke Detectors				
CO Detectors				
Combo. CO/Smoke				

	Qty
Vent Bath Fan to Outside: Less than 4 ft.	
Vent Bath Fan to Outside: More than 4 ft.	
Vent Clothes Dryer to Outside	

	Qty Found	Desription/Location	Proposed Cost
Gas Leaks			$ -

Description	Proposed Cost
	$ -

Description	Proposed Cost
	$ -

Description	Proposed Cost
	$ -

Other (custom measures):

Description	Life of Measure	Reduction kWh	Reduction Therm	$ Savings	Cost
				$ -	$ -
				$ -	$ -
				$ -	$ -
				$ -	$ -
				$ -	$ -
				$ -	$ -
				$ -	$ -

Notes:

EmPower New York

Supplemental Data Collection - REQUIRED for non-EmpCalc Users

Customer Name: _____ Contractor Name: _____

EmPower ID #: D0 _____ Date: _____

in household: _____ Heated Sqft: _____ Annual Electric Usage: _____ kWh

Annual Gas Usage: _____ Therms

Heating Fuel Type: _____ Unit Cost: _____ / _____ Annual Usage: _____

Dryer Conversion - Electric To Natural Gas:

Est. Loads/Week: _____ New Dryer Make: _____

Replacement Cost: _____ New Dryer Model: _____

Insulation:

Surface Type	Siding Type	Existing Insulation Type	Sqft	Inches	Condition	Proposed Inches	Proposed Type

Other Description:

	Sqft	Inches
	R-Value	**Cost/sqft**

Airsealing:

# of bedrooms: _____ Building Exposure: Pre-CFM: _____ @50 Fan Pressure: _____ Pa

Description of Measure and Material	Est. Hrs	Labor Rate	Labor $		Material $		Total Cost
			$ 0.00	+		=	$ 0.00
			$ 0.00	+		=	$ 0.00
			$ 0.00	+		=	$ 0.00
			$ 0.00	+		=	$ 0.00
			$ 0.00	+		=	$ 0.00
			$ 0.00	+		=	$ 0.00
			$ 0.00	+		=	$ 0.00
			$ 0.00	+		=	$ 0.00
			$ 0.00	+		=	$ 0.00
			$ 0.00	+		=	$ 0.00

Post-CFM: _____ **@50** **TOTAL** $ 0.00

NYSERDA

Project ID:
Customer Name:
Tier:

Certificate of Completion - Audit & Direct Install

Section 1. Customer and Contractor Information

Customer Name	
Customer Building Address	
Customer Mailing Address	
Project ID	
Contractor Name	

WAP Coordination ☐ WAP work complete ☐ WAP work in-progress ☐ WAP will be completed within 12 months

Section 2. Customer Education: Energy Savings Action Plan

To reduce my monthly energy costs, I will take the following actions:	
Action 1	
Action 2	
Action 3	
Action 4	

If household opts out of Energy Education, have household initial here: ☐

Section 3. Energy Saving Direct Install Measures

Measure Name *Installation Status >>*	**Yes**	**No**	**Measure Name** *Installation Status >>*	**Yes**	**No**
LEDs (standard or candelabra)	☐	☐	DHW Pressure Relief Valve Discharge Pipe*	☐	☐
Advanced Power Strips	☐	☐	Furnace Filter*	☐	☐
DHW Pipe Wrap Insulation	☐	☐	Furnace Filter Slot Cover*	☐	☐
Door Sweep	☐	☐	Showerheads (regular or handheld)*	☐	☐
Weatherstrip	☐	☐	Thermostat (programmable)*	☐	☐
CO Detector	☐	☐			
Smoke Detector	☐	☐			

Direct Install measures are provided at no cost to eligible customers.
Customers receiving electric service through a municipal electric provider may not be eligible for direct install measures.
*For renters, the installation of these measures require landlord permission through the submission of a Rental Property Energy Efficiency Service Agreement.

Section 4. Customer Statement and Signature

I, _____ attest that my home was left in good condition. I will make my best effort to complete the energy savings action that I listed above. As part of the comprehensive home energy audit, the contractor installed the energy saving and/or direct install measures listed above unless I declined or there was no opportunity to install the specific measures.

Customer's Name (Print) _____ SIGNATURE _____ Date _____

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Project ID:
Customer Name:
Tier:

Section 5. Building Leakage & Combustion Appliance Zone (CAZ) Testing

Blower Door Testing			
Test Out Date / /		Minimum Ventilation Guideline	CFM50
Inside Temperature	°F	Building Leakage	CFM50
Outside Temperature	°F	House Pressure	Pa
Worst Case Depressurization	Pa	Fan Ring ☐ Open ☐ A ☐ B ☐ C	
		Fan Pressure	Pa
Combustion Appliance Zone (CAZ) Testing			
Ambient CO (max in CAZ during test)	PPM	Ambient CO (max in living space)	PPM

Appliance Type	**Electric**	**Combustion Appliance Testing**			
	Testing NA	Spillage (Worst Case)	Spillage (Natural)	CO (Worst Case)	(CO) Natural
Heating System 1	☐	☐ Pass ☐ Fail	☐ Pass ☐ Fail	PPM	PPM
Heating System 2	☐	☐ Pass ☐ Fail	☐ Pass ☐ Fail	PPM	PPM
Water Heater 1	☐	☐ Pass ☐ Fail	☐ Pass ☐ Fail	PPM	PPM
Water Heater 2	☐	☐ Pass ☐ Fail	☐ Pass ☐ Fail	PPM	PPM
Oven	☐	☐ Gas w/ no vent	☐ Gas w/ vent	PPM	PPM

Note testing not completed and reasons why below. ☐ **No Blower Door Testing** ☐ **No CAZ Testing**

Contractor: I, _____ attest that all measures installed through AHP and/or EmPower adhere to current AHP/EmPower program guidelines. I further attest that, for all AHP/EmPower projects, I have conducted the appropriate Combustion Appliance Zone (CAZ) testing and left the home in a safe condition as per program requirements.

Technician Name (Print) _____ Technician SIGNATURE _____ Date _____

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Clean & Tune Checklist & Certification Form

Customer Name _____ Contractor _____

EmPower ID _____ Date _____

Equip Make & Model:		Burner Make & Model:		System Type:	Warm air___ Boiler___ Fuel _____

DISCONTINUE C&T AND DISABLE SYSTEM AT ANY POINT THAT SYSTEM IS DETERMINED TO BE UNSAFE TO OPERATE

Please complete all items listed & confirm with a √ that the component is in safe & fully-operable condition. Comment as needed.

CONFIRM THAT SYSTEM IS SAFE TO OPERATE	✓	COMMENTS
Confirm that ambient CO is below 35ppm. If not, shut off system, ventilate area, evacuate building. Correct problem before proceeding or disable system.		
Equipment appears safe to operate, sufficient clearance from flammables		
Oil tank condition, oil lines & connections not leaking, oil supply shutoff operative (oil-fired only)		
Gas tank condition, gas lines & connections not leaking, gas supply shutoff operative (gas only)		
Electrical wiring sound, disconnect switch operative		
Flue/vent stack/chimney connected, not blocked, no signs of backdrafting		
Appears to be sufficient air supply for combustion		
Other health & safety concerns (specify under comments or on back)		
Verify that conversion sticker is present (propane only)		
EQUIPMENT SAFETY CHECKS & CONTROLS	**✓**	**COMMENTS**
Oil pump operating pressure/pressure after cutoff (test, adjust as needed) (oil-fired only)		____ psi pressure ____ psi after cutoff
Ignition/flame (check, adjust as applicable) if gas, no flame movement when blower starts		Lockout time ____ secs
Thermostat/heat anticipator (check & adjust as needed)		
HOT AIR: Fan switch/high limit control (check, adjust as needed)		
BOILER: No leaks or corrosion anywhere in system/low water cutoff/ aquastat/temp & pressure gauges/backflow regulator/pressure relief/mixing valve/expansion tank/zone valves (check, adjust, repair as applicable)		
EQUIPMENT CLEANING & MAINTENANCE	**✓**	**COMMENTS**
Flue/vent stack/ barometric damper/chimney base/cleanout (clean, inspect, adjust, tighten, seal as applicable)		
HOT AIR: Air filter (inspect/replace as needed)		
HOT AIR: Blower motor/fan belt/pulley (clean, inspect, lubricate as applicable)		
HOT AIR: Fan blades or scroll/cabinetry (brush & clean, inspect)		
BOILER: Circulator motor/coupler (inspect, adjust, lubricate as applicable)		
Heat exchanger (clean, inspect)		
HOT AIR: Airflow (dampers operable, in/out temp diff (ΔT) as per mfgr's specs)		
Heating system operating sequence (observe, adjust as needed & conduct tests)		
Combustion chamber (clean, inspect) Replace gaskets as needed		
Transformer (clean, inspect) (oil-fired only)		
Burner motor (clean, inspect, lubricate as needed) (oil-fired only)		
Oil filter (replace) (oil-fired only)		Type:
Oil nozzle (replace or resize to mfg. specifications) (oil-fired only)		Nozzle used: _____GPH x _____
Oil pump inner housing, strainer, coupling (clean, replace as needed) (oil-fired only)		
Cad cell (wipe clean, test, ohm test if suspect) (oil-fired only)		
Electrodes (clean, inspect, reset, replace as needed) (oil-fired only)		

CONDUCT TESTS AT STEADY STATE AFTER C&T & REPAIRS- PLEASE PROVIDE ALL NUMBERS BELOW OR EXPLAIN OMISSIONS --LEAVE TAG ON BOILER--

Smoke (oil-fired only)	____	Breech (in-flue) Draft	____ IWC or ___ PA
Net Stack Temperature (Stack Temp Minus Room Temp) *	____ °F	Over-Fire (OF) Draft	____ IWC or ___ PA
Carbon Dioxide (CO_2) ____% OR Oxygen (O_2)	____%	Ambient (room) Carbon Monoxide (CO)	____ ppm
Steady State Efficiency	____%	Breech (in-flue) Carbon Monoxide (CO)	____ppm

I,_____, CERTIFY THAT A CLEAN AND TUNE SERVICE WAS PROVIDED TO THIS CUSTOMER AS DOCUMENTED ABOVE

Customer Name
Customer Street Address
Customer City, State, Zip

EmPower New York Opt-Out

I understand that I am/or may be eligible to have energy efficiency work done on my home at **no-cost to me** through the EmPower New York (EmPower) program, such as: replacing inefficient refrigerators or freezers, installing high efficiency lighting, reducing drafts, and improving attic and/or wall insulation, and conducting a thorough health and safety check.

My contractor has explained the free services available through EmPower; however, I am declining consideration for one or more of these improvements and choose instead to proceed with energy efficiency improvements offered through Assisted Home Performance with ENERGY STAR® (AHPwES). I am declining free EmPower energy efficiency improvements because… (please check all that apply):

☐ I am okay with paying 50% of the cost of one or more energy efficiency improvements.
☐ I prefer to work with a contractor not participating in EmPower.
☐ I only want services that are not offered through EmPower.

☐ Other: _____

I understand that eligible improvements installed through participation in AHPwES can receive a subsidy of 50% of the total cost, up to a maximum of $5,000, and I will be responsible for paying the remaining cost of the energy efficiency work installed through AHPwES. I also understand that the subsidy will be paid to the certified contractor who will be performing the work. I further understand that if the improvements I want are not offered through EmPower, I can pursue them through AHPwES, while still working with my contractor to identify improvements that are available to me at no-cost though EmPower.

I understand that I may also be eligible to receive no-cost services through the NYS Weatherization Assistance Program (WAP). To find a local provider, please visit http://www.nyhousingsearch.gov/weatherization/NYWeatherization.html and enter your address. For questions about WAP, please call (518) 474-5700.

Signature _____ Date_____
Customer Name (please print) _____

Contractor Name_____ Date_____
Contractor Signature_____

Contractors: If you are working with a customer prior to the submission of the Combined Residential Application and have determined they would like to pursue improvements through AHPwES, please complete and submit this form as part of the application submission package. If the customer has already been determined to be eligible for free services through EmPower and would like to opt out, please complete this form and submit through a ticket to support.residential@nyserda.ny.gov.

Version 7/18

NYSERDA

Residential Existing Homes Programs Material and Installation Guidelines

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Acknowledgments

NYSERDA acknowledges CLEAResult for their assistance in development of this document for the purpose of supporting NYSERDA's Single Family Residential programs. The document has been revised, as appropriate, from the Material and Installation Guidelines originally developed by the CLEAResult Residential Retrofit Technical Committee. CLEAResult grants NYSERDA an exclusive and unrestricted license to use the document for use in their residential efficiency programs.

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1. Introduction

1.1 Purpose

This Material and Installation Guidelines (MIG) is designed to provide the materials and installation requirements for installing energy efficiency measures in NYSERDA's NY Residential Existing Homes Program (The combined programs NY Home Performance with ENERGY STAR®, Assisted Home Performance with ENERGY STAR®, and EmPower New York, collectively the "Program"). It is intended to assist participating contractors, field staff, quality assurance inspectors, quality control inspectors and management in ensuring consistent quality of installed work.

The guide is based on the concept of "Standard Work Specifications" (SWS). These are the minimum expectations for meeting the requirements for quality installation of the measure. In many instances the MIG does not dictate the exact techniques to be implemented, leaving the contractor to determine the best approach. Optional best practices and recommendations are offered to assist contractors in effective installations.

The guidelines set forth in this document establish the basis of quality for work performed within the program. To ensure compliance, participating contractors are responsible for adhering to these guidelines. Completed projects are subject to inspection by NYSERDA's third-party Quality Assurance contractor. In-progress projects are subject to review by the Implementation Contractor or NYSERDA staff.

This guide also provides effective techniques for contractors who provide energy efficiency services outside of the Program, and contractors are encouraged to follow these guidelines in all of the work they perform.

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1.2 Program Specific Content

The Material and Installation Guidelines do not provide program eligibility information. All questions or concerns regarding Program Requirements, and the use of this MIG may be directed to the Implementation Contractor. All requirements in this document apply to measures that are listed on the Program's lists of eligible measures.

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2. Work Related Standards & Regulations

All contractors must perform their work in compliance with all applicable codes, regulations, laws, and standards in the jurisdiction where completing work. In instances where this manual may conflict with state and/or local code or manufacturer's requirements, code or manufacturer's requirements must take precedent. If there is any variation between code and manufacturer's requirements, the more stringent standard must be followed. In all instances where specific code citations are included in the manual, current code, if revised, takes precedence over citations in this document.

1. It is the contractor's responsibility to verify pre-installation conditions, and measurements of insulated areas, and to install measures according to these specifications. Any discrepancies must be resolved before work commences whenever possible.
2. All contractors must comply with their company's health & safety specifications.
3. All contractors must maintain a copy of their company health and safety policy at the work site. Contractors must supply a Safety Data Sheet (SDS) for products and materials used by their crews to customers and Program staff upon request.
4. Work area must be cleaned daily by sweeping and disposing of debris and scraps in a location designated by the owner. Upon completion of the work in any given area, the contractor must remove tools, equipment, and all rubbish and debris from the work area and leave area in broom-clean condition.
5. Waste such as dust, trimming, packaging and chemical cylinders must be disposed of in accordance with applicable federal, state and local regulations.

○*OPTIONAL BEST PRACTICE*○ Walk the entire job with the Homeowner to ensure that all aspects of the job are completed to agreed-upon standards.

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2.1 Personal Protection & Work Site Air Quality

2.1.1 Employee Safety

- The contractor must perform all work in a safe manner and utilize appropriate personal protection measures.
- The contractor must maintain a copy of its health and safety policy and treat all employees accordingly.
- Adherence to applicable OSHA standards is required for all jobs conducted through the Program.

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2.1.2 Occupant Safety

Any negative impact an installation may cause upon the health and safety of the occupants and the structural integrity of the building must be avoided. Contractors must comply with all local, state and federal regulations governing potential hazardous materials or situations. Contractors must evaluate existing conditions and communicate potential problems to the customer so that problems may be addressed before beginning work. This includes the identification of possible indoor air contaminants, severe moisture problems and potential back-drafting of combustion appliances.

○*OPTIONAL BEST PRACTICE*○ Keep extra copies of the Safety Data Sheets (SDS) in work trucks and provide them to customers upon request or in situations when customers express concerns about the materials to be installed.

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2.2 Presumed Asbestos Containing Material (PACM)

2.2.1 Definition

Asbestos is a fibrous mineral used in thousands of building products. This mineral, when broken down, forms microscopic fibers that persist in the air and can be inhaled. These asbestos fibers are known to cause debilitating and sometimes fatal lung diseases. Asbestos-containing building materials are typically classified as either friable or non-friable and contain greater than 1% of asbestos. The goal is to ensure that any work performed at the home will not damage asbestos-containing materials and that the safety of the occupants and contractor's workers are protected. Materials can only be termed "asbestos" if testing has been done to confirm the presence of asbestos in the material. In the absence of such testing, contractors must not use the term "asbestos" when describing suspected materials. Instead, the term "Presumed Asbestos Containing Material" (PACM) should be used.

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2.2.2 Requirements

The presence of PACM in building materials that is damaged or in a deteriorating condition ("friable") disqualifies the home from blower door tests, duct pressurization tests or any activity that could potentially introduce asbestos fibers into the living space. Friable asbestos-containing materials, which are not intact, can become a source of airborne asbestos if the material is disturbed by movement or air currents. Friable asbestos-containing building materials may be found in vermiculite, boiler and pipe insulation/fittings furnace distribution systems, and other locations. Blower door tests that either pressurize or depressurize a dwelling must not be conducted if friable PACM are not intact and are at risk of being drawn into the living space. Vermiculite, used as loose fill insulation, is presumed to be asbestos-containing and should not be disturbed. For additional information on asbestos and vermiculite insulation, please reference the EPA at:

http://www2.epa.gov/asbestos

The presence of PACM does not automatically disqualify a home from all weatherization work unless the proposed work causes the potential for PACM particles to become airborne through activities such as sawing, drilling or other construction activity or if the existing building material is damaged. Examples of asbestos-containing building materials that are typically less likely to be friable include, but are not limited to, cementitious house siding, roof shingles, fire-stop boards, floor tiles, linoleum, flue pipes and chimneys. Under no circumstances should the contractor saw, cut, break, tear, sand or drill PACM in the performance of any work. Note: If any cementitious siding deemed PACM is damaged during removal it must be handled and disposed of in accordance with all applicable regulations.

If a contractor is not sure if a building material is asbestos-containing, then they should deem it PACM and not disturb the material. If potential hazards cannot be avoided in complying a measure, such as potential worker exposure to friable PACM, the contractor or Program may elect not to complete the measure.

Blower door and applicable retrofit work may proceed in circumstances where friable PACM is remediated by a certified asbestos abatement contractor who has attested to its remediation in writing.

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2.3 Knob-and-Tube Wiring

2.3.1 Definition

Knob and Tube wiring may be found in pre-1950 buildings. It is a style of wiring that has two separated strands of insulated wire that run through ceramic tubes when passing through framing members and ceramic knobs when attached to a framing member. When electricity flows through the wires there is resistance to the passage of the electrons. This resistance builds up heat that is dissipated to the surrounding space.

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2.3.2 Requirements

If active knob and tube wiring is determined to be present in a home, no insulation or air sealing materials may be installed within three inches of any live knob and tube wiring. The knob and tube wiring must either be decommissioned or removed by a licensed electrician, or accommodation must be made to ensure that any and all installed insulation or air sealing materials not installed within 3 inches of the existing knob and tube insulation.

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2.4 Mold-Like Substance (MLS)

2.4.1 Definition

Mold is an organic substance that has been shown to cause adverse health effects in some individuals. Contractors must not characterize a moldlike substance as "mold" unless a determination has been made by a certified mold inspector. Instead, the term "Mold-Like Substance" (MLS) may be appropriate.

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2.4.2 Requirements

When a suspected mold-like substance is present, the homeowner should be informed and directed to consult the Environmental Protection Agency's "A Brief Guide to Mold, Moisture and Your Home". Additional information may be found at:

https://www.epa.gov/mold/brief-guide-mold-moisture-and-your-home

When a mold-like substance is found to be present in an area of the home, and it exceeds an area greater than 10 sq. ft., air sealing and insulation work must not be installed until one of the following conditions have been met:

1. A certified mold abatement professional has remediated the mold and has attested to its remediation in writing.
2. A certified mold abatement professional has determined that the substance is not mold, does not need to be remediated and has attested to this determination in writing.

Exception: In situations where more than 10 sq. ft. of mold-like substance exists in the attic, contractors may proceed with measures that may impede mold growth in the attic, such as:

- Elimination of the source of moisture
- Air sealing and insulating the air barrier between the source of the moisture and the attic space where the mold-like substance was found. The contractor must not add insulation unless they can ensure that they have sealed all bypasses by which moisture may enter the attic. The use of Zonal Pressure Diagnostics to ensure comprehensive sealing is strongly recommended.
- Reducing the impact of central humidifiers that may be installed on furnaces and driving moisture into the attic. Ensuring comprehensive return duct sealing and ensuring that the furnace filter slot is sealed may reduce positive pressure in the conditioned space that can drive moisture into the attic.

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2.5 Lead Paint

2.5.1 Definition

Lead was a common ingredient in many paints up until its use was banned in 1978. Lead ingestion or inhalation of lead dust or particles has been shown to cause damage to the central nervous system. Children in particular are at a high risk for nervous system damage from lead exposure.

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2.5.2 Requirements

In any home built before 1978 there is a possibility that lead paint was applied to some or all surfaces. If specified work in the home will require cutting into areas that are potentially covered with lead paint the EPA Lead Safe Guidelines and all Lead Safe Practices as outlined in Title 40: Protection of Environment, Subsection 745.85 must be followed.

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2.6 Heat Sources

2.6.1 Definition

A heat source is any item, equipment, or material that produces heat at temperatures that has the potential to ignite combustible material.

Examples of heat sources include but are not limited to: space and water heating appliances, including wood and pellet stoves; metal combustion flue piping; metal and masonry chimneys; heat lamps.

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2.6.2 Requirements

Locations in close proximity to a heat source should be air sealed or insulated with fire-proof materials at a minimum to the distances required by Code from the heat source. Appropriate materials for this application are sheet metal and high temperature sealants (ASTM E136 for oil or wood flues, 500F RTV silicone for gas flues). The sheet metal must be applied over any openings that cannot be bridged by the sealants and mechanically fastened in place with nails, screws or staples. Gaps and leakage points around the sheet metal must then be sealed using the appropriate high temperature sealant.

All sealants must meet code requirements as noted above. Foam sealants intended for fire-blocking may not be fireproof, and therefore may not be suitable for air sealing around a heat source.

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2.7 Combustion Appliance Zone Safety

Combustion Appliance Zone (CAZ) safety screening or testing is required before and after air sealing or dense pack wall insulation is installed. If the installation of air sealing or dense pack insulation measures occurs over several days, CAZ testing must be done at the end of each day. All tests must be conducted using the Building Performance Institute (BPI) combustion testing procedures and all test results must be recorded and submitted to the Program.

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2.8 Indoor Air Quality

Measures that reduce air movement in the home must always be done in a manner that ensures the dwelling has sufficient fresh air for the occupants, and that the work performed does not increase the likelihood that the occupants will be exposed to pollutants.

This is done by:

1. Identifying pollutants in the home that may be impacted by air sealing
2. Whenever possible, removing the source of the pollutants or isolating them from the living space
3. Choosing air sealing strategies that ensure that fresh air is available throughout the home

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2.9 Radon

2.9.1 Definition

Radon is a colorless, odorless gas that in high enough concentrations has been shown to increase the risk of developing lung cancer.

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2.9.2 Requirements

The homeowner should be advised about the possible presence of radon and should be encouraged to perform a radon concentration test after any air sealing work is done. More information about the health risks associated with Radon can be found in EPA's "A Citizen's Guide to Radon" on their website.

Additional information may be found at:

https://www.health.ny.gov/publications/3168/

2.10 Gas Leak Testing

In dwellings where natural gas or propane lines or appliances are present, the contractor must test the ambient air for natural gas in all areas of the dwelling using a Combustion Gas Detector (CGD) suitable for testing ambient air and capable of detecting gas levels of 20 ppm. In the event that propane is in use in the dwelling, the contractor must test the ambient air in all of the lowest areas of the dwelling. When the CGD indicates that combustion gas exists in the ambient atmosphere (at *any* level below 10% LEL) the contractor must initiate gas leak testing on all gas lines and combustion appliances as per ANSI/BPI-1200-S-2017, Standard Practice for Basic Analysis of Buildings, Section 7.5.2. Testing must be completed prior to and upon completion of work.

The contractor must test all gas lines and combustion appliances as per ANSI/BPI-1200-S-2017 Standard Practice for Basic Analysis of Buildings, Section 7.5. immediately after the following situations:

- The contractor repairs, modifies or installs new natural gas or propane lines, connectors, or combustion appliances.
- The contractor has reason to suspect a gas leak.
- A gas meter is replaced
- An out-of-gas condition occurs

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3. Air Sealing and Insulation

3.1 Air Sealing Overview

Air leakage can be linked directly or indirectly to the most prevalent building envelope performance and durability problems. The best way to ensure adequate thermal performance, comfort and avoid moisture problems is to prevent air from uncontrollably flowing into and out of the occupied space of the building envelope. At the same time it is critical to ensure adequate fresh air throughout the dwelling for the building's occupants, both present and future.

The objective is to safely and cost-effectively control air leakage. This is accomplished by obstructing airflow through leaks, penetrations and bypasses that are found in the attic, basement, living space and exterior pressure boundaries as indicated by blower door tests and air sealing guidelines. The goal should be to provide a continuous, structurally supported plane of materials to contain the indoor air (reduce exfiltration) and to reduce the amount of outdoor air from entering the building (infiltration). While doing so, it is important to measure air leakage levels and consider the ventilation paths throughout the dwelling.

1. Air sealing strategies may include addressing building assembly transitions that are extensions of the building envelope into unconditioned spaces. These transitions include, but are not limited to, changes in substrate, perimeter and transition conditions, mechanical penetrations and mechanical system components.
2. The building envelope must incorporate a continuous air barrier system as per the International Energy Conservation Code.
3. The air barrier must be installed in a manner that meets the NYS Energy Code.
4. The air sealing materials must be selected and installed in a manner that will accommodate normal building movements.

This section defines the quantitative and qualitative requirements for the products, materials and workmanship for the air barrier system of the thermal envelope.

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3.1.1 Air Sealing Materials: Locations & Use

The following are requirements that apply to all air sealing material choices:

1. The proper caulking material should be matched to the location where it is applied. Consideration should be given to the durability, paint compatibility, adherence, color, toxicity and flammability of the material.
2. Applied sealant and blocking materials must be suitable for the working surfaces and be able to maintain a durable seal.
3. Siliconized acrylic materials should generally be used only in interior locations or in exterior locations where paint compatibility is important. When used in visible areas the customer should

approve the application and see a sample before proceeding. It is best to avoid clear acrylic materials due to their shiny appearance and their propensity to shrinkage. Siliconized acrylic materials should not be used to seal openings or cracks over 3/16 inch without a backer and generally should not be used to seal openings or cracks more than 3/8 inch.

4. Pure silicone should generally be used in exterior applications unless paint compatibility is needed. Pure silicone should be used anywhere that sealants are needed between wood and metal and wood and concrete. Also, pure silicone should generally be used to seal materials that expand and contract at different rates as moisture and temperature vary. Pure silicone should not be used to seal openings or cracks over 3/8 inch without a backer, and generally should not be used to seal openings or cracks more than ½ inch.
5. Caulking may be performed on the interior of the dwelling for general air leakage and to prevent moisture penetration into wall cavities.
6. Caulking may be performed on the exterior of the dwelling to prevent bulk moisture from entering the envelope of the building and to seal areas of air leakage.
7. 1-part and 2-part foam sealant:
   a. Foam sealant must not be used to seal gaps or openings spanning more than 1½ inch without a backer material.
   b. Foam sealant must not be used where it can be exposed to sunlight or other ultraviolet sources.
   c. Foam sealant must not be used near any heat-producing device.
8. Spray foam applied sealants must be installed according to manufacturer's specifications.

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3.1.2 Sealant & Blocking Materials

Caulking

All caulking materials must be rated for a minimum 20-year life span. Caulking used around chimneys must be rated for use against heat sources. Caulking used around gas flues or chimneys must meet ASTM C290. Caulk used around solid fuel or oil appliance vent flues or chimneys must meet ASTM E136. Siliconized acrylic caulks must be paintable.

○*OPTIONAL BEST PRACTICE*○ Apply products with ultra-low or no CFCs, and with minimal or no odor.

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2-Part Spray-Applied Polyurethane Foam (SPF)

All SPF materials must meet ICC ES AC 377 for the application. Refer to Appendices B&C for methods to correctly and safely install spray foam. Types of SPF include:

1. Open-cell polyurethane foam (0.5pcf)
2. Medium-density closed-cell spray-applied polyurethane foam (2.0pcf)

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Other Sealants

Other acceptable sealants include, but are not limited to, the following:

- Spray applied Latex Based Sealants
- Mastic

Examples of Materials for Use as Blockers & Backers

- Plywood
- Foam board
- Foil bubble-wrap or similar (to block large bypasses)
- Metal flashing materials (used for damming and to bridge gaps at chimneys and flues). Materials must be waterproof in area where susceptible to rust.
- Wallboard
- Glass or mineral fiber insulation as a backer for other sealants
- Backer rod (foam rope) used as a backer for other sealants. Closed cell backer rod is waterproof.
- 6-mil (0. l50 mm) polyethylene sheeting (waterproof)
- Cellulose or fiber glass insulation as used in a dense-pack application
- House wrap such as Tyvek™ or similar material

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3.1.3 Safety Checks Prior to Air Sealing

General Safety Check

During the initial assessment, the contractor must evaluate health and safety risks that may impact indoor air quality, such as:

- The presence of PACM or mold-like growth
- Wood stove particulates
- Tobacco smoke
- Home renovations which include materials such as plywood, particle board or new carpeting, that may outgas formaldehyde and other pollutants;
- Dryer or other appliances not properly vented to outside the building envelope.
- Other health risks.

Additionally, the contractor must assess moisture conditions in the dwelling that may be impacted by work to be performed, such as:

- Standing water in basements or crawlspaces
- Roof leaks
- Aquariums, hot tub, large number of plants within the thermal envelope
- Pre-existing damp insulation in the attic areas
- Occupant reports of high moisture levels

- Kitchen or bathroom fans venting to the attic areas, or otherwise not venting outside
- The use of a central humidifier on a furnace, particularly with leaky return ducts

In the presence of identified health risks that may increase if air sealing activities are implemented, the contractor must either:

- Discontinue or limit air sealing activities; or
- Initiate removal of the pollutants: or
- Air seal in such a manner as to isolate the pollutants from the living space, or
- Supplement natural ventilation with mechanical ventilation in such a manner that pollutants are reduced.

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Combustion Safety Pre-test

The air sealing technician must perform a combustion safety pretest before air sealing. The combustion safety pretest must include:

1. Fireplaces, wood stoves, coal stoves or other solid fuel appliances
2. Gas or propane cooking stoves
3. Gas, propane or oil water heaters
4. Gas, propane, or oil boilers, furnaces and unit heaters

The combustion safety pretest must follow the BPI 1200 and Program combustion pretest procedure which includes:

1. Ambient combustible fuel gases test - Section 7.3.2 of BPI 1200
2. Ambient Carbon Monoxide (CO) readings and actions - Section 7.3.3 of BPI 1200
3. Natural Gas and Liquid Propane (LP) gas leak testing – As per Section 2.10, above
4. Check unvented Gas Fired Room Heaters - Section 7.8.4 of BPI 1200
5. Spillage Assessment and CO Measurement in cold vent (Except domestic water heaters) - Section 7.9.2 of BPI 1200
6. Spillage Assessment and CO Measurement in domestic water heaters or warm vent - Section 7.9.3 of BPI 1200
7. Carbon monoxide levels in flues (undiluted)
8. Zone pressures created by exhaust appliances
9. Zone pressures created by the duct system when the air handler is operating

○*OPTIONAL BEST PRACTICE*○ Draft pressure checks of venting systems for space and water heaters.

If there is any failure in the combustion safety pretest no air sealing shall be performed until the problem has been remedied.

Blower Door Pre-test
The air-sealing technician must prepare the house for a blower door pretest. Pressure differential readings must generally be used to detect substantial leakage paths and to determine the ratio of pressure differences across interior and exterior surfaces of a zone.

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3.1.4 General Air Sealing Procedures

Air sealing technicians must strive to seal all cost-effective leakage in the building. It is important to recognize that air sealing efforts may not result in immediate significant air leakage reductions; often a certain volume of holes must be sealed before air sealing efforts have an effect.

○*OPTIONAL BEST PRACTICE*○ If a blower door is used while air sealing, take hourly blower door readings to monitor the impact of air sealing. Work should terminate once cost-effective reductions have been achieved and all major areas of leakage have been addressed, while maintaining adequate ventilation of the conditioned space.

Before applying caulking and other sealants, remove dust, dirt or debris from the area to be sealed. Ensure that the area to which the sealant will be applied is dry. Follow any additional instructions in the manufacturer's installation guidelines and specifications before application. Be sure to take into consideration all temperature requirements related to the product and ensure that the products are installed in such a manner as to produce a strong, failure resistant bond.

Backer Materials fall into two general categories: Rigid and non-rigid.

- Rigid backers inserted into joist or stud bays may be held in place by friction and permanently secured by the adhesion of 1-part foam or caulk. Rigid insulation that seals drop soffits, large mechanical chases, etc. must be fastened in place using either nails or screws. Metal flashing can be held in place with box nails or screws.
- Non-rigid barriers (foil-faced bubble wrap, polyethylene, etc.) can be secured using ½ inch staples every 4-6 inches. Rolled fiberglass batts or mineral wool must be stuffed tightly into openings to ensure that they stay where intended.

Rigid foam board insulation that will be exposed to finished spaces must be covered with a thermal barrier. Rigid foam board insulation that will be exposed to an accessible area that is used for storage must be covered with a thermal barrier. Backer materials used in exterior wall applications must be waterproof.

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3.1.5 Air Sealing Post-Installation

Air sealing technicians must conduct a blower door test and combustion safety testing after all air sealing work is complete, unless conditions, such as the presence of damaged PACM or mold-like growth, preclude

their use. If there is any failure in the post-installation combustion testing appropriate corrective action must be taken.

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3.2 Attic Air Sealing

3.2.1 Definition

Attics are enclosed spaces outside of the intentionally conditioned living space. Air sealing measures for *conditioned* attic spaces are covered in the sections on walls and roof slopes.

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3.2.2 General

The following installation guidelines shall be followed to ensure that attic air sealing measures are effective and durable. The materials used in each descriptive application (See: *Locations and Use*) must be chosen from the list of appropriate materials. Alternative materials may be used as long as they have the same performance criteria as the listed appropriate materials (i.e. they are fireproof if fireproof materials are required). All attic air sealing applications must be able to support the weight of existing and proposed insulation. Additional support must be added as needed. No backer material must exceed a distance of 24 inches if unsupported.

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3.2.3 Locations and Use

Typical openings, cracks, gaps and penetrations to be air sealed in attics include, but are not limited to the following:

- Interior partitions and exterior wall top plates
- Along both sides of top plates, at butt joints and at intersections
- Along dropped ceilings and soffits
- Junction boxes and wiring penetrations
- Open joist bays in knee-wall attics
- Hatches and pull-down stairs
- Wet walls and plumbing chases/penetrations
- Mechanical system components (also see Heating and Cooling Systems)
- Chimneys and flues
- Duct penetrations
- Whole-house fan enclosures
- Bathroom fans and recessed light fixtures

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3.2.4 Material

Backers

Backers consist of any material that is used to bridge openings that cannot be closed solely by a sealant. The following is the list of backers that are appropriate to use in attics air sealing applications:

1. Fire-proof Backers:
    a. Metal Flashing
    b. Mineral Wool
2. Fire-resistant Backers:
    a. Thermax
    b. Wallboard
    c. FSK rigid board
3. Moisture-resistant Bakers:
    a. 6 mil polyethylene or thicker
    b. Rigid foam board Insulation (extruded polystyrene)
    c. Foam backer rod
    d. Foil faced polyisocyanurate
4. Other Backers: (may be used when fire and/or moisture resistance is not a concern)
    a. House wrap
    b. Radiant bubble wrap
    c. Plywood
    d. Insulated structural sheathing

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Sealants

Attic Air Sealants are materials applied to attic surfaces and/or backers to form an air tight seal. The following is the list of sealants appropriate for attic use:

1. Fire-Proof Sealants:
    a. Non-combustible fire rated caulk meeting ASTM E 136
    b. Silicone high temperature RTV sealant meeting ASTM C920 on gas vents with flue temperatures up to 500 degrees Fahrenheit
2. Non-Fireproof Sealants:
    a. 1-part urethane foam
    b. 1-part urethane fire block foam rated for sealing gaps in wood framing
    c. 2-part urethane foam kits
    d. Siliconized latex sealants meeting ASTM C834
    e. Silicone urethane and other elastomeric sealants meeting ASTM C920
    f. Water-based duct sealant meeting UL181A-M, UL181B-M
    g. Spray applied latex based sealant

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Table 1. Compatible Attic Air Sealing Materials

(Note: This table lists effective combinations of backers, fasteners, and blockers. Other combinations are possible.)

Attic Locations	Backer	Fastener	Sealant	Notes
Attic Top Plates	N/A	N/A	1- or 2-part foam, spray applied sealant	Platform construction.
Attic Top Plates	Fiber Glass	Friction Fit	2-part foam, spray applied sealant	
Attic Top Plates	XPS	Friction Fit	1- or 2-part foam or caulk, spray applied sealant	
Attic Top Plates	Foil Faced Wrap	1/2" staples	1- or 2-part foam, spray applied sealant or caulk	
Dropped Soffit	1/2 " drywall	1" drywall screws	1- or 2-part foam, spray applied sealant	Openings over spans larger than 24" must be supported.
Dropped Soffit	1.5" XPS	2"drywall screws	1- or 2-part foam, spray applied sealant	Openings over spans larger than 24" must be supported.
Dropped Soffit	1" FSK	1" drywall screws	1- or 2-part foam, spray applied sealant	Openings over spans larger than 24" must be supported.
Dropped Soffit	Foil Face Wrap	1/2 " staples	1- or 2-part foam, spray applied sealant	Openings over spans larger than 24" must be supported.
Junction Boxes	N/A	N/A	Silicone Caulk, spray applied sealant	No foam in electrical boxes.
Wire Penetration	N/A	N/A	1-part foam	
Kneewall transition	Fiber Glass	Friction Fit	2-part foam, spray applied sealant	Foam must create an air barrier.
Kneewall transition	XPS	Friction Fit	1-part foam, spray applied sealant or caulk	If exposed needs thermal barrier.
Kneewall transition	1' FSK	Friction Fit	1-part foam, spray applied sealant or caulk	Foam must create an air barrier.
Kneewall transition	Foil Face Wrap	1/2" staples	1-part foam, spray applied sealant or caulk	Foam must create an air barrier.
Chimney/Flue	Metal flashing	4d box nails or 1” drywall screws	High Temp Caulk	High temp sealant must be compatible with fuel type.
Chimney/Flue	Mineral Wool	Friction Fit	High Temp Caulk	If gaps are very small they can be stuffed and caulked.
Recessed Lights	Drywall/XPS	Tape	1-part foam or caulk	Drywall or XPS on the sides, drywall on top. Taped until foamed.
Open Chases	Drywall	1" drywall screws	1- or 2-part foam, spray applied sealant	Openings over spans larger than 24" must be supported.
Open Chases	1.5" XPS	2"drywall screws	1- or 2-part foam, spray applied sealant	Openings over spans larger than 24" must be supported.
Open Chases	1" FSK	1" drywall screws	1- or 2-part foam, spray applied sealant	Openings over spans larger than 24" must be supported.
Open Chases	Foil Faced Wrap	1/2" staples	1- or 2-part foam, spray applied sealant	Openings over spans larger than 24" must be supported.

Table 1. cont.

Attic Locations	Backer	Fastener	Sealant	Notes
Wet Wall Top Plates	XPS	Friction Fit	1- or 2-part foam, spray applied sealant or caulk	Backer must be moisture resistant.
Wet Wall Top Plates	1" FSK	Friction Fit	1- or 2-part foam, spray applied sealant or caulk	Backer must be moisture resistant.
Wet Wall Top Plates	Foil Faced Wrap	1/2" staples	1- or 2-part foam, spray applied sealant or caulk	Backer must be moisture resistant.

3.2.5 Attic Air Sealing Installation

This section defines what materials and methods are suitable when sealing penetrations between the attic and the conditioned space.

Attic Top Plates
Where exterior and interior walls terminate in the attic there is a junction between the wall board and the framing called the Attic Top Plate. This long, thin gap between the wall board and the wall framing, if left untreated, allows an unwanted exchange of conditioned house air and attic air. To seal this gap first remove any existing insulation or debris from either side of the top plate where it meets the wall board.

○*OPTIONAL BEST PRACTICE*○ Apply a continuous bead of 1-part urethane foam between the wooden top plate of the wall and the wallboard. 2-part foam or spray applied latex based sealants can also be used at this location.

When area applied sealants are used the entire top plate must be covered (i.e. only sheetrock and foam must be visible after the top plate has been sealed). **Photo**: Top Plates Sealed with 1-Part Foam

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Dropped Ceilings and Soffits
This attic detail most commonly occurs above bathrooms and kitchens. Wall board is often excluded from areas above cabinets, bathtubs and/or showers which results in open spaces that are open to wall cavities. These open spaces must be sealed from the attic using a rigid supported material that is installed and sealed in line with the attic plane. If the dropped soffit or ceiling is above a bathroom or kitchen a moisture resistant backer must be used. The span must be bridged by the backer leaving enough overlap at all edges to mechanically attach the backer to the surrounding attic air barrier. The edges and seams must be sealed with foam. **Photo**: Dropped Soffit Sealed with XPS and 1-Part Foam

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Junction Boxes and Wire Penetrations
Junction boxes may be sealed using siliconized or silicone caulk or equivalent. To ensure that the caulk bonds to the junction box, dust and debris must be brushed off. The openings in the box can be sealed with the caulk but care must be taken not to inject the caulk into the junction box. Wire penetrations may be

sealed with foam. The nozzle of the foam gun must be inserted into the wire hole and foam injected until the foam backs out into the attic space.

Open Joist Bays in Knee Wall Attics

This area, sometimes referred to as the knee wall transition, is the space where the floor joists of an unconditioned knee wall attic pass under the knee wall and transition from unconditioned space to what is typically conditioned space. If the kneewall attic is not included in within the pressure boundary, this transition must be sealed.

○*OPTIONAL BEST PRACTICE*○ To close this space, cut rigid foam board to the dimensions of the floor bays and rigid fit the foam board into the joist bay. The foam board must be inserted under the shoe plate of the knee walls inner (towards conditioned space) side. The inner face of the rigid board must align with the vertical plane of the wall board.

Any gaps or seams must be sealed. Silicone caulk or 1-part urethane foam are effective materials for this purpose. **Photo:** Knee Wall Transition Sealed with XPS and 1-Part Foam

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Whole House Fans

Whole house fan covers must be treated like attic stair case covers in regard to appropriate materials, installation techniques and code compliance. The fan itself must be dammed off from any blown material for a distance of two feet around the fan perimeter using batts laid flat, or other permanent barriers.

Chimney Flues & Vents

Closing the gap between heat sources and combustible materials requires the use of non-combustible materials. A clearance of three inches must be maintained between masonry chimneys or double wall metal vents and combustible materials, and six inches between single wall vents and combustible materials. The material used to seal this gap must be non-combustible air-tight material, such as metal flashing. The metal flashing must be applied over any openings that cannot be bridged by the sealants and mechanically fastened in place with nails, screws or staples. The flashing must be cut so that it spans the gap and leaves enough overlap to be attached with fasteners to surrounding framing, and so that when fastened in place the remaining gaps between the flashing and the venting and the flashing and the framing are ¼ inch or less and can be sealed with high temperature sealants (ASTM E136 for oil or wood flues, 500F RTV silicone for gas flues). Other sealants can be used on the side of the sheet metal that is fastened to the framing. **Photo:** Chimney in Attic Sealed with High-Temp Caulk and Metal Flashing

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Bath Fans

The housings of most bath fans have many perforations and knock-outs. In addition to the openings in the housing, it is not uncommon for there to be sizable openings between the housing and the attic plane material (wall board, plaster, paneling, etc.). If the bath fan is a fan-light combination unit, it must be treated as a

recessed light (see Section 3.3). If it does not have a light, the openings and perforations must be sealed with silicone caulk. The gap between the attic plane and the fan housing can be sealed with caulk if the gap is small enough or foam if the gap exceeds the maximum bead width of silicone caulk. **Photo:** Bath Fan Sealed with 1-Part Foam

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Open Chases

Material selection is the most critical aspect of sealing open attic chases. Backer materials that are used to seal chases must have sufficient rigidity to span the opening and support any insulation that will be placed upon it. Any span greater than 24 inches must be supported by framing members regardless of the material chosen. A moisture-resistant backer must be chosen when persistent exposure to moisture-laden air is deemed likely. Whatever material is chosen, it must be cut in a section large enough to span the chase and have enough overlap to be securely fastened to the surrounding framing. Any remaining gaps between the rigid material and the surrounding air barrier must be sealed with foam or caulk. Applicable fire codes apply for ignition barriers and thermal protection. **Photo:** Open Attic Chase Sealed with Sheet Metal, Duct Mastic and Acoustical Sealant

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Wet Walls and Plumbing Penetrations

A wet wall is a wall that has plumbing pipes running vertically through it to unconditioned space. These walls are often framed using higher dimension framing (i.e. 2x6's) or a double 2x4 stud wall. From the attic this wall is easy to locate. It is the one that the waste vent comes through. Usually, the top plate(s) of this wall have large openings that need to be bridged with a rigid, moisture resistant material and then sealed with foam. **Photo:** Plumbing Wet Wall Sealed with Fiberglass Batt Backer and 1-Part Foam

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Ceiling Height Level Changes

When ceilings change from one height to another a short wall is created with wall studs that run from the conditioned space into the unconditioned space of the attic. In the case of pre-platform framing, this transition area in the wall stud bay will normally not have an air barrier installed at all. If the house was built with platform framing, there may be a wood blocker with unsealed edges. If there is no backer in the wall stud bay at the transition from conditioned to unconditioned space, one must be installed. This backer can be rigid or spray foam insulation or a rolled insulation batt and sealed around the edges. **Photo:** Ceiling Height Transition Wall Sealed with 2-Part Foam

3.3 Recessed Lights

3.3.1 Definition

Recessed lights are a type of fixture that projects through the thermal boundary of a ceiling into the attic space or cathedral roof slope. The holes in the thermal boundary created by these fixtures are a source of air leakage and degrade the overall thermal performance of the insulation of the attic or cathedral roof plane. Depending on type, great care must be taken when sealing and insulating around recessed light fixtures.

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3.3.2 Requirements

Homes with recessed lighting fixtures that penetrate the thermal envelope should be air sealed and insulated using the following criteria and method:

1. First determine whether the fixture is a Non "Insulation Contact" (IC) rated fixture, an IC rated fixture, or an airtight IC rated fixture. If it is not possible to determine what type of fixture it is, then it must be treated as a Non-IC rated fixture.
2. If the fixture is Non-IC rated, or IC rated but not air tight, an air tight enclosure must be built from an air barrier material.

   ○*OPTIONAL BEST PRACTICE*○ Use a non-flammable material such as wall board, mineral fiber, or foil-faced fiberglass.

   The enclosure must be constructed securely to maintain a minimum clearance of 3 inches to any part of the fixture. Rigid foam insulation or other impermeable material can be used for the enclosure sides. However, the top of the enclosure must be made from a non-insulating material and must not exceed an R-value of .5. Insulation can be placed against the side of the enclosure but must NOT be placed over the top.
3. If the fixture is an air-tight IC rated can light fixture (ICAT) installation may be installed over it according to manufacturer specifications.

○*OPTIONAL BEST PRACTICE*○ Install an LED inset into a recessed light fixture and ensure that it is sealed around the perimeter with a sealant that is appropriate for close proximity to the LED light. This can eliminate air leakage while reducing lighting costs and may be easier to install than an enclosure in the attic above.

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3.4 Attic Access Air Sealing & Insulation

3.4.1 General

All attic accesses must be:

- As air tight as possible, using weather-stripping permanently mounted to the access and secured with metal fastenings that keep the access secure through repeated use.

  ○*OPTIONAL BEST PRACTICE*○ "Q-Lon" style weather-stripping products.

- Insulated to R-14 or greater, unless the construction of the attic (such as cross-bracing) impedes the ability to add sufficient insulation thickness. Foam boards, fiberglass, or rock wool batts are acceptable forms of insulation.

  ○*OPTIONAL BEST PRACTICE*○ Insulate access to the level of the remainder of the attic.

- Constructed from materials with a 20-year life span or greater

In the event that a contractor creates an access to the attic that must be permanently sealed (such as access through drywall, or situations where the contractor insulates the attic through a vent), the contractor must provide pre- and post-photos of the installed insulation and submit per Program Guidelines.

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3.4.2 Hatches

- The contractor must weather-strip and insulate the hatches but not permanently seal existing or installed hatches.
- All hatches must be weather-stripped on all four sides and the corners mitered to fit together. The seams between the weather-stripping and the finish, and in the finish, must be caulked with a siliconized caulk or equivalent. Any gap between the finish and the rough framing and the surrounding wall board must be sealed
- If necessary on pre-existing or installed hatches, positive closing mechanisms (such as eye hooks) must be installed on opposite sides with sufficient tension to ensure an effective seal.
- If necessary to prevent insulation spillage the attic hatch opening must be surrounded with a durable protective baffle that is higher than the level of the surrounding floor insulation.
- Installed hatches must be constructed of a minimum of ½ inch plywood, or material of comparable strength and acceptable to the homeowner.
- Installed hatches must be framed with a minimum 2½ inch casing permanently fixed with metal fastenings, mitered neatly, weather-stripped, and insulated to a level consistent with the attic area around it.

○*OPTIONAL BEST PRACTICE*○ Insulate attic hatch with foam board. The first layer of foam board can be attached using screws and 1 inch or wider washers spaced approximately every 8 inches. Additional layers must be added by gluing to the lower layer using construction adhesive. If using Extruded Polystyrene (XPS) do not apply a petroleum-based adhesive on the XPS.

. **Photo:** Attic Hatch Weather-stripped

3.4.3 Temporary Access through a Wall or Ceiling

Where entry to the attic via a pre-existing hatchway of access panel is not possible, access to attic areas may be gained from the exterior through roof or gable vent openings. If this is not feasible, access may be created by cutting through the ceiling between two ceiling joists or the knee wall area between two wall studs.

- Openings must be cut in such a manner as to ensure structural integrity of the dwelling.

  ○*OPTIONAL BEST PRACTICE*○ Use a stud finder to identify the location of wall studs or ceiling joists, then cut an opening between them, being careful to ensure that no electric wiring is damaged.

- If no permanent access is intended, the opening must be closed with the same or comparable material that is flush with the existing ceiling or wall material. At least one coat of joint compound must be applied, smooth enough to allow the application of a second coat of compound, resulting in a smooth surface that will have minimal visibility when painted. If Program incentives or Program loans are applied to this measure, signed authorization from the homeowner must be obtained, and provided to Program staff upon request.

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3.4.4 Pull-down Staircase Enclosures

Pull-down Staircase enclosures must consist of an air tight enclosure that fits over the top of the stairs. This may be constructed on site or purchased as a kit.

- The enclosure must have a minimum R-value of 14.
- This enclosure must be large enough to allow the pull-down staircase to close without interference.
- The cover must be cut to lengths that fully encompass the framing surrounding the staircase. The side must be of sufficient height to accept the folding stairs without being disturbed.
- All seams of this enclosure must be sealed with construction glue, foil tape or other material that ensures a tight, durable, permanent seal.
- The existing surrounding framing of the attic deck must be complete and level enough to allow weather-stripping on the bottom of the enclosure or attached to the deck to engage all the way around the enclosure. There must be some type of fastening mechanism (eye hooks, Velcro, brackets, etc.) with sufficient tension to engage the weather-stripping on all four sides. This box must be constructed of materials light enough to be easily moved aside by the homeowner.
- If the attic space may be used for storage or any purpose other than repairs or maintenance, any foam board that is included on the enclosure must have a thermal barrier. **Photo:** Pull-down Stair Cover

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3.4.5 Attic Doors (including Kneewall access doors)

- Attic doors must be weather-stripped using Q-lon style weather-stripping or equivalent.

- The seam between the framing or finish and the weather-stripping must be sealed with a bead of caulk.
- The door must be swept with a non-spring-loaded door sweep.
- Insulation, such as rigid foam board insulation, with an R-value of 14 or greater, must be permanently fastened to the back side of the door with metal fastenings. If the foam board insulation is not rated for exposure, a thermal barrier must be installed.

○*OPTIONAL BEST PRACTICE*○ Attach with screws and 1-inch washers spaced approximately 8 inches apart.

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3.5 Wall Air Sealing

3.5.1 General

The following are general requirements for wall air sealing:

1. Sealant materials must be compatible with the wall assembly materials and must allow normal movement due to changes in temperature and humidity and air pressure variations.
2. Sealant materials must be in a matching color to the substrate or be paintable.
3. Sealants must be installed in a manner that continues the function of the drainage plane. Do not install sealants in a manner that will hold water in the wall assembly.
4. When insulation is used as part of the air barrier system, the installation must be an air tight material or meet the minimum density for the material. (See: "Dense Pack Insulation" in Section 3.14.3: Wall Insulation/Installation).
5. When membranes or films are used as air barrier system components, the entire perimeter of the material must be air sealed.
6. Windows, doors, and skylights must be integrated into the wall air barrier system. Seal the portion of the window, door, or skylight that is the air barrier component of the opening assembly to the air barrier component of the wall assembly, not the exterior siding or trim.
7. Mechanical penetrations must be sealed to the air barrier component of the wall assembly, not the exterior siding or trim.

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3.5.2 Material

Wall air sealing materials can be broken into three different materials: Backers, Sealants, and Dense Pack Insulation.

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Backers

Backers are materials used to bridge openings that cannot be closed by sealants. Following is the list of appropriate backers for use when air sealing walls.

1. Fireproof Backers:
    a. Metal Flashing
    b. Mineral Wool
2. Fire-resistant Backers:
    a. Wall Board
3. Moisture-permeable Backers:
    a. Wall Board (unpainted)
    b. Building Wrap
4. Other Backers:
    a. 6-mil Polyethylene
    b. Radiant Bubble Wrap
    c. Plywood/OSB
    d. Thermo-Ply
    e. Structural insulated sheathing
    f. Foam Backer Rod

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Sealants

Sealants are any material applied to the existing wall air barrier or the installed backer that forms an air tight seal. Following is a list of appropriate sealants for use when air sealing walls.

1. Fireproof Sealants:
    a. Non-combustible fire rated caulk meeting ASTM E 136
    b. Silicone high temp RTV on gas vents to 500 degrees Fahrenheit meeting ASTM C920
2. Non-Fireproof Sealants:
    a. 1-part urethane foam
    b. 1-part urethane fire block foam rated for sealing gaps in wood framing
    c. 2-part urethane foam kits
    d. Siliconized latex sealants meeting ASTM C834
    e. Silicone urethane and other elastomeric sealants meeting ASTM C920
    f. Spray applied latex based sealant

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Wall Insulation as an air sealing strategy

Fibrous insulations blown into an enclosed cavity at a specified density can greatly reduce air flow through the cavity and can be considered a form of air sealing. The two most widely used materials for this application are cellulose and glass wool (fiber glass). Foam insulation injected into walls may also serve as an air sealing strategy.

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Table 2. Compatible Wall Air Sealing Materials

(Note: This table lists effective combinations of backers, fasteners, and blockers. Other combinations are possible.)

Wall Locations	Backer	Fastener	Sealant	Notes
Wall Cavities	N/A	N/A	Cellulose	Dense pack cellulose to 3.5+ lbs/cuft.
Wall Cavities	N/A	N/A	Fiber Glass	Dense pack fiber glass to 2.2+ lbs/cuft.
Wall Cavities	N/A	N/A	Spray Foam	See Appendices B,C,D for installation specifications.
Heat Sources	Metal Flashing	4d box nails	High Temp Caulk	Use compatible caulk and fuel combination.
Moisture Resistant Interior	Drywall/Paint (two layers of latex)	1" drywall screws	see notes	if finished look use joint compound, if not use 1-part foam or spray applied sealant.
Moisture Resistant Interior	1.5" XPS	2" drywall screws	1-part foam, spray applied sealant or caulk	Not for finished areas.
Moisture Resistant Interior	6 mil polyethylene	1/2" staples	1-part foam, spray applied sealant or caulk	Not for finished areas. "Tu-Tuff" or similar thinner sheeting may be substituted.
Moisture Resistant Interior	foil faced wrap	1/2" staples	1-part foam, spray applied sealant or caulk	Not for finished areas.
Moisture Resistant Exterior	Metal Flashing	4d box nails	silicone caulk	
Moisture Resistant Exterior	Building Wrap	1/2" staples	Sheathing Tape	Sealant must be protected from exterior exposure immediately.
Moisture Resistant Exterior	Rigid Insulation	Screws	Sheathing Tape	Sealant must be protected from exterior exposure immediately.
Moisture Resistant Exterior	polyethylene	1/2" staples	Sheathing Tape	Sealant must be protected from exterior exposure immediately.
Other Openings	1/2" drywall	1" drywall screws	see notes	Finished look use joint compound, if not use 1-part foam. 1st choice-finish & fire rating.

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3.5.3 Installation of Wall Air Sealing

Air sealing the exterior walls can be broken into distinct parts. There is the combination of air sealing and insulation embodied in dense packing. There are heat sources that must be dealt with using fire proof materials and methods. There are seals made in areas that must resist moisture intrusion or allow vapor to escape when necessary. Finally, there are just penetrations through the walls that can be dealt with using "other" backers and non-specialized sealants.

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Heat Sources

Any penetrations through exterior walls that are considered a heat source (stove pipes, etc.) must be sealed using fireproof materials. If the gap between the existing wall air barrier and the venting system cannot be

bridged by sealants alone, the gap may be bridged with metal flashing and sealed with furnace cement meeting ASTM E136. An alternative method is to stuff the gap with mineral wool as a backer (and insulation) and seal the mineral wool with a fire-rated furnace cement meeting ASTM E136. If the gap is small enough to bridge with sealant alone it must be sealed with a fire-rated furnace cement meeting ASTM E136.

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Moisture Resistant Seals

Air sealing of exterior walls in some locations may require the use of a material that is a class I vapor retarder. Such locations could be bathrooms, kitchens or other areas of high moisture concentration. When sealing out moisture is a consideration and the opening in the air barrier is too large to close with sealant, the opening must be sealed with one of the following:

1. For interior sealing that is meant to retard vapor diffusion, XPS, wallboard painted with two layers of latex paint, and polyethylene are appropriate materials. Appropriate interior sealants are siliconized latex sealants meeting ASTM C384, silicone caulk meeting ASTM C920, 1-part urethane foam, and duct mastic.
2. For exterior sealing meant to stop bulk moisture intrusion metal flashing, building wrap, polyethylene, and XPS are appropriate materials. Once the backer is selected based on location, suitability, and appearance a compatible sealant must be matched to the location and finished appearance. Suitable exterior sealants include siliconized latex sealants meeting ASTM C384 or silicone caulk meeting ASTM C920.

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Other Wall Penetrations

When sealing interior wall penetrations that are not heat sources or areas of high moisture concentrations the choice of backer on large openings must be chosen based on two criteria: compatibility with the surrounding finish, and fire resistance. Where visible or exposed to the living space, wallboard is an optimum material of choice as a backer due to its classification as a thermal barrier and its ability to be finished easily. Sealants in visible areas must be limited to either low sheen clear caulks or paintable caulks where applicable. 1-part foam can be used if it will then be covered by insulation or some form of thermal barrier. (See Appendix B, Section B.5: Fire Protection)

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Seal Baseboards

If a room is not carpeted, the baseboard can be sealed by caulking the seam between the baseboard molding and the floor and the baseboard molding and the drywall.

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Window and Door Trim Sealed

The trim around windows and doors can be sealed using caulk at the seam between the window trim and the window frame and the seam between the window trim and the drywall.

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Plumbing Penetrations Sealed
The area where plumbing pipes pass through walls can be sealed with caulk if the gap is less than ¼ inch, 1-part foam if the gap is less than 1 inch, or 1-part foam or caulk, with a backer, if the gap is greater than 1 inch.

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HVAC Boot to Subfloor/Drywall Sealed
The area where a Heating, Ventilation and Air Conditioning (HVAC) supply or return boot penetrates the subfloor or drywall on a wall or ceiling can be sealed with duct mastic or caulk if the gap is less than ¼ inch. If the gap is greater than ¼ inch a backer must be used and then sealed with mastic.
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Interior Sheathing Voids Repaired
Holes and gaps in the interior sheathing must be repaired with a material similar to the surrounding materials. These repairs must be discussed with the homeowner prior to beginning the repair to get approval of material and sealing methods.

○*OPTIONAL BEST PRACTICE*○ Create a signed agreement with the homeowner that details the expectation of the condition of the area after completion of work by the contractor. Take photos upon completion of the work.
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3.6 Conditioned Basement Air Sealing

3.6.1 General

Basements are spaces that are primarily below grade. Basements are considered to be conditioned spaces in this section of the MIG. See: Crawlspace & Unconditioned Basement Air Sealing for sealing recommendations in those areas.

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3.6.2 Heat Sources

The following penetrations from the basement to the exterior or the basement to the conditioned space are considered heat sources: Flue pipes from heating or Domestic Hot Water (DHW) systems; flue pipes from solid fuel burning appliances.

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3.6.3 Locations and Use

The following basement locations should be considered for air sealing, depending on the location of the dwelling's pressure plane, and pollutants in the space. Care must be taken to ensure that a path remains to provide adequate combustion air for any HVAC equipment or woodstoves in the basement.

1. Mechanical Chases and Other Large Openings
2. Rim Joists & Sills
3. Water Pipes
4. Leaky Basement Windows
5. Dryer Vents
6. Plumbing Penetrations
7. Small openings between the basement and conditioned or exterior spaces

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3.6.4 Materials

Basement air sealing materials have different recommendations based on the potential for high relative humidity in the space. Organic materials that support mold growth or materials that lose their rigidity after absorbing moisture must not be used. In addition to these recommendations, rigid foam board insulation that is used in a finished basement must either be fire-resistant or have a thermal barrier. Foam installed in basements or crawlspaces that can be used for storage or accessed for any other purpose beyond repair and maintenance of HVAC equipment must have a thermal barrier. A thermal barrier is not required for the installation of foam on a sill plate/rim joist area, provided that the maximum thickness of the foam is 3 ¼ inches (See Appendix B, Section B.5: Fire Protection). State and local codes must be checked for additional fire barrier recommendations and requirements.

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Backers

Materials that *do not* need a thermal barrier:

1. Thermax rigid foam board
2. Metal Flashing
3. Mineral Wool
4. Polyethylene
5. Foil Bubble Wrap

Materials that *may* need a thermal barrier:

1. Rigid Foam Board (except Thermax)
2. Spray applied foam plastic insulation

Sealants

Materials that *do not* need a thermal barrier:

1. 1-part foam
2. Siliconized latex sealants meeting ASTM C834
3. Silicone urethane sealants meeting ASTM C920
4. Water based duct mastic meeting UL181A, UL181B-M
5. Spray applied latex based sealants

Materials that *do* need a thermal barrier:

1. 2-part foam used as a sealant in a finished basement space, or a basement that can be used for storage, must have a thermal barrier (See Appendix B, Section B.5: Fire Protection).

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3.6.5 Installation

The following installation instructions for basement air sealing locations details the most common appropriate materials and practices.

Heat Sources

If the gap around heat sources is too great for sealant alone, the gap must be closed with non-combustible material, such as metal flashing mechanically fastened to surrounding framing. If the appliance burns solid fuel or oil, the edges and gaps must be sealed using fire-rated caulk meeting ASTM E136. If the appliance burns natural gas or propane, the edges and seams must be sealed with high temperature silicone RTV meeting ASTM C920. **Photo:** Chimney in Basement Sealed with Sheet Metal and High-Temp Caulk

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Mechanical Chases and Other Large Openings

Large openings between the basement and the conditioned space or the exterior must be backed with a fire-resistant material that does not support mold growth. For this reason, materials such as wall board or other paper-based products are not suitable. Further, if the opening is between the basement and the conditioned space, then the material must also be a class 1 vapor retarder. Appropriate materials for closing large gaps include Thermax, mineral wool, metal flashing or polyethylene. Materials such as XPS or other foil faced foam boards are appropriate if they will be either covered with insulation after installation or treated with a thermal barrier. The rigid material must be cut to fit over the opening with at least an inch of overlap where possible. The backer material must be fastened into place with mechanical fasteners (screws, staples etc.). Once the backer is secured firmly into place, the edges must be sealed using caulk or 1-part foam.

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Rim Joists & Sills

In situations where the basement or crawlspace has been defined as being within the building envelope, and rim joists are selected as an air sealing measure, rim joists must be sealed in such a manner as to eliminate air leakage from outside of the building envelope.

○*OPTIONAL BEST PRACTICE*○ Insulate the rim joist area as well as air sealing it. Acceptable methods for sealing rim joists include the following:

1. Seal with 2-part foam. In this application the foam can be extended from the subfloor to the junction of the foundation and the sill plate. In areas where termite infestations may exist, code may require an inspection break between the foam and the bottom of the sill. If there is a termite inspection break, the seam between the foundation and the bottom of the sill must be sealed using silicone caulk. This approach provides an insulation value.
2. Seal by cutting blocks of rigid foam board to fit in the rim joist area and sealing the edges with caulk or 1-part foam. In this application the sill-to-foundation seam and the seam between the two sill plates must also be caulked. This approach provides an insulation value. **Photo:** Rim Joist Sealed to Sill (and Insulated) with Foam Board and 1-Part Foam.
3. Seal all gaps in the rim joist area with caulk or foam. This application does not by itself provide an insulation value. If insulation is subsequently added to the rim joist area, care must be taken to ensure that moisture is prevented from migrating through the insulation to the rim joist, where it may reach the dew point and cause damage.

Note: A thermal or ignition barrier is not required for the installation of foam on a sill plate/rim joist area, provided that the maximum thickness of the foam is 3 ¼ inches, and the foam does not extend down the vertical wall below the sill plate.

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Water Pipes

Air infiltration into basements is the main cause of pipes freezing. It must be noted that in some dwellings water pipes as far as five feet from the rim joist area can be frozen when temperatures are low enough and the air is driven into the space by high winds. The basement must be thoroughly inspected for water pipes that could be frozen by wind-driven air infiltration. In these spaces, where pipes are at risk, the perimeter of the basement can be sealed in such a manner as to reduce the risk of freezing pipes. Methods for sealing the perimeter can be found in "Rim Joists & Sills", above.

Basement Windows

Gaps in the frame and joints between the frame and the surrounding air barrier that are smaller than ¼ inch must be sealed with caulk. Larger gaps must be backed by backer rod and the seams caulked.

Dryer Vents

In situations where a pre-existing dryer vent is found or suspected to be combustible, the contractor must ensure that foam or other combustible insulation is not installed in direct contact with the combustible section of the dryer vent. This may be done by either:

1. Replacing the dryer vent with a non-combustible, code-compliant dryer vent, or
2. Treating the dryer vent as a heat source and protecting the dryer vent from contact with combustible insulation. If the gap between the dryer vent and the building surface is less than ¼ inch it can be sealed with high temperature silicone for gas vents meeting ASTM C920. If there is a gap too wide to be bridged by sealant alone, the gap must be sealed using either metal flashing or mineral wool. The edges and seams must then be sealed with high temperature silicone for gas vents meeting ASTM C920.

Plumbing Penetrations

If the gap between the pipe wall and the subfloor is less than ¼ inch the gap may be sealed using caulk. If the gap is between ¼ inch and 1 inch it can be sealed using 1-part foam. If the gap is greater than 1 inch it must be bridged using a moisture-resistant, fire-resistant material. Foam board, metal flashing, OSB, or plywood are appropriate materials for this application. (Foam board must either be rated for exposure (i.e. Thermax) or be covered with a thermal barrier.) Once the gap is closed, the edges and seams must be sealed with either caulk or 1-part foam.

Small Openings Between the Basement and Conditioned or Exterior Spaces

Small openings must be sealed using a fire-rated sealant. This can be a 1-part foam product or a fire-rated caulk.

3.7 Crawlspace & Unconditioned Basement Air Sealing

3.7.1 General

Crawl spaces use the same guidelines as Basements above, with the following additional considerations:

1. Code compliance: When working in crawls spaces all applicable national, state, and local codes regarding vapor retarders, ventilation, and thermal barriers (based on use type) in crawl spaces must be followed.
2. Access considerations: When specifying energy upgrades in a crawl space auditors must keep access restrictions and ease of installation in mind when specifying methods and materials.
3. Use the appropriate safety measures when crawl spaces qualify as confined spaces.

Table 3. Compatible Crawlspace & Unconditioned Basement Air Sealing Materials

(Note: This table lists effective combinations of backers, fasteners, and blockers.. Other combinations are possible)

Crawlspace & Basement Locations	Backer	Fastener	Sealant	Notes
Heat Sources	Metal Flashing	4d Box nails	High Temp Sealant	Use compatible sealant and fuel combination.

Heat Sources	Mineral Wool	Friction Fit	High Temp Sealant	If gaps are 1/4" or less stuff and seal.
Mechanical Chases	1" Thermax	2" drywall screws	1 or 2-part foam, spray applied sealant or caulk	Use Thermax, not any other type of rigid foil faced board. Exposed foam plastic insulation must have a fire barrier.
Mechanical Chases	Metal Flashing	4d box nails	1 or 2-part foam, spray applied sealant or caulk	Exposed foam plastic insulation must have a fire barrier.
Mechanical Chases	Polyethylene	1/2" staples	1 or 2-part foam, spray applied sealant or caulk	Exposed foam plastic insulation must have a fire barrier.
Mechanical Chases	1 or 1.5" XPS	2" drywall screws	1 or 2-part foam or caulk	Must have a thermal barrier if not covered by insulation.
Mechanical Chases	Rigid Insulations	2" drywall screws	1 or 2-part foam, spray applied sealant or caulk	Any rigid board insulation other than Thermax must have a thermal barrier if exposed.
Mechanical Chases	1" FSK	2" drywall screws	1 or 2-part foam, spray applied sealant or caulk	Exposed foam plastic insulation must have a fire barrier.
Mechanical Chases	Foil Face Wrap	1/2" staples	1 or 2-part foam, spray applied sealant or caulk	Exposed foam plastic insulation must have a fire barrier.
Large Openings				See Mech Chases.
Rim and Band	N/A	N/A	Spray Foam, spray applied sealant	In unconditioned basements or crawl spaces 2-part spray foam does not require a fire barrier.
Rim and Band	Rigid Insulations	Friction Fit	1-part foam, spray applied sealant or caulk	Rigid insulation must be rated for exposure or treated with a fire barrier
Rim and Band	N/A	N/A	1-part foam, spray applied sealant or caulk	The framing junctions can be caulked or foamed and batt insulation added.
Pipe Penetration	Fiber Glass	Friction Fit	1-part foam or spray applied sealant	for gaps greater than 1"
Pipe Penetration	Foil Face Wrap	1/2" staples	1-part foam, spray applied sealant or caulk	for gaps greater than 1"

(Table 3 Cont.)

Crawlspace & Basement Locations	Backer	Fastener	Sealant	Notes
Pipe Penetration	N/A	N/A	1-part foam, spray applied sealant	for gaps between 1/4" and 1".
Pipe Penetration	N/A	N/A	caulk	for gaps 1/4" or less

Windows/Doors	Backer Rod	Friction Fit	caulk	for gaps more than 1/4"
Windows/Doors	N/A	N/A	caulk	for gaps less than 1/4"
Windows/Doors	N/A	N/A	1-part foam or spray applied sealant	gaps between 1/4" and 1". Care must be taken during installation to avoid over filling
Dryer Vent				See Heat Sources

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3.8 Kneewall Attic Air Sealing

3.8.1 General

Roof vs. Wall & Floor

In determining options for air sealing in a knee wall area, it is important to first make a determination as to whether the knee wall attic is inside or outside of the pressure boundary of the dwelling.

- Inside (conditioned space): Air sealing follows the line of the roof rafters, which will bring the knee wall attic space inside the conditioned area.
- Outside (unconditioned space): Air sealing follows the knee wall itself from the sloped ceiling to the attic floor and then across the knee wall attic floor to the exterior wall top plate.

Vapor Permeable Air Barrier on Knee-walls

If the knee wall attic is air sealed as unconditioned attic space, this space must be ventilated according to state and local codes. Ventilating this space will make the knee wall insulation susceptible to wind washing. Therefore, a vapor permeable air barrier must be added to protect the installed insulation from wind washing. Dense pack insulation installed with webbing is an acceptable method of reducing the impact of wind washing.

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3.8.2 Locations and Use

Knee wall or other side-attic areas, including rim joist areas under single-story shed roof, gambrel, garage, or other floor framing very often open into vented or unconditioned attic areas. If some areas are inaccessible, strategic dense-pack insulation must be considered to slow or stop leakage.

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3.8.3 Material

If the attic has been sealed along the knee wall, and the attic floor and has been pushed outside of the conditioned space, refer to Section 3.2.4: Attic Air Sealing/ Material.

Air Barrier Aligns with Roof Rafters

This plane must be sealed with an air impermeable barrier. If the rafter bays are insulated with glass fiber or cellulose insulation, the following air barriers are appropriate:

1. Wallboard
2. Foam board (Must either be rated for exposure (i.e. Thermax) or be covered with a thermal barrier).
3. Plywood
4. OSB
5. Structural insulated sheathing
6. Polyethylene
7. Building wrap

If the rafter bays are insulated with spray foam the air barrier must be a thermal barrier also. Appropriate materials in this situation would be:

1. Wallboard
2. Foam board (Must either be rated for exposure (i.e. Thermax) or be covered with a thermal barrier.

Air Barrier Aligns with Knee Wall and Attic Floor

If the air barrier aligns with the attic knee wall, the interior face of the knee wall will be the air barrier. The material used to seal the knee wall transition area will depend on access.

If the knee wall attic floor is not decked, the following materials are appropriate for sealing the opening between the floor joist cavities:

1. Rigid foam board
2. Wallboard
3. Framing lumber
4. Structural insulated sheathing
5. Foil-faced bubble wrap

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3.8.4 Installation

Air Barrier Aligns with Roof Rafters

If the air barrier is going to align with the roof rafters and bring the knee wall attic inside the conditioned space, an air barrier material must be run from the top plate of the knee wall to the top plate of the exterior wall. This air barrier can be a rigid material like Thermax, XPS with a thermal barrier, or wall board, or it could be polyethylene or building wrap. The air barrier must be mechanically fastened with screws for rigid materials or staples for flexible barriers. All seams and edges must be sealed. Acceptable applications include 1-part foam on rigid materials, 3M 8086 or equivalent tape on polyethylene or building wrap tape on building wrap. **Photo:** Knee wall Attic Air Sealed Along Rafter Line (attic space within thermal/pressure boundary).

Air Barrier Aligns with Knee Wall & Attic Floor

If the air barrier aligns with the attic knee wall, the interior face of the knee wall will be the air barrier. The seam where the shoe plate of the knee wall sits on the subfloor must be sealed with caulk. If the knee wall attic floor is not decked, a solid substance that blocks the opening, such as rigid foam board, must be used to seal beneath the knee wall area.

If the attic knee wall floor is sheathed this area must be air sealed using dense pack insulation, or by removal of the sheathing and treatment of the area below the kneewall as noted above

○*OPTIONAL BEST PRACTICE*○ Foam board can be cut into sections and rigid fit under the interior edge of the shoe plate so that it aligns with the interior face of the knee wall. The seams between the foam board and the floor joists, ceiling, and subfloor must be sealed with 1-part foam or caulk. The foam board must be covered with fire protection if the kneewall attic will be used for storage.

○*OPTIONAL BEST PRACTICE*○ In some cases it may be desirable to stop blown-in material from penetrating too far down a bay above the living space when dense packing. In this case a burlap "feedbag" may be used as an inflatable insert into the floor joist bay. This can be done by stuffing the bag through the drill hole while holding onto the opening of the feed bag. The fill tube can then be inserted into the feed bag and the feedbag "inflated" with blown in material until it fills the bay and forms a plug under the knee wall. The remainder of the bay can then be dense packed without fear of insulation entering areas where it is not intended. The top plate of the exterior wall and any penetrations through the attic knee wall floor must be treated as specified in Section 3.2.5: Attic Air Sealing Installation.

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Photo: Knee wall Attic Diagram for Air Sealing Along Wall/Floor Framing (attic space outside thermal/pressure boundary).

Table 4. Compatible Kneewall Attic Air Sealing Materials
(Note: This table lists effective combinations of backers, fasteners, and blockers. Other combinations are possible.)

Kneewall Attic Locations	Backer	Fastener	Sealant	Notes
Conditioned Kneewall	1/2" drywall	1" drywall screws	1-part foam, spray applied sealant or caulk	Qualifies as a thermal barrier if used over foam insulation.
Conditioned Kneewall	1" Thermax	2" drywall screws	1-part foam, spray applied sealant or caulk	Qualifies as a thermal barrier if used over foam insulation.
Conditioned Kneewall	1/2" Plywood/OSB	1" drywall screws	1-part foam, spray applied sealant or caulk	Qualifies as a thermal barrier if used over foam insulation.
Conditioned Kneewall	Structural Sheathing	1" drywall screws	1-part foam, spray applied sealant or caulk	Qualifies as a thermal barrier if used over foam insulation.
Conditioned Kneewall	Polyethylene	1/2" staples	Sheathing Tape	Does not qualify as an ignition barrier
Conditioned Kneewall	Building Wrap	1/2" staples	Sheathing Tape	Does not qualify as an ignition barrier
Unconditioned Kneewall				The interior face of kneewall will be the air barrier. See "attic knee wall transition" for materials to be used in that area. Seal holes in kneewall to conditioned space using Wall Air Sealing table 2.2.7.4.

3.9 Floors Over Unconditioned Space or Ambient Conditions Air Sealing

3.9.1 Overhang Air Sealing

General
Overhangs are a type of floor over unconditioned space, usually outside. Because of its exposure to the exterior it is necessary that the insulation be protected from the weather as well as from air movement.

Access Considerations
Access to the overhang will determine the method used to seal the floor joist bay transition area. If access cannot be gained to seal by other means, dense pack may be used to slow air flow through this area.

Confined spaces
Use special safety measures when crawl spaces qualify as confined spaces.

Material
The following materials are appropriate for use in the following overhang configurations:

1. Backers:

- Foam board (Must either be rated for exposure (i.e. Thermax) or be covered with a thermal barrier.)
- Rolled batt
- Foil-faced bubble wrap
- Structural Insulated sheathing
- Framing lumber
- Wallboard

2. Sealants:
    - 1-part foam
    - 2-part foam
    - Silicone caulk
    - Duct mastic
    - Spray applied latex based sealants (must not be exposed to sun or weather) can be used wherever 1-part or 2-part foam are used as sealants.

Installation

Methods and materials for sealing overhangs will depend on existing conditions and access. For all overhangs in cold climates the floor joist bays must be inspected to ensure that water pipes running through these areas will end up inside the conditioned area. Generally, this means that 75% of the insulation to be installed will be on the exterior side of the water pipes. If floor bays have ducts installed in them, then the ducts must be made air tight before pushing them outside with air sealing, especially before dense packing the joist bay. The following configurations must be sealed as specified here:

Overhang Accessible from Interior Space**:** Before sealing the transition area, the floor bay must be filled with insulation. The area where the floor joist crosses over the sill plate or exterior wall top plate must be sealed with an appropriate backer and the seams on all four sides of the backer sealed with 1-part foam or siliconized caulk. On the exterior, the seam between the sheathing on the bottom surface of the floor joist and the surrounding siding/sheathing must be sealed using a silicone caulk rated for exterior use.

Exterior Overhang with Sheathing**:** Removed **for** Access **or** No Sheathing**:** Seal the transition area using an appropriate backer. Seal the seams around the backer using 1-part foam, silicone caulk or equivalent.

○*OPTIONAL BEST PRACTICE*○ Fill the overhang floor bays with insulation, if there is enough clearance at the bottom of the floor joist and the bottom of the siding/sheathing consider adding a layer of rigid foam board to break the thermal bridge before replacing or installing the overhang sheathing. Seal the overhang sheathing to the surrounding siding or sheathing using silicone caulk.

No Access to the Overhang Floor Bays

This area can be dense packed to slow air flow. A thorough inspection of the floor joist bays must be made to ensure that there are no water pipes, ducts or recessed fixtures in the area to be dense packed. To stop the

unwanted flow of blown insulation down the floor bays and into the conditioned space, the burlap "feedbag" method can be used. See Section 3.8.4/Air Barrier Aligns with Knee Wall & Attic Floor

The seam between the overhang sheathing and the exterior sheathing or siding must be sealed using silicone caulk.

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3.9.2 Air Sealing Garage walls adjacent to conditioned spaces; frame floors over garage

Material

The following materials are appropriate for use in frame floor configurations when sealing the ends of bays exposed to outside air movement or large openings between the garage and conditioned space:

1. Backers:
   a. Foam board (Must either be rated for exposure (i.e. Thermax) or be covered with a thermal barrier)
   b. Rolled batt
   c. Foil-faced bubble wrap
   d. Structural Insulated sheathing
   e. Framing lumber
   f. Wallboard
2. Sealants:
   a. 1-part foam
   b. 2-part foam (with thermal barrier, unless at rim and band joist area)
   c. Silicone caulk
   d. Duct mastic
   e. Spray applied latex based sealants (must not be exposed to sun or weather) can be used wherever 1-part or 2-part foam are used as sealants.

Installation

Methods and materials for sealing areas adjacent to garages will depend on existing conditions and access.

1. **For all frame floors** the floor joist bays must be inspected to ensure that water pipes running through these areas will end up inside the conditioned area. Generally, this means that 75% of the insulation to be installed will be on the exterior side of the water pipes.
2. **Ducts running along and below a garage ceiling**, or along a garage wall must be made air tight.

   ○*OPTIONAL BEST PRACTICE*○ Insulate the ducts after air sealing.

3. If **floor bays above a garage ceiling have ducts running through them**, the ducts must be made air tight whenever practical. Note: cavities with flex duct should NOT be dense-packed, as the insulation is likely to compress and compromise the effectiveness of the duct. Alternative methods, such as inserting batt insulation around the flex duct, should be considered.

4. **If a heat source such as a flue pipe from a heating system located in area to be dense packed**: This heat source located in an enclosed space must have the bay that it is located in blocked with an appropriate backer with a clearance of at least three inches between the dam and the heat source. The backer must be made air tight with the surrounding materials to remove the chance that the insulation dust, under pressure could be forced within three inches of the heat source. If the heat source is close to one side of the bay and blown material in an adjacent bay is within three inches of the heat source, the adjacent bay must have a non-combustible insulation type (i.e. mineral wool) installed anywhere in that bay that is within three inches of the heat source.
5. **If a flue pipe from a heating system traverses the pressure boundary**, and the gap around the heat source is too great for sealant alone, the gap must be closed with metal flashing mechanically fastened to surrounding framing. If the appliance burns solid fuel or oil, the edges and gaps must be sealed using fire-rated caulk meeting ASTM E136. If the appliance burns natural gas or propane, the edges and seams must be sealed with high temperature silicone RTV meeting ASTM C920.
6. **Large openings between the garage and the conditioned space** must be backed with a fire-resistant material. Appropriate materials for closing large gaps would be Thermax, plywood or Oriented Strand Board (OSB), drywall or structural insulated sheathing. Materials such as XPS or other foil faced foam boards are appropriate if they will be either covered with insulation after installation or treated with a thermal barrier. The rigid material must be cut to fit over the opening with at least an inch of overlap where possible. The backer material must be fastened into place with mechanical fasteners (screws, staples etc.). Once the backer is secured firmly into place, the edges must be sealed using caulk or 1-part foam.
7. **Plumbing Penetrations:** If the gap between the pipe wall and the subfloor is less than ¼ inch the gap may be sealed using caulk. If the gap is between ¼ inch and 1 inch it can be sealed using 1-part foam. If the gap is greater than 1 inch it must be bridged using an appropriate backer. Foam board, metal flashing, OSB, or plywood or other appropriate materials for this application. (Foam board must either be rated for exposure (i.e. Thermax) or be covered with a thermal barrier.) Once the gap is closed, the edges and seams must be sealed with either caulk or 1-part foam.
8. **Small openings between the garage and conditioned space** must be sealed with a fire-rated sealant.
9. **Rim Joists and Sills** must be sealed as per Section 3.6.5 – Rim Joists and Sills, above

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3.10 Window Weather-stripping

3.10.1 General

Technicians are not required to weather-strip windows and doors as part of air sealing, but they may, based on customer comfort issues or where large leaks are found. Weather-stripping is recommended for doors between living space and garage.

In addition to weather-stripping of doors and windows it may sometimes be necessary to install window sash locks, eye hooks, barrel bolts, etc. to make the installed weather stripping engage effectively.

○*OPTIONAL BEST PRACTICE*○ Educate the customer on the value of ensuring that all storm windows are adjusted seasonally, and that employing window locks may (depending on design) improve air sealing effectiveness.

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3.10.2 Locations and Use

Window weather-stripping must only be installed where it does not have the potential to interfere with the smooth operation of the window and where normal operation of the window will not cause the weather-stripping to be torn out.

Window Weight Treatment

There are two separate window weight treatment techniques. Which technique is chosen is based on what treatment the window is undergoing. If the window is being weather-stripped only, then pulley seals can be installed to slow air leakage through the pulley openings. If the window is being replaced, the window weight cavities must be accessed through the lower sash channel access panel. The ropes or chains that the weights hang on must be cut and removed along with the weights themselves. The pulleys must be removed from the upper sash channels and the opening covered with duct tape. The window weight cavities must now be insulated by dense packed using a fill tube and entering from the lower sash access panel, installing foam, or by other comparable means. Re-install the access panels in the lower sash channels.

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3.10.3 Material

V-Seal type or equivalent vinyl weather-stripping with a deflection range of at least ¼ inch must be used. Materials must remain pliant in cold weather.

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3.10.4 Installation

All weather-stripping must be permanently installed with fasteners (tacks, staples, brads, etc.) and must make positive contact between surfaces to prevent air leakage. The weather-stripping must form an airtight seal when the window is closed and latched. A small bead of caulk must be applied if necessary to prevent air leakage behind the weather-stripping.

Weather-stripping must be installed on any sash, meeting rail or sill surface that leaks air as long as placement does not interfere with the smooth operation of the window.

1. "Three-sided" LOWER sash channels, & sill; or, if window has spring loaded channels: top, bottom and meeting rail.
2. "Four-sided:" LOWER sash channels, meeting rail & sill.

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3.11 Door Weather-stripping

3.11.1 Location and Use

Air sealing priority must be given to weather-stripping doors to unconditioned attic spaces and attached garages. Additionally, weather-stripping of doors between conditioned and unconditioned (or semi-conditioned) space may be treated.

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3.11.2 Materials for Door Weather-stripping and Sweeps

Materials must:

- Be durable enough to withstand years of use
- Be reinforced with metal or wood
- Be capable of sealing the gaps around the door, and with enough flexibility to adjust for seasonal expansion and contraction of door and framing materials.
- Have a deflection range of at least ¼ inch and remain pliant in cold weather.

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3.11.3 Installation

1. All weather-stripping must be permanently installed with fasteners (tacks, staples, brads, etc.) and must make positive contact between surfaces to prevent air leakage.
2. The weather-stripping must form an airtight seal when the door is closed. A small bead of caulk must be applied as necessary to prevent air leakage behind the weather-stripping.
3. The weather-stripping must not interfere with the smooth operation of the door.
4. One of two types of sweeps must be used on exterior doors. Which sweep must be used depends on frequency of door usage. Doors that have high usage must be swept with a spring-loaded sweep that will only engage and contact the floor when the door is closed. Low use doors can have either the spring-loaded sweep or a non-retracting sweep that always makes contact with the floor.
5. After the weather-stripping is installed the door must be tested for ease of use. It must not be necessary to slam or exert excessive force on the door for the lock set to engage.
6. In addition to weather-stripping of doors and windows it may sometimes be necessary to install window sash locks, eye hooks, barrel bolts, etc. to make the installed weather stripping engage effectively.

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3.12 All Insulation

3.12.1 General

The following applies to all insulation installed through the program:

1. Install attic, basement wall/ceiling, garage, and wall insulation upgrades according to program eligibility criteria, based on customer work order.
2. Cost-effectiveness calculations must be based on effective R-values of pre-existing insulation.
3. Insulation materials and levels installed must match what is specified on the work scope as well as any contracts provided to the customer.
4. Insulation levels on retrofit projects must conform to code requirements for new construction to the extent that allowable space, program budgets, and customer agreements allow.
5. Particular attention must be paid to exposed foam insulation. See Appendix B-5 for fireproofing requirements.
6. Upon completion of the work the home and it grounds will be returned to their original condition. All construction debris and materials will be removed; windows and doors returned to original configuration, storage placed back in original areas etc.
7. Combustion safety screening and/or testing is required before and after air sealing, and with all projects in which enclosed cavities that are insulated represent 25% or more of the shell area.
8. ○*OPTIONAL BEST PRACTICE*○ Leave documentation of installed insulation levels, material or bag counts, and insulated area at the electrical panel or when it is not possible to leave it at the electrical panel, with the customer.
9. ○*OPTIONAL BEST PRACTICE*○ Install strategic dense blown insulation in enclosed cavities, to control air leakage and increase insulation levels in attic, basement, and living space cavities.
10. ○*OPTIONAL BEST PRACTICE*○ Ensure that all ductwork in an unconditioned attic is insulated to the same level as the remainder of the attic/conditioned space boundary.

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3.12.2 Measurement of Areas

1. There are three locations from which components of a building can be measured: outside, in the living space, or in a buffer zone such as an attic or crawlspace. Measuring from the outside is always preferred. When the building floor plan and the area to be insulated, such as the attic floor plan, are the same, exterior dimensions may be used.
2. Interior measurements from the living space (preferable) or from inside the attic/kneewall space (second option if living space measurements are inconvenient or not accessible) may be used for attic areas that do not match the building floor plan, such as knee-walls, slopes, cathedral ceilings, kneewall floors and attic flat areas that are smaller than the building floor plan. When interior measurements are used, then an additional foot should be added to each dimension to compensate for exterior wall thickness.
3. When taking measurements, round up to the next half-foot. For example, if the dimension is between 24 feet and 1 inch or 24 feet and 5 inches, the contractor may round up to 24 feet 6 inches (24.5 feet).
4. If software requires measurement in *net* square footage, the net wall area determined by:
    a. The exterior perimeter multiplied by the interior wall height(s). One (1) extra foot of height must be added for band joist perimeter of floor system between two conditioned floors if the

home is balloon framed, or if the home is platform construction, and if the insulation project will include the band joist area.

b. Basic windows and doors must then be deducted from this area. Large sections which cannot be insulated, such as brick walls or fireplaces must be deducted and noted on insulation work orders.

If *gross* square footage is required, this can be determined by 4.a., above.

5. If exterior dimensions cannot be taken for the building shell and interior dimensions are used, an additional two linear feet must be added to the perimeter before it is multiplied by the interior wall height.

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3.12.3 Physical Properties

Insulation materials must satisfy the following national standards:

1. Batts - ASTM C 665
2. Loose fill (blown) cellulose - ASTM C 739
3. Loose fill (blown) fiber glass - ASTM C 764
4. Loose fill (blown) mineral fiber – ASTM C 764
5. Preformed polystyrene boards - ASTM C 578
6. Preformed polyurethane/polyisocyanurate boards - ASTM C 591

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3.13 Attic & Roof Slope Insulation: General

3.13.1 Sealing Bypasses Prior to Insulating

Before insulating the attic, the contractor must ensure that all identifiable bypasses through the attic floor, or at attic transitions (i.e. changes in ceiling height) have been sealed. Areas of concern include:

- Chimney edges
- Soil stacks
- Recessed lights and electrical boxes
- Openings into perimeter walls
- Tongue and groove gaps in ceilings
- Dropped ceilings
- Hatches, doors or recessed drawers leading into unconditioned kneewall attics
- Bypasses between conditioned area floors and unconditioned kneewall attics
- Bypasses between conditioned knee wall attics and unconditioned slopes.
- Open-top window weight boxes in gable or eave-side walls that terminate at or in the closed-cavity slopes

○*OPTIONAL BEST PRACTICE*○ Use visual inspection and infrared in combination with the blower door to determine leakage paths.

○*OPTIONAL BEST PRACTICE*○ Use Zonal Pressure Diagnostics to ensure that all identifiable leakage paths have been addressed.

Photo: Diagram of General Air Leakage Paths.

3.13.2 Attic Stairwell walls and stairs

If an attic area is determined to be outside of the thermal envelope, and attic insulation is to be proposed, the contractor must consider insulation of the stairwell wall between the conditioned space and the stairwell, including any wall area above and around the access door. Additionally, the cavity beneath the stairs must be considered if a conditioned space exists directly below.

○*OPTIONAL BEST PRACTICE*○ Insulate these areas. This eliminates a major thermal bypass.

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3.13.3 Material

Loose blown, batt and rigid foam board insulations in attic spaces must meet the appropriate guidelines listed in Section 3.12.3: Physical Properties. Where the brand name Thermax is specified for rigid foam board, an equivalent foam board that is rated for exposure to conditioned areas without a thermal barrier may be used. Otherwise the foam board must have a thermal or ignition barrier as specified in Appendix B-5. Area spray foams must conform to Appendix B.

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3.13.4 Installation

When insulating at the perimeter of the attic, the contractor must ensure that:

1. Air flow from soffit vent openings into the attic cavity is not impeded to any degree by the insulation.
2. The insulation is protected from the effects of wind-washing
3. The insulation at the edges of the conditioned space, including the top plate, is supported in such a manner as to maintain the desired depth and R-value for the life of the insulation and to prevent loose-fill insulation from falling into the soffit.

Baffles

1. Baffles must be installed at each soffit vent unless appropriate structural barriers exist to ensure appropriate air flow and protection from wind-washing.
2. Baffles must be permanent, mechanically fastened at sides and at bottom, and ensure the free movement of air through soffit vents into the attic.
3. Baffles must be rigid enough to restrain loose-fill insulation from congesting the soffit vents at the eaves and obstructing ventilation. These baffles must extend above the final level of resulting insulation by at least four inches, so to be visible upon inspection.
4. Pre-formed baffles are available, but baffles can also be made using rigid foam board, structural insulated sheathing, framing lumber, plywood, or OSB.

5. ○*OPTIONAL BEST PRACTICE*○ Wind washing at the eaves can be stopped by installing a rigid, air impermeable baffle that extends from the outer edge of the exterior wall top plate to within two inches of the roof sheathing and is attached to the joists on either side of the cavity that is being protected.

   Photo: Insulation Wind Wash Baffle.

Attic Hatch Damming

Permanent dams must be installed around all attic hatch covers in the following manner:

1. This damming may be accomplished by using unfaced fiberglass batts of greater thickness than the installed insulation placed around the perimeter of the hatch, by using a framing lumber fixed in place around the hatch, or by using rigid foam boards of sufficient thickness as to provide permanent support to the surrounding insulation.
2. The damming must not interfere with the opening of the hatch cover.
3. When the hatch is opened, the damming must prevent loose-fill insulation from falling into the living area.
4. The damming must allow for easy access into attic for future inspection.
5. Insulation levels immediately surrounding the hatch must equal or exceed the R-value of the rest of the attic space.

Electric Radiant Strip Heating Elements

Blown-in or faced insulation must not be installed in contact with electric radiant strip heating elements. A minimum 3-inch thick un-faced mineral wool fiber batt must be installed first.

Bathroom Fans

All bathroom fans must be dammed, using unfaced batts or other permanent enclosures, and vented through the roof with insulated ductwork that terminates at roof or eave vent with a spring-loaded damper. Bath fan venting must not terminate anywhere inside the building shell. (i.e. duct must not be laid into soffit area, or hung near gable vent, with termination within attic.) If roof penetrations are prohibited, an alternative route must be devised. Care must be taken to ensure that duct routes do not bow in such a manner as to create the opportunity for pockets of water to collect within the duct.

Flooring

If homeowner so desires, when attic flooring is removed, it must be reinstalled and screwed securely back into place. The contractor must remove and replace any flooring damaged during installation with a like product that is fastened securely.

Open Blow Insulation

Loose fill blown in insulation must be installed according to manufacturer's specifications and recommended densities. All open blow attics must be installed to a level condition. Photo: Loose Fill Attic Insulation Evenly Installed. Insulation in open blown areas must have minimum material count per manufacturer's instructions, as follows: thickness as specified in work order is average settled thickness. Insulation depth markers with numbers at least one-inch high must be installed at least one for every 300

sq. ft. throughout the attic space. The markers must be fastened to the bottom of the attic joists or trusses and marked with the initial installed thickness. All depth markers must face the attic hatch. A cellulose table and example is provided below.

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Table 5. Example of a Cellulose Table

Example: Work order specifies 12 inch cellulose open blow. R-value from chart is R-42. Attic area is 1000 sq. ft. Look at chart on product bag, if chart says that installed R-42 = 60 bags for1,000 sq. ft, you need to install 60 bags. Minimum thickness specified on work order also applies.

Inches on work order	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Installed R-value	11	14	18	21	25	28	32	35	39	42	46	49	53	56

1. Use depth charts provided by the manufacturer as a guide to specifying the number of inches to be installed. The installer will need the depth estimate to monitor insulation installation amounts. The depth and desired R-value must be checked periodically to ensure that the projected number of bags for the desired density are being installed.F
2. Damming: Blown in insulation must be contained using damming at the following areas and listed clearances: chimneys & double wall flues (3 inches), single wall flues (6 inches), Recessed lights or bath fans with heat lamps or lights (3 inches). Attic hatches or pull-down stairs, whole house fans, mechanical access walkways, air conditioner drip pans, and storage areas (no clearance required). **Photo:** Attic Insulation Dammed Away from Chimney.
3. In situations where the dwelling has a whole house fan of the type that sits horizontally on the attic floor and draws air upwards through a louvered area below:
    a. If left untreated, the louvered area, even when closed, may allow air leakage into the attic. The contractor may consider creating a cover if practicable, to reduce this leakage.
    b. The contractor must always discuss any modifications to the whole house fan with the customer prior to initiating changes.
4. Loose Blown Insulation on Slopes: Loose blown insulation must not be blown onto unenclosed attic slopes with a pitch of more than 4:12. If loose blown insulation is blown on a slope that terminates at the end of a tray ceiling or other vertical wall open to the attic flat, the end of the sloped surface must be dammed with unfaced fiber glass of sufficient depth to maintain the specified R-value and the blown insulation must be installed up to the dam.

Dense Pack Insulation

1. Blown in insulation in restricted or dense packed applications must be 3.5 lbs./cu. ft. for cellulose and 2.2 lbs./cu. ft. for blown fiber that is manufactured for dense pack installation.
2. All openings into the cavity must be sealed in such a manner as to prohibit the insulation from coming out of the cavity.
3. If dense-packed insulation is used to insulate and air seal the joist cavity beneath an attic knee-wall, the cavity must be sufficiently packed and sealed to make it extremely difficult detect any air movement with infrared (IR) scan and blower door.

4. ○*OPTIONAL BEST PRACTICE*○ Ensure that an area has been properly dense-packed by one of the following verification tests:
   a. Core sampling in 4 locations indicates the installed insulation has a density of at least 3.5 lbs./cu ft for cellulose and 2.2 lbs./cu ft for fiberglass that is approved for dense packing. This is the most reliable option. Core sampling is sometimes used by Program Quality Inspection teams.
   b. The blower door used in conjunction with an IR camera reveals no accessible major bypass leaks and less than 10% of the accessible top plates unsealed in an attic. For walls the IR camera must see no movement of air from bay to bay or through drywall penetrations. This method helps assure adequate coverage but may not ensure dense-packing.
   c. Proper insulation densities and depths may also be calculated by performing area and volume calculations and "bag counts".

Platforms

An attic storage platform may be built at the customer's expense if they wish to raise the attic floor for more room for insulation. The storage platform must have at least 2x6 frames. Contractors must ensure that the platforms are constructed with metal fastenings, and have sufficient structural integrity to support the weight of storage items, occupants and others who may access the attic.

○*OPTIONAL BEST PRACTICE*○ As an alternative to using structural framing and either dense packing or loose blowing below the storage deck, foam board can be used to gain a higher R-value within the cavity below the deck. The foam board should be supported structurally in such a manner as to maintain the integrity of the foam board insulation.

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3.14 Wall Insulation

3.14.1 Materials

Installed insulation materials must meet the appropriate guidelines listed in Section 3.12.3: Physical Properties

Exterior drill and plug repair on painted wood surfaces must include insertion of a wooden plug and exterior spackling or equivalent. Interior drill and plug applications through drywall or plaster must include the use of a plug and joint compound.

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3.14.2 Pre-Installation

Interior & Exterior Inspections

Prior to starting a job, an interior and exterior inspection must be conducted to determine any potential problem areas. These problem areas must be identified and addressed prior to working on that area. Examples of some problem areas are recessed radiators, duct work in wall cavities, recessed bookshelves, stairways on exterior walls, loose or cracked plaster on walls, poor siding, etc. Check wall areas for valuables that must be removed prior to working on walls. The process and the work that is to be performed must be explained to the client.

For buildings with masonry exteriors, the contractor must confirm through visual observation that there is a barrier in the wall system that will prevent blown in insulation from coming into contact with the masonry. The purpose of this observation is to ensure that the insulation will not absorb moisture when the masonry gets wet. The visual observation can be with the naked eye or via borescope and must be done for each cavity that is being insulated. This barrier will typically be in the form of sheathing attached to a frame wall, but other systems that separate the insulation from the masonry are also appropriate.

Avoiding Hazards

Ensure that the insulation of the cavities does not present a hazard to the occupant, installer or the home's structural/mechanical integrity, i.e., heat ducts, recessed lights, vent fans, electrical service entrances, etc.

Knob & Tube Wiring

Verify that knob and tube wiring has been replaced. Receive certification that existing knob and tube wiring is not live. (See Section 2.3: Knob-and-Tube Wiring for complete policy).

Moisture

Ensure that the moisture conditions detected in the structure are corrected prior to insulation of the sidewall cavities. This may be accomplished by one or more of the following techniques:

1. All cracks and holes between wall cavities and high moisture areas (kitchen, bathrooms, etc.) should be thoroughly sealed.
2. A vapor barrier may be installed, when possible, on the interior surface of the walls in bathrooms, kitchens, laundry rooms, and any other high moisture areas.
3. A vapor barrier floor covering, and possibly mechanical ventilation should be installed into high moisture crawlspace areas as per Section 3.15.3: Ground Cover
4. Exterior structural flaws that admit rainwater into wall cavities must be corrected: repair gutter, downspout, drainage system, and seal gaps above door/window casings.
5. An adequate moisture control system may be installed in the house, including indoor mechanical ventilation and passive attic ventilation.
6. Clothes dryers must be vented to the outside.
7. The owners/occupants should be advised to consider lowering their humidifier and/or to change lifestyle practice, which contribute significantly to high humidity.

Sidewall Openings

Ensure that all openings in sidewalls through which the insulation can escape to the interior or exterior of the building are blocked as follows:

1. Missing interior wall surfaces must be covered with a compatible material (i.e., drywall) and sealed into place. Generally, this must be done prior to beginning work.
2. Block all openings in sidewalls through which the insulation may escape. Seal all wall cavities which open into a basement or crawlspace before wall insulation is installed. Also check for pipe openings that enter kitchen cabinets and block them as needed.
3. Wall cavities with no top plate and/or open at the sill plate must be blocked and sealed with an air impermeable barrier, such as rigid polystyrene insulation.

In situations where missing or damaged exterior siding exist on the dwelling, the contractor must ensure that any opening that may allow moisture intrusion into the wall cavities are addressed in a manner that provides permanent protection of the insulation from water intrusion.

Siding

Because the siding on a house is the most obvious indicator a homeowner will use to judge the quality of an insulation job, it is extremely important that the siding work is done properly. Contractors must always explain to the homeowner how the siding will be removed and replaced before beginning work.

○*OPTIONAL BEST PRACTICE*○ Take photographs of the before and after siding conditions.

○*OPTIONAL BEST PRACTICE*○ Document final condition of siding in writing with the customer.

Siding Removal

1. Siding must be removed with great care to minimize stray marks, splits, and broken siding.
2. In cold weather, extreme care must be taken to avoid cracking vinyl siding.
   ○*OPTIONAL BEST PRACTICE*○ If practicable, contractor may defer vulnerable vinyl sidewall insulation for warm weather.
3. Bevel cuts on wooden siding can be helpful in reducing the risk of water migration behind the siding.
4. Great care should be taken in working around windows, doors and corners to avoid damage to trim.
5. ○*OPTIONAL BEST PRACTICE*○ Ensure that workers have clean hands, or use gloves, to avoid fingerprints or stains.

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3.14.3 Installation

Dense Pack Insulation

Blown in insulation in restricted or dense packed applications must be 3.5 lbs./cu. ft. for cellulose and 2.2 lbs./cu. ft. for blown fiber that is manufactured for dense pack installation. The cavity must be sufficiently packed and sealed to significantly reduce air leakage. For an effective installation use only equipment compatible with the insulation material used. Follow manufacturer's recommendation for air pressure and density.

○*OPTIONAL BEST PRACTICE*○ Ensure that an area has been properly dense-packed by one of the following verification tests:

a. Cellulose: core sampling in 4 locations indicates the installed insulation has a density of at least 3.5 lbs./cu. ft. This is the most reliable option. Core sampling is sometimes used by Program Quality Inspection teams.
b. The blower door used in conjunction with an IR camera reveals no accessible major bypass leaks and less than 10% of the accessible top plates unsealed in an attic. For walls the IR camera must see no movement of air from bay to bay or through drywall penetrations. This method helps assure adequate coverage but may not ensure dense-packing.
c. Proper insulation densities and depths may also be calculated by performing area and volume calculations and "bag counts". Keep a record of the number of bags used to insure the installed insulation conforms to the manufacturer's recommended coverage shown on the material label.
d. Use smoke devices to test dense-packing: Dense-pack one bay. Use the blower door to depressurize the dwelling, set at 50 pascals with respect to outside. Use a smoke puffer to generate smoke at the drill hole of the insulated cavity. If the smoke is drawn into the cavity, adjust the material and air settings on the insulation machine and reblow the bay. Repeat the test until the smoke is not drawn into the cavity when the house is under pressure.

Drill and Plug (D&P) Applications

All blown in wall insulation should be installed with minimum 2 1/8 inch holes. Locate entry holes in walls to permit complete filling of wall cavities. Be sure to use sharp drill bits designed to cleanly cut holes with no tear out or other surface damage, properly sized for the wooden plugs being used. Speed-bore bits must not be used for this application.

Interior Applications

1. Interior drill and plug applications include attic stairway walls and treads, interior walls deemed to define the thermal boundary and exterior walls (when not done from the outside).
2. Before beginning work on interior drill and plug applications the area to be worked on must be cleared of as much homeowner property as possible. Remaining large pieces of furniture etc. must be protected by covering with drop cloths and sealed tightly, or by similar means. The area to be drilled must be sealed tightly from the remainder of the house using polyethylene sheeting, extension poles and duct tape. If the dwelling walls contain plaster and lathe, rather than drywall the interior wall holes must be staggered horizontally to avoid drilling out the same row of lathe as this weakens the wall and can cause large sections to detach.

○*OPTIONAL BEST PRACTICE*○ It is recommended that two drills be used for the interior drill process. The first drill will be used to cut through the plaster and will be very dull. The second drill will be used on the same hole after the plaster has been cleared to cut cleanly through the lathe and minimize pulling and cracking.

○*OPTIONAL BEST PRACTICE*○ An example of the drilled and plugged hole should be made in an inconspicuous place and shown to the owner at the beginning of the job for approval.

Exterior Applications

1. When drilling holes through siding that cannot be removed, and that has no repeating reference marks (such as Texture 1-11, novelty siding, knotty pine siding, frieze boards, and any other sheathing type siding) the holes must be drilled in a straight horizontal line.
   ○*OPTIONAL BEST PRACTICE*○ Use a laser level or chalk line to keep the plugs level across the wall. Do not use waterproof chalk.
2. Holes must be drilled as neatly as possible through all siding and sheathing materials, including plaster and wallboard.
3. During the hole drilling process, cavities must be probed in FOUR directions (left, right, up, and down) to ensure stud and blocking locations are correctly identified and blind bays are not left un-insulated.
4. The contractor must not leave holes in wall open overnight. Any holes must be plugged at the end of the day if work is not complete.
5. ○*OPTIONAL BEST PRACTICE*○ One-hole installation method. Use a fill tube to ensure consistent insulation coverage and density. Only one hole is needed per cavity if a fill tube is used, provided the tube is long enough to reach both ends of the cavity from the opening.

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3.14.4 Post-Installation

General

1. Before replacing the siding, the existing drainage plane must be returned to a condition that ensures drainage of any moisture that may penetrate the exterior cladding. (All exterior claddings pass some rainwater.) All holes opened in a wall must be covered or closed. Acceptable materials include: 15# felt paper stapled in place, wood, cork, Styrofoam plugs. Materials must be permanently caulked to prevent moisture intrusion.
2. All types of siding must be reinstalled with permanent metal fastenings as close to its original condition as possible, ensuring that the siding is weather tight. Fastenings must not detract from the appearance of the siding. Finish nails or comparable fastenings are recommended; however, vinyl siding should not be nailed unless pre-drilled. Vinyl or aluminum siding must not be face-nailed.
3. New siding installed to replace siding damaged by the contractor must match the original siding to the greatest extent possible. Wooden siding must be primed white (pre-primed in inclement weather) on the front, back and both ends, and painted or stained to match the original siding.
4. All patching and painting must be done with materials appropriate for exterior use. Patching of small areas may be done using a paintable siliconized acrylic caulking compound.

Repair of Drill and Plug (D&P) Applications

1. All drill and plug applications must be sealed upon completion of work.
2. In situations where the plug is recessed, at least one coat of spackling compound or comparable product must be applied. The contractor must ensure that the compound used does not have a tendency to shrink or crack.

3. In situations where the project is provided with full incentives through the Program, all drill and plug interior applications must be spackled to a smooth surface and painted to match the surrounding walls. Exceptions may be made only if agreed to in writing by the customer and approved by the Program.

Exterior Applications

Exterior D&P applications on painted surfaces must be completed in the following manner:

1. After installation, insert the plug so it is slightly (approximately 1/16 inch) recessed.
2. Apply one coat of an exterior rated sealer (exterior vinyl spackling or equivalent) and use a putty knife to bring sealant close to flush to the exterior siding.
3. This procedure also applies to drill and plug applications on windowsills, frieze boards, and entrances.

Exterior drill and plug applications on stained surfaces must be completed in the following manner:

1. After installation, insert a plug so that is it flush with the existing siding and the wood grains of the plug and the sheathing are in the same direction.
2. A small bead of caulk must be applied around the radius of the plug where it will contact the surrounding sheathing.
3. The plug must be installed flush with the siding. ○*OPTIONAL BEST PRACTICE*○ Tap it in place with a block of wood and a hammer.

Interior Applications

Interior drill and plug applications must be completed in the following manner: After installation, insert a plug so that it is slightly (1/16 inch) recessed. Apply one or two coats of patching material flush to the existing surface.

Work Review: Upon completion, contactor must ensure the following:

1. All the siding is repaired and/or reinstalled.
2. Paint touch-up is complete.
3. Shutters are reinstalled.
4. Yard, porches, driveways, and all exterior areas are swept clean.
5. Job documentation is complete.

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3.15 Basement and Crawlspace Insulation

Crawl spaces must be inspected for signs of standing water or existing moisture problems. Any existing moisture issues must be remediated before working to bring the crawl space inside the conditioned area.
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3.15.1 Locations and Use

Basements and crawlspaces may be insulated in one of two locations: on the interior side of foundation walls, or in the ceiling that defines the floor above. The decision where to insulate depends on the thermal boundary:

1. If the basement or crawlspace contains living space, heating equipment, laundry facilities, a water heater, distribution pipes or ducts, or water pipes, it is typically best to define the thermal boundary as the perimeter of the basement or crawlspace. In these instances the basement walls and rim joists should be considered appropriate for insulation. Basement ceiling insulation is likely to have minimal value.
2. If the crawlspace is open to a basement that is contained within the thermal boundary, the perimeter of the crawlspace should be considered the thermal boundary.
3. If a basement or crawlspace contains none of the equipment above and is not directly connected to a space within the thermal boundary, the area may be considered outside of the thermal boundary. In this situation the ceiling of the space may be considered appropriate for insulation.

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3.15.2 Material

Installed insulation must meet specification in Section 3.12.3: Physical Properties. Installed 2-part spray foam must meet specifications from Appendix B.

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3.15.3 Installation

Interior Wall Treatment

1. **A drainage plane or waterproof membrane must be installed between the insulation and the basement wall.**
2. A stud wall and batt system are not recommended for below grade applications due to its poor moisture performance, unless steps are taken to isolate the batt insulation and the wood framing from contact with the concrete wall or floor.
3. Insulation must be permanently fixed in place with a durable connection.
4. A non-absorbent insulation must be used.
5. Insulation must be continuous.
6. A constant air barrier must be installed on the warm side of the insulation and include floor-to-wall and wall-to ceiling connections. Insulation that provides an air barrier requires no further moisture barrier.
7. Thermal and ignition barriers must be installed as per code. See Appendix B for details regarding spray foam insulation requirements.

Ceiling Treatment

Batt Insulation

1. If faced insulation is specified, vapor barrier facing must be installed facing the heated space.

2. The insulation must be pushed into the floor bay far enough to ensure that the insulation contacts the sub-floor. Care must be taken not to compress the insulation more than necessary to achieve contact.
3. Insulation must be secured with support rods every 2 feet.
4. Areas above (freeze-ups and heat loss) and below pipes, ducts and around cross braces must be insulated. Insulation must be cut and fit neatly around all obstructions. Pipes and ducts must not be thermally isolated from the house.
5. Insulation must not be left exposed in areas of heavy use (house-wrap must be specified to cover insulation).
6. Crawl spaces exposed to the outdoors (unconditioned, ventilated crawl space) must have house wrap or equivalent installed beneath insulation for wind wash protection.

Dense Pack Insulation

1. All openings between the basement/crawlspace and the conditioned space must be sealed thoroughly.
2. A fiber reinforced membrane must be securely stapled to the floor joist at intervals of no more than 2 inches.
3. The membrane must be slit approximately every 6 feet and a fill tube used to dense pack the insulation to the density needed for the material used.
4. The slits must be sealed using a durable permanent tape or equivalent.
5. The area and cavity depth must be compared to the number of bags installed to verify density.
6. Crawl space exposed to the outdoors (unconditioned, ventilated crawl space) must have house wrap or equivalent installed beneath insulation for wind wash protection.
7. For a material to be considered field verified dense packed it must pass one of the tests in Section 3.14.3 Dense Pack Insulation.

Part Spray Foam

Follow procedures in Appendix B.

Ground Cover

A vapor barrier must be installed on exposed dirt floors, with the following qualifications:

Material Requirements

Minimum 6 mil polyethylene

Installation Requirements

1. Installed neatly and covering the entire area, with seams lapped a minimum of 12 inches
2. Seams sealed with a tape or sealant that provides a permanent, durable seal
3. Penetrations with foam, acoustic sealant, or compatible roofing mastic.
4. Perimeter edges run 10 inches minimum up wall and sealed to walls with acoustic sealant or roofing mastic
   a. Exceptions made only where access is impossible due to low clearance.

b. If vapor barrier is not present and not specified, or if proper installation is not possible, the situation must be brought to the attention of program field supervisor before work commences.

Photo: Crawlspace Ground Cover.

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3.16 Band Joist, Rim Joist, & Sill Insulation

3.16.1 Material

Installed insulation materials must meet the appropriate recommendations listed in Section 3.12.3: Physical Properties

Installed 2-part spray foam must meet specifications from Appendix B.

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3.16.2 Installation

1. If heat sources, such as heating or water heater exhaust vent pass through the rim joist area, the contractor must ensure clearances are maintained with fire-proof materials at a minimum to the distances required by Code from the heat source.
2. Any of the following or combination of the following methods may be used to insulate the rim and band joist:
   a. 2-part spray foam insulation may be used. In this application the foam can be extended from the subfloor to the junction of the foundation and the sill plate. In areas where termite presence exists, code may require an inspection break between the foam and the bottom of the sill. If there is a termite inspection break, then the seam between the foundation and the bottom of the sill must be sealed with caulk.
   b. The rim joist can be sealed by cutting blocks of 2 inch foam board to fit in the rim joist area and sealing the edges with 1-part foam. In this application the sill to foundation seam and the seam between the two sill plates must be sealed with caulk.
   c. If access to the gable wall joist bay prevents installation of 2 inch foam board, then the bay may be enclosed and the cavity dense packed. Care must be taken to ensure that the exposed foundation top is covered to prevent wicking into the insulation.
   d. Dense packed, blown-in insulation may be specified when basement ceiling is plastered.
   e. Batt insulation may be used in the rim and band area if the seams between the box beam and the sill, the floor joists and the box beam and the box beam and the subfloor have been sealed with either caulk or 1-part foam. If the batt insulation is faced the vapor retarder must be toward the warm surface. The batt must be cut large enough to be friction fit in the box sill area. Along gable walls (joists parallel to foundation wall), batts must be neatly installed and in full contact with exterior joist – full dimension batt may be needed to fill joist bay and held with metal rods.
   f. Exposed sill seal material is to be cut back to edge of sill and a sealant is to be applied where the sill plate meets the foundation wall.

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3.17 Knee Wall Attic Insulation

3.17.1 Material

Attic knee walls may be insulated with batt insulation, blown in insulation held in place by a restraining mesh, foam boards, or 2-part spray foam. Batt insulation must be protected from wind washing with an air barrier. Dense-packed cellulose may be deemed sufficient to protect the installation from the effect of wind washing if held in place a restraining mesh.
Appropriate materials for wind wash protection are building wrap, extruded poly styrene, insulated structural sheathing, plywood or OSB, or wall board.
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3.17.2 Installation

Insulating knee walls with batt insulation
Batts must be cut to fit and fill the entire bay. There must be no gaps, compression or stuffing of insulation. An air impervious wind wash barrier must be installed on the back side of the installed batt insulation. The air barrier must be pulled tight and mechanically fastened in place to ensure permanent attachment.

○*OPTIONAL BEST PRACTICE*○ Apply either staples every six inches for building wrap or screws every foot for rigid materials. Seams in the wind wash barrier may be sealed using building wrap tape on building wrap or 1-part foam on rigid materials.

Insulating knee-walls with blown in insulation and mesh
Knee walls can be sealed and insulated using dense pack cellulose or fiber glass. The density of the blown in material must be verified by using an area vs. coverage chart comparison or a smoke test as detailed in 3.14.3 Dense Pack Insulation. If the material is dense packed and protected by the fiber reinforced mesh, it is not necessary to install a wind wash barrier.

Insulating knee walls with 2-part spray foam
See Appendix B.
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3.18 Floors Over Unconditioned Spaces or Ambient Conditions Insulation

3.18.1 Overhang Insulation

General

Overhangs that were not sealed and fully insulated during construction are weak spots in a buildings thermal envelope. The sheathing material that is used on the underside of an overhang or even ventilated overhang floors are contributing factors to poor performance of this building detail.

Material

The insulating material that will be used to insulate an overhang can be dependent on access. If the overhang is unsheathed or accessible through the rim and band joist, the floor joist bay can be filled with batt insulation, dense packed or sprayed with 2-part foam. If the overhang is sheathed and there is no access through the rim and band, then the floor joist bays can be dense packed with blown insulation. If limiting the flow of blown-in material into the conditioned area of the floor bays is necessary, the inflated feedbag method described in Section 3.8.4/Air Barrier Aligns with Knee Wall & Attic Floor may be used.

Installation

Insulating A Cantilever (Overhang) With Batts

When an overhang is accessible because it is unsheathed or accessible through the transition area at the top plate fiberglass batts may be used to insulate the floor bays. Batt insulation must be installed to fill the entire cavity without voids or compression. The depth of the fiberglass batt must equal the depth of the cavity. Because fiber glass batts do not stop air movement the transition area at the top plate must be thoroughly sealed after batt installation and the sheathing that will be added to the bottom chord of the floor joists must be sealed to the surrounding finish with exterior rated caulk. Adding a layer of rigid foam board on the floor joist bottom before re-sheathing if conditions permit may be considered as an option to increase overall R-value and reduce thermal bridging.

Dense Packing A Cantilever

When an overhang is sheathed or otherwise inaccessible dense pack insulation may be used to reduce air flow and increase the R-value of this area. A thorough inspection of the floor joist bays that will be affected must be conducted before beginning work. Insulation must not be installed within 3 inches of recessed lights (unless they are ICAT). If heating supply or return ducts exist in the cantilever area, the contractor must ensure that the densepacking does not deform the duct or intrude insulation into the duct. If heat sources, such as heating or water heater exhaust vent pass through the cantilever, the contractor must ensure clearances are maintained with fire-proof materials at a minimum to the distances required by Code from the heat source.

If the overhang extends over the outside space more than 6 feet, additional holes must be drilled to ensure that the fill tube can reach all areas that are to be insulated, or a longer fill tube may be employed. The density of the installed insulation may be checked using a coverage chart and the number of bags installed or by de-pressurizing the house and checking for air movement at the drill holes with smoke. Once the floor bays are dense packed the drill holes must be plugged. If there are frayed edges at the drill holes the strands must be pushed into the drill hole and a wooden plug inserted. The wood grain of the plug must run the same way as the wood grain of the sheathing. The plug must be made flush.

○*OPTIONAL BEST PRACTICE*○ The flow of insulation can be controlled using the "feedbag" method described in Section 3.8.4/Air Barrier Aligns with Knee Wall & Attic Floor. The feedbag method is strongly recommended for use in every floor bay to control the flow of insulation into non-specified areas. When dense packing over hangs using the feedbag method the drill hole in each floor bay must be made as close to the transition area where the floor joist passes over the exterior wall top plate as possible. The feed bag must be inserted there and inflated to block the rim joist area. Once the rim joist area is sealed with the inflated feedbag, the fill tube can be withdrawn, reinserted into the joist bay cavity and the remainder of the overhang dense packed.

Insulating an Overhang With 2-Part Spray Foam

If the overhang is unsheathed and accessible 2-part spray foam may be used to seal and insulate this area. The transition area at the exterior wall plate must be backed with a rolled batt. See Appendix B for the proper installation of 2-part spray foam.

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3.18.2 Frame Floor Over Garage Insulation

Batt Insulation

1. If faced insulation is specified, vapor barrier must be installed facing the heated space.
2. The insulation must be pushed into the floor bay far enough to ensure that the insulation contacts the sub-floor. Care must be taken not to compress the insulation more than necessary to achieve contact.
3. Insulation must be secured with support rods no more than 2 feet apart.
4. Areas above (freeze-ups and heat loss) and below pipes, ducts and around cross braces must be insulated. Insulation must be cut and fit neatly around all obstructions. Pipes and ducts must not be thermally isolated from the house.
5. Insulation must not be left exposed in areas of heavy use (house-wrap or equivalent must be specified to cover insulation).
6. Crawl spaces exposed to the outdoors (unconditioned, ventilated crawl space) must have house wrap or equivalent installed beneath insulation for wind wash protection. Drywall or an equivalent air barrier must be recommended for garage ceilings. House wrap can be used in garage applications if it is securely fastened with staples and the seams are sealed with house wrap tape.
7. If rigid board insulation is used as an insulator and a wind wash barrier or air barrier it must be continuous without gaps or voids and all edges and seams must be sealed with 1-part foam or equivalent.

Dense Pack Insulation

1. All openings between the garage, overhang or crawlspace and the conditioned space must be sealed thoroughly.
2. If a rigid air barrier (drywall, structural Insulated panels etc.) is already in place follow the same dense packing procedures as in Section 3.18.1 Dense Packing A Cantilever.
3. If there is no rigid air barrier in place, the following procedure may be used:

a. A fiber reinforced membrane must be securely stapled to the floor joist at approximately 2 inch intervals.
b. The membrane must be slit approximately every 6 feet and a fill tube used to dense pack the insulation to the density needed for the material used.
c. The slits must be sealed using 3M 8086 tape or equivalent.

4. The area and cavity depth must be compared to the number of bags installed to verify density.
5. Crawl space exposed to the outdoors (unconditioned, ventilated crawl space) must have house wrap or equivalent installed beneath insulation for wind wash protection.

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3.19 Guidelines for Insulating a Mobile Home Belly

Prior to insulating

1. All plumbing leaks in the underbelly area must be permanently repaired, and all plumbing under the mobile home must be in good condition.
2. Pre-existing insulation condition and level must be evaluated.
    a. In the event that the under belly is in very poor condition and requires repairs that may be impeded by the installation of foam or other insulation, alternative methods of insulation, such as re-insulating with fiberglass, should be considered.
    b. In the event that the underbelly insulation is in generally good condition, with some areas of missing insulation. It may be more cost effective to repair the insulation.

○*OPTIONAL BEST PRACTICE*○ Probe in at least two places, and document condition with photographs.

3. Workscope must ensure that any pipes that will extend below the foam will be protected from freezing. If heat tape is required, ensure that the heat tape is installed prior to installing the belly insulation, and that occupants are educated on the use of the heat tape. Note: Heat tape must be treated as a heat source. Foam must not be installed within direct contact of heat tape.

○*OPTIONAL BEST PRACTICE*○ Boxing in water supply lines with foam board in such a manner that the enclosed water lines have access to heat.

4. The heating distribution system must be examined, and repairs made as needed prior to the installation of belly insulation.

○*OPTIONAL BEST PRACTICE*○ Visual inspection with mirror and flashlight, and diagnostic testing with pressure pan, with a goal of 3 Pascals or less of leakage per register.

○*OPTIONAL BEST PRACTICE*○ See all accessible duct work and eliminate all blockage.

Foaming the belly

1. Installation must comply with Appendix B: Spray-Applied Polyurethane Foam

2. The foam must be adequately supported to ensure long-term integrity.

○*OPTIONAL BEST PRACTICE*○ Use furring strips or fiber mesh to add structural support to the foam.

3. If the cavity between the floor and the membrane has a sidewall area (in other words, the membrane does not curve upward to meet the floor area) the sidewalls of the cavity must be included in the application.

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4. Attic, Roof & Crawlspace Venting

4.1 General

When attics are air sealed and insulated, they must be brought into compliance with state and local code requirements. The IRC 2015 defines required venting levels in Section R806.2. This section calls for a ratio of one sq. ft. of net free venting area for every 150 sq. ft. of attic area. This ratio can be decreased to one sq. ft. of net free area for every 300 sq. ft. of attic area if at least one of the following statements are true:

- A class I or II vapor retarder exists on the conditioned side, or
- If at least 40% and not more than 50% of the venting area is provided by ventilators located in the upper portion of the space to be ventilated not more than three feet from the ridge or highest point of the space, measuring vertically, with ventilation at the eaves or cornices providing the balance. In instances where framing members conflict with the installation locations, the higher vents can be more than three feet from the ridge. In practice this means that as much as possible vent openings must be equally spaced between areas high in the attic or slope and low in the attic or slope.

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4.2 Assessing pre-existing venting and required venting

1. The attic planes must be checked for the existence, location and condition of a Class I or II vapor retarder. Examples include: Kraft or foil facing on a batt, polyethylene sheeting or wall board with two layers of latex paint.
2. Once the class of vapor retarder is identified, the attic area (including vaulted areas) must be divided by either 150 sq. ft. if there is not vapor retarder or 300 sq. ft. if there is a vapor retarder. The result of this calculation is the amount of attic ventilation required by Code. Next, the existing ventilation must be assessed, the net free area calculated (see below), broken into high and low ventilation and subtracted from the appropriate high or low ventilation of the code required ventilation area. The results of subtracting the existing ventilation area from the code required ventilation area is the area of ventilation that must be installed to ventilate the attic to code levels.
3. Net free area vs. gross are: The actual amount of ventilation area provided by a vent depends on its "net free area." Net free area is not the same as the external dimensions of any particular type of vent: it is the actual amount of area that allows air flow when the inhibiting factors such as vent louvers, trim and screening are deducted. Therefore, it is necessary to determine the amount of ventilation provided by the vents used by calculating their total next free area and comparing that to the attic's ventilation requirements. Most vents have their net free area stamped on them. When in doubt, consult with the manufacturer before installing.
4. The contractor must ensure that all vent openings are cut in such a manner as to allow maximum air flow through the vent.
5. Continuous Soffit Venting: Newer homes may have continuous soffit venting installed when constructed. Continuous soffit vent typically has a net free area of 0.12 sq. ft. per linear foot. However, it is important to verify that the openings in the soffit vent are actually open to the attic area, and to calculate the actual net free area of the openings. Perforated drip edge is another form

of low ventilation. The integrity of the drip edge must be assessed before giving ventilation credit to it as it can be crushed during installation and its net free area reduced.

6. In some cases where attic height is very low, gable vents may be used as low ventilation. In these cases, it may be necessary to dam off the gable vent to keep it clear of blown insulation.
7. Placement of vents must be considered for proper air flow and must prevent entry of wind-driven rain or snow. The vents themselves must be configured to protect against the entrance of rain and snow.

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4.3 Preparation

1. Attic ventilation must only be installed if the presence of an effective air barrier and thermal boundary between the attic and the living space is verified, or if effective air sealing and proper insulation is specified as part of the work scope.

   ○*OPTIONAL BEST PRACTICE*○ Employ Zonal Pressure Diagnostics to evaluate the air sealing between the conditioned space and the attic.

   The existing condition of the attic plane may be tested to be tight by way of the blower door and pressure differential and visual inspection of all bypasses before more passive ventilation is added. If the attic plane is going to be tested with a blower door, the "Add a Hole" or "Open a Door" method may be used to quantify leakage across the attic plane. To be considered tight the CFM50 across the attic place must be less than 0.5 CFM50/sq. ft. with respect to the conditioned space.
2. All ducted exhaust equipment (bath fans, kitchen fans, clothes dryers) must be vented to the outside of the structure prior to any air sealing or insulation work performed in an attic.
   Ductwork contained in the attic must be sealed and insulated to at least R-8 before passive ventilation is added.

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4.4 Passive Attic Venting: Materials

1. Air vent types must be consistent with the requirements for their specific location (e.g., exterior soffit, gable end, roof) and material and intended use.
2. Air vents must be of color and appearance that is consistent with the exterior of the dwelling and acceptable to the customer. Mill finish vents must be spray painted to match house colors. Care must be taken when spray painting to avoid reducing the net free area by clogging the insect screen.
3. Typical sizing of vents is as follows:
   a. Soffit vents: 4x12, 6x12 and 8x12
   b. Gable vents: 12x12, 12x18, and 18x24
   c. Roof vents: Eight-inch diameter
   d. Ridge vents: Four and Eight-foot lengths
4. All attic vents must have screens of non-corroding wire mesh with openings between 1/16 to ¼ to prevent pest entry.

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4.5 Passive Attic Venting: Installation

1. All vents must be installed to manufacturer's specifications, properly flashed with roofing and siding materials and properly sealed to be watertight.
2. All vent opening must be cut to appropriate size for installed unit.
3. All installed soffit vents must have soffit baffles installed in the bays they ventilate, unless the housing configuration allows for a barrier between the insulation and the soffit area, and an air flow of at least 2 inches about the barrier. Continuous soffit vents must have soffit baffles installed in as many bays as is needed to meet code requirements for low ventilation based on the net free area of the continuous soffit vent. Remaining bays must be protected from wind washing. Care must be taken to ensure that all vent chutes remain clear of insulation and other obstructions.
4. Bath, dryer, or heating system vents must not be installed in or below the specific soffits that provide inlet ventilation to vented roof slopes or attics.

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4.6 Active (Mechanical) Attic Venting: Materials

1. The attic fan must be rated for continuous use. It must be capable of having its speed adjusted by a rheostat without being damaged, humming or vibrating.
2. The attic fan must be controlled by a thermostat that will activate the fan at a pre-set maximum temperature.

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4.7 Active Attic Venting: Installation

1. All electrical connections that need to be installed for this system must be installed by a licensed electrician.
2. The fan must be permanently mounted to roof or wall framing and have sound attenuators installed to minimize sound and vibration transfer.
3. If a vent needs to be installed to install the fan, the vent must be installed neatly and be tied into existing drainage planes. Roof or siding materials must be repaired/restored to original conditions.

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4.8 Basement and Crawlspace Venting

4.8.1 General

Section 408 of the 2015 IRC contains the following ventilation requirements for crawlspaces not included in or open to basements:

- No mechanical ventilation exists, and no Class I vapor retarder exists (see below): **1 ft2 of ventilation for every 150 ft2 of crawlspace floor area**
- No mechanical ventilation exists, but a Class 1 vapor retarder has been installed with 6 inch overlaps sealed and taped at the seams, and vents located in such a manner as to provide cross ventilation: **1 ft2 of ventilation for every 1500 ft2 of crawlspace floor area**
- **No additional ventilation is required** if a Class I vapor retarder exists as per above, and either:
  - A mechanical ventilation system installed capable of either exhausting or supplying 1 CFM/50 sq. ft. of area including an air path to conditioned area, and the perimeter walls are insulated
  - The space is heated by conditioned air and the perimeter walls are insulated
  - The space is used as a plenum

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4.8.2 Mechanical Ventilation: Material

1. Installed fan must be rated for continuous use and have a Sone rating of less than 1.0.
2. Fan must be controlled by an on/off switch as the fan must not run on a schedule. It must run continuously.
3. If the system is an exhaust system, there must be a vent termination with an integral pest screen and a back draft damper.
4. System ducting must be hard duct.

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4.8.3 Mechanical Ventilation: Installation

1. All electrical installations required for installation of this system must be installed by a licensed electrician.
2. The fan must be securely fastened to the floor framing system and sound attenuators must be used to minimize the transfer of vibration and sound.
3. If this is an exhaust system, the fan must be hard ducted to the exterior with the ducts supported every 10 feet.
4. The vent termination must be neatly installed and tied into the existing drainage plane. Exterior finish surrounding the vent must be returned to its original condition.
5. For exhaust systems contractors must ensure that there are adequate air paths from the conditioned space to the crawl space to relieve the pressure induced by the fan.
6. For supply systems the fan must be ducted to draw air from the conditioned space to deposit it in the crawl space.

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4.9 Fresh Air Ventilation for the Conditioned Space

4.9.1 General

The contractor must employ ventilation strategies that:

1. Ensure fresh air throughout the dwelling. In some instances, both whole house and local ventilation may be required.
2. Reduce or eliminate the risk of back drafting or drawing pollutants into the conditioned spaced.

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4.9.2 Material

Exhaust fans must:

1. Be rated for continuous use
2. Have a noise rating 1.0 sones or less.

Fan Controls must comply with the following:

1. Timers must consist of a 24-hour timer capable of automatically turning the fan on and off at pre-set times.
2. Fans must have an on/off switch separate from the timer that occupants may use for spot ventilation.

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4.10 Installation

1. Fans and 24-hour timers must be installed neatly and according to manufacturer's installation instructions.
2. Gaps between the fan housing and surrounding finished must be sealed with caulk or one-part foam.
3. Exhaust fans must be installed with air outlet facing in the direction that the duct will run to minimize the need for elbows.
4. All joints and seams in the air ducts must be sealed.

    ○*OPTIONAL BEST PRACTICE*○ Duct mastic

5. Exhaust Location: 2015 IRC Section M1501.1 forbids the venting of exhaust fans of any types into attics, soffits vents, ridge cents, or crawl spaces. All installed exhaust systems must terminate outside of the building. Exhaust vents must be vented to either a roof flapper vent, an end wall flapper vent or if neither of these two options is available, to an exhaust vent designed to be installed in a soffit. All exterior flapper vents must be equipped with a backdraft damper that works smoothly. Back draft dampers at the fan unit must be removed. Vent outlets must be properly flashed and sealed into roof or siding materials, so water will not leak into the assembly.
6. Exhaust ducting must be attached to the fan outlet and the flapper vent connector with metal clamps.
7. The duct must be insulated to current code levels for the location it passes through. The duct insulation must have a vapor retarder covering.
8. Hard duct must be supported every 10 feet with 1-inch metal straps. Flex duct must be supported according to manufacturer's instructions.

9. All joints in the duct must be screwed securely at a minimum of 3 points with no more than 3/8-inch screws.
10. Manufacturer's literature for fans and control device must be left with the homeowner.
11. Installed fresh air intakes must not be within 10 feet of any pollutant source. In cold climates it must be at least two feet above grade. There must not be a back-draft damper as part of this vent. There must be a pest screen. The vent must be properly flashed and tied into the existing drainage plan and the existing siding must be repaired/replaced to the original condition.

    ○*OPTIONAL BEST PRACTICE*○ An in-line fan can be remotely mounted and connected to one or more bathrooms and controlled by a 24-hour timer. The in-line fan must be mounted with vibration attenuators. Photo: In-line Exhaust Fan Ventilation

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4.11 Additional requirements specific to kitchen ventilation

4.11.1 General

Kitchen venting must comply with 2015 IRC Sections M1503 through M1507.

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4.11.2 Materials

1. Kitchen exhaust fans must be capable of exhausting 25 CFM continuously or 100 CFM intermittent. Any kitchen exhaust system that exhausts more than 400 CFM must have a makeup air system that conforms to M1503.4.
2. Ducts connected to kitchen range hoods must be constructed of galvanized steel, stainless steel or copper. The ducts must have a smooth interior surface, must be air tight and must have a back draft damper installed.

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5. Exterior Window & Door Measures

5.1 General

This section covers window and door replacements, and window insulating panels.
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5.2 Storm Windows

5.2.1 General

A high quality well installed storm window can significantly improve the performance of a primary window. In addition to lowering U-factors and Solar Heat Gain Coefficients, if the window is installed level and square and caulked correctly it will make a leaky primary window tighter.
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5.2.2 Material

1. All storm windows must conform to the standards determined by the American National Standards Institute/Architectural Aluminum Manufacturers Association (AAMA 1002.10.93).
2. Storm windows must be aluminum, combination, triple-track type, complete with operating sashes and screen insert.
3. Interior storm windows must have a rigid frame that clip easily into place. Interior storm windows are exempt from the air tightness standard.
4. Air leakage rates must be according to ASTM E283:
    a. Air leakage for fixed panel storm windows must not exceed 0.15 CFM per sq. ft. of window area at both a positive (infiltration) and negative (exfiltration) static pressure of 1.56 PSF at 25 mph wind. Weep holes must not be sealed during the air leakage test.
    b. With the storm window sash in the closed position, air leakage in removable panel, horizontal and vertical sliding windows must not exceed 0.50 CFM per lineal foot of sash crack at both positive and negative static pressure 1.56 PSF at 25 mph wind. Weep holes must not be sealed during the air leakage test.

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5.2.3 Installation

1. The four window sashes, meeting rail, sill and head jamb must either interlock in a tongue and groove manner or be weather-stripped with wool pile and/or silicone treated wool pile or equivalent.
2. Window must be installed squarely so that storm windows and screen operate smoothly.
3. No adjustments to window opening must be made to accommodate a mis-measured product.

4. Continuous, substantial bead of caulk must seal exterior storm to casing of dwelling; effective weep hole(s) must be created at the sill. The expander bars at the bottom of the storm windows must be caulked from the inside.
5. Interior storm windows must be clipped or screwed in place. If over 48 linear inches, must be double strength or tempered glass.
6. All windows must be installed according to manufacturer's specifications.

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5.3 Replacement Windows

5.3.1 General

While window replacement is not generally a cost effective energy saving upgrade, there are times when window replacement may be recommended. Typical reasons are aesthetics, existing windows don't function, or existing windows structurally deteriorated. If the windows are going to be replaced it makes sense to replace them with a high quality, energy efficient units.

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5.3.2 Material

1. All windows must be ENERGY STAR ® labeled.
2. Sealed glass units must be warranted against leakage for a minimum of five (5) years. All warranties must be provided to the homeowner.
3. The air infiltration rate must be 0.2 CFM/Sq. Ft. (at uniform static pressure of 1.57 lbs./sq. ft. (25mph) or less.

○*OPTIONAL BEST PRACTICE*○ Install double hung windows with tilt-in feature

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5.3.3 Pre-Installation

1. Where applicable, the homeowner must be informed about the lack of structural integrity of existing jambs if the window unit is to be secured to them. This must be assessed at the time of the first site visit, prior to signing the contract.

○*OPTIONAL BEST PRACTICE*○ At the time of the site visit, home assessor may provide a sample of the window unit to be installed. A cut-away view may be used.

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5.3.4 Installation

1. At the time of installation, the interior and/or exterior trim should be removed by first breaking the paint seal with a sharp tool, such as a utility knife and then removing screws or nails as carefully as possible to prevent breakage.
2. The installed window must be tested to ensure that it operates correctly and smoothly as the manufacturer intended and that all locking mechanisms and weather stripping engage as intended.
3. Existing balance systems and weights must be removed, pulley openings must be sealed over, pockets must be completely filled with dense pack insulation, foam, or other substance that provides insulation and eliminates air movement through the pockets. Jambs must be thoroughly caulked, so that the end product is an effective air barrier and insulated against heat loss around the window unit.
4. After installation, the exterior and interior trim must be in place, whether it is existing or new, and must be caulked as needed with a 20-year siliconized paintable caulk or equivalent and in a careful manner. The end product must be a continuous air barrier from the interior wall finish to the new sash unit.
5. Installed window must be integrated into the drainage plane. Pan flashing and head flashing must be installed.
6. At a minimum, completed window installation must be left touch-up paint-ready, with any damage to the window or frame repaired.

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5.4 Interior Window Insulating Panels

5.4.1 Material Requirements

Installed panels must be R-3 or greater.

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5.4.2 Installation Requirements

1. The insulating panels will be fastened to the interior finish framing of the window.
2. The insulating panel will be securely fastened using a fastening system that allow the insulating panels to be easily removed during warm months.
3. The insulating panel will have an airtight gasket between the panel frame and the finish frame of the window.

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5.5 Replacement Doors

5.5.1 Material

Doors must be ENERGY STAR ® rated door for climate zone.

5.5.2 Installation

1. The door must be installed according to manufacturer's directions.
2. The space between the framing and door jamb must be filled with either 1-part foam or silicone caulk and the casing must be caulked to prevent infiltration.
3. Door flashing must be tied into the existing drainage plane to minimize the potential for leaks.
4. Door must operate and lock easily.

6. Heating & Cooling Systems

6.1 General Requirements

1. All installed equipment must meet current ENERGY STAR ® requirements for efficiency for the climate zone in which they are installed.
2. All equipment must be installed in accordance with manufacturer's specifications.
3. Sizing:
    a. The contractor must ensure that the installed heating unit, along with any supplemental heat / emergency heat is appropriately sized to meet the heat load for the dwelling. NYS IRC Section R303.10 heating requirements must be met as follows: "… every dwelling unit shall be provided with heating facilities capable of maintaining room temperature of not less than 68°F (20°C) at a point 3 feet (914 mm) above the floor and 2 feet (610 mm) from exterior walls in habitable rooms at the design temperature."
    b. All installed space conditioning equipment must be sized in accordance with the latest version ACCA Manual-J or other approved equivalent. A list of ACCA-approved software can be found at:

        www.acca.org/standards/software

    c. A Blower Door (cfm50) test must be performed on existing homes whenever possible to estimate building air leakage rate for infiltration load assessment.
    d. Space conditioning equipment must be selected using the latest version ACCA Manual-S.
4. The contractor must ensure that the customer has access to technicians capable of providing servicing to the unit in a timely manner. This requirement extends beyond the contractor's warrantee period.
5. Installation must comply with the latest version of ACCA5: HVAC Quality Installation Specification in design, install and commissioning.
6. Installation must comply with requirements of the National Fuel Gas Code, including:
    a. NFPA 31: Standards for the Installation of Oil-Burning Equipment
    b. NFPA 54: provides minimum safety requirements for the design and installation of fuel gas piping systems in homes and other buildings.
    c. NFPA 58: provides for safe LP-Gas storage, handling, transportation, and use, and mitigates risks and ensures safe installations, to prevent failures, leaks, and tampering that could lead to fires and explosions.
7. All equipment and accessories must be designed and installed per manufacturer's specifications.
8. All air conditioning equipment must be Air Conditioning, Heating and Refrigeration Institute (AHRI) certified.
9. All equipment must be installed in compliance with state and local codes.
10. The contractor must ensure that the equipment is designed, installed and serviced by factory-trained personnel or the equivalent.

11. Ventilation calculations must be performed for every HVAC system installation/replacement with a proposal for a new ventilation system when needed.
12. Work must include the removal of all old heating and cooling system parts and material that will not be included in the new installation. An exception can be made if the old system will serve as backup or supplemental heat.
13. Maintenance panels shall be easily accessible and not blocked by refrigerant piping, wiring, building components, exhaust gas venting etc. All appliances shall have the minimum clearances required by manufacturer's specifications. All units shall be able to have components switched out for repair or replacement without requiring extensive dismantling of ducts, wiring, refrigerant lines etc. If the contractor discovers that the homeowner has placed items close enough to the appliance as to constitute a fire hazard, the contractor must require that they be moved a safe distance from it prior to installation.
14. All installed equipment or systems must be tested for combustion safety.
15. Start-up and commissioning:
    a. The contractor must secure, in an easily visible location, a sticker showing their name, regular phone number, emergency service phone number (if applicable), and date of system startup.
    b. There must be, either in the owner's possession or affixed near the unit, all installation and operating manuals and warranties.
    c. The contractors must complete and submit an ACCA 9 or manufacturer's commissioning sheet to the customer. The ACCA 9 version can be found at:

       http://www.acca.org/HigherLogic/System/DownloadDocumentFile.ashx?DocumentFileKey=4e66c088-1175-d40c-64ef-247a17db7af2&forceDialog=0

    d. The contractor or his/her representative must instruct the owner on the complete operation of the system at the time of system startup.
16. All technicians or subcontractors who remove refrigerants from the premises are to recover/recycle refrigerants in compliance with EPA regulations.
17. When installing boilers or water heaters that draw water from the dwelling's water source, the contractor must ensure that water quality will not damage the installed equipment, especially if a dwelling draws water from a well. The contractor must ensure that installed system is protected from the detrimental effects of hard water, sediment, high or low pH, and high levels of chlorides in the domestic water. The following steps must be taken:
    a. The contractor must follow manufacturer's water testing requirements and retain copies of test results.
    b. The contractor must ensure that any required water treatment systems are in place prior to installation. The treatment must be compatible with materials of construction.
    c. The contractor must ensure that customer is made aware of any potential impacts of customer actions that may affect the quality of the water and the performance of the system and has been informed of all maintenance requirements.
18. Condensate must be piped, trapped, pitched, sized and insulated per manufacturer's specifications. Condensate disposal systems must be installed as to prevent freezing and must not terminate over

walkways**.** If condensate pump is installed, it must also have an interlocked detector / cutout switch installed so that unit is disabled if water level rises and activates detector / switch.

○*OPTIONAL BEST PRACTICE*○ Identifying the presence and quantity of moisture in addition to its source is a high priority issue when evaluating a building's performance. Undesirable moisture levels can occur as a result of diffusion through high permeability building components in contact with the ground, or bulk water transport through vulnerabilities in the exterior envelope. In the enclosed space of a basement, moisture whether in the vapor phase or as bulk water, can contribute to mold development, building and mechanical equipment durability issues such as wood decay and corrosion of metallic equipment, and other indoor air quality concerns. Common strategies to mitigate moisture intrusion in the living space are often focused at the basement / crawlspace level.

For these reasons it is a ○*OPTIONAL BEST PRACTICE*○ to route the condensate that is produced from combustion appliances and cooling coils directly to an enclosed drain system. This could include existing plumbing which conveys wastes to a treatment system or directly to a passive (gravitational) or actively pumped system leading to the outside of the building. If none of the above approaches are available to pipe condensate directly to an enclosed piping or sump system, installing a condensate pump is the ○*OPTIONAL BEST PRACTICE*○ to ensure that the high efficiency equipment that is installed is not creating a moisture problem or contributing to an existing moisture problem.

Routing condensate along an open interior perimeter trench is not sufficient because it can allow this liquid to evaporate into the basement before it reaches the sump or absorb into the slab and possibly collect in the soil under the slab. These scenarios can contribute to undesirable moisture levels.

19. All combustion gas venting systems must be run to the exterior of the building and terminate with an approved end cap.
20. Venting:
    - Appliance venting must have the proper sizing, design, material selection and assembly for the combustion fuel venting system as per applicable codes and manufacturer's specifications.
    - The contractor must ensure that all pre-existing and installed venting has the proper pitch, with a minimum slope of ¼ inch per foot or according to manufacturer's specifications.
    - All unused openings in venting system must be sealed.
    - The contractor must inspect existing flues which will have continued use, either by the new system, or by other appliances which may be "orphaned" by the installation of a new system with an alternative flue. Flues must be sized and lined as required by the National Fire Protection Association (NFPA).
    - The contractor must ensure that there is no blockage or restriction, leakage, corrosion and other deficiencies which could cause an unsafe condition. Chimney must be cleaned as needed to ensure continued safe operation.

- All positive pressure combustion gas venting systems must be sealed tightly.

21. All installed systems must have both the combustion air intake and the combustion gas exhaust piped to the exterior.
22. All piping and venting must be appropriately supported.

○*OPTIONAL BEST PRACTICE*○ Prior to installation provide customer with a written description of critical aspects of the installation, such as make and model numbers, locations identified for installation, planned location of line sets, etc. Obtain a signature that confirms agreement by the customer.

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6.2 Additional Requirements Specific to Natural Gas or Propane Systems

1. All positive pressure combustion venting systems must be sealed tightly and appropriately supported.
2. Gas Piping:
    a. All gas piping to be leak-free / tested and must be sized to provide adequate gas supply to all connected gas appliances. Refer to NFPA 54 (natural gas) or NFPA 58 (propane) and local codes for gas piping requirements and sizing.
    b. Gas piping systems must be of such size and installed as to provide a supply of gas necessary to meet the maximum demand of the all gas appliances at the proper pressures.
    c. Gas pipe and connectors must have the appropriate supports, hangers, anchors and gas pipe sealant.
    d. The new appliance must have a manual "equipment" shut-off valve in the gas supply line immediately upstream of union. A ground-joint union and a drip leg must be installed immediately upstream of the appliance.
3. Grounding of Gas Piping
    a. All gas piping must be grounded as required by the International Residential Code (IRC).
    b. Yellow-jacketed Corrugated Stainless Steel Tubing (CSST) must be bonded to the electrical service grounding system or, where provided, the lighting protection electrode system. Refer to section G2411.1.1 of the IRC for further details and requirements.
    c. Black-jacketed CSST which has been tested and listed to ICC-ES LC 1024 "CSST Utilizing a Protective Jacket", may not require the additional direct bonding required for Yellow CSST (above). Consult with local code officials as to requirements.
    d. Non-CSST piping, such as black pipe, can be considered safely grounded if the appliance it supplies is hard-wired to the buildings electrical service (including ground) or plugged into a three prong, properly grounded electrical outlet.
4. Propane storage system: Integrity must be checked and repairs/replacement included with new installation. The propane storage system must be installed in accordance with the latest edition of NFPA 58.

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6.3 Additional Requirements Specific to Oil Systems

6.3.1 Installation

1. Chimney and connectors to be properly sized using latest edition of Standard for the Installation of Oil-Burning Equipment (NFPA31) and manufacturer's specifications. Oil venting systems must have a barometric damper installed and must not use side wall “engineered” power vent systems unless specifically allowed by the manufacturer’s specifications. Barometric dampers must be installed in a location specified by the manufacturer.
2. All oil piping to be leak-free and must be sized to provide adequate oil supply to all connected oil appliances. Oil line piping design, materials, and construction must be in accordance with the latest edition of NFPA 31. Refer also to the instruction manuals provided with the burner and oil pump. Fuel line piping must be airtight. Use only listed flare type fittings. Piping must be substantially supported and protected against physical damage and corrosion where required. Inspect existing fill, vent, oil tanks, filters and fuel lines for leaks, kinks and proper material support. Repair or replace as needed. All new and existing buried lines (in the floor) and unprotected oil lines on the floor must be encased in protective sleeve. Install one fuel shut-off valve near the storage tank and second fuel shut-off valve near the oil burner fuel pump. All systems must have a new oil filter installed. Note: NFPA 31 requires shut-off valves at tank and burners, also they both need to be Fusible Fire Safety Valves.
3. The integrity of the fuel oil storage system must be checked and repairs/replacement included with new installation. New oil storage system must be installed in accordance with the latest edition of NFPA 31.
4. Oil to Gas conversion: Refer to latest edition of the NFPA 31 “Abandonment and Removal from Service of Tanks and Related Equipment.”
5. ○*OPTIONAL BEST PRACTICE*○ It is recommended to have an anti-siphon valve located at the tank when the tank or oil line is above or level with the oil burning appliances. Anti-siphon Valve commonly referred to as “oil safety valve” or OSV are valves that operate with the use of a diaphragm that requires a minimum suction draw from the pump at the appliance before fuel is allowed to pass through it. Without a sufficient vacuum draw from the pump, oil cannot free flow from the tank by the siphoning action of a broken line. Follow manufactures installation instructions. If the oil supply line is in protective sleeve typically no Anti-siphon Valve is recommended.
6. ○*OPTIONAL BEST PRACTICE*○ Recommend that the customer keep the tank full during the summer to prevent condensation of moisture on the inside surface of the tank.

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6.4 Additional Requirements Specific to Furnaces

1. When installing a complete duct system, or a partial duct system that includes 25% or more of the duct system, the contractor must complete a duct sizing comparison using the latest version of ACCA Manual-D. Ducts must be designed to limit friction losses. Room by room load calculations must be performed for all new ductwork installations.

2. Ducted systems must have air filters installed in the return air system in a location that facilitates easy replacement by the homeowner. Filter slots must have a durable gasketed cover that seals tightly when in place and be enclosed in such a manner as to prohibit duct leakage at the filter slot opening, which reduces the effectiveness of the return air system, and may draw pollutants from the basement. All return air must pass through the return air filter.
3. All new duct systems installed must include minimum MERV 6 with design accounting for filter pressure drop at design airflow.

   ○*OPTIONAL BEST PRACTICE*○ Installing 1 minimum MERV 6 filter when replacing existing furnace only (no new ductwork installed). If doing so, manufacturer's minimum or higher airflow must be maintained for both heating and cooling modes.

4. Two or more units must not be connected in parallel or series to a common supply or return air duct system.
5. See also "Ductwork", Section 6.15, below.

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6.5 Additional Requirements Specific to Hot Water Boilers

6.5.1 Materials

1. As an alternative to Manual-J, IBR load calculations or an approved equivalent may be used.
2. New installed radiation must be sized using Manual J, IBR or approved equivalent.
3. Boiler, pump and system piping must be sized per manufacturer's specifications, IBR or approved equivalent.
4. Antifreeze: If used, a tag must be left on the system identifying the chemical type of the heat transfer fluid, its volume and concentration, and the date it was installed. Use only manufacturer's approved antifreeze that is also compatible with materials of construction.

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6.5.2 Installation

1. The contractor must ensure that the following boiler controls/piping are in place, working correctly, and conform to manufacturer's specifications:
   - Circulator
   - Air Elimination System
   - Water Expansion System: Hot water boilers must be provided with expansion tanks. Non-pressurized expansion tanks must be removed and replaced with a diaphragm expansion tank.
   - Pressure Reducing Valve (Fill Valve)
   - Low Water Cut Off
   - Safety Relief Valve

- Back-flow Preventer installed in domestic water line to boiler, if not already present and functioning correctly.
- Flow Control Valve (under some conditions)
- Isolation Valves
- Drain Valve
- High Limit Aquastat
- Pressure/Temperature Gauge

2. Controls and/or piping must be designed and installed to protect the boiler from thermal shock and low return water temperatures (per manufacturer's specifications).
3. Boiler and system piping must prevent oxygen contamination of boiler water and frequent water additions. Boiler and system must be leak-free. All water leaks, including pre-existing leaks, must be identified and repaired.
4. A raw water analysis must be taken initially for each installation so that the correct water treatment can be established and installed per manufacturer's recommendations. The primary goal of boiler water treatment is to control solids that cause deposits in the boiler and control gases that cause corrosion.
5. All piping, valves, fittings, insulation and connections must be rated for use at the operating temperature and pressure of the hydronic system. Existing pipe, fittings, valves or other materials must be free of foreign materials.
6. Boiler piping installed in unconditioned spaces (i.e., spaces outside of the thermal boundary of the dwelling) must be insulated with a minimum of R-4.

   ○*OPTIONAL BEST PRACTICE*○ Insulate existing boiler piping in unconditioned spaces to a minimum of R-4, unless doing so would create a risk of freezing water pipes in the space.

7. Piping must be installed so that piping, connections and equipment must not be subjected to excessive strains or stresses. Provisions must be made to compensate for expansion, contraction, shrinkage and structural settlement. Piping must include all necessary fittings, valves and piping for manufactures specified maintenance and cleaning.
8. All existing piping and radiation must be properly flushed to remove any sediment/sludge in order to prevent any blockage or reduction in efficiency of the new boiler.
9. When making changes to a distribution system involving piping, pipes, or valves, including installing a new circulator, the contractor must ensure proper Gallons Per Minute (GPM) flow through boiler and all radiation, with the ability to balance radiation as needed.
10. Two or more boilers installed: Controls and piping per manufacturer recommendations, which will provide the most efficient operation while meeting the heating and if added domestic water heater needs.
11. Open expansion tanks must be replaced with sealed and pressurized expansion tanks.

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6.6 Additional Requirements Specific to Combination or Condensing Boilers

6.6.1 Materials

1. All systems must have a minimum manufacturer rating AFUE or CAFUE > 90%.
2. ECM fan motors and water pumps must be installed on all equipment.
3. All systems must be sealed combustion.

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6.6.2 Installation

1. Unit must be designed and installed to operate in condensing mode in both heating and domestic water heating operation. Outdoor temperature reset controls must be installed if the existing radiation/radiators cannot meet the peak heating requirement with a return temperature of 130°F. The outdoor temperature reset controls must be commissioned to provide the lowest possible return water temperature while meeting the space temperature set point(s).
2. System must segregate heating function from domestic hot water production, with priority to hot water production.
3. ○*OPTIONAL BEST PRACTICE*○ Unit sizing, operation and radiation should be sized and setup to maximize condensing mode operation, with return water design typically not exceeding 130°F when possible.
4. ○*OPTIONAL BEST PRACTICE*○ Flushing and cleansing is important when installing a condensing boiler in existing systems with ferrous piping and/or radiation to ensure iron oxide, sludge, sediment and other dissolved contaminants do not foul the new boiler's heat exchanger. Prior to removing the existing boiler inject system cleaner and circulate at normal operating temperature for a minimum of 2 hours and up to one week. Drain and flush the system thoroughly at least twice, until the water runs clear. Once the new boiler is installed, filled and purged, inject system water treatment as recommended by the manufacturer. Consider installing in-line filters to remove contaminants from the system and safeguard the boiler's heat exchanger.
5. ○*OPTIONAL BEST PRACTICE*○ To provide the best opportunity for these installations to maximize the condensing feature, the following are recommended:
    - Unit should have self-modulating control capabilities.
    - All circulators should be variable speed and be able to module according to boiler fuel modulation. Circulators should have displays showing flow rate and energy consumption which are particularly useful during commissioning to optimize performance and ensure design conditions are being met.

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6.7 Additional Requirements Specific to Steam Boilers

1. Steam boiler to be sized using existing radiation: Sq. ft. of "Equivalent Direct Radiator" (EDR). Base the size of the replacement boiler on the connected load, not the building's heat loss.
2. A raw water analysis must be taken initially for each installation so that the correct water treatment can be established and installed per manufacturer's recommendations. The primary goal of boiler water treatment is to control solids that cause deposits in the boiler and control gases that cause corrosion.
3. New installed radiation must be sized using Manual J, IBR or approved equivalent.
4. The boiler must be checked for contaminants follow manufacture testing and recommendations.
5. Boiler piping and system piping must be sized per manufacturer's specifications, IBR or approved equivalent.
6. ○*OPTIONAL BEST PRACTICE*○ Determine if possible why the old boiler failed. Is there a possibility of buried (leaking) piping? Is there an issue with the condensate return time being too slow? Ask the homeowner/occupant the following:
   - Is there gurgling or banging noises in the pipes or radiators? Is the system radiation balanced?
   - Do they have to add water to the existing boiler, is the low water cutoff activated frequently, how often?

   Note these concerns and suggest remedies.
7. ○*OPTIONAL BEST PRACTICE*○ The contractor should review heating performance of all radiation with customer and note any rooms that are under or overheating. If this is noted the contractor should evaluate the need to add or remove radiation or correct radiation deficiencies. If air sealing and or insulation is part of the workscope the contractor should also evaluate the need to adjust radiation. Additional measures to consider include replacing radiator vents, adding or upgrading mainline air vents, insulating all steam pipes to keep the steam from condensing before it reaches the radiators.

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6.7.1 Installation

1. Boiler and system piping must prevent oxygen contamination of boiler water and frequent water additions. Boiler and system must be leak-free. All steam and water leaks must be identified and repaired.
2. All existing piping and radiation must be properly flushed to remove any sediment/sludge in order to prevent any blockage or reduction in efficiency of the new boiler. Refer to manufacturer's recommendations.
3. Piping must be installed so that piping, connections and equipment must not be subjected to excessive strains or stresses, and that any air pockets that may result in knocking noises or vibrations are eliminated. Provisions must be made to compensate for expansion, contraction, shrinkage and structural settlement. Piping must include all necessary fittings, valves and piping for manufactures specified maintenance and cleaning.
4. Two or more boilers: Controls and piping per manufacturer recommendations, which will provide the most efficient operation while meeting thermostat set point**.**
5. Boiler controls/piping must conform to manufacturer's specifications. The contractor must ensure that the following items are in place and fully functional as part of the installation:

- Low Water Cut Off (LWCO)
- Relief Valve
- Sight Glass
- Drain Valve
- High Limit Pressure Control
- Pressure Gauge

6. All piping, valves, fittings, insulation and connections must be rated for use at the operating temperature and pressure of the steam system. Existing pipe, fittings, valves or other materials must be free of foreign materials.
7. Boiler piping installed in unconditioned spaces (i.e., spaces outside of the thermal boundary of the dwelling) must be insulated with a minimum of R-4.

   ○*OPTIONAL BEST PRACTICE*○ Uninsulated steam pipes in unconditioned or in semi-conditioned areas can negatively impact the performance of a steam system. When there are performance problems that may be the result of the lack of insulation with a steam distribution system, it is strongly recommended that a contractor encourage the customer to insulate any pre-existing steam pipes in these areas both for energy savings and system maintenance, unless insulation of these pipes may cause a risk of freezing water pipes in these areas.

8. Steam boiler installation must provide for dry steam to supply piping and radiation, along with providing adequate return of condensate to maintain steady boiler water level. Existing steam traps, steam vents, wet returns, condensate receiver and pipe insulation or need thereof, to be inspected with proposal to install/repair as needed.
9. "Near Boiler Piping" is crucial for proper performance of a replacement steam boiler and must always be considered as part of the boiler installation. Always be sure to include clean-out and skimming tees in the near boiler piping. These "Tees" are necessary for proper cleaning and servicing of the boiler.

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6.8 Air Source Heat Pumps (ASHPs)

6.8.1 General

All ASHPs installed through the Program must conform to the requirements of the NYSERDA Air Source Heat Pump Program:

https://www.nyserda.ny.gov/all-programs/programs/air-source-heat-pump-program

6.8.2 Additional Installation Requirements for ASHPs

1. Additional requirement, installation:

a. When an ASHP is installed to provide the only heating source in a house or zone, without backup or supplemental heat, the ASHP must be sized according to heating loads, using engineering specifications *at design conditions* (not based on nominal or "rated" capacity).
b. All penetrations through the shell of the dwelling created during installation must be sealed with insulating sealant/spray foam. Any insulation disturbed by installed line set must be returned to original (or better) condition.

2. ASHP controls/thermostats must be installed as follows:
   a. In the event that the original heating system will remain in the dwelling to serve as a supplemental heat source, the contractor must provide a control plan for the thermostats, in which the operation of the ASHP and any secondary or supplemental heating systems are coordinated in such a way as to offer the customer the best options for maximizing benefit from the ASHP.
   b. Thermostats must be placed on interior walls, away from direct sunlight, appliances, heating ducts, radiators, or drafty areas
   c. In larger spaces (> 150 ft2) a fixed, wall-mounted thermostat must be installed in a location that will be representative of the space the unit is serving. Set the installer controls so that the temperature is actually sensed at the thermostat, rather than in the air handler.
3. The contractors must provide customers with the following guidance:
   a. Appropriate settings for controls to ensure maximum benefit from the ASHP, including:
      i. ASHP thermostat use and programming, including explanations for setting such as "heat" "cool" and "auto".
      ii. Optimum interaction with controls for a central heating system, if one remains in the dwelling, and written guidance on how to maximize value of using ASHP for heating and avoid using central heating systems in mild weather.
      iii. How and whether the ASHP works more effectively if setback or if kept at steady temperature settings;
   b. Maintenance requirements
   c. The importance of keeping snow away from outdoor unit, especially in heavy snow or drifting conditions, and of maintaining air flow clearances around exterior equipment, especially if visual enclosure is contemplated.

4. Location of outdoor unit(s) should always be approved by the customer.
5. ○*OPTIONAL BEST PRACTICE*○ The location of the outside units should take into account the following:
   a. Outdoor units should be located in inconspicuous places, such as the rear of the building.
   b. Contractors should avoid noise-sensitive areas. Interview customer to assess both degree of sensitivity, and locations that might pose trouble. If mounting to the wall of the building, efforts should be taken to minimize the possibility of noise caused by vibration of the unit being transmitted into occupied areas of the home. Mount on foundation, ensure a non-sensitive area, or use a ground-mounted alternative.

6. ○*OPTIONAL BEST PRACTICE*○ Ductless system design

a. When possible, avoid using multiple oversized ductless units in a multi-zone configuration. Size indoor terminals carefully.
b. When room loads are too small for indoor terminals, consider using compact-ducted terminals to serve several rooms, or use single-zone systems for small zones to allow adequate capacity turn-down.

7. ○*OPTIONAL BEST PRACTICE*○ Ductless indoor units

a. When possible, install ductless heads 4-6 inches below ceiling, even if this is more than the manufacturer's minimum clearance.
b. In rooms with vaulted ceilings, install ductless heads so their lower surface is no more than 6-7 feet from the floor, to facilitate heating distribution and filter changes. Consider using floor-mount consoles in heating applications.

8. ○*OPTIONAL BEST PRACTICE*○ ASHP Ductwork

a. New duct work should be run within the thermal envelope of the dwelling whenever possible.
b. If duct work is installed in an attic or other unconditioned space: after air sealing and insulating ducts, additional insulation should be installed over the ducts to ensure coverage consistent with attic insulation levels over the conditioned space. Duct vapor barrier must have adequate R-value to the interior (duct side) to prevent condensation on the vapor barrier.

9. ○*OPTIONAL BEST PRACTICE*○
Consider installing a hard-wired surge suppressor at the service disconnect or breaker panel to help protect the heat pump circuit(s).

10. ○*OPTIONAL BEST PRACTICE*○ Follow Northeast Energy Efficiency Partnerships (NEEP) Guidelines:

- "Guide to Sizing & Selecting Air-Source Heat Pumps in Cold Climates"
- "Guide to Installing Air-Source Heat Pumps in Cold Climates"

available at the following link:

http://www.neep.org/initiatives/high-efficiency-products/air-source-heat-pumps/air-source-heat-pump-installer-resources

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6.9 Additional Installation Requirements for Air Conditioners, not including Air Source Heat Pumps

6.9.1 Materials

See Sections 6.1

6.9.2 Installation

1. Design and installation of the outdoor units should include elements as needed to prevent possible damage from animals including the protection of wiring.
2. Unit must be placed to allow for free air flow. The contractor must follow manufacturer's guidance on clearance from obstructions including walls, overhangs, protrusions and other features. The contractor must ensure that the outdoor unit does not interfere with view through or operation of any window or door.
3. Line set insulation: Refrigerant vapor (suction) lines must be continuously insulated and vapor sealed with a minimum thickness of 3/8 inch of foam rubber or equivalent, and all seams sealed.
4. If required by the manufacturer, insulation must cover entire line set length (both pipes) to avoid condensation and energy loss. Once insulated, the outdoor portion of line set must be protected with a rigid cover to avoid insulation damage and installed in a workmanlike manner with tightly connected joints. UV tape must be added as needed to ensure that any remaining exposed insulation is protected.
5. Line set penetrations into the dwelling should be made rodent-proof (e.g., with PVC sleeve and cap drilled to the size of the refrigerant lines.)
6. All penetrations through the shell of the dwelling must be sealed with insulating sealant/spray foam. Any insulation disturbed by installed line set must be returned to original (or better) condition.
7. Refrigerator tubing flair connections:
    a. The contractor must create new flare fittings as needed, using a flaring tool and measurement gauge appropriate to the applicable refrigerant and in accordance with manufacturer's instructions.
    b. The contractor must not reuse used manufacturer-provided tubing flares and fittings.
8. Refrigerant piping: Piping installed in the earth or below a concrete slab must be encased in conduit or a minimum of Schedule 40 polyvinyl chloride. The encasement diameter must be at least 3/4 inches greater than that of the tubing and its insulation. The casing must be laid in a straight line to permit removal or insertion of the piping and must terminate above the grade level. Split systems must, where feasible, use only new, appropriately insulated refrigerant line sets specified by the manufacturer and not in excess of 50 feet. The linear, one-way length of refrigerant piping between the two sections of split units must not exceed the maximum distance specified in the manufacturer's published literature. The compressor section where feasible must not be more than 20 feet above or below the indoor unit. Oil traps or double suction risers, as required by the equipment manufacturer must be provided for oil return. Refrigerant piping must be supported properly to prevent excessive sagging, movement, or vibration and limit lateral movement, but permit normal thermal expansion and contraction.
9. The contractor must ensure all refrigerant piping installed:
    a. Has the correct size line set on split systems.
    b. Has the properly sized liquid line filter drier, field or factory installed.
    c. Is brazed with a nitrogen purge in the line set and indoor coil.

d. Has a vacuum of 500 microns or manufacture specified microns drawn before releasing the factory charge, with no leaks.

10. The condensate must be properly piped, pitched, sized and insulated per manufacturer's specifications. Condensate must not terminate over walkways where accumulating/not draining properly condensate could damage building components. A secondary AC condensate drain must be installed with a drain pan to a conspicuous point of disposal, both AC condensate drains (primary and secondary) must discharge in different locations and the secondary drain to some easily accessible / conspicuous location that would alert the homeowner to the drainage issue. In cases where no secondary drain and no means of installing an auxiliary drip pan can be plumbed /installed to some conspicuous location, an interlocked detector / cutout switch must be installed so that outdoor unit is disabled if water level rises and activates detector / switch. The primary AC condensate discharge pipe must have a trap installation or per manufacturer's specification (no traps on a drip pan secondary line). If a condensate pump is installed, it must also have an interlocked detector / cutout switch be installed so that outdoor unit is disabled if water level rises and activates detector / switch.
11. Equipment must meet all manufacturer specified minimum clearances. Indoor equipment must have properly installed condensate line that is trapped and insulated. Indoor equipment must have a drip pan that extends under the entire unit.
12. Outdoor equipment must be placed on level concrete pad or equivalent. If mounting to the wall of the building, efforts should be taken to minimize the possibility of noise caused by vibration of the unit being transmitted into occupied areas of the home.
13. When possible, the contractor must avoid installing outdoor unit(s) directly under any drip line from the roof or other overhang that would subject them to falling snowmelt, ice or concentrated rain runoff, including roof valleys, or any roof without a gutter. When this is unavoidable, outdoor units must be installed with drip caps or shields approved by the manufacturer.
14. If the unit does not have a fuse to protect the unit's sensitive electronics, a surge protection must be installed per manufacturer specification or at the service.
15. The contractor must follow manufacturer allowed clearances for multiple units and avoid stacking units above each other except when explicitly permitted by manufacturer.
16. Outdoor units should be located in inconspicuous places for aesthetic and noise considerations.
17. Contractors should avoid noise-sensitive areas.

○*OPTIONAL BEST PRACTICE*○ Interview customer to assess both degree of sensitivity, and locations that might pose trouble.

Transmitted noise from wall brackets is generally a minimal issue for 2x6 or thicker walls, and/or walls with 1inch+ rigid insulation. With 2x4 walls it's important to ensure a non-sensitive area, or a ground-mounted alternative.

18. Location of outdoor unit(s) should always be approved by the customer.
19. The replacement of the indoor units should take into account the following recommendations:
    a. Indoor wall mounted units should be installed high on the wall but with adequate clearance from the ceiling (a minimum of 12-18 inches) if possible for ceiling heights up to 8 feet. In

rooms with higher or vaulted ceilings, they should be no higher than 8 feet. This will help focus the space conditioning on the occupied space in and cooling seasons.

b. Equipment must meet all manufacturer specified minimum clearances.

20. Metering Devices: Equipment must have a TXV or electronic equivalent refrigerant metering device installed.
21. System charge must be checked by any method approved and specifically documented by the manufacturer that will ensure proper refrigerant charging of the system. Note: If outdoor conditions require a follow-up visit to finalize the charging process, this must be recorded at both the initial visit and the follow-up visit.
22. Accessories: All accessories must be designed and installed per manufacturer's specifications.
23. Service Access: All units must be located to allow service access for removal of any unit component without removing any piping, ductwork, or other permanently installed fixtures or components.
24. Two or more systems must not be connected in parallel to a common supply or return system.
25. All ducted Air Conditioning units must include a filter system with a minimum rating of MERV 6 unless otherwise specified in the manufacturer's specifications.
26. Start-up and Commissioning: The contractor must secure, in an easily visible location, a sticker showing their name, regular phone number, emergency service phone number (if applicable), and date of system startup. There must be, either in the owner's possession or affixed near the unit, all installation and operating manuals and warranties, and the contractor or his / her representative must instruct the owner on the complete operation of the heat pump system at the time of system startup. The contractor must conduct and provide start-up and commissioning report per manufacturer's protocol.

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6.10 Ground Source Heat Pumps

All contractors installing Ground Source Heat Pumps must meet the certification and installation requirements of NYSERDA's Ground Source Heat Pump Rebate Program. Requirements can be found at:

https://portal.nyserda.ny.gov/servlet/servlet.FileDownload?file=00Pt0000003HRiBEAW

6.11 Solid Fuel Burning Appliances (Woodstoves and Pellet Stoves)

6.11.1 Materials

1. Installed appliances must have a flue properly sized to the appliance that has the necessary vertical rise, is protected from extreme cold and is correctly configured according to the manufacturer's specifications.
2. ○*OPTIONAL BEST PRACTICE*○ Install sealed combustion units.
3. ○*OPTIONAL BEST PRACTICE*○ Ensure sizing of stove is based on BTU output figures from the list of certified EPA stoves, not from manufacturer promotional materials. Manufacturer

promotional materials often have higher BTU figures than the EPA list of certified stoves, leading to an under sizing of appliances for the space intended to be heated.

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6.11.2 Installation

1. Installer must ensure that installed appliance and venting system are compatible and installed to manufacturer's specifications.
2. All combustion gas venting must be run to the exterior of the building and must terminate with an approved end cap. The contractor must ensure that venting conforms to manufacturer's recommendations and NFPA 211. As required, the venting system must extend at least 3 feet above the roof at its exit point, and at least 2 feet above any part of the roof within ten feet of the vent.
3. Vent piping should slope upward from the appliance at a minimum of ¼ inch/foot or according to manufacturer's specifications.
4. The contractor must ensure that the venting system is free from blockage or restriction, leakage, corrosion, inadequate vent connectors or other deficiencies that may cause an unsafe condition.
5. The contractor must ensure that appropriate clearances between the wood-burning appliance and combustible materials and the venting system and combustible materials are maintained as specified in the manufacturer's installation specifications.
6. Protection of combustible floors must be installed as part of the appliance install. Hearth boards or pads used to protect combustible materials in proximity to the appliance must be approved for such use.
7. Installed systems must have a dedicated combustion air intake. Whenever possible the system should be installed with a combustion air intake that is connected directly to outside air. The only exception to this installation is when the distance to outside combustion air and the associated angles of venting to the exterior, would exceed manufacturer's recommendations.
8. When a "skuttle" air intake is installed to bring in combustion air, this air intake must not be installed directly below the flue or on the windward side of the home, where during exceptionally cold days, the stove's emitted combustion byproducts from the flue/chimney, may be taken back into the fresh air of the household.
9. ○*OPTIONAL BEST PRACTICE*○ When installing a wood or pellet stove, the installer should also show the homeowner how to do recommended daily, weekly and/or monthly cleaning of the stove, including cleaning of heat exchanger. This demonstration may be one of the best ways to avoid future call backs and malfunctioning of the stove.

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6.12 Additional Requirements Specific to Wood Stoves

1. Installed appliances must meet Program guidelines for efficiency.
2. Installed appliances must be EPA Certified for particulate matter output of 4.5 grams per hour or less.

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6.13 Additional Requirements Specific to Pellet Stoves

6.13.1 Materials

1. Installed pellet stoves must be listed on the US EPA Certified Wood Stoves list as having a particulate matter output of 2.0 grams per hour (PM 2.0 g/h) or less and an actual measured efficiency of 70% efficient or greater.
2. Installed pellet stoves should be listed and labeled in accordance with ASTM E1509.
3. Pellet stove venting materials must be listed and labeled specifically for pellet stoves

6.13.2 Installation

1. Pellet stoves must be installed in accordance with ASTM E1509.
2. Flue lining and vent systems for use in masonry chimneys with pellet fuel-burning *appliances* shall be limited to the following:
   a. Flue lining systems complying with Section R1003.11.1 of the IRC (International Residential Code) 2015, or subsequent update.
   b. Pellet vents listed for installation within masonry chimneys per Section R1003.11.4of the IRC 2015, or subsequent update.

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6.14 Additional Requirements Specific to Domestic Hot Water Systems

6.14.1 General:

1. In 2017 the DOE changed testing procedures and rating standards for water heaters, which will affect how water heater efficiencies are labeled. This changes the efficiency listing from Energy Factor (EF) to Uniform Energy Factor (UEF). This new standard accurately reflects real-world use and pattern scenarios.
2. Water heaters installed through the Program must have a UEF that meets Program requirements.
3. The Air-conditioning, Heating and Refrigeration Institute (AHRI) has converted all DWH equipment from EF to UEF. The AHRI directory that lists UEFs for available water heaters is available at:

www.ahridirectory.org

4. Location: If possible, water heater must be placed where leakage from the relief valve, leakage from the related piping, or leakage from the tank or connections, will not result in damage to the surrounding areas, or to the lower floors of the building.
5. Drain Pan: A drain pan must be installed underneath the water heater if it is located where leaks could cause damage. A 1-inch line must be installed between the pan and an appropriate drain. A water alarm/shut-off can be installed in the pan if there is no place to run a drain line.
6. Leaks: Water heater and system must be leak-free. All water leaks must be identified and repaired.

7. If the water heater to be installed does not have factory-installed heat traps, the contractor may install heat traps or one-way valves, which allow water to flow into the tank and prevent unwanted hot-water flow out of the tank in both hot and cold lines.
8. Installation must include a shut off valve in the cold and hot water inlet / outlet lines. It must be located close to the water heater and be easily accessible. Use only full flow ball or gate valves.
9. Unions: Use dielectric unions or nipples to protect hot and cold water fittings from corrosion when connecting dissimilar materials such as copper and galvanized iron pipe.
10. Thermal Expansion Tank: If installing the water heater in a closed water system, install properly sized expansion tank. To clarify: thermal expansion of heated water may occur wherever potable water is heated in a closed system (when the potable water is isolated from the public water supply by a one-way valve, such as a pressure reducing valve, backflow preventer or check valve. Some water meters do have an internal check valve to protect the city mains from local contamination). Potable water expansion tanks are designed to absorb the increased volume of water created by thermal expansion and to maintain a balanced pressure throughout the potable water supply system. They are used to prevent plumbing system and/or water heater damage and unnecessary relief valve discharge caused by excessive pressure from thermal expansion.
11. T&P relief valve: Water heater must have the proper size and type T&P valve and discharge pipe installed per manufacturer's instructions.
12. Drain valve: Water heaters must have accessible drain valve installed.
13. Single-wall heat exchangers are permitted if they satisfy all of the following:
    a. The heat transfer medium is potable water or contains only substances which are recognized as safe by the U.S. Food and Drug Administration.
    b. The pressure of the heat transfer medium is maintained less than the normal minimum operating pressure of the potable water system.
    c. The equipment is permanently labeled to indicate that only additives recognized as safe by the FDA must be used in the heat transfer medium. Other heat exchanger designs may be permitted where approved by local code.
14. Well systems: If installed on private well systems, water heater must be able to operate correctly at the lowest anticipated operating water pressure.
15. Two or more water heaters: Controls and piping per manufacturer recommendations to provide the most efficient operation while meeting the hot water demands of the consumer.
16. Piping must be installed so that piping, connections and equipment must not be subjected to excessive strains or stresses. Provisions must be made to compensate for expansion, contraction, shrinkage and structural settlement. Piping must include all necessary fittings, valves and piping for manufactures specified maintenance and cleaning.
17. All installed fossil fuel fired DHW systems must be tested for combustion safety.
18. o*OPTIONAL BEST PRACTICE*o Insulate DHW supply pipes to improve delivery time and reduce heat loss to unconditioned or semi-conditioned spaces.

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6.14.2 Air Source Heat Pump Water Heaters

Materials

Installed systems must be ENERGY STAR ® rated.

Installation

1. Installed systems must be located outside of the conditioned area. Installed system must be located in space temperatures between 45-90 degrees. Or for a system that uses inlet air ducts: entering air must be between 40 – 90 degrees. Water heater location to be a 750 - 1,000 cubic feet of area or as required by manufacturer's specifications.
2. Heat Pump Water Heaters must have at the minimum the following modes of operation:
    - HEAT PUMP ONLY
    - HYBRID: This mode uses the heat pump as the primary heating source. The heating element will heat water if demand exceeds a predetermined level so that the set point temperature can be recovered more quickly.
    - ELECTRIC: The water heater functions as a conventional electric unit, relying totally on the elements to heat the water in the tank.
    - VACATION: Unit off or set for very low temperature

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6.14.3 Storage Water Heater

1. Storage water heater must be sized by peak-hour demand (the busiest one-hour), which can be determined by using GAMA Water Heater Sizing Tool. The water heaters First Hour Rating (FHR) must match within 1 - 5 gallons of peak-hour demand.

6.14.4 Indirect Storage Water Heater

Materials

Tank must be sized by peak-hour demand (the busiest one-hour), which can be determined by using GAMA Water Heater Sizing Tool. The water heaters First Hour Rating (FHR) must match within 1 - 5 gallons of peak-hour demand. In addition, the installed boiler output must meet the manufacturer's minimum Btu/hr. requirements to achieve First Hour Rating with the specified GPM through the Indirect coil at the design water temperature.

Installation

1. Indirect water heater must be piped as priority zone on boiler.
2. Boiler piping, controls and pumping must be installed to provide the proper flow through the indirect coil, specified by the indirect manufacturer.
3. Cold-start control strategy must be used.

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6.14.5 Tankless Water Heaters

Materials

1. Installed systems must be ENERGY STAR ® rated.
2. Must have a flow rate of at least .5 Gallons Per Minute (GPM).
3. Must have thermostatic control.
4. Two pipe systems or concentric pipe vented to the exterior, with an approved vent cap.
5. Sizing: Peak-hour demand (the busiest one-hour) flow rate, in GPM if possible measure the flow rate, (GPM) for each point of use, to determine how many gallons will be required during that peak demand time period flow rate in GPM, if not use GAMA Water Heater Sizing Tool to determine estimated peak-hour flow rate in GPM. Then determine temperature rise using coldest anticipated inlet water temperature and design outlet water temperature, the difference being the design temperature rise. Match peak-hour flow rate in GPM and anticipated temperature rise with manufacturer's rated flow rate in GPM and temperature rise.
6. System must be leak-free. All water leaks, including pre-existing, must be identified and repaired.
7. A raw water analysis must be taken initially of each installation so that the correct water treatment can be established and installed per manufacturer's recommendations. The treatment must be compatible with materials of construction. The primary goal of boiler water treatment is to control solids that cause deposits in the boiler and control gases that cause corrosion.

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6.15 Ductwork

6.15.1 General

1. Ducts must be assembled and installed in accordance with recognized industry practices to achieve air-tight and noiseless (no objectionable noise) systems, capable of performing each intended service.
2. Install each run with minimum number of joints. Align ductwork accurately at connections, within 1/8 inch misalignment tolerance and with internal surfaces smooth. Support ducts rigidly with suitable braces, and anchors of type which will hold ducts true-to-shape and to prevent buckling. Ducts must be braced and guyed to prevent lateral or horizontal swing. Installation must meet or exceed all applicable federal, state and local requirements, referenced standards and conform to codes and ordinances of authorities having jurisdiction. All installation must be in accordance with manufacturer's published recommendations.
3. Penetrations: Where ducts pass through interior partitions and exterior walls, and are exposed to view, the contractor must:
    a. Seal space between construction opening and duct or duct insulation with sheet metal flanges of same gage as duct.
    b. Overlap opening on 4 sides by at least 1½ inch.
    c. Fasten to duct and substrate.
4. Vapor Barriers: Where vapor barriers are present, the vapor barrier must be on the outside of ductwork. Vapor barrier must be unbroken. Joints, etc., must all be sealed. Where insulation with a

vapor barrier terminates, it must be sealed off with the vapor barrier being continuous to the surface being insulated. Ends must not be left with exposed fiber glass or other insulation.

5. Return air must not be taken from any of the following locations; bathroom, kitchen, garage, crawl space, mechanical room or other separate dwelling unit. No supply ducts may be installed to the garage. New duct system must have return duct system installed. The use of building cavities in new duct system installations is not allowed. Return air path for each room must be provided by properly sized permanent means, such as return ducts, unclose-able grilled or louvered transfer into the door, wall or ceiling or undercut door with any combination thereof along with duct sealing and proper duct insulation as needed.
6. Fuel-burning Appliances: No duct system may be installed such that the sole source of return air is located in a room or space containing a fuel-burning appliance, except where the fuel-burning appliance is a direct-vent appliance.
7. Balancing Dampers: All newly installed duct systems must have balancing dampers installed for the purpose of air balancing the duct system with a means of access to balancing dampers.
8. Abandoned register, grilles and ductwork must be removed, blocked off and permanently sealed.
9. The contractor must check system balance and make modifications as needed to provide proper aiflow and room pressure. A system is considered balanced when room to room pressure differencial does not exceed 3 pascals when the system fan is running at design maximum speed.
10. Ductwork located outdoors: duct must be metal and installed with proper insulation resistant to UV, and ozone, acid rain, and physical elements produced from outdoor weather. Support members that connect directly to the ductwork are to be insulated with this same material. Horizontal ductwork located outdoors must be sloped at a minimum 2-degree angle to prevent the accumulation of water on top of the finished insulated duct.
11. Protection of Ducts: Ducts installed in locations where they are exposed to mechanical damage must have barriers to prevent such damage.
12. All new duct systems installed must include minimum MERV 6 with design accounting for filter pressure drop at design airflow.
13. Existing duct system airflow through the indoor unit, under steady state condition must be within ± 10% of the airflow required per the system design or manufacturer recommendations (with all accessories and system components in place). The contractor must measure airflow and adjust to above specifications.
14. On installation where a new duct system is installed the following must be met: The individual room airflows are within the greater of ± 20% or 25CFM of the design/application requirements for the supply and return ducts. The contractor must measure airflow and adjust to above specifications.
15. See Section 6.4 “Additional Requirements Specific to Furnaces” regarding filters.
16. ○*OPTIONAL BEST PRACTICE*○ When duct systems run through unconditioned space and are used for cooling only, register openings must be tightly sealed to prevent water vapor accumulation in the system during the heating season.

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6.16 Installation of Metal Ductwork

6.16.1 Materials

1. Metal ducts and plenums with a cross sectional area of 1.2 sq./ft. or less must be 30 equivalent galvanized sheet gage or thicker, over 1.2 sq./ft. must be 28 gauge equivalent galvanized sheet gage or thicker.
2. Duct liner material must be rated for its intended purpose and must not support the growth of fungus or bacteria.

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6.16.2 Installation

1. All joints and connections must be mechanically fastened with screws in three places.
2. Metal ducts must be supported by ½ inch wide 18-gage metal straps or 12-gage galvanized wire at intervals not exceeding 10 feet or other approved means.
3. Duct Liners must at minimum comply with the following:
    - All joints must be neatly butted. All rips and tears on the air stream surface must be repaired by coating damaged areas with approved adhesive or coating, or by replacement of duct liner.
    - Mechanical fasteners must be used to secure the duct liner to the sheet metal; these may be either impact-driven or weld-secured with adhesive that must be applied to the sheet metal with a minimum coverage of 90%.
    - Exposed edges must have adequate treatment to withstand operating velocities.
    - To avoid contact with liquid water, duct liner must be protected by use of a sheet metal sleeve and drip pan adjacent to such equipment as evaporative coolers, humidifiers, cooling coils, and outside air intakes.

6.17 Installation of Flex Duct

This section is extracted from the "Flexible Duct Performance and Installation Standards 3rd Edition" which is published by the Air Diffusion Council.

6.17.1 Materials

All tapes, mastics and non-metallic fasteners (plastic clamps) used for field installation of flexible ducts must be listed and labeled to UL 181B, with the proper shear strength and adhesion needed to stay effectively in place for the live of the HVAC system.

6.17.2 Installation

1. All connections, joints and splices must be made in accordance with the manufacturer's installation instructions.
2. Use the minimum length of flexible duct to make connections.

○*OPTIONAL BEST PRACTICE*○ It is recommended that flexible air duct branch takeoffs (run-outs), flexible air ducts direct to boots from the plenum and flexible ducts in radial duct systems be limited in length to 25 feet.

3. Flex ducts must not be installed where exposure to direct or indirect sunlight or UV producing air treatment devices can occur. Prolonged exposure to sunlight or UV light may cause degradation of the core material or the vapor barrier.
4. The contractor must repair torn or damaged vapor barrier/jacket with duct tapes listed and labeled to UL 181B; if internal core is penetrated, replace flexible duct or treat with a splice.
5. Ducts must be installed fully extended and not installed in the compressed state. Contractors must avoid installing excessive lengths where possible. Duct must be installed without any kinks or excessive bends.
6. Ducts must not be installed in concrete, buried below grade or in contact with the ground.
7. Ducts must not be installed near hot equipment (i.e. furnaces, boilers, steam pipes, etc.) that is above the recommended flexible duct use temperature.
8. Flexible duct must be supported at manufacturer's recommended intervals, but at no greater distance than 5 feet. Maximum permissible sag is ½ inch per foot of spacing between supports. Duct supported with "Zip" ties must not sag or kink.
9. Hanger or saddle material in contact with the flexible duct must be of sufficient width (minimum of 1 ½ inch) to prevent any restriction of the internal diameter of the duct when the weight of the supported section rests on the hanger. Individual ducts must be separately supported.
10. Flexible ducts may rest on ceiling joists or truss supports. Maximum spacing between supports must not exceed the maximum spacing per manufacturer's installation instructions.
11. Vertically installed duct must be stabilized by support straps at a maximum of 6 feet on center.

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6.18 Installation of Rigid Fibrous Duct

6.18.1 Materials

1. In an up-flow configuration, standard uncoated fibrous glass duct board may be used adjacent to the coil plenum.
2. For down-flow furnaces, sheet metal must be used directly below the unit and then for four feet in the ductwork adjacent to the coil plenum. Standard uncoated fibrous glass duct board may be used after the first four feet of coated duct.
3. In an up-flow configuration with a side return, standard uncoated fibrous glass duct board may be used in the return adjacent to the furnace fan.
4. In a horizontal supply system with a horizontal return, standard uncoated fibrous glass duct board may be used in the return adjacent to the furnace fan.
5. For up-flow furnaces with a bottom return, sheet metal must be used in the return ductwork directly below the unit. In addition, the return boot must also be fabricated from sheet metal to prevent any water that may enter the system from collecting in the boot. From the return boot, standard uncoated fibrous glass duct board may be used for the rest of the return.

6. In a horizontal supply system, there are two options that may be considered. Metal duct, installed so that it slopes back to the condensate pan, may be used for the first four feet of duct adjacent to the coil. To prevent air infiltration, all seams and connections must be sealed with a UL 181 approved closure system. In addition, exterior insulation is to be used on the metal duct to prevent condensation potential. After four feet, the ductwork may be transitioned to standard uncoated fibrous glass duct board with all butt seams sealed with a UL 181 closure system. The other option is to use coated or laminated fibrous glass duct board adjacent to the coil. This ductwork must also be sloped back toward the furnace to prevent water from traveling through the duct system. As with the metal duct, all board edges of the fibrous glass duct board must be sealed with a UL 181 closure system prior to fabrication to reduce the surface area of the exposed edge.

6.18.2 Installation

1. Rigid fibrous glass duct must not be used in concrete, buried below grade, or any other location where it may be exposed to weather or physical abuse.
2. Rigid Fibrous Glass Duct must be made and installed using tools and/or machines designed for that purpose.
3. Hanger straps or saddles must be a minimum of 2 inches wide. Avoid sharp edges and burrs. Hangers must be spaced on 6 feet centers and must be located at circumferential joints wherever practical. Duct must be hung so that the hanger will not cut or otherwise damage the duct facing (NAIMA Fibrous Glass Duct Liner Standard).

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6.19 Duct Sealing

6.19.1 General

1. Duct sealing must be prioritized where the pressure is greatest (typically closest to the air handler) and then out toward the extremities of the system. Care must be taken when performing duct sealing to avoid exceeding manufacturer's rated temperature rise/drop across the heat exchanger of the furnace or CAC.
2. For energy savings, only ducts in unconditioned space must be sealed. Ducts in enclosed crawl spaces and basements have proven to have marginal payback. Therefore, it makes the most sense to seal ducts that are located in ventilated spaces or ambient areas such as ventilated attics, open crawl spaces, garages, etc. Once the decision is made to seal a duct segment, all the openings in the duct system must be sealed starting closest to the system air handler and moving toward supply and return registers.
3. ○*OPTIONAL BEST PRACTICE*○ In situations where a central humidifier exists in the furnace, the contractor must evaluate where leaks in the return ducts may create a pressure imbalance and drive moisture into unconditioned spaces, such as unconditioned attics or wall cavities. In these instances, sealing return ducts and thorough air sealing can be critical.

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6.19.2 Materials

1. Cork tape or equivalent must be used for sealing gaps where refrigerant and/or drain lines penetrate coil or plenum.
2. 181A or 181B metallic pressure tape with non-butyl (i.e. acrylic) adhesive must be used to seal service panels, access covers, etc.
3. Rigid Fibrous Glass Duct, Tapes and Mastic must comply with the following: UL 181A and must be marked "181 A-P" for pressure-sensitive tapes, "181 A-M" for mastic and "181 A-H for heat sensitive tape.
4. Flex, Metal to Metal Ducts Tapes and Mastic must comply with the following: UL181B and must be marked "181 B-FX for tape or "181 A-M" for mastic.
5. Consult manufacturers' recommendations and ensure compliance with their requirements for installation, shelf life, and long-term storage of closure tapes and mastics.
6. 100% silicone caulk may be used at component to component and component to plenum connections.

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6.19.3 Installation

1. All joints, seams and connections of the duct system must be mechanically fastened with screws in at least three points. These joints, seams and connections must be sealed with duct mastic. **Photo:** Metal Ductwork Sealed with Mastic.
2. Surfaces to receive sealant must be clean, meaning free from oil, dust, dirt, rust, moisture, ice crystals, and other substances that inhibit or prevent bonding.
3. Cracks or seams wider than ¼ inch must to be repaired with fiberglass mesh as well as mastic.
4. Gaps over 1 inch wide must be repaired with a sleeve or sheet metal patch and sealed with approved mastic or tape.
5. Air handler access panels and seams that may need to be opened for service must be sealed with a UL181 rated tape.
6. Connections between the air handler and the cooling coil or hot water coil must be sealed with 100% silicone caulk. **Photo:** Air Handler Sealed with Silicone Caulk.
7. Flex duct connections must be made with hard duct connectors, held in place with a vinyl tension strap and the strap screwed into place. The connection between the inner liner and the hard duct that it is connected to must be sealed with duct mastic.
8. Boot to floor, wall or ceiling connections for supplies and returns must be mechanically fastened to the surface or surrounding framing and sealed to the wallboard or subfloor with mastic.
9. If there is a filter door, it must have an operable door that closes securely and is reasonably tight.

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6.20 Duct Insulation

6.20.1 General

1. Insulate any sections of duct systems that are in unconditioned spaces to code levels.
2. Duct sealing must take place before insulating ducts.
3. Air conditioning ducts in unconditioned spaces must have a continuous Class I vapor retarder to avoid condensation and water damage. The seams of the vapor retarder must be sealed with vinyl tape. The entire duct system in the unconditioned space must be insulated. Special attention must be paid to ducts that run near the roof sheathing in cold climates. Failure to seal ducts in this area can lead directly to ice damming.

6.20.2 Materials

1. Vinyl duct wrap with a minimum R-value of 6 must be used to insulate ducts in unconditioned basements, crawl spaces, or garages.
2. Vinyl duct wrap with a minimum R-value of 8 must be used in unconditioned attics.
3. Vinyl Tape made especially for use on vinyl duct insulation
4. Clamp stapler and staples must be used to secure ducts
5. Materials must be resistant to UV, and ozone, acid rain, and physical elements produced from outdoor weather.

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6.20.3 Installation

1. Duct insulation must be installed by wrapping insulation around ductwork and attaching neatly using a clamp stapler with staples every two inches. Two inches must be added to the width of the duct wrap to provide the excess wrap needed to create a neat tight seam that can be stapled without compressing the insulation. Do not pull the insulation too tight as this will compress it and decrease its R-value.
2. No fiberglass must be left exposed. All seams and tears in the vinyl vapor retarder must be sealed using vinyl tape. **Photo:** Sealed Vapor Retarder on Attic Ductwork.
3. No part of the duct system must be left un-insulated, including supply and return boots. When insulating cooling system ducts, the vapor retarder must be made continuous.
4. If floor joist bays are used as return ducts and are to be insulated, the contractor must first ensure that all leakage paths into the bays are sealed. Duct insulation must then be wrapped around 3 sides and stapled near the top of each joist or to the subfloor on each side. Duct insulation must be in substantial contact with all sides of duct area. Seams must be mechanically reinforced using vinyl tape.

7. Controls

7.1 Programmable and Smart Thermostats

7.1.1 Materials

1. All installed thermostats must be compatible with the equipment they are controlling.
2. The thermostat must have a minimum of a 5/2-day program schedule.
3. The thermostat must be easy to program and maintain by the customer. The display screen must be easily readable, and appropriate for the visual capabilities of the customer.
4. ○*OPTIONAL BEST PRACTICE*○ A large display and touch screen programming will aid setup.
5. In situations where a customer may use a furnace fan as a cooling system, the thermostat must have a "Fan On" switch.

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7.1.2 Installation

1. The thermostat must be installed according to the manufacturer's specifications and instructions.
2. Installed thermostats must be properly leveled, calibrated as specified by the equipment manufacturer and appropriately located:
    a. On an interior wall
    b. Out of the path of direct sunlight
    c. At an appropriate distance from heat sources, such as incandescent lights, heat vents or radiators.
3. The surrounding finish surfaces must be returned to the same condition as pre-installation.
4. After installation the thermostat must be turned on and the program must be verified.
5. The contractor must leave the program instruction manual with the homeowner and must verbally walk through the process for programing the thermostat.
6. Heat Pump Thermostats: In no case (for normal heat pump operation) must the auxiliary heater(s) be wired to energize during the first heating stage of the indoor thermostat. Either a manual emergency heat switch on the sub base, or automatic controls (factory installed) within the heat pump must be supplied to allow all of the auxiliary electric heaters to be electrically turned on during the heating season (under control of the indoor thermostat but with the compressor and outdoor thermostats bypassed) for use when the heat pump compressor or associated refrigeration equipment is inoperative. An outdoor thermostat, intelligent thermostat (two-stage) or equivalent control may be used to lock out the supplemental heat when outdoor temperature is above the thermal balance point.
7. The contractor must collect and properly dispose of the thermostat being replaced. Special attention must be paid to the proper disposal of thermostats containing mercury. All mercury thermostats must be disposed of according to the NYS Mercury Thermostat Collection Act. Thermostat wholesalers may serve as disposal sites.

7.2 Boiler Outdoor Reset Controls

7.2.1 General

While all boilers can show savings when combined with outdoor reset control, not all existing boilers are good candidates for this control strategy. The boiler reset control must only be installed under the following conditions:

- The boiler is in good working order, with venting system in good condition.
- If a combustion efficiency testing is conducted the results indicate 75% or higher combustion efficiency.
- No tankless coil is in use on the boiler
- Programmable thermostat setbacks are limited to 5 degrees or less
- Annual heating usage exceeds 50 million BTUs, as per chart below:

Table 6. Annual Heating usage

Annual Heating Usage	Fuel Type
500 Therms	Natural Gas
535 Gallons	Propane
350 Gallons	# 2 Fuel Oil

7.2.2 Material Requirements

Control and all materials installed must be compatible with equipment that it will be installed with.

7.2.3 Installation Requirements

1. All installed equipment must be installed in compliance with state and local codes.
2. All equipment must be installed in accordance with manufacturer's specifications.

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7.3 Time of Use Timers for Electric Hot Water Tanks

Time of use timers for hot water heaters may be eligible for installation if the water is heated by electricity and the household has time of use (or on-peak/off-peak) rates. If time-of-use rates are in effect, or available the contractor must ensure that household is switched over to these rates as part of the process. The following conditions must be met:

1. Water is heated by electricity
2. The household must have time of use (or on-peak/off-peak) rates. If time-of-use rates are in effect, or the contractor must ensure that household has switched over to these rates as part of the process
3. Water tank must have an 80-gallon capacity or greater
4. Timer to be installed must have a battery backup
5. Written permission has been obtained by owner, and timer and rates must be acceptable to household

6. The contractor must ensure that household must be willing and capable of adjusting the timer and replacing the batteries as needed and is educated by the contractor on the use of the timer.

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8. Lighting

8.1 LEDs

8.1.1 Material

1. ENERGY STAR ® rated
2. Operable in enclosed lighting fixtures.
3. If installed outdoor, operable in year-round exterior temperature conditions.
4. All socket extenders installed must be UL listed.
5. Color rendition must be acceptable to the family and appropriate for their needs.

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8.1.2 Installation

1. Replacement must be guided by customer usage, with priority given to high-use lighting. Pre-existing bulbs must be determined to have at least a two hour per day burn time.
2. Installation should not be undertaken if there is a reasonable concern of damage to a fragile or poorly installed fixture.
3. Do not install LEDs in locations that have a high potential for breakage.
4. LEDs replacement must reasonably match the lumen rating of the replaced bulb, unless directed by occupant to install bulbs with different lumen output.
5. Only bulbs marked as “dimmable” can be used with a dimmer light control.
6. After installation turn on light and verify that bulb energizes and comes to full brightness.
7. The contractor must install or assist household in installation of all lighting provided by the contractor prior to invoicing the Program.
8. LEDs must not be installed to replace a CFL.
9. Socket must be functional, and no hazardous conditions exist.
10. All replaced incandescent bulbs must be removed from the premises and disposed of properly.
11. Any LEDs damaged during installation must also be disposed of properly.
12. ○*OPTIONAL BEST PRACTICE*○ Motion sensor timers can be installed on exterior lighting fixtures. The installed sensor should be tested to ensure that it energizes the fixture only when there is activity in the desired area.
13. ○*OPTIONAL BEST PRACTICE*○ During the lighting installation the contractor should also look for opportunities to downsize existing lighting, such as reducing the number of bulbs used.

8.2 Lighting Fixtures

8.2.1 Material Requirements

All installed fixtures must be ENERGY STAR® rated.

8.2.2 Installation Requirements

1. The fixture must be installed according to all local electric codes.
2. If the contractor determines that the existing wiring condition is inadequate or that replacement will result in damage to the home, the installation must not go forward.
3. ○*OPTIONAL BEST PRACTICE*○ If the fixture bulb is of a custom design, a spare bulb should be left with the customer for each installed fixture.

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8.3 LED Nightlights

8.3.1 Material Requirements

Must be photocell operated.

8.3.2 Installation Requirements

If installed as an energy efficiency measure, must be installed to replace an incandescent light that is currently left on at night.

8.4 Torchieres

8.4.1 Material Requirements

Halogen Torchieres must be replaced with ENERGY STAR ® LED models of comparable luminescence.

8.4.2 Installation Requirements

1. The contractor must install lighting of comparable or higher luminescence.
2. Unless rated as dimmable, torchieres must not be installed in a light fixture operated by a dimmer.
3. If a new torchiere is installed during the visit, the old torchiere must be disabled by removing and disposing of the old bulb and cutting the power cord. The contractor may leave the old halogen torchiere for disposal by the household.

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9. Hot Water Efficiency Measures

9.1 Showerheads

9.1.1 Material

1. Installed showerheads must have a maximum flow rating no greater than 1.5 gpm (gallons per minute).
2. Showerhead must be acceptable to the household.

○*OPTIONAL BEST PRACTICE*○ The water flow can be simply and quickly measured with a plastic gallon milk jug with a hole cut out of the top that fits the shower head. If the gallon just fills in 20 seconds or less, the showerhead has a flow rate of 3 gpm or greater (20 seconds x 3 = 1 minute)

○*OPTIONAL BEST PRACTICE*○ Replace a standard showerhead with a showerhead with hand-held capabilities. Customers may be more receptive to the new showerhead because it represents an enhancement.

9.1.2 Installation

1. Inspect the existing pipe connector section for weakness due to corrosion and do not change if pipe is obviously weakened.
2. Showerhead must be installed without causing damage, including cosmetic damage, to the plumbing. ○*OPTIONAL BEST PRACTICE*○ for installation:
    a. Grasp the pipe connector firmly and use slip joint pliers/channel locks to remove existing showerhead
    b. Do not use excessive force. Bear in mind that the installer or installing company is financially liable for repairs.
    c. Clean the threads of the pipe connector to remove old sealant tape or plumbing putty.
    d. Cut a six to eight-inch length of new sealant tape and wrap it around the threads of the pipe connector. Be sure to wrap the tape in a clockwise direction. Installed tape must be neat with no dangling or frayed edges showing.
    e. Hand tighten the new showerhead into place on the pipe connector.
    f. Use a rubber patch to protect the showerhead from the teeth of the slip joint pliers when tightening the shower head.
    g. Do not over tighten. The sealant tape will make the water tight seal without forcing the shower head on too tight.
    h. Turn on the shower and inspect for leaks. The water stream must be even and flow straight from the showerhead

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9.2 Faucet Aerators

9.2.1 Material

1. Flip faucet aerators must have a maximum rated flow of 2.0 gpm
2. Standard aerators must have a maximum rated flow of 1.0-1.5 gpm

9.2.2 Installation

1. Rated flow of existing aerator must be lower than replacement aerator. ○*OPTIONAL BEST PRACTICE*○ for installation:
   a. Remove the old aerator by turning in a counter clockwise direction.
   b. While no aerator is installed run the water for a few seconds to flush out debris.
   c. Cut a six to eight-inch length of new sealant tape and wrap it around the threads of the new aerator. Be sure to wrap the tape in a clockwise direction. The tape must be minimally visible and neatly installed with no dangling or frayed edges.
   d. Screw the new aerator into place finger tight and then further tighten a half turn with slip joint pliers/channel locks. Use a rubber patch to prevent damage to the new aerators finish
   e. Turn on the faucet and check for leaks.
   f. Check that the lever works correctly on the flip aerator and that the increased back pressure caused by stopping flow through the aerator with the lever does not cause the seal between the faucet and the aerator to leak.
2. As part of customer education, the home owner must be shown how the flip aerator works and given a few suggestions as to when it would be a useful feature.

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9.3 Domestic Hot Water Tank Wraps

9.3.1 Material

1. Tank wrap must be two-inch fiber glass backed by a vinyl covering.
2. "Cinch" staples must be ½ inch.

9.3.2 Installation

1. The contractor must ensure that there is no warning posted on the appliance that prohibits wrapping the tank.
2. Insulation must not be installed in a compressed state.
3. Pressure relief valve and pipe stub ins must not be covered by wrap. Insulation must be cut on three sides at location of control plate access panels to allow for access as needed.
4. All joints must be sealed with vinyl or other tape that ensures a permanent, secure seal.
5. Wrap must be secured to the tank with staples, baling wire or other means that ensure that the wrap remains in place for the life of the tank.

6. ○*OPTIONAL BEST PRACTICE*○ for installation:
    a. Measure the diameter of the tank and add four inches to it. Then use the adjusted diameter (d) to calculate the tank insulation length around the tank circumference (C) using this formula: C=π times the diameter. OR: wrap a tape measure around the tank.
    b. Cut the tank wrap to length C + 2 inches and insulate the side of the tank. Do not pull the tank wrap so tight that it compresses the insulation.
    c. Use the excess two inches from the tank wrap length that was cut to fold the tank wrap at the seam and neatly staple it together every two inches with a cinch stapler.
    d. If it is power vented or an electric tank, cut a circular piece of tank wrap that has a diameter two inches greater than the tank. Cut a second piece of tank wrap that is the same diameter of the tank and place that on top of the tank. Place the round section that is 2 inches greater in diameter on top of the tank and using the excess wrap, fold the edges of the side wrap and the top wrap together and fasten securely with the cinch stapler every two inches.

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9.4 DHW Pipe Insulation

9.4.1 Materials

1. Installed pipe insulation must be neoprene or closed-cell foam material of at least ½ inch thickness.
2. Seams must be sealed with suitable material to ensure a permanent firm seal. Acceptable materials include, but are not limited to:
    a. Nylon cable ties ("zip" ties)
    b. Electrical tape

9.4.2 Installation

1. The first three feet of hot water pipe exiting from the DHW tank must be insulated with ½ inch pipe insulation,
2. The first three feet of cold water pipe exiting from the DHW tank must be insulated with ½ inch pipe insulation.
3. All elbows must have mitered corners.
4. “T” connections must have fish mouths cut int o make a tight joint.
5. Pipe insulation must be installed with the seam facing downward. And must be secured using nylon cable ties spaced no greater than 12 inches apart. Pieces longer than 6 inches must have a tie on each end. Ties must be cinched hand tight and must not cause compression of the insulation. The protruding end of the tie must be cut off.
6. Pipe wrap must not come within six inches of single wall flue pipe or within three inches of double wall or b-vent flue pipe on fossil-fuel fired hot water tanks.

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9.5 DHW Temperature Setback

Checking the hot water temperature and adjusting the temperature to meet the occupants' needs can result at energy savings with very little effort.

9.5.1 Installation

1. The contractor must measure and document hot water temperature at the fixture farthest from the hot water source. The fixture must be opened fully with only hot water running and be allowed to run long enough so that the hot water line is fully charged.
2. If the measured hot water temperature exceeds 120 degrees F, the contractor should recommend to the occupant that the water heater setting be lowered so that it delivers water at 120 F. Upon approval of occupant, the contractor may lower the water heater thermostat to achieve 120 F delivery temperatures and must document the new thermostat setting.

   ○*OPTIONAL BEST PRACTICE*○ After testing the water temperature, invite the customer to adjust the water to their preferred shower temperature. Once set, measure the temperature and show the customer. In many instances, customers who prefer a "really hot shower" find that they are using water at a temperature of around 108 degrees. This can be a real eye-opener when you are discussing temperature setbacks.

3. In the case of electric water heaters:
   a. Circuit breaker should be turned off prior to adjusting settings
   b. If the water heater contains two heating elements, both heating elements must be adjusted.
   c. The contractor must ensure that the circuit is turned back on upon completion of adjustment.
4. ○*OPTIONAL BEST PRACTICE*○ In the case of natural gas or propane water heaters, temperature settings are not typically identified on the dial. The contractor may mark the original setting, turn down the dial an estimated amount based on original temperature setting, and instruct the household member how to make further adjustments if necessary.
5. Note: Common water heater thermostats are not very accurate and the contractor will have limited ability to make a precise adjustment. It is not feasible to re-measure the outlet water temperature because the water heater will need to purge its existing contents and refill. The contractor must make their best attempt to set the thermostat to the correct lower temperature.

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10. Appliances

10.1 General Requirements

10.1.1 Material Requirements

All replacement appliances must be ENERGY STAR ® rated except where noted otherwise.

10.1.2 Installation Requirements

1. All replacement appliances must be installed in compliance with manufacturer's installation specifications.
2. Circuit must be safe after installation.

10.2 Additional Requirements Specific to Dryers

10.2.1 Material Requirements

Dryers that are installed through the program must have a sensor that turns off the dryer automatically when clothes are dry.

10.2.2 Installation Requirements

1. The contractor must evaluate the appropriateness of installation:
    a. Location must allow dryer to be vented to the outside without an extensive dryer duct run.
    b. Natural gas must be available to the location where the dryer is to be replaced.
    c. If the pre-existing dryer is electric, the proposed dryer is propane or natural gas, and there are indications that the house is very tight, adding another combustion appliance may not be advisable. In these cases, the contractor must contact the Program Implementer and discuss the option of blower-door testing to ensure safe installation.
2. Dryer installations must include metallic vent ducts (not vinyl).
3. CAZ and gas leak testing must be completed as required by BPI.

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10.3 Other Electric Reduction Measures

In evaluating options for reducing energy use, it is important that the contractor review household usage patterns to identify additional measures. Some examples are as follows:

1. Opportunity to reduce or eliminate electric space heater use by enhancing or repairing the main heating system's distribution system, air sealing or insulating.

2. Programmable thermostats may be installed in homes heated by electricity. See Section 7.1 for further information.
3. A motion sensor light or time for a high-wattage outdoor light that is currently left on all night.
4. Repairs to well pump systems that cycle continuously due to a leak in the system.
5. Insulation and air sealing to reduce or eliminate use of roof heat tape installed to counteract ice damming.
6. Leaking hot water pipes or faucets.
7. Provide timers for TVs or other appliances left to run continuously.

APPENDIX A: Example Pictures

Top Plates Sealed with 1-Part Foam (Click to Return to Section)

Dropped Soffit Sealed with XPS and 1-Part Foam (Click to Return to Section)

Knee Wall Transition Sealed with XPS and 1-Part Foam (Click to Return to Section)

Attic Hatch Weather-stripped (Click to Return to Section)

Pull Down Staircase Enclosure (Click to Return to Section)

Chimney in Attic Sealed with High-Temp Caulk and Metal Flashing (Click to Return to Section)

Bath Fan Sealed with 1-Part Foam (Click to Return to Section)

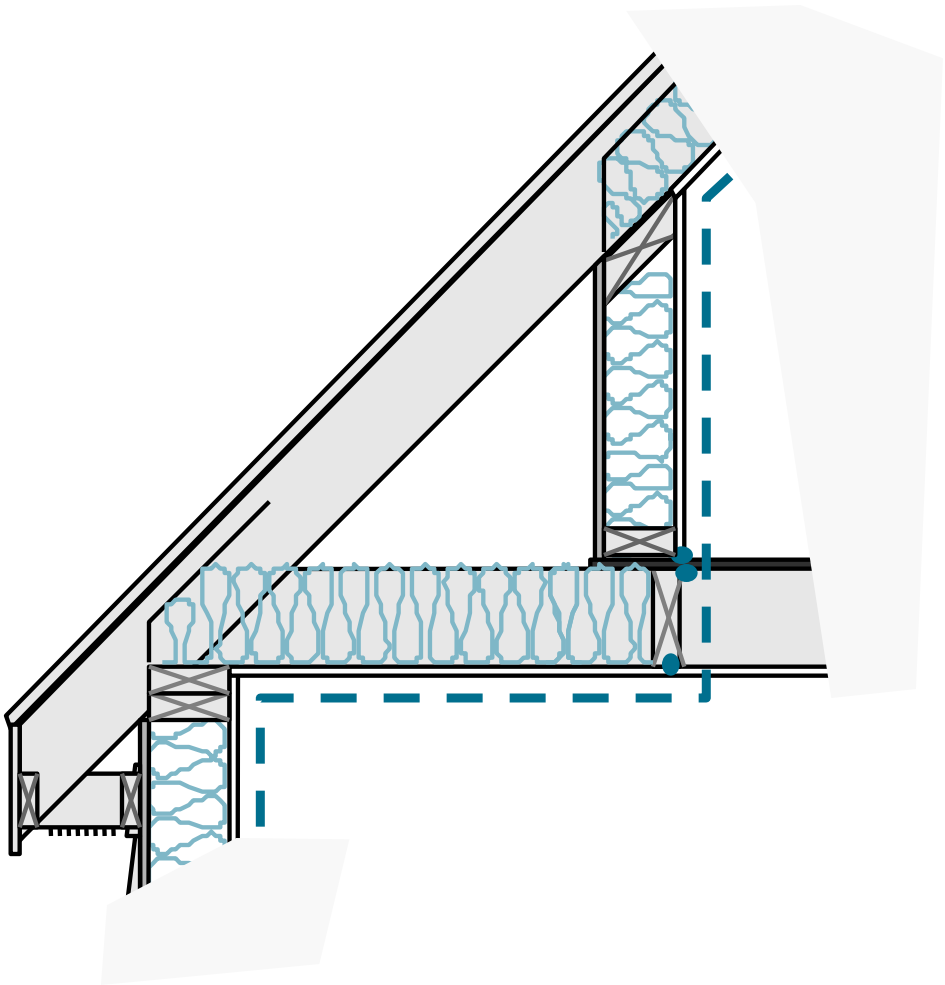
Open Attic Chase Sealed with Sheet Metal, Duct Mastic and Acoustical Sealant (Click to Return to Section)

Plumbing Wet Wall Sealed with Fiberglass Batt Backer and 1-Part Foam
(Click to Return to Section)

Ceiling Height Transition Wall Sealed with 2-Part Foam (Click to Return to Section)

Chimney in Basement Sealed with Sheet Metal and High-Temp Caulk (Click to Return to Section)

Kneewall Attic Air Sealed Along Rafter Line (attic space within thermal/pressure boundary) (Click to Return to Section)



Kneewall Attic Diagram for Air Sealing Along Wall/Floor Framing (attic space outside thermal/pressure boundary)

(Click to Return to Section)

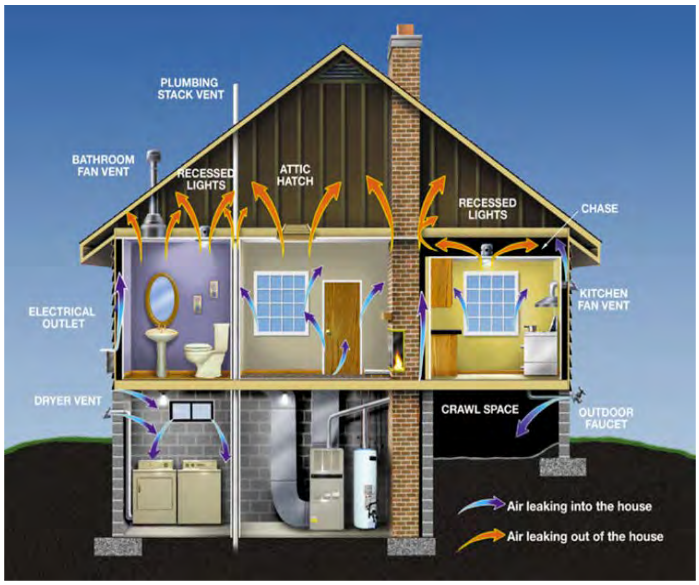
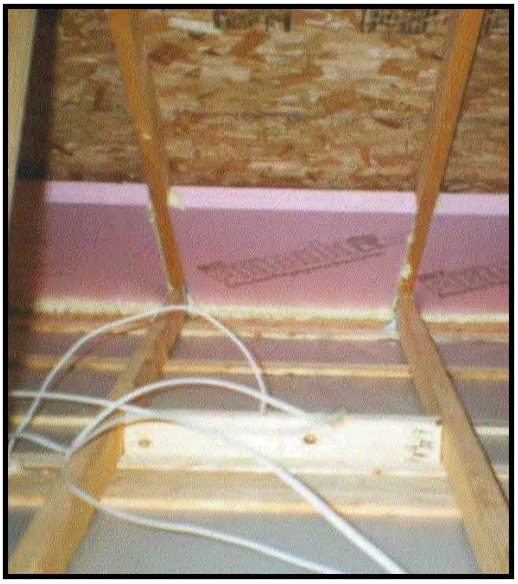


Diagram of General Air Leakage Paths (Click to Return to Section)



Insulation Wind Wash Baffle
(Click to Return to Section)

Loose Fill Attic Insulation Evenly Installed (Click to Return to Section)

Attic Insulation Dammed Away from Chimney (Click to Return to Section)

Smoke Testing Dense pack (Click to Return to Section)

Crawlspace Ground Cover (Click to Return to Section)

Rim Joist Insulated (and Sealed to Sill) with Foam Board and 1-Part Foam
(Click to Return to Section)

Metal Ductwork Sealed with Mastic (Click to Return to Section)

Air Handler Sealed with Silicone Caulk (Click to Return to Section)

Sealed Vapor Retarder on Attic Ductwork (Click to Return to Section)

In-line Exhaust Fan Ventilation (Click to Return to Section)

APPENDIX B: Spray-applied Polyurethane Foam (SPF)

B.1 Appendix Scope

1. This appendix applies to plural component polyurethane products.
2. High Pressure Polyurethane Foam systems are systems where the materials are generally delivered in unpressurized containers. Application equipment includes generators, compressors, pumps, heaters, heated hoses, and other associated equipment. Pressures used are usually between 800 and 1200 PSI on the hoses.
3. Low Pressure Polyurethane foam systems are application systems delivered in pressurized containers that require ambient conditions be acceptable for installation. There is no apparatus on these systems to heat them. The only auxiliary apparatus needed is a small non-heated hose and/or an application gun. Pressure on materials is below 30 psi.

B.2 General Requirements

1. All materials, products and equipment must be delivered, handled, stored, fabricated, assembled, installed and operated in accordance with the manufacturer's printed instructions.
2. Installation must comply with all federal, state and municipal codes, laws and regulations for thermal insulation and vapor retarders.
3. The contractor must maintain a copy of Safety Data Sheets (SDS), technical data sheet, and jobsite conditions log on file and at the job site at all times and make available upon request to the Customer, Project Inspector, Program Implementer, or NYSERDA.
4. Prior to initiating the project, the contractor must provide customers with access to accurate information regarding spray foam installation, including SDS, information on requirements to vacate premises, odors related to the work.
5. The contractor must list the names and makes of the specific products used on invoices to the customer contract or invoice and all invoices to NYSERDA programs.
6. Saving estimates must be based on the rated R-value for the specific product used.
7. The rigs used to process high pressure foam systems must be self-powered. Using power from the client property by opening a client electrical panel and inserting a circuit breaker or connecting wires to an existing circuit breaker is strictly prohibited.
8. The jobsite conditions log must contain the following:
    a. Contractor name and contact information
    b. Names of crew members on site
    c. Material manufacturer name and contact information
    d. Specific product name and manufacturer lot number
    e. Processing equipment type, pump size, gun type, tip size

f. Quantity of materials used measured in strokes or pounds
g. The following data must be collected at the start of foam ops, any time a drum is changed out, and at the completion of foam ops:
    - Ambient temperature, RH, Dew Point
    - Surface Temperature, % Moisture
    - Acceptable ranges for these measurements as per the product installed
    - Measured ventilation rate in confined spaces where applicable

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B.3 Health and Safety Requirements

1. Contractors must ensure that occupants and staff are informed of, and follow, manufacturer's requirements, regarding: who may be present during spraying; how far away occupants and pets must be kept during work; and when occupants and pets can re-enter premises.
2. Contractors must ensure that staff on-site during spraying are provided with and use proper equipment such as goggles, respirators, clothes and gloves, as required by manufacturer.
3. Temporary space heating required during foaming operations must be provided by vented or non-open flame sources. Smoking must be prohibited.
4. During foaming operations, two air changes per hour of ventilation must be maintained for installation personnel, and the installer must otherwise ensure an acceptable level of indoor air quality as per OSHA standards.

○*OPTIONAL BEST PRACTICE*○ It is recommended that all staff involved in application obtain training from the suppliers of SPF to help ensure installation quality and use of all equipment as well as safe handling, use, and disposal of all chemicals used in the process. The Spray Polyurethane Foam Alliance (SPFA) offers additional training and accreditation for SPF applications. The American Chemistry Council website www.spraypolyurethanefoam.org offers two certifications, one for Low Pressure Polyurethane Foam Systems, and another for High Pressure Polyurethane Foam Systems. These courses may be used for BPI CEU credits.

B.4 Materials

B.4.1 Protection of Materials

1. Contractors must follow manufacturer's guides regarding transportation and storage of materials.
2. Insulation materials must be protected from physical damage and from becoming wet, soiled, or covered with ice or snow between phases of the work or after the completed

installation. Materials must not be exposed to sunlight, except to the extent necessary for period of installation and concealment.

3. Insulation materials must be protected against ignition at all times.
4. Materials must be protected from freezing or extreme heat. Chemical components must be maintained at a minimum of 60 degrees while stored on site.

B.4.2 Specifications

1. Polyurethane foam product to be a two-component mix for producing high quality rigid insulation.
2. All products must be labeled with Model Building Code approvals and ICC ESR, UL, or FM listings where required.
3. Surface-burning characteristics: Maximum flame-spread and smoke developed indices of 25 and smoke <450, respectively, when tested in accordance with ASTM E-84 or UL 723.
4. ASTM C-518 Aged R Value, meet or exceed as follows:
   - Low Pressure Closed Cell SPF: R-5 per inch of thickness
   - High Pressure Closed Cell SPF: R-6 per inch of thickness
   - High Pressure Open Cell SPF: R-3.5 per inch of thickness

5. ASTM 1622 Core Density within the range of:
   ii. Closed Cell SPF: 1.7 to 2.2 pounds per cubic foot
   iii. Open Cell SPF: 0.5 to 0.7 pounds per cubic foot

6. ASTM D6226 Closed-cell content: 90 percent minimum.

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B.5 Fire Protection

1. In situations where the foam insulation is installed in a space that is difficult to access, is segregated from other interstitial or occupied space by a prescriptive thermal barrier, and has no floor in it, but where there may exist an HVAC device, wiring, piping, or ductwork, it is a “space accessible only to service mechanical devices”. Foamed plastic in interior applications in these spaces must be protected by an approved IGNITION barrier, as follows:

a. Prescriptive ignition barriers including, but are not limited to, the following:
   - 1 ½ -inch-thick (38 mm) mineral fiber insulation;
   - ¼ -inch-thick (6.4 mm) wood structural panels
   - 3/8-inch (9.5 mm) particleboard;

- ¼ -inch (6.4 mm) hardboard;
- 3/8-inch (9.5 mm) gypsum board
- Corrosion-resistant steel having a base metal thickness of 0.016 inch (0.406 mm).

b. Other materials that can stop ignition as well as or better than the prescriptive materials listed above and tested in accordance with International Code Council Evaluation Services Acceptance Criteria 377 Appendix X (ICC-ES AC 377 Appendix X). In cases where ICC-ES AC 377 Appendix X is used, proper ICC ESR documentation is required.

2. A thermal barrier is not required for the installation of foam on a sill plate/rim joist area, provided that the maximum thickness of the foam is 3 ¼ inches.
3. In all other cases, including all areas that could be used for storage, foam must be covered by a THERMAL Barrier, as follows:
    - ½ inch thick Sheetrock.
    - Other materials that will delay the surface of foam from experiencing surface temperature increase equal to or more than 250°F in 15 minutes AND are proven to remain in place under fire conditions. The alternate products must have ICC ES reports proving that they are acceptable alternate thermal barriers for the specific foam product installed.

B.6 Preparation

1. Prior to beginning work, the contractor must examine all substrates and conditions for compliance with installation requirements to determine if conditions affecting performance of insulation are satisfactory. Examine all substrates for soundness, such as tightness of connections, crumbling or looseness of surface, level tolerance of surface, and other conditions which would affect the installation. Joints in insulation, sheathing, and other substrate components must be solidly supported and fastened.
2. The contractor must clear all cracks, spaces, voids, cavities, and openings to be sealed of debris, moisture, ice, and materials prior to the commencement of foaming operations. Clean substrates of substances harmful to insulations, including moisture, dirt, or un-bonded coatings that will affect the insulation or prevent an airtight seal. Remove projections which might puncture vapor retarders.
3. To prevent foam leakage, all joints must be sealed and openings in the sheathing closed off in the areas to be sprayed.
4. Wiring, conduit, boxes, etc. must be braced or fastened securely so that expansion of foam sealant must not cause wiring to "float." Wiring must be located within the wall/ceiling cavity to be foamed so as to prevent damage to wiring during the trimming and/or planing of the foam. Ensure that all electrical connections are made in a box, and that all boxes

have covers securely screwed shut. Non-metallic electrical wiring in the areas to be sprayed must be Type NMB or NMC-B.

5. Areas, belongings and gas and water pipes to be protected must be masked from over-spray. ○*OPTIONAL BEST PRACTICE*○ Wrap copper water lines in pipe insulation before spraying around them because hot water makes the pipes move. When they move undesirable sounds may occur if foam is applied directly to them.
6. The contractor must not proceed with installation until unsatisfactory conditions have been corrected in a manner acceptable to the customer, the installer and the Program Implementer.

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B.7 Installation

1. The component ratio must be maintained and the components of the polyurethane chemicals mixed in accordance with the manufacturer's product specifications and processing instructions in order to achieve the desired density and physical properties. Product should be test-sprayed off target and must be periodically checked to be sure it is on ratio, has correct “froth” state, and has proper density.
2. The component temperatures must be maintained in accordance with the manufacturer's product specifications and processing instructions to achieve the desired mix, density, and physical properties. For example, 2-part foam in canisters typically must be at or above 70° F for 24 hours before and throughout use of the product.
3. Continuity of the air/vapor barrier created by the spray-applied polyurethane foam insulation system must be maintained at all intersections of the building assemblies (floor to foundations, walls to floors, walls to roofs, etc.), across expansion and control joints, and around elements penetrating through the building envelope (doors, windows, louvers, vents, etc.) by sealing as per Program air sealing and insulation installation requirements.
4. Insulation must be applied onto the substrate to a minimum or average cured depth/thickness in consecutive passes of no more than the maximum lift thickness recommended by the manufacturer. Thickness specifications must be at invoiced levels. Areas determined to be less than this tolerance must be re-coated to the minimum and areas greater than this tolerance, if extending beyond the framing that will be enclosed, must be trimmed to the maximum specified thickness.
5. The ambient and substrate temperatures at the time of application must be at or above the minimum required by the manufacturer before and during the foam installation. The manufacturer’s minimum cure temperature must be maintained for the required period after the foam has been installed. For example, foam from 2-part foam canisters must typically be applied to surfaces at or above 50° F. No foam may be applied if the surface temperature at the time of application is within 5 degrees of dew point.

6. In colder climates (IECC zones 5&6) the SPF used must be installed at a thickness of at least Class II vapor retarder or have at least Class II vapor retarder coating or covering in direct contact with the inside surface of the SPF.
7. Foam must be trimmed flush with the inside surfaces. Foam must be removed from finished surfaces such as window glass, casings, and gypsum board.
8. The contractor must ensure that any access panels or openings required for maintenance remain accessible.

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APPENDIX C: Health and Safety: Additional Worker Considerations When Working in Attics

Extreme Heat

During hot sunny periods the temperature in the attic can climb to 120 degrees, and as high as 150+ degrees. During these periods care must be taken to ensure worker health. During off times workers must be sure to drink plenty of fluids and be assessed for signs of heat related illnesses. ○*OPTIONAL BEST PRACTICE*○ Limit worker limit in the attic to 15 minutes on and 15 minutes off.

Inadequate Light

Adequate lighting must be provided and care must be taken to avoid potential dangerous situations.

Hazardous Materials

Asbestos, molds, and animal feces are all possible materials found in an attic.

Electric Shock Hazard

Exposed wires, uncovered boxes, perspiration caused by extreme heat and exertion can combine to create a dangerous situation.

Falling Hazard

1. Attic level changes or loose debris can result in falling in the attic. Care must be taken when moving about the attic.
2. The contractor must ensure that workers are provided with adequate fall protection for open-joist attic work.

Confined Spaces

Some attics may have low head room or severely limited access. The contractor must follow OSHA safety regulations when attic spaces qualify as confined spaces.

Version 7/18

NYSERDA

Residential Existing Homes Programs Material and Installation Guidelines

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1. Introduction

1.1 Purpose

This Material and Installation Guidelines (MIG) is designed to provide the materials and installation requirements for installing energy efficiency measures in NYSERDA's NY Residential Existing Homes Program (The combined programs NY Home Performance with ENERGY STAR®, Assisted Home Performance with ENERGY STAR®, and EmPower New York, collectively the "Program"). It is intended to assist participating contractors, field staff, quality assurance inspectors, quality control inspectors and management in ensuring consistent quality of installed work.

The guide is based on the concept of "Standard Work Specifications" (SWS). These are the minimum expectations for meeting the requirements for quality installation of the measure. In many instances the MIG does not dictate the exact techniques to be implemented, leaving the contractor to determine the best approach. Optional best practices and recommendations are offered to assist contractors in effective installations.

The guidelines set forth in this document establish the basis of quality for work performed within the program. To ensure compliance, participating contractors are responsible for adhering to these guidelines. Completed projects are subject to inspection by NYSERDA's third-party Quality Assurance contractor. In-progress projects are subject to review by the Implementation Contractor or NYSERDA staff.

This guide also provides effective techniques for contractors who provide energy efficiency services outside of the Program, and contractors are encouraged to follow these guidelines in all of the work they perform.

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1.2 Program Specific Content

The Material and Installation Guidelines do not provide program eligibility information. All questions or concerns regarding Program Requirements, and the use of this MIG may be directed to the Implementation Contractor. All requirements in this document apply to measures that are listed on the Program's lists of eligible measures.

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2. Work Related Standards & Regulations

All contractors must perform their work in compliance with all applicable codes, regulations, laws, and standards in the jurisdiction where completing work. In instances where this manual may conflict with state and/or local code or manufacturer's requirements, code or manufacturer's requirements must take precedent. If there is any variation between code and manufacturer's requirements, the more stringent standard must be followed. In all instances where specific code citations are included in the manual, current code, if revised, takes precedence over citations in this document.

1. It is the contractor's responsibility to verify pre-installation conditions, and measurements of insulated areas, and to install measures according to these specifications. Any discrepancies must be resolved before work commences whenever possible.
2. All contractors must comply with their company's health & safety specifications.
3. All contractors must maintain a copy of their company health and safety policy at the work site. Contractors must supply a Safety Data Sheet (SDS) for products and materials used by their crews to customers and Program staff upon request.
4. Work area must be cleaned daily by sweeping and disposing of debris and scraps in a location designated by the owner. Upon completion of the work in any given area, the contractor must remove tools, equipment, and all rubbish and debris from the work area and leave area in broom-clean condition.
5. Waste such as dust, trimming, packaging and chemical cylinders must be disposed of in accordance with applicable federal, state and local regulations.

○*OPTIONAL BEST PRACTICE*○ Walk the entire job with the Homeowner to ensure that all aspects of the job are completed to agreed-upon standards.

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2.1 Personal Protection & Work Site Air Quality

2.1.1 Employee Safety

- The contractor must perform all work in a safe manner and utilize appropriate personal protection measures.
- The contractor must maintain a copy of its health and safety policy and treat all employees accordingly.
- Adherence to applicable OSHA standards is required for all jobs conducted through the Program.

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2.1.2 Occupant Safety

Any negative impact an installation may cause upon the health and safety of the occupants and the structural integrity of the building must be avoided. Contractors must comply with all local, state and federal regulations governing potential hazardous materials or situations. Contractors must evaluate existing conditions and communicate potential problems to the customer so that problems may be addressed before beginning work. This includes the identification of possible indoor air contaminants, severe moisture problems and potential back-drafting of combustion appliances.

○*OPTIONAL BEST PRACTICE*○ Keep extra copies of the Safety Data Sheets (SDS) in work trucks and provide them to customers upon request or in situations when customers express concerns about the materials to be installed.

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2.2 Presumed Asbestos Containing Material (PACM)

2.2.1 Definition

Asbestos is a fibrous mineral used in thousands of building products. This mineral, when broken down, forms microscopic fibers that persist in the air and can be inhaled. These asbestos fibers are known to cause debilitating and sometimes fatal lung diseases. Asbestos-containing building materials are typically classified as either friable or non-friable and contain greater than 1% of asbestos. The goal is to ensure that any work performed at the home will not damage asbestos-containing materials and that the safety of the occupants and contractor's workers are protected. Materials can only be termed "asbestos" if testing has been done to confirm the presence of asbestos in the material. In the absence of such testing, contractors must not use the term "asbestos" when describing suspected materials. Instead, the term "Presumed Asbestos Containing Material" (PACM) should be used.

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2.2.2 Requirements

The presence of PACM in building materials that is damaged or in a deteriorating condition ("friable") disqualifies the home from blower door tests, duct pressurization tests or any activity that could potentially introduce asbestos fibers into the living space. Friable asbestos-containing materials, which are not intact, can become a source of airborne asbestos if the material is disturbed by movement or air currents. Friable asbestos-containing building materials may be found in vermiculite, boiler and pipe insulation/fittings furnace distribution systems, and other locations. Blower door tests that either pressurize or depressurize a dwelling must not be conducted if friable PACM are not intact and are at risk of being drawn into the living space. Vermiculite, used as loose fill insulation, is presumed to be asbestos-containing and should not be disturbed. For additional information on asbestos and vermiculite insulation, please reference the EPA at:

http://www2.epa.gov/asbestos

The presence of PACM does not automatically disqualify a home from all weatherization work unless the proposed work causes the potential for PACM particles to become airborne through activities such as sawing, drilling or other construction activity or if the existing building material is damaged. Examples of asbestos-containing building materials that are typically less likely to be friable include, but are not limited to, cementitious house siding, roof shingles, fire-stop boards, floor tiles, linoleum, flue pipes and chimneys. Under no circumstances should the contractor saw, cut, break, tear, sand or drill PACM in the performance of any work. Note: If any cementitious siding deemed PACM is damaged during removal it must be handled and disposed of in accordance with all applicable regulations.

If a contractor is not sure if a building material is asbestos-containing, then they should deem it PACM and not disturb the material. If potential hazards cannot be avoided in complying a measure, such as potential worker exposure to friable PACM, the contractor or Program may elect not to complete the measure.

Blower door and applicable retrofit work may proceed in circumstances where friable PACM is remediated by a certified asbestos abatement contractor who has attested to its remediation in writing.

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2.3 Knob-and-Tube Wiring

2.3.1 Definition

Knob and Tube wiring may be found in pre-1950 buildings. It is a style of wiring that has two separated strands of insulated wire that run through ceramic tubes when passing through framing members and ceramic knobs when attached to a framing member. When electricity flows through the wires there is resistance to the passage of the electrons. This resistance builds up heat that is dissipated to the surrounding space.

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2.3.2 Requirements

If active knob and tube wiring is determined to be present in a home, no insulation or air sealing materials may be installed within three inches of any live knob and tube wiring. The knob and tube wiring must either be decommissioned or removed by a licensed electrician, or accommodation must be made to ensure that any and all installed insulation or air sealing materials not installed within 3 inches of the existing knob and tube insulation.

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2.4 Mold-Like Substance (MLS)

2.4.1 Definition

Mold is an organic substance that has been shown to cause adverse health effects in some individuals. Contractors must not characterize a moldlike substance as "mold" unless a determination has been made by a certified mold inspector. Instead, the term "Mold-Like Substance" (MLS) may be appropriate.

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2.4.2 Requirements

When a suspected mold-like substance is present, the homeowner should be informed and directed to consult the Environmental Protection Agency's "A Brief Guide to Mold, Moisture and Your Home".
Additional information may be found at:

https://www.epa.gov/mold/brief-guide-mold-moisture-and-your-home

When a mold-like substance is found to be present in an area of the home, and it exceeds an area greater than 10 sq. ft., air sealing and insulation work must not be installed until one of the following conditions have been met:

1. A certified mold abatement professional has remediated the mold and has attested to its remediation in writing.
2. A certified mold abatement professional has determined that the substance is not mold, does not need to be remediated and has attested to this determination in writing.

Exception: In situations where more than 10 sq. ft. of mold-like substance exists in the attic, contractors may proceed with measures that may impede mold growth in the attic, such as:

- Elimination of the source of moisture
- Air sealing and insulating the air barrier between the source of the moisture and the attic space where the mold-like substance was found. The contractor must not add insulation unless they can ensure that they have sealed all bypasses by which moisture may enter the attic. The use of Zonal Pressure Diagnostics to ensure comprehensive sealing is strongly recommended.
- Reducing the impact of central humidifiers that may be installed on furnaces and driving moisture into the attic. Ensuring comprehensive return duct sealing and ensuring that the furnace filter slot is sealed may reduce positive pressure in the conditioned space that can drive moisture into the attic.

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2.5 Lead Paint

2.5.1 Definition

Lead was a common ingredient in many paints up until its use was banned in 1978. Lead ingestion or inhalation of lead dust or particles has been shown to cause damage to the central nervous system. Children in particular are at a high risk for nervous system damage from lead exposure.

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2.5.2 Requirements

In any home built before 1978 there is a possibility that lead paint was applied to some or all surfaces. If specified work in the home will require cutting into areas that are potentially covered with lead paint the EPA Lead Safe Guidelines and all Lead Safe Practices as outlined in Title 40: Protection of Environment, Subsection 745.85 must be followed.

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2.6 Heat Sources

2.6.1 Definition

A heat source is any item, equipment, or material that produces heat at temperatures that has the potential to ignite combustible material.

Examples of heat sources include but are not limited to: space and water heating appliances, including wood and pellet stoves; metal combustion flue piping; metal and masonry chimneys; heat lamps.

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2.6.2 Requirements

Locations in close proximity to a heat source should be air sealed or insulated with fire-proof materials at a minimum to the distances required by Code from the heat source. Appropriate materials for this application are sheet metal and high temperature sealants (ASTM E136 for oil or wood flues, 500F RTV silicone for gas flues). The sheet metal must be applied over any openings that cannot be bridged by the sealants and mechanically fastened in place with nails, screws or staples. Gaps and leakage points around the sheet metal must then be sealed using the appropriate high temperature sealant.

All sealants must meet code requirements as noted above. Foam sealants intended for fire-blocking may not be fireproof, and therefore may not be suitable for air sealing around a heat source.

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2.7 Combustion Appliance Zone Safety

Combustion Appliance Zone (CAZ) safety screening or testing is required before and after air sealing or dense pack wall insulation is installed. If the installation of air sealing or dense pack insulation measures occurs over several days, CAZ testing must be done at the end of each day. All tests must be conducted using the Building Performance Institute (BPI) combustion testing procedures and all test results must be recorded and submitted to the Program.

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2.8 Indoor Air Quality

Measures that reduce air movement in the home must always be done in a manner that ensures the dwelling has sufficient fresh air for the occupants, and that the work performed does not increase the likelihood that the occupants will be exposed to pollutants.

This is done by:

1. Identifying pollutants in the home that may be impacted by air sealing
2. Whenever possible, removing the source of the pollutants or isolating them from the living space
3. Choosing air sealing strategies that ensure that fresh air is available throughout the home

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2.9 Radon

2.9.1 Definition

Radon is a colorless, odorless gas that in high enough concentrations has been shown to increase the risk of developing lung cancer.

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2.9.2 Requirements

The homeowner should be advised about the possible presence of radon and should be encouraged to perform a radon concentration test after any air sealing work is done. More information about the health risks associated with Radon can be found in EPA's "A Citizen's Guide to Radon" on their website.

Additional information may be found at:

https://www.health.ny.gov/publications/3168/

2.10 Gas Leak Testing

In dwellings where natural gas or propane lines or appliances are present, the contractor must test the ambient air for natural gas in all areas of the dwelling using a Combustion Gas Detector (CGD) suitable for testing ambient air and capable of detecting gas levels of 20 ppm. In the event that propane is in use in the dwelling, the contractor must test the ambient air in all of the lowest areas of the dwelling. When the CGD indicates that combustion gas exists in the ambient atmosphere (at *any* level below 10% LEL) the contractor must initiate gas leak testing on all gas lines and combustion appliances as per ANSI/BPI-1200-S-2017, Standard Practice for Basic Analysis of Buildings, Section 7.5.2. Testing must be completed prior to and upon completion of work.

The contractor must test all gas lines and combustion appliances as per ANSI/BPI-1200-S-2017 Standard Practice for Basic Analysis of Buildings, Section 7.5. immediately after the following situations:

- The contractor repairs, modifies or installs new natural gas or propane lines, connectors, or combustion appliances.
- The contractor has reason to suspect a gas leak.
- A gas meter is replaced
- An out-of-gas condition occurs

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3. Air Sealing and Insulation

3.1 Air Sealing Overview

Air leakage can be linked directly or indirectly to the most prevalent building envelope performance and durability problems. The best way to ensure adequate thermal performance, comfort and avoid moisture problems is to prevent air from uncontrollably flowing into and out of the occupied space of the building envelope. At the same time it is critical to ensure adequate fresh air throughout the dwelling for the building's occupants, both present and future.

The objective is to safely and cost-effectively control air leakage. This is accomplished by obstructing airflow through leaks, penetrations and bypasses that are found in the attic, basement, living space and exterior pressure boundaries as indicated by blower door tests and air sealing guidelines. The goal should be to provide a continuous, structurally supported plane of materials to contain the indoor air (reduce exfiltration) and to reduce the amount of outdoor air from entering the building (infiltration). While doing so, it is important to measure air leakage levels and consider the ventilation paths throughout the dwelling.

1. Air sealing strategies may include addressing building assembly transitions that are extensions of the building envelope into unconditioned spaces. These transitions include, but are not limited to, changes in substrate, perimeter and transition conditions, mechanical penetrations and mechanical system components.
2. The building envelope must incorporate a continuous air barrier system as per the International Energy Conservation Code.
3. The air barrier must be installed in a manner that meets the NYS Energy Code.
4. The air sealing materials must be selected and installed in a manner that will accommodate normal building movements.

This section defines the quantitative and qualitative requirements for the products, materials and workmanship for the air barrier system of the thermal envelope.

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3.1.1 Air Sealing Materials: Locations & Use

The following are requirements that apply to all air sealing material choices:

1. The proper caulking material should be matched to the location where it is applied. Consideration should be given to the durability, paint compatibility, adherence, color, toxicity and flammability of the material.
2. Applied sealant and blocking materials must be suitable for the working surfaces and be able to maintain a durable seal.
3. Siliconized acrylic materials should generally be used only in interior locations or in exterior locations where paint compatibility is important. When used in visible areas the customer should

approve the application and see a sample before proceeding. It is best to avoid clear acrylic materials due to their shiny appearance and their propensity to shrinkage. Siliconized acrylic materials should not be used to seal openings or cracks over 3/16 inch without a backer and generally should not be used to seal openings or cracks more than 3/8 inch.

4. Pure silicone should generally be used in exterior applications unless paint compatibility is needed. Pure silicone should be used anywhere that sealants are needed between wood and metal and wood and concrete. Also, pure silicone should generally be used to seal materials that expand and contract at different rates as moisture and temperature vary. Pure silicone should not be used to seal openings or cracks over 3/8 inch without a backer, and generally should not be used to seal openings or cracks more than ½ inch.
5. Caulking may be performed on the interior of the dwelling for general air leakage and to prevent moisture penetration into wall cavities.
6. Caulking may be performed on the exterior of the dwelling to prevent bulk moisture from entering the envelope of the building and to seal areas of air leakage.
7. 1-part and 2-part foam sealant:
   a. Foam sealant must not be used to seal gaps or openings spanning more than 1½ inch without a backer material.
   b. Foam sealant must not be used where it can be exposed to sunlight or other ultraviolet sources.
   c. Foam sealant must not be used near any heat-producing device.
8. Spray foam applied sealants must be installed according to manufacturer's specifications.

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3.1.2 Sealant & Blocking Materials

Caulking

All caulking materials must be rated for a minimum 20-year life span. Caulking used around chimneys must be rated for use against heat sources. Caulking used around gas flues or chimneys must meet ASTM C290. Caulk used around solid fuel or oil appliance vent flues or chimneys must meet ASTM E136. Siliconized acrylic caulks must be paintable.

○*OPTIONAL BEST PRACTICE*○ Apply products with ultra-low or no CFCs, and with minimal or no odor.

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2-Part Spray-Applied Polyurethane Foam (SPF)

All SPF materials must meet ICC ES AC 377 for the application. Refer to Appendices B&C for methods to correctly and safely install spray foam. Types of SPF include:

1. Open-cell polyurethane foam (0.5pcf)
2. Medium-density closed-cell spray-applied polyurethane foam (2.0pcf)

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Other Sealants

Other acceptable sealants include, but are not limited to, the following:

- Spray applied Latex Based Sealants
- Mastic

Examples of Materials for Use as Blockers & Backers

- Plywood
- Foam board
- Foil bubble-wrap or similar (to block large bypasses)
- Metal flashing materials (used for damming and to bridge gaps at chimneys and flues). Materials must be waterproof in area where susceptible to rust.
- Wallboard
- Glass or mineral fiber insulation as a backer for other sealants
- Backer rod (foam rope) used as a backer for other sealants. Closed cell backer rod is waterproof.
- 6-mil (0. l50 mm) polyethylene sheeting (waterproof)
- Cellulose or fiber glass insulation as used in a dense-pack application
- House wrap such as Tyvek™ or similar material

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3.1.3 Safety Checks Prior to Air Sealing

General Safety Check

During the initial assessment, the contractor must evaluate health and safety risks that may impact indoor air quality, such as:

- The presence of PACM or mold-like growth
- Wood stove particulates
- Tobacco smoke
- Home renovations which include materials such as plywood, particle board or new carpeting, that may outgas formaldehyde and other pollutants;
- Dryer or other appliances not properly vented to outside the building envelope.
- Other health risks.

Additionally, the contractor must assess moisture conditions in the dwelling that may be impacted by work to be performed, such as:

- Standing water in basements or crawlspaces
- Roof leaks
- Aquariums, hot tub, large number of plants within the thermal envelope
- Pre-existing damp insulation in the attic areas
- Occupant reports of high moisture levels

- Kitchen or bathroom fans venting to the attic areas, or otherwise not venting outside
- The use of a central humidifier on a furnace, particularly with leaky return ducts

In the presence of identified health risks that may increase if air sealing activities are implemented, the contractor must either:

- Discontinue or limit air sealing activities; or
- Initiate removal of the pollutants: or
- Air seal in such a manner as to isolate the pollutants from the living space, or
- Supplement natural ventilation with mechanical ventilation in such a manner that pollutants are reduced.

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Combustion Safety Pre-test

The air sealing technician must perform a combustion safety pretest before air sealing. The combustion safety pretest must include:

1. Fireplaces, wood stoves, coal stoves or other solid fuel appliances
2. Gas or propane cooking stoves
3. Gas, propane or oil water heaters
4. Gas, propane, or oil boilers, furnaces and unit heaters

The combustion safety pretest must follow the BPI 1200 and Program combustion pretest procedure which includes:

1. Ambient combustible fuel gases test - Section 7.3.2 of BPI 1200
2. Ambient Carbon Monoxide (CO) readings and actions - Section 7.3.3 of BPI 1200
3. Natural Gas and Liquid Propane (LP) gas leak testing – As per Section 2.10, above
4. Check unvented Gas Fired Room Heaters - Section 7.8.4 of BPI 1200
5. Spillage Assessment and CO Measurement in cold vent (Except domestic water heaters) - Section 7.9.2 of BPI 1200
6. Spillage Assessment and CO Measurement in domestic water heaters or warm vent - Section 7.9.3 of BPI 1200
7. Carbon monoxide levels in flues (undiluted)
8. Zone pressures created by exhaust appliances
9. Zone pressures created by the duct system when the air handler is operating

○*OPTIONAL BEST PRACTICE*○ Draft pressure checks of venting systems for space and water heaters.

If there is any failure in the combustion safety pretest no air sealing shall be performed until the problem has been remedied.

Blower Door Pre-test
The air-sealing technician must prepare the house for a blower door pretest. Pressure differential readings must generally be used to detect substantial leakage paths and to determine the ratio of pressure differences across interior and exterior surfaces of a zone.

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3.1.4 General Air Sealing Procedures

Air sealing technicians must strive to seal all cost-effective leakage in the building. It is important to recognize that air sealing efforts may not result in immediate significant air leakage reductions; often a certain volume of holes must be sealed before air sealing efforts have an effect.

○*OPTIONAL BEST PRACTICE*○ If a blower door is used while air sealing, take hourly blower door readings to monitor the impact of air sealing. Work should terminate once cost-effective reductions have been achieved and all major areas of leakage have been addressed, while maintaining adequate ventilation of the conditioned space.

Before applying caulking and other sealants, remove dust, dirt or debris from the area to be sealed. Ensure that the area to which the sealant will be applied is dry. Follow any additional instructions in the manufacturer's installation guidelines and specifications before application. Be sure to take into consideration all temperature requirements related to the product and ensure that the products are installed in such a manner as to produce a strong, failure resistant bond.

Backer Materials fall into two general categories: Rigid and non-rigid.

- Rigid backers inserted into joist or stud bays may be held in place by friction and permanently secured by the adhesion of 1-part foam or caulk. Rigid insulation that seals drop soffits, large mechanical chases, etc. must be fastened in place using either nails or screws. Metal flashing can be held in place with box nails or screws.
- Non-rigid barriers (foil-faced bubble wrap, polyethylene, etc.) can be secured using ½ inch staples every 4-6 inches. Rolled fiberglass batts or mineral wool must be stuffed tightly into openings to ensure that they stay where intended.

Rigid foam board insulation that will be exposed to finished spaces must be covered with a thermal barrier. Rigid foam board insulation that will be exposed to an accessible area that is used for storage must be covered with a thermal barrier. Backer materials used in exterior wall applications must be waterproof.

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3.1.5 Air Sealing Post-Installation

Air sealing technicians must conduct a blower door test and combustion safety testing after all air sealing work is complete, unless conditions, such as the presence of damaged PACM or mold-like growth, preclude

their use. If there is any failure in the post-installation combustion testing appropriate corrective action must be taken.

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3.2 Attic Air Sealing

3.2.1 Definition

Attics are enclosed spaces outside of the intentionally conditioned living space. Air sealing measures for *conditioned* attic spaces are covered in the sections on walls and roof slopes.

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3.2.2 General

The following installation guidelines shall be followed to ensure that attic air sealing measures are effective and durable. The materials used in each descriptive application (See: *Locations and Use*) must be chosen from the list of appropriate materials. Alternative materials may be used as long as they have the same performance criteria as the listed appropriate materials (i.e. they are fireproof if fireproof materials are required). All attic air sealing applications must be able to support the weight of existing and proposed insulation. Additional support must be added as needed. No backer material must exceed a distance of 24 inches if unsupported.

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3.2.3 Locations and Use

Typical openings, cracks, gaps and penetrations to be air sealed in attics include, but are not limited to the following:

- Interior partitions and exterior wall top plates
- Along both sides of top plates, at butt joints and at intersections
- Along dropped ceilings and soffits
- Junction boxes and wiring penetrations
- Open joist bays in knee-wall attics
- Hatches and pull-down stairs
- Wet walls and plumbing chases/penetrations
- Mechanical system components (also see Heating and Cooling Systems)
- Chimneys and flues
- Duct penetrations
- Whole-house fan enclosures
- Bathroom fans and recessed light fixtures

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3.2.4 Material

Backers

Backers consist of any material that is used to bridge openings that cannot be closed solely by a sealant. The following is the list of backers that are appropriate to use in attics air sealing applications:

1. Fire-proof Backers:
    a. Metal Flashing
    b. Mineral Wool
2. Fire-resistant Backers:
    a. Thermax
    b. Wallboard
    c. FSK rigid board
3. Moisture-resistant Bakers:
    a. 6 mil polyethylene or thicker
    b. Rigid foam board Insulation (extruded polystyrene)
    c. Foam backer rod
    d. Foil faced polyisocyanurate
4. Other Backers: (may be used when fire and/or moisture resistance is not a concern)
    a. House wrap
    b. Radiant bubble wrap
    c. Plywood
    d. Insulated structural sheathing

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Sealants

Attic Air Sealants are materials applied to attic surfaces and/or backers to form an air tight seal. The following is the list of sealants appropriate for attic use:

1. Fire-Proof Sealants:
    a. Non-combustible fire rated caulk meeting ASTM E 136
    b. Silicone high temperature RTV sealant meeting ASTM C920 on gas vents with flue temperatures up to 500 degrees Fahrenheit
2. Non-Fireproof Sealants:
    a. 1-part urethane foam
    b. 1-part urethane fire block foam rated for sealing gaps in wood framing
    c. 2-part urethane foam kits
    d. Siliconized latex sealants meeting ASTM C834
    e. Silicone urethane and other elastomeric sealants meeting ASTM C920
    f. Water-based duct sealant meeting UL181A-M, UL181B-M
    g. Spray applied latex based sealant

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Table 1. Compatible Attic Air Sealing Materials

(Note: This table lists effective combinations of backers, fasteners, and blockers. Other combinations are possible.)

Attic Locations	Backer	Fastener	Sealant	Notes
Attic Top Plates	N/A	N/A	1- or 2-part foam, spray applied sealant	Platform construction.
Attic Top Plates	Fiber Glass	Friction Fit	2-part foam, spray applied sealant	
Attic Top Plates	XPS	Friction Fit	1- or 2-part foam or caulk, spray applied sealant	
Attic Top Plates	Foil Faced Wrap	1/2" staples	1- or 2-part foam, spray applied sealant or caulk	
Dropped Soffit	1/2 " drywall	1" drywall screws	1- or 2-part foam, spray applied sealant	Openings over spans larger than 24" must be supported.
Dropped Soffit	1.5" XPS	2"drywall screws	1- or 2-part foam, spray applied sealant	Openings over spans larger than 24" must be supported.
Dropped Soffit	1" FSK	1" drywall screws	1- or 2-part foam, spray applied sealant	Openings over spans larger than 24" must be supported.
Dropped Soffit	Foil Face Wrap	1/2 " staples	1- or 2-part foam, spray applied sealant	Openings over spans larger than 24" must be supported.
Junction Boxes	N/A	N/A	Silicone Caulk, spray applied sealant	No foam in electrical boxes.
Wire Penetration	N/A	N/A	1-part foam	
Kneewall transition	Fiber Glass	Friction Fit	2-part foam, spray applied sealant	Foam must create an air barrier.
Kneewall transition	XPS	Friction Fit	1-part foam, spray applied sealant or caulk	If exposed needs thermal barrier.
Kneewall transition	1' FSK	Friction Fit	1-part foam, spray applied sealant or caulk	Foam must create an air barrier.
Kneewall transition	Foil Face Wrap	1/2" staples	1-part foam, spray applied sealant or caulk	Foam must create an air barrier.
Chimney/Flue	Metal flashing	4d box nails or 1” drywall screws	High Temp Caulk	High temp sealant must be compatible with fuel type.
Chimney/Flue	Mineral Wool	Friction Fit	High Temp Caulk	If gaps are very small they can be stuffed and caulked.
Recessed Lights	Drywall/XPS	Tape	1-part foam or caulk	Drywall or XPS on the sides, drywall on top. Taped until foamed.
Open Chases	Drywall	1" drywall screws	1- or 2-part foam, spray applied sealant	Openings over spans larger than 24" must be supported.
Open Chases	1.5" XPS	2"drywall screws	1- or 2-part foam, spray applied sealant	Openings over spans larger than 24" must be supported.
Open Chases	1" FSK	1" drywall screws	1- or 2-part foam, spray applied sealant	Openings over spans larger than 24" must be supported.
Open Chases	Foil Faced Wrap	1/2" staples	1- or 2-part foam, spray applied sealant	Openings over spans larger than 24" must be supported.

Table 1. cont.

Attic Locations	Backer	Fastener	Sealant	Notes
Wet Wall Top Plates	XPS	Friction Fit	1- or 2-part foam, spray applied sealant or caulk	Backer must be moisture resistant.
Wet Wall Top Plates	1" FSK	Friction Fit	1- or 2-part foam, spray applied sealant or caulk	Backer must be moisture resistant.
Wet Wall Top Plates	Foil Faced Wrap	1/2" staples	1- or 2-part foam, spray applied sealant or caulk	Backer must be moisture resistant.

3.2.5 Attic Air Sealing Installation

This section defines what materials and methods are suitable when sealing penetrations between the attic and the conditioned space.

Attic Top Plates
Where exterior and interior walls terminate in the attic there is a junction between the wall board and the framing called the Attic Top Plate. This long, thin gap between the wall board and the wall framing, if left untreated, allows an unwanted exchange of conditioned house air and attic air. To seal this gap first remove any existing insulation or debris from either side of the top plate where it meets the wall board.

○*OPTIONAL BEST PRACTICE*○ Apply a continuous bead of 1-part urethane foam between the wooden top plate of the wall and the wallboard. 2-part foam or spray applied latex based sealants can also be used at this location.

When area applied sealants are used the entire top plate must be covered (i.e. only sheetrock and foam must be visible after the top plate has been sealed). **Photo**: Top Plates Sealed with 1-Part Foam

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Dropped Ceilings and Soffits
This attic detail most commonly occurs above bathrooms and kitchens. Wall board is often excluded from areas above cabinets, bathtubs and/or showers which results in open spaces that are open to wall cavities. These open spaces must be sealed from the attic using a rigid supported material that is installed and sealed in line with the attic plane. If the dropped soffit or ceiling is above a bathroom or kitchen a moisture resistant backer must be used. The span must be bridged by the backer leaving enough overlap at all edges to mechanically attach the backer to the surrounding attic air barrier. The edges and seams must be sealed with foam. **Photo**: Dropped Soffit Sealed with XPS and 1-Part Foam

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Junction Boxes and Wire Penetrations
Junction boxes may be sealed using siliconized or silicone caulk or equivalent. To ensure that the caulk bonds to the junction box, dust and debris must be brushed off. The openings in the box can be sealed with

the caulk but care must be taken not to inject the caulk into the junction box. Wire penetrations may be sealed with foam. The nozzle of the foam gun must be inserted into the wire hole and foam injected until the foam backs out into the attic space.

Open Joist Bays in Knee Wall Attics

This area, sometimes referred to as the knee wall transition, is the space where the floor joists of an unconditioned knee wall attic pass under the knee wall and transition from unconditioned space to what is typically conditioned space. If the kneewall attic is not included in within the pressure boundary, this transition must be sealed.

○*OPTIONAL BEST PRACTICE*○ To close this space, cut rigid foam board to the dimensions of the floor bays and rigid fit the foam board into the joist bay. The foam board must be inserted under the shoe plate of the knee walls inner (towards conditioned space) side. The inner face of the rigid board must align with the vertical plane of the wall board.

Any gaps or seams must be sealed. Silicone caulk or 1-part urethane foam are effective materials for this purpose. **Photo:** Knee Wall Transition Sealed with XPS and 1-Part Foam

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Whole House Fans

Whole house fan covers must be treated like attic stair case covers in regard to appropriate materials, installation techniques and code compliance. The fan itself must be dammed off from any blown material for a distance of two feet around the fan perimeter using batts laid flat, or other permanent barriers.

Chimney Flues & Vents

Closing the gap between heat sources and combustible materials requires the use of non-combustible materials. A clearance of three inches must be maintained between masonry chimneys or double wall metal vents and combustible materials, and six inches between single wall vents and combustible materials. The material used to seal this gap must be non-combustible air-tight material, such as metal flashing. The metal flashing must be applied over any openings that cannot be bridged by the sealants and mechanically fastened in place with nails, screws or staples. The flashing must be cut so that it spans the gap and leaves enough overlap to be attached with fasteners to surrounding framing, and so that when fastened in place the remaining gaps between the flashing and the venting and the flashing and the framing are ¼ inch or less and can be sealed with high temperature sealants (ASTM E136 for oil or wood flues, 500F RTV silicone for gas flues). Other sealants can be used on the side of the sheet metal that is fastened to the framing. **Photo:** Chimney in Attic Sealed with High-Temp Caulk and Metal Flashing

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Bath Fans

The housings of most bath fans have many perforations and knock-outs. In addition to the openings in the housing, it is not uncommon for there to be sizable openings between the housing and the attic plane material

(wall board, plaster, paneling, etc.). If the bath fan is a fan-light combination unit, it must be treated as a recessed light (see Section 3.3). If it does not have a light, the openings and perforations must be sealed with silicone caulk. The gap between the attic plane and the fan housing can be sealed with caulk if the gap is small enough or foam if the gap exceeds the maximum bead width of silicone caulk. **Photo:** Bath Fan Sealed with 1-Part Foam

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Open Chases

Material selection is the most critical aspect of sealing open attic chases. Backer materials that are used to seal chases must have sufficient rigidity to span the opening and support any insulation that will be placed upon it. Any span greater than 24 inches must be supported by framing members regardless of the material chosen. A moisture-resistant backer must be chosen when persistent exposure to moisture-laden air is deemed likely. Whatever material is chosen, it must be cut in a section large enough to span the chase and have enough overlap to be securely fastened to the surrounding framing. Any remaining gaps between the rigid material and the surrounding air barrier must be sealed with foam or caulk. Applicable fire codes apply for ignition barriers and thermal protection. **Photo:** Open Attic Chase Sealed with Sheet Metal, Duct Mastic and Acoustical Sealant

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Wet Walls and Plumbing Penetrations

A wet wall is a wall that has plumbing pipes running vertically through it to unconditioned space. These walls are often framed using higher dimension framing (i.e. 2x6's) or a double 2x4 stud wall. From the attic this wall is easy to locate. It is the one that the waste vent comes through. Usually, the top plate(s) of this wall have large openings that need to be bridged with a rigid, moisture resistant material and then sealed with foam. **Photo:** Plumbing Wet Wall Sealed with Fiberglass Batt Backer and 1-Part Foam

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Ceiling Height Level Changes

When ceilings change from one height to another a short wall is created with wall studs that run from the conditioned space into the unconditioned space of the attic. In the case of pre-platform framing, this transition area in the wall stud bay will normally not have an air barrier installed at all. If the house was built with platform framing, there may be a wood blocker with unsealed edges. If there is no backer in the wall stud bay at the transition from conditioned to unconditioned space, one must be installed. This backer can be rigid or spray foam insulation or a rolled insulation batt and sealed around the edges. **Photo:** Ceiling Height Transition Wall Sealed with 2-Part Foam

3.3 Recessed Lights

3.3.1 Definition

Recessed lights are a type of fixture that projects through the thermal boundary of a ceiling into the attic space or cathedral roof slope. The holes in the thermal boundary created by these fixtures are a source of air leakage and degrade the overall thermal performance of the insulation of the attic or cathedral roof plane. Depending on type, great care must be taken when sealing and insulating around recessed light fixtures.

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3.3.2 Requirements

Homes with recessed lighting fixtures that penetrate the thermal envelope should be air sealed and insulated using the following criteria and method:

1. First determine whether the fixture is a Non "Insulation Contact" (IC) rated fixture, an IC rated fixture, or an airtight IC rated fixture. If it is not possible to determine what type of fixture it is, then it must be treated as a Non-IC rated fixture.
2. If the fixture is Non-IC rated, or IC rated but not air tight, an air tight enclosure must be built from an air barrier material.

   ○*OPTIONAL BEST PRACTICE*○ Use a non-flammable material such as wall board, mineral fiber, or foil-faced fiberglass.

   The enclosure must be constructed securely to maintain a minimum clearance of 3 inches to any part of the fixture. Rigid foam insulation or other impermeable material can be used for the enclosure sides. However, the top of the enclosure must be made from a non-insulating material and must not exceed an R-value of .5. Insulation can be placed against the side of the enclosure but must NOT be placed over the top.
3. If the fixture is an air-tight IC rated can light fixture (ICAT) installation may be installed over it according to manufacturer specifications.

○*OPTIONAL BEST PRACTICE*○ Install an LED inset into a recessed light fixture and ensure that it is sealed around the perimeter with a sealant that is appropriate for close proximity to the LED light. This can eliminate air leakage while reducing lighting costs and may be easier to install than an enclosure in the attic above.

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3.4 Attic Access Air Sealing & Insulation

3.4.1 General

All attic accesses must be:

- As air tight as possible, using weather-stripping permanently mounted to the access and secured with metal fastenings that keep the access secure through repeated use.

  ○*OPTIONAL BEST PRACTICE*○ "Q-Lon" style weather-stripping products.

- Insulated to R-14 or greater, unless the construction of the attic (such as cross-bracing) impedes the ability to add sufficient insulation thickness. Foam boards, fiberglass, or rock wool batts are acceptable forms of insulation.

  ○*OPTIONAL BEST PRACTICE*○ Insulate access to the level of the remainder of the attic.

- Constructed from materials with a 20-year life span or greater

In the event that a contractor creates an access to the attic that must be permanently sealed (such as access through drywall, or situations where the contractor insulates the attic through a vent), the contractor must provide pre- and post-photos of the installed insulation and submit per Program Guidelines.

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3.4.2 Hatches

- The contractor must weather-strip and insulate the hatches but not permanently seal existing or installed hatches.
- All hatches must be weather-stripped on all four sides and the corners mitered to fit together. The seams between the weather-stripping and the finish, and in the finish, must be caulked with a siliconized caulk or equivalent. Any gap between the finish and the rough framing and the surrounding wall board must be sealed
- If necessary on pre-existing or installed hatches, positive closing mechanisms (such as eye hooks) must be installed on opposite sides with sufficient tension to ensure an effective seal.
- If necessary to prevent insulation spillage the attic hatch opening must be surrounded with a durable protective baffle that is higher than the level of the surrounding floor insulation.
- Installed hatches must be constructed of a minimum of ½ inch plywood, or material of comparable strength and acceptable to the homeowner.
- Installed hatches must be framed with a minimum 2½ inch casing permanently fixed with metal fastenings, mitered neatly, weather-stripped, and insulated to a level consistent with the attic area around it.

○*OPTIONAL BEST PRACTICE*○ Insulate attic hatch with foam board. The first layer of foam board can be attached using screws and 1 inch or wider washers spaced approximately every 8 inches. Additional layers must be added by gluing to the lower layer using construction adhesive. If using Extruded Polystyrene (XPS) do not apply a petroleum-based adhesive on the XPS.

. **Photo:** Attic Hatch Weather-stripped

3.4.3 Temporary Access through a Wall or Ceiling

Where entry to the attic via a pre-existing hatchway of access panel is not possible, access to attic areas may be gained from the exterior through roof or gable vent openings. If this is not feasible, access may be created by cutting through the ceiling between two ceiling joists or the knee wall area between two wall studs.

- Openings must be cut in such a manner as to ensure structural integrity of the dwelling.

  ○*OPTIONAL BEST PRACTICE*○ Use a stud finder to identify the location of wall studs or ceiling joists, then cut an opening between them, being careful to ensure that no electric wiring is damaged.

- If no permanent access is intended, the opening must be closed with the same or comparable material that is flush with the existing ceiling or wall material. At least one coat of joint compound must be applied, smooth enough to allow the application of a second coat of compound, resulting in a smooth surface that will have minimal visibility when painted. If Program incentives or Program loans are applied to this measure, signed authorization from the homeowner must be obtained, and provided to Program staff upon request.

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3.4.4 Pull-down Staircase Enclosures

Pull-down Staircase enclosures must consist of an air tight enclosure that fits over the top of the stairs. This may be constructed on site or purchased as a kit.

- The enclosure must have a minimum R-value of 14.
- This enclosure must be large enough to allow the pull-down staircase to close without interference.
- The cover must be cut to lengths that fully encompass the framing surrounding the staircase. The side must be of sufficient height to accept the folding stairs without being disturbed.
- All seams of this enclosure must be sealed with construction glue, foil tape or other material that ensures a tight, durable, permanent seal.
- The existing surrounding framing of the attic deck must be complete and level enough to allow weather-stripping on the bottom of the enclosure or attached to the deck to engage all the way around the enclosure. There must be some type of fastening mechanism (eye hooks, Velcro, brackets, etc.) with sufficient tension to engage the weather-stripping on all four sides. This box must be constructed of materials light enough to be easily moved aside by the homeowner.
- If the attic space may be used for storage or any purpose other than repairs or maintenance, any foam board that is included on the enclosure must have a thermal barrier. **Photo:** Pull-down Stair Cover

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3.4.5 Attic Doors (including Kneewall access doors)

- Attic doors must be weather-stripped using Q-lon style weather-stripping or equivalent.
- The seam between the framing or finish and the weather-stripping must be sealed with a bead of caulk.
- The door must be swept with a non-spring-loaded door sweep.
- Insulation, such as rigid foam board insulation, with an R-value of 14 or greater, must be permanently fastened to the back side of the door with metal fastenings. If the foam board insulation is not rated for exposure, a thermal barrier must be installed.

○*OPTIONAL BEST PRACTICE*○ Attach with screws and 1-inch washers spaced approximately 8 inches apart.

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3.5 Wall Air Sealing

3.5.1 General

The following are general requirements for wall air sealing:

1. Sealant materials must be compatible with the wall assembly materials and must allow normal movement due to changes in temperature and humidity and air pressure variations.
2. Sealant materials must be in a matching color to the substrate or be paintable.
3. Sealants must be installed in a manner that continues the function of the drainage plane. Do not install sealants in a manner that will hold water in the wall assembly.
4. When insulation is used as part of the air barrier system, the installation must be an air tight material or meet the minimum density for the material. (See: “Dense Pack Insulation” in Section 3.14.3: Wall Insulation/Installation).
5. When membranes or films are used as air barrier system components, the entire perimeter of the material must be air sealed.
6. Windows, doors, and skylights must be integrated into the wall air barrier system. Seal the portion of the window, door, or skylight that is the air barrier component of the opening assembly to the air barrier component of the wall assembly, not the exterior siding or trim.
7. Mechanical penetrations must be sealed to the air barrier component of the wall assembly, not the exterior siding or trim.

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3.5.2 Material

Wall air sealing materials can be broken into three different materials: Backers, Sealants, and Dense Pack Insulation.

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Backers

Backers are materials used to bridge openings that cannot be closed by sealants. Following is the list of appropriate backers for use when air sealing walls.

1. Fireproof Backers:
    a. Metal Flashing
    b. Mineral Wool
2. Fire-resistant Backers:
    a. Wall Board
3. Moisture-permeable Backers:
    a. Wall Board (unpainted)
    b. Building Wrap
4. Other Backers:
    a. 6-mil Polyethylene
    b. Radiant Bubble Wrap
    c. Plywood/OSB
    d. Thermo-Ply
    e. Structural insulated sheathing
    f. Foam Backer Rod

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Sealants

Sealants are any material applied to the existing wall air barrier or the installed backer that forms an air tight seal. Following is a list of appropriate sealants for use when air sealing walls.

1. Fireproof Sealants:
    a. Non-combustible fire rated caulk meeting ASTM E 136
    b. Silicone high temp RTV on gas vents to 500 degrees Fahrenheit meeting ASTM C920
2. Non-Fireproof Sealants:
    a. 1-part urethane foam
    b. 1-part urethane fire block foam rated for sealing gaps in wood framing
    c. 2-part urethane foam kits
    d. Siliconized latex sealants meeting ASTM C834
    e. Silicone urethane and other elastomeric sealants meeting ASTM C920
    f. Spray applied latex based sealant

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Wall Insulation as an air sealing strategy

Fibrous insulations blown into an enclosed cavity at a specified density can greatly reduce air flow through the cavity and can be considered a form of air sealing. The two most widely used materials for this application are cellulose and glass wool (fiber glass). Foam insulation injected into walls may also serve as an air sealing strategy.

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Table 2. Compatible Wall Air Sealing Materials

(Note: This table lists effective combinations of backers, fasteners, and blockers. Other combinations are possible.)

Wall Locations	Backer	Fastener	Sealant	Notes
Wall Cavities	N/A	N/A	Cellulose	Dense pack cellulose to 3.5+ lbs/cuft.
Wall Cavities	N/A	N/A	Fiber Glass	Dense pack fiber glass to 2.2+ lbs/cuft.
Wall Cavities	N/A	N/A	Spray Foam	See Appendices B,C,D for installation specifications.
Heat Sources	Metal Flashing	4d box nails	High Temp Caulk	Use compatible caulk and fuel combination.
Moisture Resistant Interior	Drywall/Paint (two layers of latex)	1" drywall screws	see notes	if finished look use joint compound, if not use 1-part foam or spray applied sealant.
Moisture Resistant Interior	1.5" XPS	2" drywall screws	1-part foam, spray applied sealant or caulk	Not for finished areas.
Moisture Resistant Interior	6 mil polyethylene	1/2" staples	1-part foam, spray applied sealant or caulk	Not for finished areas. "Tu-Tuff" or similar thinner sheeting may be substituted.
Moisture Resistant Interior	foil faced wrap	1/2" staples	1-part foam, spray applied sealant or caulk	Not for finished areas.
Moisture Resistant Exterior	Metal Flashing	4d box nails	silicone caulk	
Moisture Resistant Exterior	Building Wrap	1/2" staples	Sheathing Tape	Sealant must be protected from exterior exposure immediately.
Moisture Resistant Exterior	Rigid Insulation	Screws	Sheathing Tape	Sealant must be protected from exterior exposure immediately.
Moisture Resistant Exterior	polyethylene	1/2" staples	Sheathing Tape	Sealant must be protected from exterior exposure immediately.
Other Openings	1/2" drywall	1" drywall screws	see notes	Finished look use joint compound, if not use 1-part foam. 1st choice-finish & fire rating.

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3.5.3 Installation of Wall Air Sealing

Air sealing the exterior walls can be broken into distinct parts. There is the combination of air sealing and insulation embodied in dense packing. There are heat sources that must be dealt with using fire proof materials and methods. There are seals made in areas that must resist moisture intrusion or allow vapor to

escape when necessary. Finally, there are just penetrations through the walls that can be dealt with using "other" backers and non-specialized sealants.

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Heat Sources

Any penetrations through exterior walls that are considered a heat source (stove pipes, etc.) must be sealed using fireproof materials. If the gap between the existing wall air barrier and the venting system cannot be bridged by sealants alone, the gap may be bridged with metal flashing and sealed with furnace cement meeting ASTM E136. An alternative method is to stuff the gap with mineral wool as a backer (and insulation) and seal the mineral wool with a fire-rated furnace cement meeting ASTM E136. If the gap is small enough to bridge with sealant alone it must be sealed with a fire-rated furnace cement meeting ASTM E136.

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Moisture Resistant Seals

Air sealing of exterior walls in some locations may require the use of a material that is a class I vapor retarder. Such locations could be bathrooms, kitchens or other areas of high moisture concentration. When sealing out moisture is a consideration and the opening in the air barrier is too large to close with sealant, the opening must be sealed with one of the following:

1. For interior sealing that is meant to retard vapor diffusion, XPS, wallboard painted with two layers of latex paint, and polyethylene are appropriate materials. Appropriate interior sealants are siliconized latex sealants meeting ASTM C384, silicone caulk meeting ASTM C920, 1-part urethane foam, and duct mastic.
2. For exterior sealing meant to stop bulk moisture intrusion metal flashing, building wrap, polyethylene, and XPS are appropriate materials. Once the backer is selected based on location, suitability, and appearance a compatible sealant must be matched to the location and finished appearance. Suitable exterior sealants include siliconized latex sealants meeting ASTM C384 or silicone caulk meeting ASTM C920.

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Other Wall Penetrations

When sealing interior wall penetrations that are not heat sources or areas of high moisture concentrations the choice of backer on large openings must be chosen based on two criteria: compatibility with the surrounding finish, and fire resistance. Where visible or exposed to the living space, wallboard is an optimum material of choice as a backer due to its classification as a thermal barrier and its ability to be finished easily. Sealants in visible areas must be limited to either low sheen clear caulks or paintable caulks where applicable. 1-part foam can be used if it will then be covered by insulation or some form of thermal barrier. (See Appendix B, Section B.5: Fire Protection)

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Seal Baseboards
If a room is not carpeted, the baseboard can be sealed by caulking the seam between the baseboard molding and the floor and the baseboard molding and the drywall.
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Window and Door Trim Sealed
The trim around windows and doors can be sealed using caulk at the seam between the window trim and the window frame and the seam between the window trim and the drywall.

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Plumbing Penetrations Sealed
The area where plumbing pipes pass through walls can be sealed with caulk if the gap is less than ¼ inch, 1-part foam if the gap is less than 1 inch, or 1-part foam or caulk, with a backer, if the gap is greater than 1 inch.

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HVAC Boot to Subfloor/Drywall Sealed
The area where a Heating, Ventilation and Air Conditioning (HVAC) supply or return boot penetrates the subfloor or drywall on a wall or ceiling can be sealed with duct mastic or caulk if the gap is less than ¼ inch. If the gap is greater than ¼ inch a backer must be used and then sealed with mastic.
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Interior Sheathing Voids Repaired
Holes and gaps in the interior sheathing must be repaired with a material similar to the surrounding materials. These repairs must be discussed with the homeowner prior to beginning the repair to get approval of material and sealing methods.

○*OPTIONAL BEST PRACTICE*○ Create a signed agreement with the homeowner that details the expectation of the condition of the area after completion of work by the contractor. Take photos upon completion of the work.
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3.6 Conditioned Basement Air Sealing

3.6.1 General

Basements are spaces that are primarily below grade. Basements are considered to be conditioned spaces in this section of the MIG. See: Crawlspace & Unconditioned Basement Air Sealing for sealing recommendations in those areas.

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3.6.2 Heat Sources

The following penetrations from the basement to the exterior or the basement to the conditioned space are considered heat sources: Flue pipes from heating or Domestic Hot Water (DHW) systems; flue pipes from solid fuel burning appliances.

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3.6.3 Locations and Use

The following basement locations should be considered for air sealing, depending on the location of the dwelling's pressure plane, and pollutants in the space. Care must be taken to ensure that a path remains to provide adequate combustion air for any HVAC equipment or woodstoves in the basement.

1. Mechanical Chases and Other Large Openings
2. Rim Joists & Sills
3. Water Pipes
4. Leaky Basement Windows
5. Dryer Vents
6. Plumbing Penetrations
7. Small openings between the basement and conditioned or exterior spaces

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3.6.4 Materials

Basement air sealing materials have different recommendations based on the potential for high relative humidity in the space. Organic materials that support mold growth or materials that lose their rigidity after absorbing moisture must not be used. In addition to these recommendations, rigid foam board insulation that is used in a finished basement must either be fire-resistant or have a thermal barrier. Foam installed in basements or crawlspaces that can be used for storage or accessed for any other purpose beyond repair and maintenance of HVAC equipment must have a thermal barrier. A thermal barrier is not required for the installation of foam on a sill plate/rim joist area, provided that the maximum thickness of the foam is 3 ¼ inches (See Appendix B, Section B.5: Fire Protection). State and local codes must be checked for additional fire barrier recommendations and requirements.

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Backers

Materials that *do not* need a thermal barrier:

1. Thermax rigid foam board
2. Metal Flashing
3. Mineral Wool
4. Polyethylene
5. Foil Bubble Wrap

Materials that *may* need a thermal barrier:

1. Rigid Foam Board (except Thermax)
2. Spray applied foam plastic insulation

Sealants

Materials that *do not* need a thermal barrier:

1. 1-part foam
2. Siliconized latex sealants meeting ASTM C834
3. Silicone urethane sealants meeting ASTM C920
4. Water based duct mastic meeting UL181A, UL181B-M
5. Spray applied latex based sealants

Materials that *do* need a thermal barrier:

1. 2-part foam used as a sealant in a finished basement space, or a basement that can be used for storage, must have a thermal barrier (See Appendix B, Section B.5: Fire Protection).

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3.6.5 Installation

The following installation instructions for basement air sealing locations details the most common appropriate materials and practices.

Heat Sources

If the gap around heat sources is too great for sealant alone, the gap must be closed with non-combustible material, such as metal flashing mechanically fastened to surrounding framing. If the appliance burns solid fuel or oil, the edges and gaps must be sealed using fire-rated caulk meeting ASTM E136. If the appliance burns natural gas or propane, the edges and seams must be sealed with high temperature silicone RTV meeting ASTM C920. **Photo:** Chimney in Basement Sealed with Sheet Metal and High-Temp Caulk

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Mechanical Chases and Other Large Openings

Large openings between the basement and the conditioned space or the exterior must be backed with a fire-resistant material that does not support mold growth. For this reason, materials such as wall board or other paper-based products are not suitable. Further, if the opening is between the basement and the conditioned space, then the material must also be a class 1 vapor retarder. Appropriate materials for closing large gaps include Thermax, mineral wool, metal flashing or polyethylene. Materials such as XPS or other foil faced foam boards are appropriate if they will be either covered with insulation after installation or treated with a thermal barrier. The rigid material must be cut to fit over the opening with at least an inch of overlap where possible. The backer material must be fastened into place with mechanical fasteners (screws, staples etc.). Once the backer is secured firmly into place, the edges must be sealed using caulk or 1-part foam.

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Rim Joists & Sills

In situations where the basement or crawlspace has been defined as being within the building envelope, and rim joists are selected as an air sealing measure, rim joists must be sealed in such a manner as to eliminate air leakage from outside of the building envelope.

○*OPTIONAL BEST PRACTICE*○ Insulate the rim joist area as well as air sealing it. Acceptable methods for sealing rim joists include the following:

1. Seal with 2-part foam. In this application the foam can be extended from the subfloor to the junction of the foundation and the sill plate. In areas where termite infestations may exist, code may require an inspection break between the foam and the bottom of the sill. If there is a termite inspection break, the seam between the foundation and the bottom of the sill must be sealed using silicone caulk. This approach provides an insulation value.
2. Seal by cutting blocks of rigid foam board to fit in the rim joist area and sealing the edges with caulk or 1-part foam. In this application the sill-to-foundation seam and the seam between the two sill plates must also be caulked. This approach provides an insulation value. **Photo:** Rim Joist Sealed to Sill (and Insulated) with Foam Board and 1-Part Foam.
3. Seal all gaps in the rim joist area with caulk or foam. This application does not by itself provide an insulation value. If insulation is subsequently added to the rim joist area, care must be taken to ensure that moisture is prevented from migrating through the insulation to the rim joist, where it may reach the dew point and cause damage.

Note: A thermal or ignition barrier is not required for the installation of foam on a sill plate/rim joist area, provided that the maximum thickness of the foam is 3 ¼ inches, and the foam does not extend down the vertical wall below the sill plate.

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Water Pipes

Air infiltration into basements is the main cause of pipes freezing. It must be noted that in some dwellings water pipes as far as five feet from the rim joist area can be frozen when temperatures are low enough and the air is driven into the space by high winds. The basement must be thoroughly inspected for water pipes that could be frozen by wind-driven air infiltration. In these spaces, where pipes are at risk, the perimeter of the basement can be sealed in such a manner as to reduce the risk of freezing pipes. Methods for sealing the perimeter can be found in “Rim Joists & Sills”, above.

Basement Windows

Gaps in the frame and joints between the frame and the surrounding air barrier that are smaller than ¼ inch must be sealed with caulk. Larger gaps must be backed by backer rod and the seams caulked.

Dryer Vents

In situations where a pre-existing dryer vent is found or suspected to be combustible, the contractor must ensure that foam or other combustible insulation is not installed in direct contact with the combustible section of the dryer vent. This may be done by either:

1. Replacing the dryer vent with a non-combustible, code-compliant dryer vent, or
2. Treating the dryer vent as a heat source and protecting the dryer vent from contact with combustible insulation. If the gap between the dryer vent and the building surface is less than ¼ inch it can be sealed with high temperature silicone for gas vents meeting ASTM C920. If there is a gap too wide to be bridged by sealant alone, the gap must be sealed using either metal flashing or mineral wool. The edges and seams must then be sealed with high temperature silicone for gas vents meeting ASTM C920.

Plumbing Penetrations

If the gap between the pipe wall and the subfloor is less than ¼ inch the gap may be sealed using caulk. If the gap is between ¼ inch and 1 inch it can be sealed using 1-part foam. If the gap is greater than 1 inch it must be bridged using a moisture-resistant, fire-resistant material. Foam board, metal flashing, OSB, or plywood are appropriate materials for this application. (Foam board must either be rated for exposure (i.e. Thermax) or be covered with a thermal barrier.) Once the gap is closed, the edges and seams must be sealed with either caulk or 1-part foam.

Small Openings Between the Basement and Conditioned or Exterior Spaces

Small openings must be sealed using a fire-rated sealant. This can be a 1-part foam product or a fire-rated caulk.

3.7 Crawlspace & Unconditioned Basement Air Sealing

3.7.1 General

Crawl spaces use the same guidelines as Basements above, with the following additional considerations:

1. Code compliance: When working in crawl spaces all applicable national, state, and local codes regarding vapor retarders, ventilation, and thermal barriers (based on use type) in crawl spaces must be followed.
2. Access considerations: When specifying energy upgrades in a crawl space auditors must keep access restrictions and ease of installation in mind when specifying methods and materials.
3. Use the appropriate safety measures when crawl spaces qualify as confined spaces.

Table 3. Compatible Crawlspace & Unconditioned Basement Air Sealing Materials

(Note: This table lists effective combinations of backers, fasteners, and blockers.. Other combinations are possible)

Crawlspace & Basement Locations	Backer	Fastener	Sealant	Notes
Heat Sources	Metal Flashing	4d Box nails	High Temp Sealant	Use compatible sealant and fuel combination.
Heat Sources	Mineral Wool	Friction Fit	High Temp Sealant	If gaps are 1/4" or less stuff and seal.
Mechanical Chases	1" Thermax	2" drywall screws	1 or 2-part foam, spray applied sealant or caulk	Use Thermax, not any other type of rigid foil faced board. Exposed foam plastic insulation must have a fire barrier.
Mechanical Chases	Metal Flashing	4d box nails	1 or 2-part foam, spray applied sealant or caulk	Exposed foam plastic insulation must have a fire barrier.
Mechanical Chases	Polyethylene	1/2" staples	1 or 2-part foam, spray applied sealant or caulk	Exposed foam plastic insulation must have a fire barrier.
Mechanical Chases	1 or 1.5" XPS	2" drywall screws	1 or 2-part foam or caulk	Must have a thermal barrier if not covered by insulation.
Mechanical Chases	Rigid Insulations	2" drywall screws	1 or 2-part foam, spray applied sealant or caulk	Any rigid board insulation other than Thermax must have a thermal barrier if exposed.
Mechanical Chases	1" FSK	2" drywall screws	1 or 2-part foam, spray applied sealant or caulk	Exposed foam plastic insulation must have a fire barrier.
Mechanical Chases	Foil Face Wrap	1/2" staples	1 or 2-part foam, spray applied sealant or caulk	Exposed foam plastic insulation must have a fire barrier.
Large Openings				See Mech Chases.
Rim and Band	N/A	N/A	Spray Foam, spray applied sealant	In unconditioned basements or crawl spaces 2-part spray foam does not require a fire barrier.
Rim and Band	Rigid Insulations	Friction Fit	1-part foam, spray applied sealant or caulk	Rigid insulation must be rated for exposure or treated with a fire barrier
Rim and Band	N/A	N/A	1-part foam, spray applied sealant or caulk	The framing junctions can be caulked or foamed and batt insulation added.
Pipe Penetration	Fiber Glass	Friction Fit	1-part foam or spray applied sealant	for gaps greater than 1"
Pipe Penetration	Foil Face Wrap	1/2" staples	1-part foam, spray applied sealant or caulk	for gaps greater than 1"

(Table 3 Cont.)

Crawlspace & Basement Locations	Backer	Fastener	Sealant	Notes
Pipe Penetration	N/A	N/A	1-part foam, spray applied sealant	for gaps between 1/4" and 1".
Pipe Penetration	N/A	N/A	caulk	for gaps 1/4" or less
Windows/Doors	Backer Rod	Friction Fit	caulk	for gaps more than 1/4"
Windows/Doors	N/A	N/A	caulk	for gaps less than 1/4"
Windows/Doors	N/A	N/A	1-part foam or spray applied sealant	gaps between 1/4" and 1". Care must be taken during installation to avoid over filling
Dryer Vent				See Heat Sources

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3.8 Kneewall Attic Air Sealing

3.8.1 General

Roof vs. Wall & Floor

In determining options for air sealing in a knee wall area, it is important to first make a determination as to whether the knee wall attic is inside or outside of the pressure boundary of the dwelling.

- Inside (conditioned space): Air sealing follows the line of the roof rafters, which will bring the knee wall attic space inside the conditioned area.
- Outside (unconditioned space): Air sealing follows the knee wall itself from the sloped ceiling to the attic floor and then across the knee wall attic floor to the exterior wall top plate.

Vapor Permeable Air Barrier on Knee-walls

If the knee wall attic is air sealed as unconditioned attic space, this space must be ventilated according to state and local codes. Ventilating this space will make the knee wall insulation susceptible to wind washing. Therefore, a vapor permeable air barrier must be added to protect the installed insulation from wind washing. Dense pack insulation installed with webbing is an acceptable method of reducing the impact of wind washing.

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3.8.2 Locations and Use

Knee wall or other side-attic areas, including rim joist areas under single-story shed roof, gambrel, garage, or other floor framing very often open into vented or unconditioned attic areas. If some areas are inaccessible, strategic dense-pack insulation must be considered to slow or stop leakage.

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3.8.3 Material

If the attic has been sealed along the knee wall, and the attic floor and has been pushed outside of the conditioned space, refer to Section 3.2.4: Attic Air Sealing/ Material.

Air Barrier Aligns with Roof Rafters

This plane must be sealed with an air impermeable barrier. If the rafter bays are insulated with glass fiber or cellulose insulation, the following air barriers are appropriate:

1. Wallboard
2. Foam board (Must either be rated for exposure (i.e. Thermax) or be covered with a thermal barrier).
3. Plywood
4. OSB
5. Structural insulated sheathing
6. Polyethylene
7. Building wrap

If the rafter bays are insulated with spray foam the air barrier must be a thermal barrier also. Appropriate materials in this situation would be:

1. Wallboard
2. Foam board (Must either be rated for exposure (i.e. Thermax) or be covered with a thermal barrier.)

Air Barrier Aligns with Knee Wall and Attic Floor

If the air barrier aligns with the attic knee wall, the interior face of the knee wall will be the air barrier. The material used to seal the knee wall transition area will depend on access.

If the knee wall attic floor is not decked, the following materials are appropriate for sealing the opening between the floor joist cavities:

1. Rigid foam board
2. Wallboard
3. Framing lumber
4. Structural insulated sheathing
5. Foil-faced bubble wrap

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3.8.4 Installation

Air Barrier Aligns with Roof Rafters

If the air barrier is going to align with the roof rafters and bring the knee wall attic inside the conditioned space, an air barrier material must be run from the top plate of the knee wall to the top plate of the exterior wall. This air barrier can be a rigid material like Thermax, XPS with a thermal barrier, or wall board, or it could be polyethylene or building wrap. The air barrier must be mechanically fastened with screws for rigid materials or staples for flexible barriers. All seams and edges must be sealed. Acceptable applications include 1-part foam on rigid materials, 3M 8086 or equivalent tape on polyethylene or building wrap tape on building wrap. **Photo:** Knee wall Attic Air Sealed Along Rafter Line (attic space within thermal/pressure boundary).

Air Barrier Aligns with Knee Wall & Attic Floor

If the air barrier aligns with the attic knee wall, the interior face of the knee wall will be the air barrier. The seam where the shoe plate of the knee wall sits on the subfloor must be sealed with caulk. If the knee wall attic floor is not decked, a solid substance that blocks the opening, such as rigid foam board, must be used to seal beneath the knee wall area.

If the attic knee wall floor is sheathed this area must be air sealed using dense pack insulation, or by removal of the sheathing and treatment of the area below the kneewall as noted above

○*OPTIONAL BEST PRACTICE*○ Foam board can be cut into sections and rigid fit under the interior edge of the shoe plate so that it aligns with the interior face of the knee wall. The seams between the foam board and the floor joists, ceiling, and subfloor must be sealed with 1-part foam or caulk. The foam board must be covered with fire protection if the kneewall attic will be used for storage.

○*OPTIONAL BEST PRACTICE*○ In some cases it may be desirable to stop blown-in material from penetrating too far down a bay above the living space when dense packing. In this case a burlap "feedbag" may be used as an inflatable insert into the floor joist bay. This can be done by stuffing the bag through the drill hole while holding onto the opening of the feed bag. The fill tube can then be inserted into the feed bag and the feedbag "inflated" with blown in material until it fills the bay and forms a plug under the knee wall. The remainder of the bay can then be dense packed without fear of insulation entering areas where it is not intended. The top plate of the exterior wall and any penetrations through the attic knee wall floor must be treated as specified in Section 3.2.5: Attic Air Sealing Installation.

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Photo: Knee wall Attic Diagram for Air Sealing Along Wall/Floor Framing (attic space outside thermal/pressure boundary).

Table 4. Compatible Kneewall Attic Air Sealing Materials
(Note: This table lists effective combinations of backers, fasteners, and blockers. Other combinations are possible.)

Kneewall Attic Locations	Backer	Fastener	Sealant	Notes
Conditioned Kneewall	1/2" drywall	1" drywall screws	1-part foam, spray applied sealant or caulk	Qualifies as a thermal barrier if used over foam insulation.
Conditioned Kneewall	1" Thermax	2" drywall screws	1-part foam, spray applied sealant or caulk	Qualifies as a thermal barrier if used over foam insulation.
Conditioned Kneewall	1/2" Plywood/OSB	1" drywall screws	1-part foam, spray applied sealant or caulk	Qualifies as a thermal barrier if used over foam insulation.
Conditioned Kneewall	Structural Sheathing	1" drywall screws	1-part foam, spray applied sealant or caulk	Qualifies as a thermal barrier if used over foam insulation.
Conditioned Kneewall	Polyethylene	1/2" staples	Sheathing Tape	Does not qualify as an ignition barrier
Conditioned Kneewall	Building Wrap	1/2" staples	Sheathing Tape	Does not qualify as an ignition barrier
Unconditioned Kneewall				The interior face of kneewall will be the air barrier. See "attic knee wall transition" for materials to be used in that area. Seal holes in kneewall to conditioned space using Wall Air Sealing table 2.2.7.4.

3.9 Floors Over Unconditioned Space or Ambient Conditions Air Sealing

3.9.1 Overhang Air Sealing

General
Overhangs are a type of floor over unconditioned space, usually outside. Because of its exposure to the exterior it is necessary that the insulation be protected from the weather as well as from air movement.

Access Considerations
Access to the overhang will determine the method used to seal the floor joist bay transition area. If access cannot be gained to seal by other means, dense pack may be used to slow air flow through this area.

Confined spaces
Use special safety measures when crawl spaces qualify as confined spaces.

Material
The following materials are appropriate for use in the following overhang configurations:

1. Backers:

- Foam board (Must either be rated for exposure (i.e. Thermax) or be covered with a thermal barrier.)
- Rolled batt
- Foil-faced bubble wrap
- Structural Insulated sheathing
- Framing lumber
- Wallboard

2. Sealants:
    - 1-part foam
    - 2-part foam
    - Silicone caulk
    - Duct mastic
    - Spray applied latex based sealants (must not be exposed to sun or weather) can be used wherever 1-part or 2-part foam are used as sealants.

Installation

Methods and materials for sealing overhangs will depend on existing conditions and access. For all overhangs in cold climates the floor joist bays must be inspected to ensure that water pipes running through these areas will end up inside the conditioned area. Generally, this means that 75% of the insulation to be installed will be on the exterior side of the water pipes. If floor bays have ducts installed in them, then the ducts must be made air tight before pushing them outside with air sealing, especially before dense packing the joist bay. The following configurations must be sealed as specified here:

Overhang Accessible from Interior Space**:** Before sealing the transition area, the floor bay must be filled with insulation. The area where the floor joist crosses over the sill plate or exterior wall top plate must be sealed with an appropriate backer and the seams on all four sides of the backer sealed with 1-part foam or siliconized caulk. On the exterior, the seam between the sheathing on the bottom surface of the floor joist and the surrounding siding/sheathing must be sealed using a silicone caulk rated for exterior use.

Exterior Overhang with Sheathing**:** Removed **for** Access **or** No Sheathing**:** Seal the transition area using an appropriate backer. Seal the seams around the backer using 1-part foam, silicone caulk or equivalent.

○*OPTIONAL BEST PRACTICE*○ Fill the overhang floor bays with insulation, if there is enough clearance at the bottom of the floor joist and the bottom of the siding/sheathing consider adding a layer of rigid foam board to break the thermal bridge before replacing or installing the overhang sheathing. Seal the overhang sheathing to the surrounding siding or sheathing using silicone caulk.

No Access to the Overhang Floor Bays

This area can be dense packed to slow air flow. A thorough inspection of the floor joist bays must be made to ensure that there are no water pipes, ducts or recessed fixtures in the area to be dense packed. To stop the

unwanted flow of blown insulation down the floor bays and into the conditioned space, the burlap "feedbag" method can be used. See Section 3.8.4/Air Barrier Aligns with Knee Wall & Attic Floor

The seam between the overhang sheathing and the exterior sheathing or siding must be sealed using silicone caulk.

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3.9.2 Air Sealing Garage walls adjacent to conditioned spaces; frame floors over garage

Material

The following materials are appropriate for use in frame floor configurations when sealing the ends of bays exposed to outside air movement or large openings between the garage and conditioned space:

1. Backers:
   a. Foam board (Must either be rated for exposure (i.e. Thermax) or be covered with a thermal barrier)
   b. Rolled batt
   c. Foil-faced bubble wrap
   d. Structural Insulated sheathing
   e. Framing lumber
   f. Wallboard
2. Sealants:
   a. 1-part foam
   b. 2-part foam (with thermal barrier, unless at rim and band joist area)
   c. Silicone caulk
   d. Duct mastic
   e. Spray applied latex based sealants (must not be exposed to sun or weather) can be used wherever 1-part or 2-part foam are used as sealants.

Installation

Methods and materials for sealing areas adjacent to garages will depend on existing conditions and access.

1. **For all frame floors** the floor joist bays must be inspected to ensure that water pipes running through these areas will end up inside the conditioned area. Generally, this means that 75% of the insulation to be installed will be on the exterior side of the water pipes.
2. **Ducts running along and below a garage ceiling**, or along a garage wall must be made air tight.

   ○*OPTIONAL BEST PRACTICE*○ Insulate the ducts after air sealing.

3. If **floor bays above a garage ceiling have ducts running through them**, the ducts must be made air tight whenever practical. Note: cavities with flex duct should NOT be dense-packed, as the insulation is likely to compress and compromise the effectiveness of the duct. Alternative methods, such as inserting batt insulation around the flex duct, should be considered.

4. **If a heat source such as a flue pipe from a heating system located in area to be dense packed**: This heat source located in an enclosed space must have the bay that it is located in blocked with an appropriate backer with a clearance of at least three inches between the dam and the heat source. The backer must be made air tight with the surrounding materials to remove the chance that the insulation dust, under pressure could be forced within three inches of the heat source. If the heat source is close to one side of the bay and blown material in an adjacent bay is within three inches of the heat source, the adjacent bay must have a non-combustible insulation type (i.e. mineral wool) installed anywhere in that bay that is within three inches of the heat source.
5. **If a flue pipe from a heating system traverses the pressure boundary**, and the gap around the heat source is too great for sealant alone, the gap must be closed with metal flashing mechanically fastened to surrounding framing. If the appliance burns solid fuel or oil, the edges and gaps must be sealed using fire-rated caulk meeting ASTM E136. If the appliance burns natural gas or propane, the edges and seams must be sealed with high temperature silicone RTV meeting ASTM C920.
6. **Large openings between the garage and the conditioned space** must be backed with a fire-resistant material. Appropriate materials for closing large gaps would be Thermax, plywood or Oriented Strand Board (OSB), drywall or structural insulated sheathing. Materials such as XPS or other foil faced foam boards are appropriate if they will be either covered with insulation after installation or treated with a thermal barrier. The rigid material must be cut to fit over the opening with at least an inch of overlap where possible. The backer material must be fastened into place with mechanical fasteners (screws, staples etc.). Once the backer is secured firmly into place, the edges must be sealed using caulk or 1-part foam.
7. **Plumbing Penetrations:** If the gap between the pipe wall and the subfloor is less than ¼ inch the gap may be sealed using caulk. If the gap is between ¼ inch and 1 inch it can be sealed using 1-part foam. If the gap is greater than 1 inch it must be bridged using an appropriate backer. Foam board, metal flashing, OSB, or plywood or other appropriate materials for this application. (Foam board must either be rated for exposure (i.e. Thermax) or be covered with a thermal barrier.) Once the gap is closed, the edges and seams must be sealed with either caulk or 1-part foam.
8. **Small openings between the garage and conditioned space** must be sealed with a fire-rated sealant.
9. **Rim Joists and Sills** must be sealed as per Section 3.6.5 – Rim Joists and Sills, above

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3.10 Window Weather-stripping

3.10.1 General

Technicians are not required to weather-strip windows and doors as part of air sealing, but they may, based on customer comfort issues or where large leaks are found. Weather-stripping is recommended for doors between living space and garage.

In addition to weather-stripping of doors and windows it may sometimes be necessary to install window sash locks, eye hooks, barrel bolts, etc. to make the installed weather stripping engage effectively.

○*OPTIONAL BEST PRACTICE*○ Educate the customer on the value of ensuring that all storm windows are adjusted seasonally, and that employing window locks may (depending on design) improve air sealing effectiveness.

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3.10.2 Locations and Use

Window weather-stripping must only be installed where it does not have the potential to interfere with the smooth operation of the window and where normal operation of the window will not cause the weather-stripping to be torn out.

Window Weight Treatment

There are two separate window weight treatment techniques. Which technique is chosen is based on what treatment the window is undergoing. If the window is being weather-stripped only, then pulley seals can be installed to slow air leakage through the pulley openings. If the window is being replaced, the window weight cavities must be accessed through the lower sash channel access panel. The ropes or chains that the weights hang on must be cut and removed along with the weights themselves. The pulleys must be removed from the upper sash channels and the opening covered with duct tape. The window weight cavities must now be insulated by dense packed using a fill tube and entering from the lower sash access panel, installing foam, or by other comparable means. Re-install the access panels in the lower sash channels.

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3.10.3 Material

V-Seal type or equivalent vinyl weather-stripping with a deflection range of at least ¼ inch must be used. Materials must remain pliant in cold weather.

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3.10.4 Installation

All weather-stripping must be permanently installed with fasteners (tacks, staples, brads, etc.) and must make positive contact between surfaces to prevent air leakage. The weather-stripping must form an airtight seal when the window is closed and latched. A small bead of caulk must be applied if necessary to prevent air leakage behind the weather-stripping.

Weather-stripping must be installed on any sash, meeting rail or sill surface that leaks air as long as placement does not interfere with the smooth operation of the window.

1. “Three-sided” LOWER sash channels, & sill; or, if window has spring loaded channels: top, bottom and meeting rail.
2. “Four-sided” LOWER sash channels, meeting rail & sill.

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3.11 Door Weather-stripping

3.11.1 Location and Use

Air sealing priority must be given to weather-stripping doors to unconditioned attic spaces and attached garages. Additionally, weather-stripping of doors between conditioned and unconditioned (or semi-conditioned) space may be treated.

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3.11.2 Materials for Door Weather-stripping and Sweeps

Materials must:

- Be durable enough to withstand years of use
- Be reinforced with metal or wood
- Be capable of sealing the gaps around the door, and with enough flexibility to adjust for seasonal expansion and contraction of door and framing materials.
- Have a deflection range of at least ¼ inch and remain pliant in cold weather.

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3.11.3 Installation

1. All weather-stripping must be permanently installed with fasteners (tacks, staples, brads, etc.) and must make positive contact between surfaces to prevent air leakage.
2. The weather-stripping must form an airtight seal when the door is closed. A small bead of caulk must be applied as necessary to prevent air leakage behind the weather-stripping.
3. The weather-stripping must not interfere with the smooth operation of the door.
4. One of two types of sweeps must be used on exterior doors. Which sweep must be used depends on frequency of door usage. Doors that have high usage must be swept with a spring-loaded sweep that will only engage and contact the floor when the door is closed. Low use doors can have either the spring-loaded sweep or a non-retracting sweep that always makes contact with the floor.
5. After the weather-stripping is installed the door must be tested for ease of use. It must not be necessary to slam or exert excessive force on the door for the lock set to engage.
6. In addition to weather-stripping of doors and windows it may sometimes be necessary to install window sash locks, eye hooks, barrel bolts, etc. to make the installed weather stripping engage effectively.

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3.12 All Insulation

3.12.1 General

The following applies to all insulation installed through the program:

1. Install attic, basement wall/ceiling, garage, and wall insulation upgrades according to program eligibility criteria, based on customer work order.
2. Cost-effectiveness calculations must be based on effective R-values of pre-existing insulation.
3. Insulation materials and levels installed must match what is specified on the work scope as well as any contracts provided to the customer.
4. Insulation levels on retrofit projects must conform to code requirements for new construction to the extent that allowable space, program budgets, and customer agreements allow.
5. Particular attention must be paid to exposed foam insulation. See Appendix B-5 for fireproofing requirements.
6. Upon completion of the work the home and it grounds will be returned to their original condition. All construction debris and materials will be removed; windows and doors returned to original configuration, storage placed back in original areas etc.
7. Combustion safety screening and/or testing is required before and after air sealing, and with all projects in which enclosed cavities that are insulated represent 25% or more of the shell area.
8. ○*OPTIONAL BEST PRACTICE*○ Leave documentation of installed insulation levels, material or bag counts, and insulated area at the electrical panel or when it is not possible to leave it at the electrical panel, with the customer.
9. ○*OPTIONAL BEST PRACTICE*○ Install strategic dense blown insulation in enclosed cavities, to control air leakage and increase insulation levels in attic, basement, and living space cavities.
10. ○*OPTIONAL BEST PRACTICE*○ Ensure that all ductwork in an unconditioned attic is insulated to the same level as the remainder of the attic/conditioned space boundary.

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3.12.2 Measurement of Areas

1. There are three locations from which components of a building can be measured: outside, in the living space, or in a buffer zone such as an attic or crawlspace. Measuring from the outside is always preferred. When the building floor plan and the area to be insulated, such as the attic floor plan, are the same, exterior dimensions may be used.
2. Interior measurements from the living space (preferable) or from inside the attic/kneewall space (second option if living space measurements are inconvenient or not accessible) may be used for attic areas that do not match the building floor plan, such as knee-walls, slopes, cathedral ceilings, kneewall floors and attic flat areas that are smaller than the building floor plan. When interior measurements are used, then an additional foot should be added to each dimension to compensate for exterior wall thickness.
3. When taking measurements, round up to the next half-foot. For example, if the dimension is between 24 feet and 1 inch or 24 feet and 5 inches, the contractor may round up to 24 feet 6 inches (24.5 feet).

4. If software requires measurement in *net* square footage, the net wall area determined by:
    a. The exterior perimeter multiplied by the interior wall height(s). One (1) extra foot of height must be added for band joist perimeter of floor system between two conditioned floors if the home is balloon framed, or if the home is platform construction, and if the insulation project will include the band joist area.
    b. Basic windows and doors must then be deducted from this area. Large sections which cannot be insulated, such as brick walls or fireplaces must be deducted and noted on insulation work orders.

    If *gross* square footage is required, this can be determined by 4.a., above.
5. If exterior dimensions cannot be taken for the building shell and interior dimensions are used, an additional two linear feet must be added to the perimeter before it is multiplied by the interior wall height.

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3.12.3 Physical Properties

Insulation materials must satisfy the following national standards:

1. Batts - ASTM C 665
2. Loose fill (blown) cellulose - ASTM C 739
3. Loose fill (blown) fiber glass - ASTM C 764
4. Loose fill (blown) mineral fiber – ASTM C 764
5. Preformed polystyrene boards - ASTM C 578
6. Preformed polyurethane/polyisocyanurate boards - ASTM C 591

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3.13 Attic & Roof Slope Insulation: General

3.13.1 Sealing Bypasses Prior to Insulating

Before insulating the attic, the contractor must ensure that all identifiable bypasses through the attic floor, or at attic transitions (i.e. changes in ceiling height) have been sealed. Areas of concern include:

- Chimney edges
- Soil stacks
- Recessed lights and electrical boxes
- Openings into perimeter walls
- Tongue and groove gaps in ceilings
- Dropped ceilings
- Hatches, doors or recessed drawers leading into unconditioned kneewall attics
- Bypasses between conditioned area floors and unconditioned kneewall attics
- Bypasses between conditioned knee wall attics and unconditioned slopes.
- Open-top window weight boxes in gable or eave-side walls that terminate at or in the closed-cavity slopes

○*OPTIONAL BEST PRACTICE*○ Use visual inspection and infrared in combination with the blower door to determine leakage paths.
○*OPTIONAL BEST PRACTICE*○ Use Zonal Pressure Diagnostics to ensure that all identifiable leakage paths have been addressed.

Photo: Diagram of General Air Leakage Paths.

3.13.2 Attic Stairwell walls and stairs

If an attic area is determined to be outside of the thermal envelope, and attic insulation is to be proposed, the contractor must consider insulation of the stairwell wall between the conditioned space and the stairwell, including any wall area above and around the access door. Additionally, the cavity beneath the stairs must be considered if a conditioned space exists directly below.

○*OPTIONAL BEST PRACTICE*○ Insulate these areas. This eliminates a major thermal bypass.

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3.13.3 Material

Loose blown, batt and rigid foam board insulations in attic spaces must meet the appropriate guidelines listed in Section 3.12.3: Physical Properties. Where the brand name Thermax is specified for rigid foam board, an equivalent foam board that is rated for exposure to conditioned areas without a thermal barrier may be used. Otherwise the foam board must have a thermal or ignition barrier as specified in Appendix B-5. Area spray foams must conform to Appendix B.

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3.13.4 Installation

When insulating at the perimeter of the attic, the contractor must ensure that:

1. Air flow from soffit vent openings into the attic cavity is not impeded to any degree by the insulation.
2. The insulation is protected from the effects of wind-washing
3. The insulation at the edges of the conditioned space, including the top plate, is supported in such a manner as to maintain the desired depth and R-value for the life of the insulation and to prevent loose-fill insulation from falling into the soffit.

Baffles

1. Baffles must be installed at each soffit vent unless appropriate structural barriers exist to ensure appropriate air flow and protection from wind-washing.
2. Baffles must be permanent, mechanically fastened at sides and at bottom, and ensure the free movement of air through soffit vents into the attic.
3. Baffles must be rigid enough to restrain loose-fill insulation from congesting the soffit vents at the eaves and obstructing ventilation. These baffles must extend above the final level of resulting insulation by at least four inches, so to be visible upon inspection.

4. Pre-formed baffles are available, but baffles can also be made using rigid foam board, structural insulated sheathing, framing lumber, plywood, or OSB.
5. ○*OPTIONAL BEST PRACTICE*○ Wind washing at the eaves can be stopped by installing a rigid, air impermeable baffle that extends from the outer edge of the exterior wall top plate to within two inches of the roof sheathing and is attached to the joists on either side of the cavity that is being protected.

   Photo: Insulation Wind Wash Baffle.

Attic Hatch Damming

Permanent dams must be installed around all attic hatch covers in the following manner:

1. This damming may be accomplished by using unfaced fiberglass batts of greater thickness than the installed insulation placed around the perimeter of the hatch, by using a framing lumber fixed in place around the hatch, or by using rigid foam boards of sufficient thickness as to provide permanent support to the surrounding insulation.
2. The damming must not interfere with the opening of the hatch cover.
3. When the hatch is opened, the damming must prevent loose-fill insulation from falling into the living area.
4. The damming must allow for easy access into attic for future inspection.
5. Insulation levels immediately surrounding the hatch must equal or exceed the R-value of the rest of the attic space.

Electric Radiant Strip Heating Elements

Blown-in or faced insulation must not be installed in contact with electric radiant strip heating elements. A minimum 3-inch thick un-faced mineral wool fiber batt must be installed first.

Bathroom Fans

All bathroom fans must be dammed, using unfaced batts or other permanent enclosures, and vented through the roof with insulated ductwork that terminates at roof or eave vent with a spring-loaded damper. Bath fan venting must not terminate anywhere inside the building shell. (i.e. duct must not be laid into soffit area, or hung near gable vent, with termination within attic.) If roof penetrations are prohibited, an alternative route must be devised. Care must be taken to ensure that duct routes do not bow in such a manner as to create the opportunity for pockets of water to collect within the duct.

Flooring

If homeowner so desires, when attic flooring is removed, it must be reinstalled and screwed securely back into place. The contractor must remove and replace any flooring damaged during installation with a like product that is fastened securely.

Open Blow Insulation

Loose fill blown in insulation must be installed according to manufacturer's specifications and recommended densities. All open blow attics must be installed to a level condition. Photo: Loose Fill Attic Insulation Evenly Installed. Insulation in open blown areas must have minimum material count per

manufacturer's instructions, as follows: thickness as specified in work order is average settled thickness. Insulation depth markers with numbers at least one-inch high must be installed at least one for every 300 sq. ft. throughout the attic space. The markers must be fastened to the bottom of the attic joists or trusses and marked with the initial installed thickness. All depth markers must face the attic hatch. A cellulose table and example is provided below.
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Table 5. Example of a Cellulose Table

Example: Work order specifies 12 inch cellulose open blow. R-value from chart is R-42. Attic area is 1000 sq. ft. Look at chart on product bag, if chart says that installed R-42 = 60 bags for 1,000 sq. ft, you need to install 60 bags. Minimum thickness specified on work order also applies.

Inches on work order	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Installed R-value	11	14	18	21	25	28	32	35	39	42	46	49	53	56

1. Use depth charts provided by the manufacturer as a guide to specifying the number of inches to be installed. The installer will need the depth estimate to monitor insulation installation amounts. The depth and desired R-value must be checked periodically to ensure that the projected number of bags for the desired density are being installed.
2. Damming: Blown in insulation must be contained using damming at the following areas and listed clearances: chimneys & double wall flues (3 inches), single wall flues (6 inches), Recessed lights or bath fans with heat lamps or lights (3 inches). Attic hatches or pull-down stairs, whole house fans, mechanical access walkways, air conditioner drip pans, and storage areas (no clearance required). **Photo:** Attic Insulation Dammed Away from Chimney.
3. In situations where the dwelling has a whole house fan of the type that sits horizontally on the attic floor and draws air upwards through a louvered area below:
    a. If left untreated, the louvered area, even when closed, may allow air leakage into the attic. The contractor may consider creating a cover if practicable, to reduce this leakage.
    b. The contractor must always discuss any modifications to the whole house fan with the customer prior to initiating changes.
4. Loose Blown Insulation on Slopes: Loose blown insulation must not be blown onto unenclosed attic slopes with a pitch of more than 4:12. If loose blown insulation is blown on a slope that terminates at the end of a tray ceiling or other vertical wall open to the attic flat, the end of the sloped surface must be dammed with unfaced fiber glass of sufficient depth to maintain the specified R-value and the blown insulation must be installed up to the dam.

Dense Pack Insulation

1. Blown in insulation in restricted or dense packed applications must be 3.5 lbs./cu. ft. for cellulose and 2.2 lbs./cu. ft. for blown fiber that is manufactured for dense pack installation.
2. All openings into the cavity must be sealed in such a manner as to prohibit the insulation from coming out of the cavity.

3. If dense-packed insulation is used to insulate and air seal the joist cavity beneath an attic knee-wall, the cavity must be sufficiently packed and sealed to make it extremely difficult to detect any air movement with infrared (IR) scan and blower door.
4. ○*OPTIONAL BEST PRACTICE*○ Ensure that an area has been properly dense-packed by one of the following verification tests:
    a. Core sampling in 4 locations indicates the installed insulation has a density of at least 3.5 lbs./cu ft for cellulose and 2.2 lbs./cu ft for fiberglass that is approved for dense packing. This is the most reliable option. Core sampling is sometimes used by Program Quality Inspection teams.
    b. The blower door used in conjunction with an IR camera reveals no accessible major bypass leaks and less than 10% of the accessible top plates unsealed in an attic. For walls the IR camera must see no movement of air from bay to bay or through drywall penetrations. This method helps assure adequate coverage but may not ensure dense-packing.
    c. Proper insulation densities and depths may also be calculated by performing area and volume calculations and "bag counts".

Platforms

An attic storage platform may be built at the customer's expense if they wish to raise the attic floor for more room for insulation. The storage platform must have at least 2x6 frames. Contractors must ensure that the platforms are constructed with metal fastenings, and have sufficient structural integrity to support the weight of storage items, occupants and others who may access the attic.

○*OPTIONAL BEST PRACTICE*○ As an alternative to using structural framing and either dense packing or loose blowing below the storage deck, foam board can be used to gain a higher R-value within the cavity below the deck. The foam board should be supported structurally in such a manner as to maintain the integrity of the foam board insulation.

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3.14 Wall Insulation

3.14.1 Materials

Installed insulation materials must meet the appropriate guidelines listed in Section 3.12.3: Physical Properties

Exterior drill and plug repair on painted wood surfaces must include insertion of a wooden plug and exterior spackling or equivalent. Interior drill and plug applications through drywall or plaster must include the use of a plug and joint compound.

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3.14.2 Pre-Installation

Interior & Exterior Inspections
Prior to starting a job, an interior and exterior inspection must be conducted to determine any potential problem areas. These problem areas must be identified and addressed prior to working on that area. Examples of some problem areas are recessed radiators, duct work in wall cavities, recessed bookshelves, stairways on exterior walls, loose or cracked plaster on walls, poor siding, etc. Check wall areas for valuables that must be removed prior to working on walls. The process and the work that is to be performed must be explained to the client.

For buildings with masonry exteriors, the contractor must confirm through visual observation that there is a barrier in the wall system that will prevent blown in insulation from coming into contact with the masonry. The purpose of this observation is to ensure that the insulation will not absorb moisture when the masonry gets wet. The visual observation can be with the naked eye or via borescope and must be done for each cavity that is being insulated. This barrier will typically be in the form of sheathing attached to a frame wall, but other systems that separate the insulation from the masonry are also appropriate.

Avoiding Hazards
Ensure that the insulation of the cavities does not present a hazard to the occupant, installer or the home's structural/mechanical integrity, i.e., heat ducts, recessed lights, vent fans, electrical service entrances, etc.

Knob & Tube Wiring
Verify that knob and tube wiring has been replaced. Receive certification that existing knob and tube wiring is not live. (See Section 2.3: Knob-and-Tube Wiring for complete policy).

Moisture
Ensure that the moisture conditions detected in the structure are corrected prior to insulation of the sidewall cavities. This may be accomplished by one or more of the following techniques:

1. All cracks and holes between wall cavities and high moisture areas (kitchen, bathrooms, etc.) should be thoroughly sealed.
2. A vapor barrier may be installed, when possible, on the interior surface of the walls in bathrooms, kitchens, laundry rooms, and any other high moisture areas.
3. A vapor barrier floor covering, and possibly mechanical ventilation should be installed into high moisture crawlspace areas as per Section 3.15.3: Ground Cover
4. Exterior structural flaws that admit rainwater into wall cavities must be corrected: repair gutter, downspout, drainage system, and seal gaps above door/window casings.
5. An adequate moisture control system may be installed in the house, including indoor mechanical ventilation and passive attic ventilation.
6. Clothes dryers must be vented to the outside.
7. The owners/occupants should be advised to consider lowering their humidifier and/or to change lifestyle practice, which contribute significantly to high humidity.

Sidewall Openings
Ensure that all openings in sidewalls through which the insulation can escape to the interior or exterior of the building are blocked as follows:

1. Missing interior wall surfaces must be covered with a compatible material (i.e., drywall) and sealed into place. Generally, this must be done prior to beginning work.
2. Block all openings in sidewalls through which the insulation may escape. Seal all wall cavities which open into a basement or crawlspace before wall insulation is installed. Also check for pipe openings that enter kitchen cabinets and block them as needed.
3. Wall cavities with no top plate and/or open at the sill plate must be blocked and sealed with an air impermeable barrier, such as rigid polystyrene insulation.

In situations where missing or damaged exterior siding exist on the dwelling, the contractor must ensure that any opening that may allow moisture intrusion into the wall cavities are addressed in a manner that provides permanent protection of the insulation from water intrusion.

Siding
Because the siding on a house is the most obvious indicator a homeowner will use to judge the quality of an insulation job, it is extremely important that the siding work is done properly. Contractors must always explain to the homeowner how the siding will be removed and replaced before beginning work.

○*OPTIONAL BEST PRACTICE*○ Take photographs of the before and after siding conditions.

○*OPTIONAL BEST PRACTICE*○ Document final condition of siding in writing with the customer.

Siding Removal
1. Siding must be removed with great care to minimize stray marks, splits, and broken siding.
2. In cold weather, extreme care must be taken to avoid cracking vinyl siding.
   ○*OPTIONAL BEST PRACTICE*○ If practicable, contractor may defer vulnerable vinyl sidewall insulation for warm weather.
3. Bevel cuts on wooden siding can be helpful in reducing the risk of water migration behind the siding.
4. Great care should be taken in working around windows, doors and corners to avoid damage to trim.
5. ○*OPTIONAL BEST PRACTICE*○ Ensure that workers have clean hands, or use gloves, to avoid fingerprints or stains.

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3.14.3 Installation

Dense Pack Insulation
Blown in insulation in restricted or dense packed applications must be 3.5 lbs./cu. ft. for cellulose and 2.2 lbs./cu. ft. for blown fiber that is manufactured for dense pack installation. The cavity must be sufficiently packed and sealed to significantly reduce air leakage. For an effective installation use only equipment

compatible with the insulation material used. Follow manufacturer's recommendation for air pressure and density.

○*OPTIONAL BEST PRACTICE*○ Ensure that an area has been properly dense-packed by one of the following verification tests:

a. Cellulose: core sampling in 4 locations indicates the installed insulation has a density of at least 3.5 lbs./cu. ft. This is the most reliable option. Core sampling is sometimes used by Program Quality Inspection teams.
b. The blower door used in conjunction with an IR camera reveals no accessible major bypass leaks and less than 10% of the accessible top plates unsealed in an attic. For walls the IR camera must see no movement of air from bay to bay or through drywall penetrations. This method helps assure adequate coverage but may not ensure dense-packing.
c. Proper insulation densities and depths may also be calculated by performing area and volume calculations and "bag counts". Keep a record of the number of bags used to insure the installed insulation conforms to the manufacturer's recommended coverage shown on the material label.
d. Use smoke devices to test dense-packing: Dense-pack one bay. Use the blower door to depressurize the dwelling, set at 50 pascals with respect to outside. Use a smoke puffer to generate smoke at the drill hole of the insulated cavity. If the smoke is drawn into the cavity, adjust the material and air settings on the insulation machine and reblow the bay. Repeat the test until the smoke is not drawn into the cavity when the house is under pressure.

Drill and Plug (D&P) Applications

All blown in wall insulation should be installed with minimum 2 1/8 inch holes. Locate entry holes in walls to permit complete filling of wall cavities. Be sure to use sharp drill bits designed to cleanly cut holes with no tear out or other surface damage, properly sized for the wooden plugs being used. Speed-bore bits must not be used for this application.

Interior Applications

1. Interior drill and plug applications include attic stairway walls and treads, interior walls deemed to define the thermal boundary and exterior walls (when not done from the outside).
2. Before beginning work on interior drill and plug applications the area to be worked on must be cleared of as much homeowner property as possible. Remaining large pieces of furniture etc. must be protected by covering with drop cloths and sealed tightly, or by similar means. The area to be drilled must be sealed tightly from the remainder of the house using polyethylene sheeting, extension poles and duct tape. If the dwelling walls contain plaster and lathe, rather than drywall the interior wall holes must be staggered horizontally to avoid drilling out the same row of lathe as this weakens the wall and can cause large sections to detach.

○*OPTIONAL BEST PRACTICE*○ It is recommended that two drills be used for the interior drill process. The first drill will be used to cut through the plaster and will be very dull. The second drill will be used on the same hole after the plaster has been cleared to cut cleanly through the lathe and minimize pulling and cracking.

○*OPTIONAL BEST PRACTICE*○ An example of the drilled and plugged hole should be made in an inconspicuous place and shown to the owner at the beginning of the job for approval.

Exterior Applications

1. When drilling holes through siding that cannot be removed, and that has no repeating reference marks (such as Texture 1-11, novelty siding, knotty pine siding, frieze boards, and any other sheathing type siding) the holes must be drilled in a straight horizontal line.
   ○*OPTIONAL BEST PRACTICE*○ Use a laser level or chalk line to keep the plugs level across the wall. Do not use waterproof chalk.
2. Holes must be drilled as neatly as possible through all siding and sheathing materials, including plaster and wallboard.
3. During the hole drilling process, cavities must be probed in FOUR directions (left, right, up, and down) to ensure stud and blocking locations are correctly identified and blind bays are not left un-insulated.
4. The contractor must not leave holes in wall open overnight. Any holes must be plugged at the end of the day if work is not complete.
5. ○*OPTIONAL BEST PRACTICE*○ One-hole installation method. Use a fill tube to ensure consistent insulation coverage and density. Only one hole is needed per cavity if a fill tube is used, provided the tube is long enough to reach both ends of the cavity from the opening.

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3.14.4 Post-Installation

General

1. Before replacing the siding, the existing drainage plane must be returned to a condition that ensures drainage of any moisture that may penetrate the exterior cladding. (All exterior claddings pass some rainwater.) All holes opened in a wall must be covered or closed. Acceptable materials include: 15# felt paper stapled in place, wood, cork, Styrofoam plugs. Materials must be permanently caulked to prevent moisture intrusion.
2. All types of siding must be reinstalled with permanent metal fastenings as close to its original condition as possible, ensuring that the siding is weather tight. Fastenings must not detract from the appearance of the siding. Finish nails or comparable fastenings are recommended; however, vinyl siding should not be nailed unless pre-drilled. Vinyl or aluminum siding must not be face-nailed.
3. New siding installed to replace siding damaged by the contractor must match the original siding to the greatest extent possible. Wooden siding must be primed white (pre-primed in inclement weather) on the front, back and both ends, and painted or stained to match the original siding.
4. All patching and painting must be done with materials appropriate for exterior use. Patching of small areas may be done using a paintable siliconized acrylic caulking compound.

Repair of Drill and Plug (D&P) Applications

1. All drill and plug applications must be sealed upon completion of work.

2. In situations where the plug is recessed, at least one coat of spackling compound or comparable product must be applied. The contractor must ensure that the compound used does not have a tendency to shrink or crack.
3. In situations where the project is provided with full incentives through the Program, all drill and plug interior applications must be spackled to a smooth surface and painted to match the surrounding walls. Exceptions may be made only if agreed to in writing by the customer and approved by the Program.

Exterior Applications

Exterior D&P applications on painted surfaces must be completed in the following manner:

1. After installation, insert the plug so it is slightly (approximately 1/16 inch) recessed.
2. Apply one coat of an exterior rated sealer (exterior vinyl spackling or equivalent) and use a putty knife to bring sealant close to flush to the exterior siding.
3. This procedure also applies to drill and plug applications on windowsills, frieze boards, and entrances.

Exterior drill and plug applications on stained surfaces must be completed in the following manner:

1. After installation, insert a plug so that is it flush with the existing siding and the wood grains of the plug and the sheathing are in the same direction.
2. A small bead of caulk must be applied around the radius of the plug where it will contact the surrounding sheathing.
3. The plug must be installed flush with the siding. ○*OPTIONAL BEST PRACTICE*○ Tap it in place with a block of wood and a hammer.

Interior Applications

Interior drill and plug applications must be completed in the following manner: After installation, insert a plug so that it is slightly (1/16 inch) recessed. Apply one or two coats of patching material flush to the existing surface.

Work Review: Upon completion, contactor must ensure the following:

1. All the siding is repaired and/or reinstalled.
2. Paint touch-up is complete.
3. Shutters are reinstalled.
4. Yard, porches, driveways, and all exterior areas are swept clean.
5. Job documentation is complete.

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3.15 Basement and Crawlspace Insulation

Crawl spaces must be inspected for signs of standing water or existing moisture problems. Any existing moisture issues must be remediated before working to bring the crawl space inside the conditioned area.
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3.15.1 Locations and Use

Basements and crawlspaces may be insulated in one of two locations: on the interior side of foundation walls, or in the ceiling that defines the floor above. The decision where to insulate depends on the thermal boundary:

1. If the basement or crawlspace contains living space, heating equipment, laundry facilities, a water heater, distribution pipes or ducts, or water pipes, it is typically best to define the thermal boundary as the perimeter of the basement or crawlspace. In these instances the basement walls and rim joists should be considered appropriate for insulation. Basement ceiling insulation is likely to have minimal value.
2. If the crawlspace is open to a basement that is contained within the thermal boundary, the perimeter of the crawlspace should be considered the thermal boundary.
3. If a basement or crawlspace contains none of the equipment above and is not directly connected to a space within the thermal boundary, the area may be considered outside of the thermal boundary. In this situation the ceiling of the space may be considered appropriate for insulation.

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3.15.2 Material

Installed insulation must meet specification in Section 3.12.3: Physical Properties. Installed 2-part spray foam must meet specifications from Appendix B.

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3.15.3 Installation

Interior Wall Treatment

1. **A drainage plane or waterproof membrane must be installed between the insulation and the basement wall.**
2. A stud wall and batt system are not recommended for below grade applications due to its poor moisture performance, unless steps are taken to isolate the batt insulation and the wood framing from contact with the concrete wall or floor.
3. Insulation must be permanently fixed in place with a durable connection.
4. A non-absorbent insulation must be used.
5. Insulation must be continuous.
6. A constant air barrier must be installed on the warm side of the insulation and include floor-to-wall and wall-to ceiling connections. Insulation that provides an air barrier requires no further moisture barrier.
7. Thermal and ignition barriers must be installed as per code. See Appendix B for details regarding spray foam insulation requirements.

Ceiling Treatment

Batt Insulation

1. If faced insulation is specified, vapor barrier facing must be installed facing the heated space.

2. The insulation must be pushed into the floor bay far enough to ensure that the insulation contacts the sub-floor. Care must be taken not to compress the insulation more than necessary to achieve contact.
3. Insulation must be secured with support rods every 2 feet.
4. Areas above (freeze-ups and heat loss) and below pipes, ducts and around cross braces must be insulated. Insulation must be cut and fit neatly around all obstructions. Pipes and ducts must not be thermally isolated from the house.
5. Insulation must not be left exposed in areas of heavy use (house-wrap must be specified to cover insulation).
6. Crawl spaces exposed to the outdoors (unconditioned, ventilated crawl space) must have house wrap or equivalent installed beneath insulation for wind wash protection.

Dense Pack Insulation

1. All openings between the basement/crawlspace and the conditioned space must be sealed thoroughly.
2. A fiber reinforced membrane must be securely stapled to the floor joist at intervals of no more than 2 inches.
3. The membrane must be slit approximately every 6 feet and a fill tube used to dense pack the insulation to the density needed for the material used.
4. The slits must be sealed using a durable permanent tape or equivalent.
5. The area and cavity depth must be compared to the number of bags installed to verify density.
6. Crawl space exposed to the outdoors (unconditioned, ventilated crawl space) must have house wrap or equivalent installed beneath insulation for wind wash protection.
7. For a material to be considered field verified dense packed it must pass one of the tests in Section 3.14.3 Dense Pack Insulation.

Part Spray Foam

Follow procedures in Appendix B.

Ground Cover

A vapor barrier must be installed on exposed dirt floors, with the following qualifications:

Material Requirements

Minimum 6 mil polyethylene

Installation Requirements

1. Installed neatly and covering the entire area, with seams lapped a minimum of 12 inches
2. Seams sealed with a tape or sealant that provides a permanent, durable seal
3. Penetrations with foam, acoustic sealant, or compatible roofing mastic.
4. Perimeter edges run 10 inches minimum up wall and sealed to walls with acoustic sealant or roofing mastic
   a. Exceptions made only where access is impossible due to low clearance.

b. If vapor barrier is not present and not specified, or if proper installation is not possible, the situation must be brought to the attention of program field supervisor before work commences.

Photo: Crawlspace Ground Cover.

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3.16 Band Joist, Rim Joist, & Sill Insulation

3.16.1 Material

Installed insulation materials must meet the appropriate recommendations listed in Section 3.12.3: Physical Properties

Installed 2-part spray foam must meet specifications from Appendix B.

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3.16.2 Installation

1. If heat sources, such as heating or water heater exhaust vent pass through the rim joist area, the contractor must ensure clearances are maintained with fire-proof materials at a minimum to the distances required by Code from the heat source.
2. Any of the following or combination of the following methods may be used to insulate the rim and band joist:
   a. 2-part spray foam insulation may be used. In this application the foam can be extended from the subfloor to the junction of the foundation and the sill plate. In areas where termite presence exists, code may require an inspection break between the foam and the bottom of the sill. If there is a termite inspection break, then the seam between the foundation and the bottom of the sill must be sealed with caulk.
   b. The rim joist can be sealed by cutting blocks of 2 inch foam board to fit in the rim joist area and sealing the edges with 1-part foam. In this application the sill to foundation seam and the seam between the two sill plates must be sealed with caulk.
   c. If access to the gable wall joist bay prevents installation of 2 inch foam board, then the bay may be enclosed and the cavity dense packed. Care must be taken to ensure that the exposed foundation top is covered to prevent wicking into the insulation.
   d. Dense packed, blown-in insulation may be specified when basement ceiling is plastered.
   e. Batt insulation may be used in the rim and band area if the seams between the box beam and the sill, the floor joists and the box beam and the box beam and the subfloor have been sealed with either caulk or 1-part foam. If the batt insulation is faced the vapor retarder must be toward the warm surface. The batt must be cut large enough to be friction fit in the box sill area. Along gable walls (joists parallel to foundation wall), batts must be neatly installed and in full contact with exterior joist – full dimension batt may be needed to fill joist bay and held with metal rods.
   f. Exposed sill seal material is to be cut back to edge of sill and a sealant is to be applied where the sill plate meets the foundation wall.

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3.17 Knee Wall Attic Insulation

3.17.1 Material

Attic knee walls may be insulated with batt insulation, blown in insulation held in place by a restraining mesh, foam boards, or 2-part spray foam. Batt insulation must be protected from wind washing with an air barrier. Dense-packed cellulose may be deemed sufficient to protect the installation from the effect of wind washing if held in place a restraining mesh.
Appropriate materials for wind wash protection are building wrap, extruded poly styrene, insulated structural sheathing, plywood or OSB, or wall board.
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3.17.2 Installation

Insulating knee walls with batt insulation
Batts must be cut to fit and fill the entire bay. There must be no gaps, compression or stuffing of insulation. An air impervious wind wash barrier must be installed on the back side of the installed batt insulation. The air barrier must be pulled tight and mechanically fastened in place to ensure permanent attachment.

○*OPTIONAL BEST PRACTICE*○ Apply either staples every six inches for building wrap or screws every foot for rigid materials. Seams in the wind wash barrier may be sealed using building wrap tape on building wrap or 1-part foam on rigid materials.

Insulating knee-walls with blown in insulation and mesh
Knee walls can be sealed and insulated using dense pack cellulose or fiber glass. The density of the blown in material must be verified by using an area vs. coverage chart comparison or a smoke test as detailed in 3.14.3 Dense Pack Insulation. If the material is dense packed and protected by the fiber reinforced mesh, it is not necessary to install a wind wash barrier.

Insulating knee walls with 2-part spray foam
See Appendix B.
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3.18 Floors Over Unconditioned Spaces or Ambient Conditions Insulation

3.18.1 Overhang Insulation

General
Overhangs that were not sealed and fully insulated during construction are weak spots in a buildings thermal envelope. The sheathing material that is used on the underside of an overhang or even ventilated overhang floors are contributing factors to poor performance of this building detail.

Material

The insulating material that will be used to insulate an overhang can be dependent on access. If the overhang is unsheathed or accessible through the rim and band joist, the floor joist bay can be filled with batt insulation, dense packed or sprayed with 2-part foam. If the overhang is sheathed and there is no access through the rim and band, then the floor joist bays can be dense packed with blown insulation. If limiting the flow of blown-in material into the conditioned area of the floor bays is necessary, the inflated feedbag method described in Section 3.8.4/Air Barrier Aligns with Knee Wall & Attic Floor may be used.

Installation

Insulating A Cantilever (Overhang) With Batts

When an overhang is accessible because it is unsheathed or accessible through the transition area at the top plate fiberglass batts may be used to insulate the floor bays. Batt insulation must be installed to fill the entire cavity without voids or compression. The depth of the fiberglass batt must equal the depth of the cavity. Because fiber glass batts do not stop air movement the transition area at the top plate must be thoroughly sealed after batt installation and the sheathing that will be added to the bottom chord of the floor joists must be sealed to the surrounding finish with exterior rated caulk. Adding a layer of rigid foam board on the floor joist bottom before re-sheathing if conditions permit may be considered as an option to increase overall R-value and reduce thermal bridging.

Dense Packing A Cantilever

When an overhang is sheathed or otherwise inaccessible dense pack insulation may be used to reduce air flow and increase the R-value of this area. A thorough inspection of the floor joist bays that will be affected must be conducted before beginning work. Insulation must not be installed within 3 inches of recessed lights (unless they are ICAT). If heating supply or return ducts exist in the cantilever area, the contractor must ensure that the densepacking does not deform the duct or intrude insulation into the duct. If heat sources, such as heating or water heater exhaust vent pass through the cantilever, the contractor must ensure clearances are maintained with fire-proof materials at a minimum to the distances required by Code from the heat source.

If the overhang extends over the outside space more than 6 feet, additional holes must be drilled to ensure that the fill tube can reach all areas that are to be insulated, or a longer fill tube may be employed. The density of the installed insulation may be checked using a coverage chart and the number of bags installed or by de-pressurizing the house and checking for air movement at the drill holes with smoke. Once the floor bays are dense packed the drill holes must be plugged. If there are frayed edges at the drill holes the strands must be pushed into the drill hole and a wooden plug inserted. The wood grain of the plug must run the same way as the wood grain of the sheathing. The plug must be made flush.

○*OPTIONAL BEST PRACTICE*○ The flow of insulation can be controlled using the “feedbag” method described in Section 3.8.4/Air Barrier Aligns with Knee Wall & Attic Floor. The feedbag method is strongly recommended for use in every floor bay to control the flow of insulation into non-specified areas. When dense packing over hangs using the feedbag method the drill hole in each floor bay must be made as

close to the transition area where the floor joist passes over the exterior wall top plate as possible. The feed bag must be inserted there and inflated to block the rim joist area. Once the rim joist area is sealed with the inflated feedbag, the fill tube can be withdrawn, reinserted into the joist bay cavity and the remainder of the overhang dense packed.

Insulating an Overhang With 2-Part Spray Foam

If the overhang is unsheathed and accessible 2-part spray foam may be used to seal and insulate this area. The transition area at the exterior wall plate must be backed with a rolled batt. See Appendix B for the proper installation of 2-part spray foam.

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3.18.2 Frame Floor Over Garage Insulation

Batt Insulation

1. If faced insulation is specified, vapor barrier must be installed facing the heated space.
2. The insulation must be pushed into the floor bay far enough to ensure that the insulation contacts the sub-floor. Care must be taken not to compress the insulation more than necessary to achieve contact.
3. Insulation must be secured with support rods no more than 2 feet apart.
4. Areas above (freeze-ups and heat loss) and below pipes, ducts and around cross braces must be insulated. Insulation must be cut and fit neatly around all obstructions. Pipes and ducts must not be thermally isolated from the house.
5. Insulation must not be left exposed in areas of heavy use (house-wrap or equivalent must be specified to cover insulation).
6. Crawl spaces exposed to the outdoors (unconditioned, ventilated crawl space) must have house wrap or equivalent installed beneath insulation for wind wash protection. Drywall or an equivalent air barrier must be recommended for garage ceilings. House wrap can be used in garage applications if it is securely fastened with staples and the seams are sealed with house wrap tape.
7. If rigid board insulation is used as an insulator and a wind wash barrier or air barrier it must be continuous without gaps or voids and all edges and seams must be sealed with 1-part foam or equivalent.

Dense Pack Insulation

1. All openings between the garage, overhang or crawlspace and the conditioned space must be sealed thoroughly.
2. If a rigid air barrier (drywall, structural Insulated panels etc.) is already in place follow the same dense packing procedures as in Section 3.18.1 Dense Packing A Cantilever.
3. If there is no rigid air barrier in place, the following procedure may be used:
   a. A fiber reinforced membrane must be securely stapled to the floor joist at approximately 2 inch intervals.
   b. The membrane must be slit approximately every 6 feet and a fill tube used to dense pack the insulation to the density needed for the material used.
   c. The slits must be sealed using 3M 8086 tape or equivalent.

4. The area and cavity depth must be compared to the number of bags installed to verify density.
5. Crawl space exposed to the outdoors (unconditioned, ventilated crawl space) must have house wrap or equivalent installed beneath insulation for wind wash protection.

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3.19 Guidelines for Insulating a Mobile Home Belly

Prior to insulating

1. All plumbing leaks in the underbelly area must be permanently repaired, and all plumbing under the mobile home must be in good condition.
2. Pre-existing insulation condition and level must be evaluated.
    a. In the event that the under belly is in very poor condition and requires repairs that may be impeded by the installation of foam or other insulation, alternative methods of insulation, such as re-insulating with fiberglass, should be considered.
    b. In the event that the underbelly insulation is in generally good condition, with some areas of missing insulation. It may be more cost effective to repair the insulation.

○*OPTIONAL BEST PRACTICE*○ Probe in at least two places, and document condition with photographs.

3. Workscope must ensure that any pipes that will extend below the foam will be protected from freezing. If heat tape is required, ensure that the heat tape is installed prior to installing the belly insulation, and that occupants are educated on the use of the heat tape. Note: Heat tape must be treated as a heat source. Foam must not be installed within direct contact of heat tape.

○*OPTIONAL BEST PRACTICE*○ Boxing in water supply lines with foam board in such a manner that the enclosed water lines have access to heat.

4. The heating distribution system must be examined, and repairs made as needed prior to the installation of belly insulation.

○*OPTIONAL BEST PRACTICE*○ Visual inspection with mirror and flashlight, and diagnostic testing with pressure pan, with a goal of 3 Pascals or less of leakage per register.

○*OPTIONAL BEST PRACTICE*○ See all accessible duct work and eliminate all blockage.

Foaming the belly

1. Installation must comply with Appendix B: Spray-Applied Polyurethane Foam
2. The foam must be adequately supported to ensure long-term integrity.

○*OPTIONAL BEST PRACTICE*○ Use furring strips or fiber mesh to add structural support to the foam.

3. If the cavity between the floor and the membrane has a sidewall area (in other words, the membrane does not curve upward to meet the floor area) the sidewalls of the cavity must be included in the application.

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4. Attic, Roof & Crawlspace Venting

4.1 General

When attics are air sealed and insulated, they must be brought into compliance with state and local code requirements. The IRC 2015 defines required venting levels in Section R806.2. This section calls for a ratio of one sq. ft. of net free venting area for every 150 sq. ft. of attic area. This ratio can be decreased to one sq. ft. of net free area for every 300 sq. ft. of attic area if at least one of the following statements are true:

- A class I or II vapor retarder exists on the conditioned side, or
- If at least 40% and not more than 50% of the venting area is provided by ventilators located in the upper portion of the space to be ventilated not more than three feet from the ridge or highest point of the space, measuring vertically, with ventilation at the eaves or cornices providing the balance. In instances where framing members conflict with the installation locations, the higher vents can be more than three feet from the ridge. In practice this means that as much as possible vent openings must be equally spaced between areas high in the attic or slope and low in the attic or slope.

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4.2 Assessing pre-existing venting and required venting

1. The attic planes must be checked for the existence, location and condition of a Class I or II vapor retarder. Examples include: Kraft or foil facing on a batt, polyethylene sheeting or wall board with two layers of latex paint.
2. Once the class of vapor retarder is identified, the attic area (including vaulted areas) must be divided by either 150 sq. ft. if there is not vapor retarder or 300 sq. ft. if there is a vapor retarder. The result of this calculation is the amount of attic ventilation required by Code. Next, the existing ventilation must be assessed, the net free area calculated (see below), broken into high and low ventilation and subtracted from the appropriate high or low ventilation of the code required ventilation area. The results of subtracting the existing ventilation area from the code required ventilation area is the area of ventilation that must be installed to ventilate the attic to code levels.
3. Net free area vs. gross are: The actual amount of ventilation area provided by a vent depends on its "net free area." Net free area is not the same as the external dimensions of any particular type of vent: it is the actual amount of area that allows air flow when the inhibiting factors such as vent louvers, trim and screening are deducted. Therefore, it is necessary to determine the amount of ventilation provided by the vents used by calculating their total next free area and comparing that to the attic's ventilation requirements. Most vents have their net free area stamped on them. When in doubt, consult with the manufacturer before installing.
4. The contractor must ensure that all vent openings are cut in such a manner as to allow maximum air flow through the vent.
5. Continuous Soffit Venting: Newer homes may have continuous soffit venting installed when constructed. Continuous soffit vent typically has a net free area of 0.12 sq. ft. per linear foot. However, it is important to verify that the openings in the soffit vent are actually open to the attic area, and to calculate the actual net free area of the openings. Perforated drip edge is another form

of low ventilation. The integrity of the drip edge must be assessed before giving ventilation credit to it as it can be crushed during installation and its net free area reduced.

6. In some cases where attic height is very low, gable vents may be used as low ventilation. In these cases, it may be necessary to dam off the gable vent to keep it clear of blown insulation.
7. Placement of vents must be considered for proper air flow and must prevent entry of wind-driven rain or snow. The vents themselves must be configured to protect against the entrance of rain and snow.

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4.3 Preparation

1. Attic ventilation must only be installed if the presence of an effective air barrier and thermal boundary between the attic and the living space is verified, or if effective air sealing and proper insulation is specified as part of the work scope.

   ○*OPTIONAL BEST PRACTICE*○ Employ Zonal Pressure Diagnostics to evaluate the air sealing between the conditioned space and the attic.

   The existing condition of the attic plane may be tested to be tight by way of the blower door and pressure differential and visual inspection of all bypasses before more passive ventilation is added. If the attic plane is going to be tested with a blower door, the "Add a Hole" or "Open a Door" method may be used to quantify leakage across the attic plane. To be considered tight the CFM50 across the attic place must be less than 0.5 CFM50/sq. ft. with respect to the conditioned space.
2. All ducted exhaust equipment (bath fans, kitchen fans, clothes dryers) must be vented to the outside of the structure prior to any air sealing or insulation work performed in an attic.
   Ductwork contained in the attic must be sealed and insulated to at least R-8 before passive ventilation is added.

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4.4 Passive Attic Venting: Materials

1. Air vent types must be consistent with the requirements for their specific location (e.g., exterior soffit, gable end, roof) and material and intended use.
2. Air vents must be of color and appearance that is consistent with the exterior of the dwelling and acceptable to the customer. Mill finish vents must be spray painted to match house colors. Care must be taken when spray painting to avoid reducing the net free area by clogging the insect screen.
3. Typical sizing of vents is as follows:
   a. Soffit vents: 4x12, 6x12 and 8x12
   b. Gable vents: 12x12, 12x18, and 18x24
   c. Roof vents: Eight-inch diameter
   d. Ridge vents: Four and Eight-foot lengths
4. All attic vents must have screens of non-corroding wire mesh with openings between 1/16 to ¼ to prevent pest entry.

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4.5 Passive Attic Venting: Installation

1. All vents must be installed to manufacturer's specifications, properly flashed with roofing and siding materials and properly sealed to be watertight.
2. All vent opening must be cut to appropriate size for installed unit.
3. All installed soffit vents must have soffit baffles installed in the bays they ventilate, unless the housing configuration allows for a barrier between the insulation and the soffit area, and an air flow of at least 2 inches about the barrier. Continuous soffit vents must have soffit baffles installed in as many bays as is needed to meet code requirements for low ventilation based on the net free area of the continuous soffit vent. Remaining bays must be protected from wind washing. Care must be taken to ensure that all vent chutes remain clear of insulation and other obstructions.
4. Bath, dryer, or heating system vents must not be installed in or below the specific soffits that provide inlet ventilation to vented roof slopes or attics.

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4.6 Active (Mechanical) Attic Venting: Materials

1. The attic fan must be rated for continuous use. It must be capable of having its speed adjusted by a rheostat without being damaged, humming or vibrating.
2. The attic fan must be controlled by a thermostat that will activate the fan at a pre-set maximum temperature.

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4.7 Active Attic Venting: Installation

1. All electrical connections that need to be installed for this system must be installed by a licensed electrician.
2. The fan must be permanently mounted to roof or wall framing and have sound attenuators installed to minimize sound and vibration transfer.
3. If a vent needs to be installed to install the fan, the vent must be installed neatly and be tied into existing drainage planes. Roof or siding materials must be repaired/restored to original conditions.

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4.8 Basement and Crawlspace Venting

4.8.1 General

Section 408 of the 2015 IRC contains the following ventilation requirements for crawlspaces not included in or open to basements:

- No mechanical ventilation exists, and no Class I vapor retarder exists (see below): **1 ft2 of ventilation for every 150 ft2 of crawlspace floor area**
- No mechanical ventilation exists, but a Class 1 vapor retarder has been installed with 6 inch overlaps sealed and taped at the seams, and vents located in such a manner as to provide cross ventilation: **1 ft2 of ventilation for every 1500 ft2 of crawlspace floor area**
- **No additional ventilation is required** if a Class I vapor retarder exists as per above, and either:
    - A mechanical ventilation system installed capable of either exhausting or supplying 1 CFM/50 sq. ft. of area including an air path to conditioned area, and the perimeter walls are insulated
    - The space is heated by conditioned air and the perimeter walls are insulated
    - The space is used as a plenum

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4.8.2 Mechanical Ventilation: Material

1. Installed fan must be rated for continuous use and have a Sone rating of less than 1.0.
2. Fan must be controlled by an on/off switch as the fan must not run on a schedule. It must run continuously.
3. If the system is an exhaust system, there must be a vent termination with an integral pest screen and a back draft damper.
4. System ducting must be hard duct.

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4.8.3 Mechanical Ventilation: Installation

1. All electrical installations required for installation of this system must be installed by a licensed electrician.
2. The fan must be securely fastened to the floor framing system and sound attenuators must be used to minimize the transfer of vibration and sound.
3. If this is an exhaust system, the fan must be hard ducted to the exterior with the ducts supported every 10 feet.
4. The vent termination must be neatly installed and tied into the existing drainage plane. Exterior finish surrounding the vent must be returned to its original condition.
5. For exhaust systems contractors must ensure that there are adequate air paths from the conditioned space to the crawl space to relieve the pressure induced by the fan.
6. For supply systems the fan must be ducted to draw air from the conditioned space to deposit it in the crawl space.

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4.9 Fresh Air Ventilation for the Conditioned Space

4.9.1 General

The contractor must employ ventilation strategies that:

1. Ensure fresh air throughout the dwelling. In some instances, both whole house and local ventilation may be required.
2. Reduce or eliminate the risk of back drafting or drawing pollutants into the conditioned spaced.

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4.9.2 Material

Exhaust fans must:

1. Be rated for continuous use
2. Have a noise rating 1.0 sones or less.

Fan Controls must comply with the following:

1. Timers must consist of a 24-hour timer capable of automatically turning the fan on and off at pre-set times.
2. Fans must have an on/off switch separate from the timer that occupants may use for spot ventilation.

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4.10 Installation

1. Fans and 24-hour timers must be installed neatly and according to manufacturer's installation instructions.
2. Gaps between the fan housing and surrounding finished must be sealed with caulk or one-part foam.
3. Exhaust fans must be installed with air outlet facing in the direction that the duct will run to minimize the need for elbows.
4. All joints and seams in the air ducts must be sealed.

   ○*OPTIONAL BEST PRACTICE*○ Duct mastic

5. Exhaust Location: 2015 IRC Section M1501.1 forbids the venting of exhaust fans of any types into attics, soffits vents, ridge cents, or crawl spaces. All installed exhaust systems must terminate outside of the building. Exhaust vents must be vented to either a roof flapper vent, an end wall flapper vent or if neither of these two options is available, to an exhaust vent designed to be installed in a soffit. All exterior flapper vents must be equipped with a backdraft damper that works smoothly. Back draft dampers at the fan unit must be removed. Vent outlets must be properly flashed and sealed into roof or siding materials, so water will not leak into the assembly.
6. Exhaust ducting must be attached to the fan outlet and the flapper vent connector with metal clamps.

7. The duct must be insulated to current code levels for the location it passes through. The duct insulation must have a vapor retarder covering.
8. Hard duct must be supported every 10 feet with 1-inch metal straps. Flex duct must be supported according to manufacturer's instructions.
9. All joints in the duct must be screwed securely at a minimum of 3 points with no more than 3/8-inch screws.
10. Manufacturer's literature for fans and control device must be left with the homeowner.
11. Installed fresh air intakes must not be within 10 feet of any pollutant source. In cold climates it must be at least two feet above grade. There must not be a back-draft damper as part of this vent. There must be a pest screen. The vent must be properly flashed and tied into the existing drainage plan and the existing siding must be repaired/replaced to the original condition.

    ○*OPTIONAL BEST PRACTICE*○ An in-line fan can be remotely mounted and connected to one or more bathrooms and controlled by a 24-hour timer. The in-line fan must be mounted with vibration attenuators. Photo: In-line Exhaust Fan Ventilation

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4.11 Additional requirements specific to kitchen ventilation

4.11.1 General

Kitchen venting must comply with 2015 IRC Sections M1503 through M1507.

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4.11.2 Materials

1. Kitchen exhaust fans must be capable of exhausting 25 CFM continuously or 100 CFM intermittent. Any kitchen exhaust system that exhausts more than 400 CFM must have a makeup air system that conforms to M1503.4.
2. Ducts connected to kitchen range hoods must be constructed of galvanized steel, stainless steel or copper. The ducts must have a smooth interior surface, must be air tight and must have a back draft damper installed.

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5. Exterior Window & Door Measures

5.1 General

This section covers window and door replacements, and window insulating panels.
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5.2 Storm Windows

5.2.1 General

A high quality well installed storm window can significantly improve the performance of a primary window. In addition to lowering U-factors and Solar Heat Gain Coefficients, if the window is installed level and square and caulked correctly it will make a leaky primary window tighter.
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5.2.2 Material

1. All storm windows must conform to the standards determined by the American National Standards Institute/Architectural Aluminum Manufacturers Association (AAMA 1002.10.93).
2. Storm windows must be aluminum, combination, triple-track type, complete with operating sashes and screen insert.
3. Interior storm windows must have a rigid frame that clip easily into place. Interior storm windows are exempt from the air tightness standard.
4. Air leakage rates must be according to ASTM E283:
    a. Air leakage for fixed panel storm windows must not exceed 0.15 CFM per sq. ft. of window area at both a positive (infiltration) and negative (exfiltration) static pressure of 1.56 PSF at 25 mph wind. Weep holes must not be sealed during the air leakage test.
    b. With the storm window sash in the closed position, air leakage in removable panel, horizontal and vertical sliding windows must not exceed 0.50 CFM per lineal foot of sash crack at both positive and negative static pressure 1.56 PSF at 25 mph wind. Weep holes must not be sealed during the air leakage test.

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5.2.3 Installation

1. The four window sashes, meeting rail, sill and head jamb must either interlock in a tongue and groove manner or be weather-stripped with wool pile and/or silicone treated wool pile or equivalent.
2. Window must be installed squarely so that storm windows and screen operate smoothly.
3. No adjustments to window opening must be made to accommodate a mis-measured product.

4. Continuous, substantial bead of caulk must seal exterior storm to casing of dwelling; effective weep hole(s) must be created at the sill. The expander bars at the bottom of the storm windows must be caulked from the inside.
5. Interior storm windows must be clipped or screwed in place. If over 48 linear inches, must be double strength or tempered glass.
6. All windows must be installed according to manufacturer's specifications.

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5.3 Replacement Windows

5.3.1 General

While window replacement is not generally a cost effective energy saving upgrade, there are times when window replacement may be recommended. Typical reasons are aesthetics, existing windows don't function, or existing windows structurally deteriorated. If the windows are going to be replaced it makes sense to replace them with a high quality, energy efficient units.

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5.3.2 Material

1. All windows must be ENERGY STAR ® labeled.
2. Sealed glass units must be warranted against leakage for a minimum of five (5) years. All warranties must be provided to the homeowner.
3. The air infiltration rate must be 0.2 CFM/Sq. Ft. (at uniform static pressure of 1.57 lbs./sq. ft. (25mph) or less.

○*OPTIONAL BEST PRACTICE*○ Install double hung windows with tilt-in feature

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5.3.3 Pre-Installation

1. Where applicable, the homeowner must be informed about the lack of structural integrity of existing jambs if the window unit is to be secured to them. This must be assessed at the time of the first site visit, prior to signing the contract.

○*OPTIONAL BEST PRACTICE*○ At the time of the site visit, home assessor may provide a sample of the window unit to be installed. A cut-away view may be used.

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5.3.4 Installation

1. At the time of installation, the interior and/or exterior trim should be removed by first breaking the paint seal with a sharp tool, such as a utility knife and then removing screws or nails as carefully as possible to prevent breakage.
2. The installed window must be tested to ensure that it operates correctly and smoothly as the manufacturer intended and that all locking mechanisms and weather stripping engage as intended.
3. Existing balance systems and weights must be removed, pulley openings must be sealed over, pockets must be completely filled with dense pack insulation, foam, or other substance that provides insulation and eliminates air movement through the pockets. Jambs must be thoroughly caulked, so that the end product is an effective air barrier and insulated against heat loss around the window unit.
4. After installation, the exterior and interior trim must be in place, whether it is existing or new, and must be caulked as needed with a 20-year siliconized paintable caulk or equivalent and in a careful manner. The end product must be a continuous air barrier from the interior wall finish to the new sash unit.
5. Installed window must be integrated into the drainage plane. Pan flashing and head flashing must be installed.
6. At a minimum, completed window installation must be left touch-up paint-ready, with any damage to the window or frame repaired.

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5.4 Interior Window Insulating Panels

5.4.1 Material Requirements

Installed panels must be R-3 or greater.

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5.4.2 Installation Requirements

1. The insulating panels will be fastened to the interior finish framing of the window.
2. The insulating panel will be securely fastened using a fastening system that allow the insulating panels to be easily removed during warm months.
3. The insulating panel will have an airtight gasket between the panel frame and the finish frame of the window.

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5.5 Replacement Doors

5.5.1 Material

Doors must be ENERGY STAR ® rated door for climate zone.

5.5.2 Installation

1. The door must be installed according to manufacturer's directions.
2. The space between the framing and door jamb must be filled with either 1-part foam or silicone caulk and the casing must be caulked to prevent infiltration.
3. Door flashing must be tied into the existing drainage plane to minimize the potential for leaks.
4. Door must operate and lock easily.

6. Heating & Cooling Systems

6.1 General Requirements

1. All installed equipment must meet current ENERGY STAR ® requirements for efficiency for the climate zone in which they are installed.
2. All equipment must be installed in accordance with manufacturer's specifications.
3. Sizing:
    a. The contractor must ensure that the installed heating unit, along with any supplemental heat / emergency heat is appropriately sized to meet the heat load for the dwelling. NYS IRC Section R303.10 heating requirements must be met as follows: "… every dwelling unit shall be provided with heating facilities capable of maintaining room temperature of not less than 68°F (20°C) at a point 3 feet (914 mm) above the floor and 2 feet (610 mm) from exterior walls in habitable rooms at the design temperature."
    b. All installed space conditioning equipment must be sized in accordance with the latest version ACCA Manual-J or other approved equivalent. A list of ACCA-approved software can be found at:

       www.acca.org/standards/software

    c. A Blower Door (cfm50) test must be performed on existing homes whenever possible to estimate building air leakage rate for infiltration load assessment.
    d. Space conditioning equipment must be selected using the latest version ACCA Manual-S.
4. The contractor must ensure that the customer has access to technicians capable of providing servicing to the unit in a timely manner. This requirement extends beyond the contractor's warrantee period.
5. Installation must comply with the latest version of ACCA5: HVAC Quality Installation Specification in design, install and commissioning.
6. Installation must comply with requirements of the National Fuel Gas Code, including:
    a. NFPA 31: Standards for the Installation of Oil-Burning Equipment
    b. NFPA 54: provides minimum safety requirements for the design and installation of fuel gas piping systems in homes and other buildings.
    c. NFPA 58: provides for safe LP-Gas storage, handling, transportation, and use, and mitigates risks and ensures safe installations, to prevent failures, leaks, and tampering that could lead to fires and explosions.
7. All equipment and accessories must be designed and installed per manufacturer's specifications.
8. All air conditioning equipment must be Air Conditioning, Heating and Refrigeration Institute (AHRI) certified.
9. All equipment must be installed in compliance with state and local codes.
10. The contractor must ensure that the equipment is designed, installed and serviced by factory-trained personnel or the equivalent.

11. Ventilation calculations must be performed for every HVAC system installation/replacement with a proposal for a new ventilation system when needed.
12. Work must include the removal of all old heating and cooling system parts and material that will not be included in the new installation. An exception can be made if the old system will serve as backup or supplemental heat.
13. Maintenance panels shall be easily accessible and not blocked by refrigerant piping, wiring, building components, exhaust gas venting etc. All appliances shall have the minimum clearances required by manufacturer's specifications. All units shall be able to have components switched out for repair or replacement without requiring extensive dismantling of ducts, wiring, refrigerant lines etc. If the contractor discovers that the homeowner has placed items close enough to the appliance as to constitute a fire hazard, the contractor must require that they be moved a safe distance from it prior to installation.
14. All installed equipment or systems must be tested for combustion safety.
15. Start-up and commissioning:
    a. The contractor must secure, in an easily visible location, a sticker showing their name, regular phone number, emergency service phone number (if applicable), and date of system startup.
    b. There must be, either in the owner's possession or affixed near the unit, all installation and operating manuals and warranties.
    c. The contractors must complete and submit an ACCA 9 or manufacturer's commissioning sheet to the customer. The ACCA 9 version can be found at:

       http://www.acca.org/HigherLogic/System/DownloadDocumentFile.ashx?DocumentFileKey=4e66c088-1175-d40c-64ef-247a17db7af2&forceDialog=0

    d. The contractor or his/her representative must instruct the owner on the complete operation of the system at the time of system startup.
16. All technicians or subcontractors who remove refrigerants from the premises are to recover/recycle refrigerants in compliance with EPA regulations.
17. When installing boilers or water heaters that draw water from the dwelling's water source, the contractor must ensure that water quality will not damage the installed equipment, especially if a dwelling draws water from a well. The contractor must ensure that installed system is protected from the detrimental effects of hard water, sediment, high or low pH, and high levels of chlorides in the domestic water. The following steps must be taken:
    a. The contractor must follow manufacturer's water testing requirements and retain copies of test results.
    b. The contractor must ensure that any required water treatment systems are in place prior to installation. The treatment must be compatible with materials of construction.
    c. The contractor must ensure that customer is made aware of any potential impacts of customer actions that may affect the quality of the water and the performance of the system and has been informed of all maintenance requirements.
18. Condensate must be piped, trapped, pitched, sized and insulated per manufacturer's specifications. Condensate disposal systems must be installed as to prevent freezing and must not terminate over

walkways**.** If condensate pump is installed, it must also have an interlocked detector / cutout switch installed so that unit is disabled if water level rises and activates detector / switch.

○*OPTIONAL BEST PRACTICE*○ Identifying the presence and quantity of moisture in addition to its source is a high priority issue when evaluating a building's performance. Undesirable moisture levels can occur as a result of diffusion through high permeability building components in contact with the ground, or bulk water transport through vulnerabilities in the exterior envelope. In the enclosed space of a basement, moisture whether in the vapor phase or as bulk water, can contribute to mold development, building and mechanical equipment durability issues such as wood decay and corrosion of metallic equipment, and other indoor air quality concerns. Common strategies to mitigate moisture intrusion in the living space are often focused at the basement / crawlspace level.

For these reasons it is a ○*OPTIONAL BEST PRACTICE*○ to route the condensate that is produced from combustion appliances and cooling coils directly to an enclosed drain system. This could include existing plumbing which conveys wastes to a treatment system or directly to a passive (gravitational) or actively pumped system leading to the outside of the building. If none of the above approaches are available to pipe condensate directly to an enclosed piping or sump system, installing a condensate pump is the ○*OPTIONAL BEST PRACTICE*○ to ensure that the high efficiency equipment that is installed is not creating a moisture problem or contributing to an existing moisture problem.

Routing condensate along an open interior perimeter trench is not sufficient because it can allow this liquid to evaporate into the basement before it reaches the sump or absorb into the slab and possibly collect in the soil under the slab. These scenarios can contribute to undesirable moisture levels.

19. All combustion gas venting systems must be run to the exterior of the building and terminate with an approved end cap.
20. Venting:
    - Appliance venting must have the proper sizing, design, material selection and assembly for the combustion fuel venting system as per applicable codes and manufacturer's specifications.
    - The contractor must ensure that all pre-existing and installed venting has the proper pitch, with a minimum slope of ¼ inch per foot or according to manufacturer's specifications.
    - All unused openings in venting system must be sealed.
    - The contractor must inspect existing flues which will have continued use, either by the new system, or by other appliances which may be "orphaned" by the installation of a new system with an alternative flue. Flues must be sized and lined as required by the National Fire Protection Association (NFPA).
    - The contractor must ensure that there is no blockage or restriction, leakage, corrosion and other deficiencies which could cause an unsafe condition. Chimney must be cleaned as needed to ensure continued safe operation.

- All positive pressure combustion gas venting systems must be sealed tightly.

21. All installed systems must have both the combustion air intake and the combustion gas exhaust piped to the exterior.
22. All piping and venting must be appropriately supported.

○*OPTIONAL BEST PRACTICE*○ Prior to installation provide customer with a written description of critical aspects of the installation, such as make and model numbers, locations identified for installation, planned location of line sets, etc. Obtain a signature that confirms agreement by the customer.

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6.2 Additional Requirements Specific to Natural Gas or Propane Systems

1. All positive pressure combustion venting systems must be sealed tightly and appropriately supported.
2. Gas Piping:
    a. All gas piping to be leak-free / tested and must be sized to provide adequate gas supply to all connected gas appliances. Refer to NFPA 54 (natural gas) or NFPA 58 (propane) and local codes for gas piping requirements and sizing.
    b. Gas piping systems must be of such size and installed as to provide a supply of gas necessary to meet the maximum demand of the all gas appliances at the proper pressures.
    c. Gas pipe and connectors must have the appropriate supports, hangers, anchors and gas pipe sealant.
    d. The new appliance must have a manual "equipment" shut-off valve in the gas supply line immediately upstream of union. A ground-joint union and a drip leg must be installed immediately upstream of the appliance.
3. Grounding of Gas Piping
    a. All gas piping must be grounded as required by the International Residential Code (IRC).
    b. Yellow-jacketed Corrugated Stainless Steel Tubing (CSST) must be bonded to the electrical service grounding system or, where provided, the lighting protection electrode system. Refer to section G2411.1.1 of the IRC for further details and requirements.
    c. Black-jacketed CSST which has been tested and listed to ICC-ES LC 1024 "CSST Utilizing a Protective Jacket", may not require the additional direct bonding required for Yellow CSST (above). Consult with local code officials as to requirements.
    d. Non-CSST piping, such as black pipe, can be considered safely grounded if the appliance it supplies is hard-wired to the buildings electrical service (including ground) or plugged into a three prong, properly grounded electrical outlet.
4. Propane storage system: Integrity must be checked and repairs/replacement included with new installation. The propane storage system must be installed in accordance with the latest edition of NFPA 58.

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6.3 Additional Requirements Specific to Oil Systems

6.3.1 Installation

1. Chimney and connectors to be properly sized using latest edition of Standard for the Installation of Oil-Burning Equipment (NFPA31) and manufacturer's specifications. Oil venting systems must have a barometric damper installed and must not use side wall “engineered” power vent systems unless specifically allowed by the manufacturer’s specifications. Barometric dampers must be installed in a location specified by the manufacturer.
2. All oil piping to be leak-free and must be sized to provide adequate oil supply to all connected oil appliances. Oil line piping design, materials, and construction must be in accordance with the latest edition of NFPA 31. Refer also to the instruction manuals provided with the burner and oil pump. Fuel line piping must be airtight. Use only listed flare type fittings. Piping must be substantially supported and protected against physical damage and corrosion where required. Inspect existing fill, vent, oil tanks, filters and fuel lines for leaks, kinks and proper material support. Repair or replace as needed. All new and existing buried lines (in the floor) and unprotected oil lines on the floor must be encased in protective sleeve. Install one fuel shut-off valve near the storage tank and second fuel shut-off valve near the oil burner fuel pump. All systems must have a new oil filter installed. Note: NFPA 31 requires shut-off valves at tank and burners, also they both need to be Fusible Fire Safety Valves.
3. The integrity of the fuel oil storage system must be checked and repairs/replacement included with new installation. New oil storage system must be installed in accordance with the latest edition of NFPA 31.
4. Oil to Gas conversion: Refer to latest edition of the NFPA 31 “Abandonment and Removal from Service of Tanks and Related Equipment.”
5. ○*OPTIONAL BEST PRACTICE*○ It is recommended to have an anti-siphon valve located at the tank when the tank or oil line is above or level with the oil burning appliances. Anti-siphon Valve commonly referred to as “oil safety valve” or OSV are valves that operate with the use of a diaphragm that requires a minimum suction draw from the pump at the appliance before fuel is allowed to pass through it. Without a sufficient vacuum draw from the pump, oil cannot free flow from the tank by the siphoning action of a broken line. Follow manufactures installation instructions. If the oil supply line is in protective sleeve typically no Anti-siphon Valve is recommended.
6. ○*OPTIONAL BEST PRACTICE*○ Recommend that the customer keep the tank full during the summer to prevent condensation of moisture on the inside surface of the tank.

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6.4 Additional Requirements Specific to Furnaces

1. When installing a complete duct system, or a partial duct system that includes 25% or more of the duct system, the contractor must complete a duct sizing comparison using the latest version of ACCA Manual-D. Ducts must be designed to limit friction losses. Room by room load calculations must be performed for all new ductwork installations.

2. Ducted systems must have air filters installed in the return air system in a location that facilitates easy replacement by the homeowner. Filter slots must have a durable gasketed cover that seals tightly when in place and be enclosed in such a manner as to prohibit duct leakage at the filter slot opening, which reduces the effectiveness of the return air system, and may draw pollutants from the basement. All return air must pass through the return air filter.
3. All new duct systems installed must include minimum MERV 6 with design accounting for filter pressure drop at design airflow.

   ○*OPTIONAL BEST PRACTICE*○ Installing 1 minimum MERV 6 filter when replacing existing furnace only (no new ductwork installed). If doing so, manufacturer's minimum or higher airflow must be maintained for both heating and cooling modes.

4. Two or more units must not be connected in parallel or series to a common supply or return air duct system.
5. See also "Ductwork", Section 6.15, below.

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6.5 Additional Requirements Specific to Hot Water Boilers

6.5.1 Materials

1. As an alternative to Manual-J, IBR load calculations or an approved equivalent may be used.
2. New installed radiation must be sized using Manual J, IBR or approved equivalent.
3. Boiler, pump and system piping must be sized per manufacturer's specifications, IBR or approved equivalent.
4. Antifreeze: If used, a tag must be left on the system identifying the chemical type of the heat transfer fluid, its volume and concentration, and the date it was installed. Use only manufacturer's approved antifreeze that is also compatible with materials of construction.

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6.5.2 Installation

1. The contractor must ensure that the following boiler controls/piping are in place, working correctly, and conform to manufacturer's specifications:
   - Circulator
   - Air Elimination System
   - Water Expansion System: Hot water boilers must be provided with expansion tanks. Non-pressurized expansion tanks must be removed and replaced with a diaphragm expansion tank.
   - Pressure Reducing Valve (Fill Valve)
   - Low Water Cut Off
   - Safety Relief Valve

- Back-flow Preventer installed in domestic water line to boiler, if not already present and functioning correctly.
- Flow Control Valve (under some conditions)
- Isolation Valves
- Drain Valve
- High Limit Aquastat
- Pressure/Temperature Gauge

2. Controls and/or piping must be designed and installed to protect the boiler from thermal shock and low return water temperatures (per manufacturer's specifications).
3. Boiler and system piping must prevent oxygen contamination of boiler water and frequent water additions. Boiler and system must be leak-free. All water leaks, including pre-existing leaks, must be identified and repaired.
4. A raw water analysis must be taken initially for each installation so that the correct water treatment can be established and installed per manufacturer's recommendations. The primary goal of boiler water treatment is to control solids that cause deposits in the boiler and control gases that cause corrosion.
5. All piping, valves, fittings, insulation and connections must be rated for use at the operating temperature and pressure of the hydronic system. Existing pipe, fittings, valves or other materials must be free of foreign materials.
6. Boiler piping installed in unconditioned spaces (i.e., spaces outside of the thermal boundary of the dwelling) must be insulated with a minimum of R-4.

   ○*OPTIONAL BEST PRACTICE*○ Insulate existing boiler piping in unconditioned spaces to a minimum of R-4, unless doing so would create a risk of freezing water pipes in the space.

7. Piping must be installed so that piping, connections and equipment must not be subjected to excessive strains or stresses. Provisions must be made to compensate for expansion, contraction, shrinkage and structural settlement. Piping must include all necessary fittings, valves and piping for manufactures specified maintenance and cleaning.
8. All existing piping and radiation must be properly flushed to remove any sediment/sludge in order to prevent any blockage or reduction in efficiency of the new boiler.
9. When making changes to a distribution system involving piping, pipes, or valves, including installing a new circulator, the contractor must ensure proper Gallons Per Minute (GPM) flow through boiler and all radiation, with the ability to balance radiation as needed.
10. Two or more boilers installed: Controls and piping per manufacturer recommendations, which will provide the most efficient operation while meeting the heating and if added domestic water heater needs.
11. Open expansion tanks must be replaced with sealed and pressurized expansion tanks.

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6.6 Additional Requirements Specific to Combination or Condensing Boilers

6.6.1 Materials

1. All systems must have a minimum manufacturer rating AFUE or CAFUE > 90%.
2. ECM fan motors and water pumps must be installed on all equipment.
3. All systems must be sealed combustion.

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6.6.2 Installation

1. Unit must be designed and installed to operate in condensing mode in both heating and domestic water heating operation. Outdoor temperature reset controls must be installed if the existing radiation/radiators cannot meet the peak heating requirement with a return temperature of 130°F. The outdoor temperature reset controls must be commissioned to provide the lowest possible return water temperature while meeting the space temperature set point(s).
2. System must segregate heating function from domestic hot water production, with priority to hot water production.
3. ○*OPTIONAL BEST PRACTICE*○ Unit sizing, operation and radiation should be sized and setup to maximize condensing mode operation, with return water design typically not exceeding 130°F when possible.
4. ○*OPTIONAL BEST PRACTICE*○ Flushing and cleansing is important when installing a condensing boiler in existing systems with ferrous piping and/or radiation to ensure iron oxide, sludge, sediment and other dissolved contaminants do not foul the new boiler's heat exchanger. Prior to removing the existing boiler inject system cleaner and circulate at normal operating temperature for a minimum of 2 hours and up to one week. Drain and flush the system thoroughly at least twice, until the water runs clear. Once the new boiler is installed, filled and purged, inject system water treatment as recommended by the manufacturer. Consider installing in-line filters to remove contaminants from the system and safeguard the boiler's heat exchanger.
5. ○*OPTIONAL BEST PRACTICE*○ To provide the best opportunity for these installations to maximize the condensing feature, the following are recommended:
    - Unit should have self-modulating control capabilities.
    - All circulators should be variable speed and be able to module according to boiler fuel modulation. Circulators should have displays showing flow rate and energy consumption which are particularly useful during commissioning to optimize performance and ensure design conditions are being met.

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6.7 Additional Requirements Specific to Steam Boilers

1. Steam boiler to be sized using existing radiation: Sq. ft. of "Equivalent Direct Radiator" (EDR). Base the size of the replacement boiler on the connected load, not the building's heat loss.
2. A raw water analysis must be taken initially for each installation so that the correct water treatment can be established and installed per manufacturer's recommendations. The primary goal of boiler water treatment is to control solids that cause deposits in the boiler and control gases that cause corrosion.
3. New installed radiation must be sized using Manual J, IBR or approved equivalent.
4. The boiler must be checked for contaminants follow manufacture testing and recommendations.
5. Boiler piping and system piping must be sized per manufacturer's specifications, IBR or approved equivalent.
6. ○*OPTIONAL BEST PRACTICE*○ Determine if possible why the old boiler failed. Is there a possibility of buried (leaking) piping? Is there an issue with the condensate return time being too slow? Ask the homeowner/occupant the following:
   - Is there gurgling or banging noises in the pipes or radiators? Is the system radiation balanced?
   - Do they have to add water to the existing boiler, is the low water cutoff activated frequently, how often?

   Note these concerns and suggest remedies.
7. ○*OPTIONAL BEST PRACTICE*○ The contractor should review heating performance of all radiation with customer and note any rooms that are under or overheating. If this is noted the contractor should evaluate the need to add or remove radiation or correct radiation deficiencies. If air sealing and or insulation is part of the workscope the contractor should also evaluate the need to adjust radiation. Additional measures to consider include replacing radiator vents, adding or upgrading mainline air vents, insulating all steam pipes to keep the steam from condensing before it reaches the radiators.

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6.7.1 Installation

1. Boiler and system piping must prevent oxygen contamination of boiler water and frequent water additions. Boiler and system must be leak-free. All steam and water leaks must be identified and repaired.
2. All existing piping and radiation must be properly flushed to remove any sediment/sludge in order to prevent any blockage or reduction in efficiency of the new boiler. Refer to manufacturer's recommendations.
3. Piping must be installed so that piping, connections and equipment must not be subjected to excessive strains or stresses, and that any air pockets that may result in knocking noises or vibrations are eliminated. Provisions must be made to compensate for expansion, contraction, shrinkage and structural settlement. Piping must include all necessary fittings, valves and piping for manufactures specified maintenance and cleaning.
4. Two or more boilers: Controls and piping per manufacturer recommendations, which will provide the most efficient operation while meeting thermostat set point**.**
5. Boiler controls/piping must conform to manufacturer's specifications. The contractor must ensure that the following items are in place and fully functional as part of the installation:

- Low Water Cut Off (LWCO)
- Relief Valve
- Sight Glass
- Drain Valve
- High Limit Pressure Control
- Pressure Gauge

6. All piping, valves, fittings, insulation and connections must be rated for use at the operating temperature and pressure of the steam system. Existing pipe, fittings, valves or other materials must be free of foreign materials.
7. Boiler piping installed in unconditioned spaces (i.e., spaces outside of the thermal boundary of the dwelling) must be insulated with a minimum of R-4.

   ○*OPTIONAL BEST PRACTICE*○ Uninsulated steam pipes in unconditioned or in semi-conditioned areas can negatively impact the performance of a steam system. When there are performance problems that may be the result of the lack of insulation with a steam distribution system, it is strongly recommended that a contractor encourage the customer to insulate any pre-existing steam pipes in these areas both for energy savings and system maintenance, unless insulation of these pipes may cause a risk of freezing water pipes in these areas.

8. Steam boiler installation must provide for dry steam to supply piping and radiation, along with providing adequate return of condensate to maintain steady boiler water level. Existing steam traps, steam vents, wet returns, condensate receiver and pipe insulation or need thereof, to be inspected with proposal to install/repair as needed.
9. "Near Boiler Piping" is crucial for proper performance of a replacement steam boiler and must always be considered as part of the boiler installation. Always be sure to include clean-out and skimming tees in the near boiler piping. These "Tees" are necessary for proper cleaning and servicing of the boiler.

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6.8 Air Source Heat Pumps (ASHPs)

6.8.1 General

All ASHPs installed through the Program must conform to the requirements of the NYSERDA Air Source Heat Pump Program:

https://www.nyserda.ny.gov/all-programs/programs/air-source-heat-pump-program

6.8.2 Additional Installation Requirements for ASHPs

1. Additional requirement, installation:

a. When an ASHP is installed to provide the only heating source in a house or zone, without backup or supplemental heat, the ASHP must be sized according to heating loads, using engineering specifications *at design conditions* (not based on nominal or "rated" capacity).
b. All penetrations through the shell of the dwelling created during installation must be sealed with insulating sealant/spray foam. Any insulation disturbed by installed line set must be returned to original (or better) condition.

2. ASHP controls/thermostats must be installed as follows:
    a. In the event that the original heating system will remain in the dwelling to serve as a supplemental heat source, the contractor must provide a control plan for the thermostats, in which the operation of the ASHP and any secondary or supplemental heating systems are coordinated in such a way as to offer the customer the best options for maximizing benefit from the ASHP.
    b. Thermostats must be placed on interior walls, away from direct sunlight, appliances, heating ducts, radiators, or drafty areas
    c. In larger spaces (> 150 ft2) a fixed, wall-mounted thermostat must be installed in a location that will be representative of the space the unit is serving. Set the installer controls so that the temperature is actually sensed at the thermostat, rather than in the air handler.
3. The contractors must provide customers with the following guidance:
    a. Appropriate settings for controls to ensure maximum benefit from the ASHP, including:
        i. ASHP thermostat use and programming, including explanations for setting such as "heat" "cool" and "auto".
        ii. Optimum interaction with controls for a central heating system, if one remains in the dwelling, and written guidance on how to maximize value of using ASHP for heating and avoid using central heating systems in mild weather.
        iii. How and whether the ASHP works more effectively if setback or if kept at steady temperature settings;
    b. Maintenance requirements
    c. The importance of keeping snow away from outdoor unit, especially in heavy snow or drifting conditions, and of maintaining air flow clearances around exterior equipment, especially if visual enclosure is contemplated.

4. Location of outdoor unit(s) should always be approved by the customer.
5. ○*OPTIONAL BEST PRACTICE*○ The location of the outside units should take into account the following:
    a. Outdoor units should be located in inconspicuous places, such as the rear of the building.
    b. Contractors should avoid noise-sensitive areas. Interview customer to assess both degree of sensitivity, and locations that might pose trouble. If mounting to the wall of the building, efforts should be taken to minimize the possibility of noise caused by vibration of the unit being transmitted into occupied areas of the home. Mount on foundation, ensure a non-sensitive area, or use a ground-mounted alternative.

6. ○*OPTIONAL BEST PRACTICE*○ Ductless system design

a. When possible, avoid using multiple oversized ductless units in a multi-zone configuration. Size indoor terminals carefully.
b. When room loads are too small for indoor terminals, consider using compact-ducted terminals to serve several rooms, or use single-zone systems for small zones to allow adequate capacity turn-down.

7. ○*OPTIONAL BEST PRACTICE*○ Ductless indoor units

a. When possible, install ductless heads 4-6 inches below ceiling, even if this is more than the manufacturer's minimum clearance.
b. In rooms with vaulted ceilings, install ductless heads so their lower surface is no more than 6-7 feet from the floor, to facilitate heating distribution and filter changes. Consider using floor-mount consoles in heating applications.

8. ○*OPTIONAL BEST PRACTICE*○ ASHP Ductwork

a. New duct work should be run within the thermal envelope of the dwelling whenever possible.
b. If duct work is installed in an attic or other unconditioned space: after air sealing and insulating ducts, additional insulation should be installed over the ducts to ensure coverage consistent with attic insulation levels over the conditioned space. Duct vapor barrier must have adequate R-value to the interior (duct side) to prevent condensation on the vapor barrier.

9. ○*OPTIONAL BEST PRACTICE*○
Consider installing a hard-wired surge suppressor at the service disconnect or breaker panel to help protect the heat pump circuit(s).

10. ○*OPTIONAL BEST PRACTICE*○ Follow Northeast Energy Efficiency Partnerships (NEEP) Guidelines:

- "Guide to Sizing & Selecting Air-Source Heat Pumps in Cold Climates"
- "Guide to Installing Air-Source Heat Pumps in Cold Climates"

available at the following link:

http://www.neep.org/initiatives/high-efficiency-products/air-source-heat-pumps/air-source-heat-pump-installer-resources

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6.9 Additional Installation Requirements for Air Conditioners, not including Air Source Heat Pumps

6.9.1 Materials

See Sections 6.1

6.9.2 Installation

1. Design and installation of the outdoor units should include elements as needed to prevent possible damage from animals including the protection of wiring.
2. Unit must be placed to allow for free air flow. The contractor must follow manufacturer's guidance on clearance from obstructions including walls, overhangs, protrusions and other features. The contractor must ensure that the outdoor unit does not interfere with view through or operation of any window or door.
3. Line set insulation: Refrigerant vapor (suction) lines must be continuously insulated and vapor sealed with a minimum thickness of 3/8 inch of foam rubber or equivalent, and all seams sealed.
4. If required by the manufacturer, insulation must cover entire line set length (both pipes) to avoid condensation and energy loss. Once insulated, the outdoor portion of line set must be protected with a rigid cover to avoid insulation damage and installed in a workmanlike manner with tightly connected joints. UV tape must be added as needed to ensure that any remaining exposed insulation is protected.
5. Line set penetrations into the dwelling should be made rodent-proof (e.g., with PVC sleeve and cap drilled to the size of the refrigerant lines.)
6. All penetrations through the shell of the dwelling must be sealed with insulating sealant/spray foam. Any insulation disturbed by installed line set must be returned to original (or better) condition.
7. Refrigerator tubing flair connections:
    a. The contractor must create new flare fittings as needed, using a flaring tool and measurement gauge appropriate to the applicable refrigerant and in accordance with manufacturer's instructions.
    b. The contractor must not reuse used manufacturer-provided tubing flares and fittings.
8. Refrigerant piping: Piping installed in the earth or below a concrete slab must be encased in conduit or a minimum of Schedule 40 polyvinyl chloride. The encasement diameter must be at least 3/4 inches greater than that of the tubing and its insulation. The casing must be laid in a straight line to permit removal or insertion of the piping and must terminate above the grade level. Split systems must, where feasible, use only new, appropriately insulated refrigerant line sets specified by the manufacturer and not in excess of 50 feet. The linear, one-way length of refrigerant piping between the two sections of split units must not exceed the maximum distance specified in the manufacturer's published literature. The compressor section where feasible must not be more than 20 feet above or below the indoor unit. Oil traps or double suction risers, as required by the equipment manufacturer must be provided for oil return. Refrigerant piping must be supported properly to prevent excessive sagging, movement, or vibration and limit lateral movement, but permit normal thermal expansion and contraction.

9. The contractor must ensure all refrigerant piping installed:
    a. Has the correct size line set on split systems.
    b. Has the properly sized liquid line filter drier, field or factory installed.
    c. Is brazed with a nitrogen purge in the line set and indoor coil.
    d. Has a vacuum of 500 microns or manufacture specified microns drawn before releasing the factory charge, with no leaks.
10. The condensate must be properly piped, pitched, sized and insulated per manufacturer's specifications. Condensate must not terminate over walkways where accumulating/not draining properly condensate could damage building components. A secondary AC condensate drain must be installed with a drain pan to a conspicuous point of disposal, both AC condensate drains (primary and secondary) must discharge in different locations and the secondary drain to some easily accessible / conspicuous location that would alert the homeowner to the drainage issue. In cases where no secondary drain and no means of installing an auxiliary drip pan can be plumbed /installed to some conspicuous location, an interlocked detector / cutout switch must be installed so that outdoor unit is disabled if water level rises and activates detector / switch. The primary AC condensate discharge pipe must have a trap installation or per manufacturer's specification (no traps on a drip pan secondary line). If a condensate pump is installed, it must also have an interlocked detector / cutout switch be installed so that outdoor unit is disabled if water level rises and activates detector / switch.
11. Equipment must meet all manufacturer specified minimum clearances. Indoor equipment must have properly installed condensate line that is trapped and insulated. Indoor equipment must have a drip pan that extends under the entire unit.
12. Outdoor equipment must be placed on level concrete pad or equivalent. If mounting to the wall of the building, efforts should be taken to minimize the possibility of noise caused by vibration of the unit being transmitted into occupied areas of the home.
13. When possible, the contractor must avoid installing outdoor unit(s) directly under any drip line from the roof or other overhang that would subject them to falling snowmelt, ice or concentrated rain runoff, including roof valleys, or any roof without a gutter. When this is unavoidable, outdoor units must be installed with drip caps or shields approved by the manufacturer.
14. If the unit does not have a fuse to protect the unit's sensitive electronics, a surge protection must be installed per manufacturer specification or at the service.
15. The contractor must follow manufacturer allowed clearances for multiple units and avoid stacking units above each other except when explicitly permitted by manufacturer.
16. Outdoor units should be located in inconspicuous places for aesthetic and noise considerations.
17. Contractors should avoid noise-sensitive areas.

    ○*OPTIONAL BEST PRACTICE*○ Interview customer to assess both degree of sensitivity, and locations that might pose trouble.

    Transmitted noise from wall brackets is generally a minimal issue for 2x6 or thicker walls, and/or walls with 1inch+ rigid insulation. With 2x4 walls it's important to ensure a non-sensitive area, or a ground-mounted alternative.
18. Location of outdoor unit(s) should always be approved by the customer.

19. The replacement of the indoor units should take into account the following recommendations:
    a. Indoor wall mounted units should be installed high on the wall but with adequate clearance from the ceiling (a minimum of 12-18 inches) if possible for ceiling heights up to 8 feet. In rooms with higher or vaulted ceilings, they should be no higher than 8 feet. This will help focus the space conditioning on the occupied space in and cooling seasons.
    b. Equipment must meet all manufacturer specified minimum clearances.
20. Metering Devices: Equipment must have a TXV or electronic equivalent refrigerant metering device installed.
21. System charge must be checked by any method approved and specifically documented by the manufacturer that will ensure proper refrigerant charging of the system. Note: If outdoor conditions require a follow-up visit to finalize the charging process, this must be recorded at both the initial visit and the follow-up visit.
22. Accessories: All accessories must be designed and installed per manufacturer's specifications.
23. Service Access: All units must be located to allow service access for removal of any unit component without removing any piping, ductwork, or other permanently installed fixtures or components.
24. Two or more systems must not be connected in parallel to a common supply or return system.
25. All ducted Air Conditioning units must include a filter system with a minimum rating of MERV 6 unless otherwise specified in the manufacturer's specifications.
26. Start-up and Commissioning: The contractor must secure, in an easily visible location, a sticker showing their name, regular phone number, emergency service phone number (if applicable), and date of system startup. There must be, either in the owner's possession or affixed near the unit, all installation and operating manuals and warranties, and the contractor or his / her representative must instruct the owner on the complete operation of the heat pump system at the time of system startup. The contractor must conduct and provide start-up and commissioning report per manufacturer's protocol.

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6.10 Ground Source Heat Pumps

All contractors installing Ground Source Heat Pumps must meet the certification and installation requirements of NYSERDA's Ground Source Heat Pump Rebate Program. Requirements can be found at:

https://portal.nyserda.ny.gov/servlet/servlet.FileDownload?file=00Pt0000003HRiBEAW

6.11 Solid Fuel Burning Appliances (Woodstoves and Pellet Stoves)

6.11.1 Materials

1. Installed appliances must have a flue properly sized to the appliance that has the necessary vertical rise, is protected from extreme cold and is correctly configured according to the manufacturer's specifications.
2. ○*OPTIONAL BEST PRACTICE*○ Install sealed combustion units.

3. ○*OPTIONAL BEST PRACTICE*○ Ensure sizing of stove is based on BTU output figures from the list of certified EPA stoves, not from manufacturer promotional materials. Manufacturer promotional materials often have higher BTU figures than the EPA list of certified stoves, leading to an under sizing of appliances for the space intended to be heated.

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6.11.2 Installation

1. Installer must ensure that installed appliance and venting system are compatible and installed to manufacturer's specifications.
2. All combustion gas venting must be run to the exterior of the building and must terminate with an approved end cap. The contractor must ensure that venting conforms to manufacturer's recommendations and NFPA 211. As required, the venting system must extend at least 3 feet above the roof at its exit point, and at least 2 feet above any part of the roof within ten feet of the vent.
3. Vent piping should slope upward from the appliance at a minimum of ¼ inch/foot or according to manufacturer's specifications.
4. The contractor must ensure that the venting system is free from blockage or restriction, leakage, corrosion, inadequate vent connectors or other deficiencies that may cause an unsafe condition.
5. The contractor must ensure that appropriate clearances between the wood-burning appliance and combustible materials and the venting system and combustible materials are maintained as specified in the manufacturer's installation specifications.
6. Protection of combustible floors must be installed as part of the appliance install. Hearth boards or pads used to protect combustible materials in proximity to the appliance must be approved for such use.
7. Installed systems must have a dedicated combustion air intake. Whenever possible the system should be installed with a combustion air intake that is connected directly to outside air. The only exception to this installation is when the distance to outside combustion air and the associated angles of venting to the exterior, would exceed manufacturer's recommendations.
8. When a "skuttle" air intake is installed to bring in combustion air, this air intake must not be installed directly below the flue or on the windward side of the home, where during exceptionally cold days, the stove's emitted combustion byproducts from the flue/chimney, may be taken back into the fresh air of the household.
9. ○*OPTIONAL BEST PRACTICE*○ When installing a wood or pellet stove, the installer should also show the homeowner how to do recommended daily, weekly and/or monthly cleaning of the stove, including cleaning of heat exchanger. This demonstration may be one of the best ways to avoid future call backs and malfunctioning of the stove.

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6.12 Additional Requirements Specific to Wood Stoves

1. Installed appliances must meet Program guidelines for efficiency.
2. Installed appliances must be EPA Certified for particulate matter output of 4.5 grams per hour or less.

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6.13 Additional Requirements Specific to Pellet Stoves

6.13.1 Materials

1. Installed pellet stoves must be listed on the US EPA Certified Wood Stoves list as having a particulate matter output of 2.0 grams per hour (PM 2.0 g/h) or less and an actual measured efficiency of 70% efficient or greater.
2. Installed pellet stoves should be listed and labeled in accordance with ASTM E1509.
3. Pellet stove venting materials must be listed and labeled specifically for pellet stoves

6.13.2 Installation

1. Pellet stoves must be installed in accordance with ASTM E1509.
2. Flue lining and vent systems for use in masonry chimneys with pellet fuel-burning *appliances* shall be limited to the following:
   a. Flue lining systems complying with Section R1003.11.1 of the IRC (International Residential Code) 2015, or subsequent update.
   b. Pellet vents listed for installation within masonry chimneys per Section R1003.11.4of the IRC 2015, or subsequent update.

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6.14 Additional Requirements Specific to Domestic Hot Water Systems

6.14.1 General:

1. In 2017 the DOE changed testing procedures and rating standards for water heaters, which will affect how water heater efficiencies are labeled. This changes the efficiency listing from Energy Factor (EF) to Uniform Energy Factor (UEF). This new standard accurately reflects real-world use and pattern scenarios.
2. Water heaters installed through the Program must have a UEF that meets Program requirements.
3. The Air-conditioning, Heating and Refrigeration Institute (AHRI) has converted all DWH equipment from EF to UEF. The AHRI directory that lists UEFs for available water heaters is available at:

www.ahridirectory.org

4. Location: If possible, water heater must be placed where leakage from the relief valve, leakage from the related piping, or leakage from the tank or connections, will not result in damage to the surrounding areas, or to the lower floors of the building.
5. Drain Pan: A drain pan must be installed underneath the water heater if it is located where leaks could cause damage. A 1-inch line must be installed between the pan and an appropriate drain. A water alarm/shut-off can be installed in the pan if there is no place to run a drain line.
6. Leaks: Water heater and system must be leak-free. All water leaks must be identified and repaired.

7. If the water heater to be installed does not have factory-installed heat traps, the contractor may install heat traps or one-way valves, which allow water to flow into the tank and prevent unwanted hot-water flow out of the tank in both hot and cold lines.
8. Installation must include a shut off valve in the cold and hot water inlet / outlet lines. It must be located close to the water heater and be easily accessible. Use only full flow ball or gate valves.
9. Unions: Use dielectric unions or nipples to protect hot and cold water fittings from corrosion when connecting dissimilar materials such as copper and galvanized iron pipe.
10. Thermal Expansion Tank: If installing the water heater in a closed water system, install properly sized expansion tank. To clarify: thermal expansion of heated water may occur wherever potable water is heated in a closed system (when the potable water is isolated from the public water supply by a one-way valve, such as a pressure reducing valve, backflow preventer or check valve. Some water meters do have an internal check valve to protect the city mains from local contamination). Potable water expansion tanks are designed to absorb the increased volume of water created by thermal expansion and to maintain a balanced pressure throughout the potable water supply system. They are used to prevent plumbing system and/or water heater damage and unnecessary relief valve discharge caused by excessive pressure from thermal expansion.
11. T&P relief valve: Water heater must have the proper size and type T&P valve and discharge pipe installed per manufacturer's instructions.
12. Drain valve: Water heaters must have accessible drain valve installed.
13. Single-wall heat exchangers are permitted if they satisfy all of the following:
    a. The heat transfer medium is potable water or contains only substances which are recognized as safe by the U.S. Food and Drug Administration.
    b. The pressure of the heat transfer medium is maintained less than the normal minimum operating pressure of the potable water system.
    c. The equipment is permanently labeled to indicate that only additives recognized as safe by the FDA must be used in the heat transfer medium. Other heat exchanger designs may be permitted where approved by local code.
14. Well systems: If installed on private well systems, water heater must be able to operate correctly at the lowest anticipated operating water pressure.
15. Two or more water heaters: Controls and piping per manufacturer recommendations to provide the most efficient operation while meeting the hot water demands of the consumer.
16. Piping must be installed so that piping, connections and equipment must not be subjected to excessive strains or stresses. Provisions must be made to compensate for expansion, contraction, shrinkage and structural settlement. Piping must include all necessary fittings, valves and piping for manufactures specified maintenance and cleaning.
17. All installed fossil fuel fired DHW systems must be tested for combustion safety.
18. o*OPTIONAL BEST PRACTICE*o Insulate DHW supply pipes to improve delivery time and reduce heat loss to unconditioned or semi-conditioned spaces.

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6.14.2 Air Source Heat Pump Water Heaters

Materials

Installed systems must be ENERGY STAR ® rated.

Installation

1. Installed systems must be located outside of the conditioned area. Installed system must be located in space temperatures between 45-90 degrees. Or for a system that uses inlet air ducts: entering air must be between 40 – 90 degrees. Water heater location to be a 750 - 1,000 cubic feet of area or as required by manufacturer's specifications.
2. Heat Pump Water Heaters must have at the minimum the following modes of operation:
    - HEAT PUMP ONLY
    - HYBRID: This mode uses the heat pump as the primary heating source. The heating element will heat water if demand exceeds a predetermined level so that the set point temperature can be recovered more quickly.
    - ELECTRIC: The water heater functions as a conventional electric unit, relying totally on the elements to heat the water in the tank.
    - VACATION: Unit off or set for very low temperature

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6.14.3 Storage Water Heater

1. Storage water heater must be sized by peak-hour demand (the busiest one-hour), which can be determined by using GAMA Water Heater Sizing Tool. The water heaters First Hour Rating (FHR) must match within 1 - 5 gallons of peak-hour demand.

6.14.4 Indirect Storage Water Heater

Materials

Tank must be sized by peak-hour demand (the busiest one-hour), which can be determined by using GAMA Water Heater Sizing Tool. The water heaters First Hour Rating (FHR) must match within 1 - 5 gallons of peak-hour demand. In addition, the installed boiler output must meet the manufacturer's minimum Btu/hr. requirements to achieve First Hour Rating with the specified GPM through the Indirect coil at the design water temperature.

Installation

1. Indirect water heater must be piped as priority zone on boiler.
2. Boiler piping, controls and pumping must be installed to provide the proper flow through the indirect coil, specified by the indirect manufacturer.
3. Cold-start control strategy must be used.

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6.14.5 Tankless Water Heaters

Materials

1. Installed systems must be ENERGY STAR ® rated.
2. Must have a flow rate of at least .5 Gallons Per Minute (GPM).
3. Must have thermostatic control.
4. Two pipe systems or concentric pipe vented to the exterior, with an approved vent cap.
5. Sizing: Peak-hour demand (the busiest one-hour) flow rate, in GPM if possible measure the flow rate, (GPM) for each point of use, to determine how many gallons will be required during that peak demand time period flow rate in GPM, if not use GAMA Water Heater Sizing Tool to determine estimated peak-hour flow rate in GPM. Then determine temperature rise using coldest anticipated inlet water temperature and design outlet water temperature, the difference being the design temperature rise. Match peak-hour flow rate in GPM and anticipated temperature rise with manufacturer's rated flow rate in GPM and temperature rise.
6. System must be leak-free. All water leaks, including pre-existing, must be identified and repaired.
7. A raw water analysis must be taken initially of each installation so that the correct water treatment can be established and installed per manufacturer's recommendations. The treatment must be compatible with materials of construction. The primary goal of boiler water treatment is to control solids that cause deposits in the boiler and control gases that cause corrosion.

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6.15 Ductwork

6.15.1 General

1. Ducts must be assembled and installed in accordance with recognized industry practices to achieve air-tight and noiseless (no objectionable noise) systems, capable of performing each intended service.
2. Install each run with minimum number of joints. Align ductwork accurately at connections, within 1/8 inch misalignment tolerance and with internal surfaces smooth. Support ducts rigidly with suitable braces, and anchors of type which will hold ducts true-to-shape and to prevent buckling. Ducts must be braced and guyed to prevent lateral or horizontal swing. Installation must meet or exceed all applicable federal, state and local requirements, referenced standards and conform to codes and ordinances of authorities having jurisdiction. All installation must be in accordance with manufacturer’s published recommendations.
3. Penetrations: Where ducts pass through interior partitions and exterior walls, and are exposed to view, the contractor must:
    a. Seal space between construction opening and duct or duct insulation with sheet metal flanges of same gage as duct.
    b. Overlap opening on 4 sides by at least 1½ inch.
    c. Fasten to duct and substrate.

4. Vapor Barriers: Where vapor barriers are present, the vapor barrier must be on the outside of ductwork. Vapor barrier must be unbroken. Joints, etc., must all be sealed. Where insulation with a vapor barrier terminates, it must be sealed off with the vapor barrier being continuous to the surface being insulated. Ends must not be left with exposed fiber glass or other insulation.
5. Return air must not be taken from any of the following locations; bathroom, kitchen, garage, crawl space, mechanical room or other separate dwelling unit. No supply ducts may be installed to the garage. New duct system must have return duct system installed. The use of building cavities in new duct system installations is not allowed. Return air path for each room must be provided by properly sized permanent means, such as return ducts, unclose-able grilled or louvered transfer into the door, wall or ceiling or undercut door with any combination thereof along with duct sealing and proper duct insulation as needed.
6. Fuel-burning Appliances: No duct system may be installed such that the sole source of return air is located in a room or space containing a fuel-burning appliance, except where the fuel-burning appliance is a direct-vent appliance.
7. Balancing Dampers: All newly installed duct systems must have balancing dampers installed for the purpose of air balancing the duct system with a means of access to balancing dampers.
8. Abandoned register, grilles and ductwork must be removed, blocked off and permanently sealed.
9. The contractor must check system balance and make modifications as needed to provide proper aiflow and room pressure. A system is considered balanced when room to room pressure differencial does not exceed 3 pascals when the system fan is running at design maximum speed.
10. Ductwork located outdoors: duct must be metal and installed with proper insulation resistant to UV, and ozone, acid rain, and physical elements produced from outdoor weather. Support members that connect directly to the ductwork are to be insulated with this same material. Horizontal ductwork located outdoors must be sloped at a minimum 2-degree angle to prevent the accumulation of water on top of the finished insulated duct.
11. Protection of Ducts: Ducts installed in locations where they are exposed to mechanical damage must have barriers to prevent such damage.
12. All new duct systems installed must include minimum MERV 6 with design accounting for filter pressure drop at design airflow.
13. Existing duct system airflow through the indoor unit, under steady state condition must be within ± 10% of the airflow required per the system design or manufacturer recommendations (with all accessories and system components in place). The contractor must measure airflow and adjust to above specifications.
14. On installation where a new duct system is installed the following must be met: The individual room airflows are within the greater of ± 20% or 25CFM of the design/application requirements for the supply and return ducts. The contractor must measure airflow and adjust to above specifications.
15. See Section 6.4 “Additional Requirements Specific to Furnaces” regarding filters.
16. ○*OPTIONAL BEST PRACTICE*○ When duct systems run through unconditioned space and are used for cooling only, register openings must be tightly sealed to prevent water vapor accumulation in the system during the heating season.

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6.16 Installation of Metal Ductwork

6.16.1 Materials

1. Metal ducts and plenums with a cross sectional area of 1.2 sq./ft. or less must be 30 equivalent galvanized sheet gage or thicker, over 1.2 sq./ft. must be 28 gauge equivalent galvanized sheet gage or thicker.
2. Duct liner material must be rated for its intended purpose and must not support the growth of fungus or bacteria.

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6.16.2 Installation

1. All joints and connections must be mechanically fastened with screws in three places.
2. Metal ducts must be supported by ½ inch wide 18-gage metal straps or 12-gage galvanized wire at intervals not exceeding 10 feet or other approved means.
3. Duct Liners must at minimum comply with the following:
    - All joints must be neatly butted. All rips and tears on the air stream surface must be repaired by coating damaged areas with approved adhesive or coating, or by replacement of duct liner.
    - Mechanical fasteners must be used to secure the duct liner to the sheet metal; these may be either impact-driven or weld-secured with adhesive that must be applied to the sheet metal with a minimum coverage of 90%.
    - Exposed edges must have adequate treatment to withstand operating velocities.
    - To avoid contact with liquid water, duct liner must be protected by use of a sheet metal sleeve and drip pan adjacent to such equipment as evaporative coolers, humidifiers, cooling coils, and outside air intakes.

6.17 Installation of Flex Duct

This section is extracted from the "Flexible Duct Performance and Installation Standards 3rd Edition" which is published by the Air Diffusion Council.

6.17.1 Materials

All tapes, mastics and non-metallic fasteners (plastic clamps) used for field installation of flexible ducts must be listed and labeled to UL 181B, with the proper shear strength and adhesion needed to stay effectively in place for the live of the HVAC system.

6.17.2 Installation

1. All connections, joints and splices must be made in accordance with the manufacturer's installation instructions.
2. Use the minimum length of flexible duct to make connections.

○*OPTIONAL BEST PRACTICE*○ It is recommended that flexible air duct branch takeoffs (run-outs), flexible air ducts direct to boots from the plenum and flexible ducts in radial duct systems be limited in length to 25 feet.

3. Flex ducts must not be installed where exposure to direct or indirect sunlight or UV producing air treatment devices can occur. Prolonged exposure to sunlight or UV light may cause degradation of the core material or the vapor barrier.
4. The contractor must repair torn or damaged vapor barrier/jacket with duct tapes listed and labeled to UL 181B; if internal core is penetrated, replace flexible duct or treat with a splice.
5. Ducts must be installed fully extended and not installed in the compressed state. Contractors must avoid installing excessive lengths where possible. Duct must be installed without any kinks or excessive bends.
6. Ducts must not be installed in concrete, buried below grade or in contact with the ground.
7. Ducts must not be installed near hot equipment (i.e. furnaces, boilers, steam pipes, etc.) that is above the recommended flexible duct use temperature.
8. Flexible duct must be supported at manufacturer's recommended intervals, but at no greater distance than 5 feet. Maximum permissible sag is ½ inch per foot of spacing between supports. Duct supported with "Zip" ties must not sag or kink.
9. Hanger or saddle material in contact with the flexible duct must be of sufficient width (minimum of 1 ½ inch) to prevent any restriction of the internal diameter of the duct when the weight of the supported section rests on the hanger. Individual ducts must be separately supported.
10. Flexible ducts may rest on ceiling joists or truss supports. Maximum spacing between supports must not exceed the maximum spacing per manufacturer's installation instructions.
11. Vertically installed duct must be stabilized by support straps at a maximum of 6 feet on center.

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6.18 Installation of Rigid Fibrous Duct

6.18.1 Materials

1. In an up-flow configuration, standard uncoated fibrous glass duct board may be used adjacent to the coil plenum.
2. For down-flow furnaces, sheet metal must be used directly below the unit and then for four feet in the ductwork adjacent to the coil plenum. Standard uncoated fibrous glass duct board may be used after the first four feet of coated duct.
3. In an up-flow configuration with a side return, standard uncoated fibrous glass duct board may be used in the return adjacent to the furnace fan.
4. In a horizontal supply system with a horizontal return, standard uncoated fibrous glass duct board may be used in the return adjacent to the furnace fan.
5. For up-flow furnaces with a bottom return, sheet metal must be used in the return ductwork directly below the unit. In addition, the return boot must also be fabricated from sheet metal to prevent any

water that may enter the system from collecting in the boot. From the return boot, standard uncoated fibrous glass duct board may be used for the rest of the return.

6. In a horizontal supply system, there are two options that may be considered. Metal duct, installed so that it slopes back to the condensate pan, may be used for the first four feet of duct adjacent to the coil. To prevent air infiltration, all seams and connections must be sealed with a UL 181 approved closure system. In addition, exterior insulation is to be used on the metal duct to prevent condensation potential. After four feet, the ductwork may be transitioned to standard uncoated fibrous glass duct board with all butt seams sealed with a UL 181 closure system. The other option is to use coated or laminated fibrous glass duct board adjacent to the coil. This ductwork must also be sloped back toward the furnace to prevent water from traveling through the duct system. As with the metal duct, all board edges of the fibrous glass duct board must be sealed with a UL 181 closure system prior to fabrication to reduce the surface area of the exposed edge.

6.18.2 Installation

1. Rigid fibrous glass duct must not be used in concrete, buried below grade, or any other location where it may be exposed to weather or physical abuse.
2. Rigid Fibrous Glass Duct must be made and installed using tools and/or machines designed for that purpose.
3. Hanger straps or saddles must be a minimum of 2 inches wide. Avoid sharp edges and burrs. Hangers must be spaced on 6 feet centers and must be located at circumferential joints wherever practical. Duct must be hung so that the hanger will not cut or otherwise damage the duct facing (NAIMA Fibrous Glass Duct Liner Standard).

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6.19 Duct Sealing

6.19.1 General

1. Duct sealing must be prioritized where the pressure is greatest (typically closest to the air handler) and then out toward the extremities of the system. Care must be taken when performing duct sealing to avoid exceeding manufacturer's rated temperature rise/drop across the heat exchanger of the furnace or CAC.
2. For energy savings, only ducts in unconditioned space must be sealed. Ducts in enclosed crawl spaces and basements have proven to have marginal payback. Therefore, it makes the most sense to seal ducts that are located in ventilated spaces or ambient areas such as ventilated attics, open crawl spaces, garages, etc. Once the decision is made to seal a duct segment, all the openings in the duct system must be sealed starting closest to the system air handler and moving toward supply and return registers.
3. ○*OPTIONAL BEST PRACTICE*○ In situations where a central humidifier exists in the furnace, the contractor must evaluate where leaks in the return ducts may create a pressure imbalance and drive moisture into unconditioned spaces, such as unconditioned attics or wall cavities. In these instances, sealing return ducts and thorough air sealing can be critical.

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6.19.2 Materials

1. Cork tape or equivalent must be used for sealing gaps where refrigerant and/or drain lines penetrate coil or plenum.
2. 181A or 181B metallic pressure tape with non-butyl (i.e. acrylic) adhesive must be used to seal service panels, access covers, etc.
3. Rigid Fibrous Glass Duct, Tapes and Mastic must comply with the following: UL 181A and must be marked "181 A-P" for pressure-sensitive tapes, "181 A-M" for mastic and "181 A-H for heat sensitive tape.
4. Flex, Metal to Metal Ducts Tapes and Mastic must comply with the following: UL181B and must be marked "181 B-FX for tape or "181 A-M" for mastic.
5. Consult manufacturers' recommendations and ensure compliance with their requirements for installation, shelf life, and long-term storage of closure tapes and mastics.
6. 100% silicone caulk may be used at component to component and component to plenum connections.

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6.19.3 Installation

1. All joints, seams and connections of the duct system must be mechanically fastened with screws in at least three points. These joints, seams and connections must be sealed with duct mastic. **Photo:** Metal Ductwork Sealed with Mastic.
2. Surfaces to receive sealant must be clean, meaning free from oil, dust, dirt, rust, moisture, ice crystals, and other substances that inhibit or prevent bonding.
3. Cracks or seams wider than ¼ inch must to be repaired with fiberglass mesh as well as mastic.
4. Gaps over 1 inch wide must be repaired with a sleeve or sheet metal patch and sealed with approved mastic or tape.
5. Air handler access panels and seams that may need to be opened for service must be sealed with a UL181 rated tape.
6. Connections between the air handler and the cooling coil or hot water coil must be sealed with 100% silicone caulk. **Photo:** Air Handler Sealed with Silicone Caulk.
7. Flex duct connections must be made with hard duct connectors, held in place with a vinyl tension strap and the strap screwed into place. The connection between the inner liner and the hard duct that it is connected to must be sealed with duct mastic.
8. Boot to floor, wall or ceiling connections for supplies and returns must be mechanically fastened to the surface or surrounding framing and sealed to the wallboard or subfloor with mastic.
9. If there is a filter door, it must have an operable door that closes securely and is reasonably tight.

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6.20 Duct Insulation

6.20.1 General

1. Insulate any sections of duct systems that are in unconditioned spaces to code levels.
2. Duct sealing must take place before insulating ducts.
3. Air conditioning ducts in unconditioned spaces must have a continuous Class I vapor retarder to avoid condensation and water damage. The seams of the vapor retarder must be sealed with vinyl tape. The entire duct system in the unconditioned space must be insulated. Special attention must be paid to ducts that run near the roof sheathing in cold climates. Failure to seal ducts in this area can lead directly to ice damming.

6.20.2 Materials

1. Vinyl duct wrap with a minimum R-value of 6 must be used to insulate ducts in unconditioned basements, crawl spaces, or garages.
2. Vinyl duct wrap with a minimum R-value of 8 must be used in unconditioned attics.
3. Vinyl Tape made especially for use on vinyl duct insulation
4. Clamp stapler and staples must be used to secure ducts
5. Materials must be resistant to UV, and ozone, acid rain, and physical elements produced from outdoor weather.

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6.20.3 Installation

1. Duct insulation must be installed by wrapping insulation around ductwork and attaching neatly using a clamp stapler with staples every two inches. Two inches must be added to the width of the duct wrap to provide the excess wrap needed to create a neat tight seam that can be stapled without compressing the insulation. Do not pull the insulation too tight as this will compress it and decrease its R-value.
2. No fiberglass must be left exposed. All seams and tears in the vinyl vapor retarder must be sealed using vinyl tape. **Photo:** Sealed Vapor Retarder on Attic Ductwork.
3. No part of the duct system must be left un-insulated, including supply and return boots. When insulating cooling system ducts, the vapor retarder must be made continuous.
4. If floor joist bays are used as return ducts and are to be insulated, the contractor must first ensure that all leakage paths into the bays are sealed. Duct insulation must then be wrapped around 3 sides and stapled near the top of each joist or to the subfloor on each side. Duct insulation must be in substantial contact with all sides of duct area. Seams must be mechanically reinforced using vinyl tape.

7. Controls

7.1 Programmable and Smart Thermostats

7.1.1 Materials

1. All installed thermostats must be compatible with the equipment they are controlling.
2. The thermostat must have a minimum of a 5/2-day program schedule.
3. The thermostat must be easy to program and maintain by the customer. The display screen must be easily readable, and appropriate for the visual capabilities of the customer.
4. ○*OPTIONAL BEST PRACTICE*○ A large display and touch screen programming will aid setup.
5. In situations where a customer may use a furnace fan as a cooling system, the thermostat must have a "Fan On" switch.

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7.1.2 Installation

1. The thermostat must be installed according to the manufacturer's specifications and instructions.
2. Installed thermostats must be properly leveled, calibrated as specified by the equipment manufacturer and appropriately located:
    a. On an interior wall
    b. Out of the path of direct sunlight
    c. At an appropriate distance from heat sources, such as incandescent lights, heat vents or radiators.
3. The surrounding finish surfaces must be returned to the same condition as pre-installation.
4. After installation the thermostat must be turned on and the program must be verified.
5. The contractor must leave the program instruction manual with the homeowner and must verbally walk through the process for programing the thermostat.
6. Heat Pump Thermostats: In no case (for normal heat pump operation) must the auxiliary heater(s) be wired to energize during the first heating stage of the indoor thermostat. Either a manual emergency heat switch on the sub base, or automatic controls (factory installed) within the heat pump must be supplied to allow all of the auxiliary electric heaters to be electrically turned on during the heating season (under control of the indoor thermostat but with the compressor and outdoor thermostats bypassed) for use when the heat pump compressor or associated refrigeration equipment is inoperative. An outdoor thermostat, intelligent thermostat (two-stage) or equivalent control may be used to lock out the supplemental heat when outdoor temperature is above the thermal balance point.
7. The contractor must collect and properly dispose of the thermostat being replaced. Special attention must be paid to the proper disposal of thermostats containing mercury. All mercury thermostats must be disposed of according to the NYS Mercury Thermostat Collection Act. Thermostat wholesalers may serve as disposal sites.

7.2 Boiler Outdoor Reset Controls

7.2.1 General

While all boilers can show savings when combined with outdoor reset control, not all existing boilers are good candidates for this control strategy. The boiler reset control must only be installed under the following conditions:

- The boiler is in good working order, with venting system in good condition.
- If a combustion efficiency testing is conducted the results indicate 75% or higher combustion efficiency.
- No tankless coil is in use on the boiler
- Programmable thermostat setbacks are limited to 5 degrees or less
- Annual heating usage exceeds 50 million BTUs, as per chart below:

Table 6. Annual Heating usage

Annual Heating Usage	Fuel Type
500 Therms	Natural Gas
535 Gallons	Propane
350 Gallons	# 2 Fuel Oil

7.2.2 Material Requirements

Control and all materials installed must be compatible with equipment that it will be installed with.

7.2.3 Installation Requirements

1. All installed equipment must be installed in compliance with state and local codes.
2. All equipment must be installed in accordance with manufacturer's specifications.

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7.3 Time of Use Timers for Electric Hot Water Tanks

Time of use timers for hot water heaters may be eligible for installation if the water is heated by electricity and the household has time of use (or on-peak/off-peak) rates. If time-of-use rates are in effect, or available the contractor must ensure that household is switched over to these rates as part of the process. The following conditions must be met:

1. Water is heated by electricity
2. The household must have time of use (or on-peak/off-peak) rates. If time-of-use rates are in effect, or the contractor must ensure that household has switched over to these rates as part of the process
3. Water tank must have an 80-gallon capacity or greater
4. Timer to be installed must have a battery backup
5. Written permission has been obtained by owner, and timer and rates must be acceptable to household

6. The contractor must ensure that household must be willing and capable of adjusting the timer and replacing the batteries as needed and is educated by the contractor on the use of the timer.

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8. Lighting

8.1 LEDs

8.1.1 Material

1. ENERGY STAR ® rated
2. Operable in enclosed lighting fixtures.
3. If installed outdoor, operable in year-round exterior temperature conditions.
4. All socket extenders installed must be UL listed.
5. Color rendition must be acceptable to the family and appropriate for their needs.

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8.1.2 Installation

1. Replacement must be guided by customer usage, with priority given to high-use lighting. Pre-existing bulbs must be determined to have at least a two hour per day burn time.
2. Installation should not be undertaken if there is a reasonable concern of damage to a fragile or poorly installed fixture.
3. Do not install LEDs in locations that have a high potential for breakage.
4. LEDs replacement must reasonably match the lumen rating of the replaced bulb, unless directed by occupant to install bulbs with different lumen output.
5. Only bulbs marked as “dimmable” can be used with a dimmer light control.
6. After installation turn on light and verify that bulb energizes and comes to full brightness.
7. The contractor must install or assist household in installation of all lighting provided by the contractor prior to invoicing the Program.
8. LEDs must not be installed to replace a CFL.
9. Socket must be functional, and no hazardous conditions exist.
10. All replaced incandescent bulbs must be removed from the premises and disposed of properly.
11. Any LEDs damaged during installation must also be disposed of properly.
12. o*OPTIONAL BEST PRACTICE*o Motion sensor timers can be installed on exterior lighting fixtures. The installed sensor should be tested to ensure that it energizes the fixture only when there is activity in the desired area.
13. o*OPTIONAL BEST PRACTICE*o During the lighting installation the contractor should also look for opportunities to downsize existing lighting, such as reducing the number of bulbs used.

8.2 Lighting Fixtures

8.2.1 Material Requirements

All installed fixtures must be ENERGY STAR® rated.

8.2.2 Installation Requirements

1. The fixture must be installed according to all local electric codes.
2. If the contractor determines that the existing wiring condition is inadequate or that replacement will result in damage to the home, the installation must not go forward.
3. ○*OPTIONAL BEST PRACTICE*○ If the fixture bulb is of a custom design, a spare bulb should be left with the customer for each installed fixture.

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8.3 LED Nightlights

8.3.1 Material Requirements

Must be photocell operated.

8.3.2 Installation Requirements

If installed as an energy efficiency measure, must be installed to replace an incandescent light that is currently left on at night.

8.4 Torchieres

8.4.1 Material Requirements

Halogen Torchieres must be replaced with ENERGY STAR ® LED models of comparable luminescence.

8.4.2 Installation Requirements

1. The contractor must install lighting of comparable or higher luminescence.
2. Unless rated as dimmable, torchieres must not be installed in a light fixture operated by a dimmer.
3. If a new torchiere is installed during the visit, the old torchiere must be disabled by removing and disposing of the old bulb and cutting the power cord. The contractor may leave the old halogen torchiere for disposal by the household.

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9. Hot Water Efficiency Measures

9.1 Showerheads

9.1.1 Material

1. Installed showerheads must have a maximum flow rating no greater than 1.5 gpm (gallons per minute).
2. Showerhead must be acceptable to the household.

○*OPTIONAL BEST PRACTICE*○ The water flow can be simply and quickly measured with a plastic gallon milk jug with a hole cut out of the top that fits the shower head. If the gallon just fills in 20 seconds or less, the showerhead has a flow rate of 3 gpm or greater (20 seconds x 3 = 1 minute)

○*OPTIONAL BEST PRACTICE*○ Replace a standard showerhead with a showerhead with hand-held capabilities. Customers may be more receptive to the new showerhead because it represents an enhancement.

9.1.2 Installation

1. Inspect the existing pipe connector section for weakness due to corrosion and do not change if pipe is obviously weakened.
2. Showerhead must be installed without causing damage, including cosmetic damage, to the plumbing. ○*OPTIONAL BEST PRACTICE*○ for installation:
    a. Grasp the pipe connector firmly and use slip joint pliers/channel locks to remove existing showerhead
    b. Do not use excessive force. Bear in mind that the installer or installing company is financially liable for repairs.
    c. Clean the threads of the pipe connector to remove old sealant tape or plumbing putty.
    d. Cut a six to eight-inch length of new sealant tape and wrap it around the threads of the pipe connector. Be sure to wrap the tape in a clockwise direction. Installed tape must be neat with no dangling or frayed edges showing.
    e. Hand tighten the new showerhead into place on the pipe connector.
    f. Use a rubber patch to protect the showerhead from the teeth of the slip joint pliers when tightening the shower head.
    g. Do not over tighten. The sealant tape will make the water tight seal without forcing the shower head on too tight.
    h. Turn on the shower and inspect for leaks. The water stream must be even and flow straight from the showerhead

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9.2 Faucet Aerators

9.2.1 Material

1. Flip faucet aerators must have a maximum rated flow of 2.0 gpm
2. Standard aerators must have a maximum rated flow of 1.0-1.5 gpm

9.2.2 Installation

1. Rated flow of existing aerator must be lower than replacement aerator. ○*OPTIONAL BEST PRACTICE*○ for installation:
   a. Remove the old aerator by turning in a counter clockwise direction.
   b. While no aerator is installed run the water for a few seconds to flush out debris.
   c. Cut a six to eight-inch length of new sealant tape and wrap it around the threads of the new aerator. Be sure to wrap the tape in a clockwise direction. The tape must be minimally visible and neatly installed with no dangling or frayed edges.
   d. Screw the new aerator into place finger tight and then further tighten a half turn with slip joint pliers/channel locks. Use a rubber patch to prevent damage to the new aerators finish
   e. Turn on the faucet and check for leaks.
   f. Check that the lever works correctly on the flip aerator and that the increased back pressure caused by stopping flow through the aerator with the lever does not cause the seal between the faucet and the aerator to leak.
2. As part of customer education, the home owner must be shown how the flip aerator works and given a few suggestions as to when it would be a useful feature.

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9.3 Domestic Hot Water Tank Wraps

9.3.1 Material

1. Tank wrap must be two-inch fiber glass backed by a vinyl covering.
2. "Cinch" staples must be ½ inch.

9.3.2 Installation

1. The contractor must ensure that there is no warning posted on the appliance that prohibits wrapping the tank.
2. Insulation must not be installed in a compressed state.
3. Pressure relief valve and pipe stub ins must not be covered by wrap. Insulation must be cut on three sides at location of control plate access panels to allow for access as needed.
4. All joints must be sealed with vinyl or other tape that ensures a permanent, secure seal.
5. Wrap must be secured to the tank with staples, baling wire or other means that ensure that the wrap remains in place for the life of the tank.

6. ○*OPTIONAL BEST PRACTICE*○ for installation:
    a. Measure the diameter of the tank and add four inches to it. Then use the adjusted diameter (d) to calculate the tank insulation length around the tank circumference (C) using this formula: C=π times the diameter. OR: wrap a tape measure around the tank.
    b. Cut the tank wrap to length C + 2 inches and insulate the side of the tank. Do not pull the tank wrap so tight that it compresses the insulation.
    c. Use the excess two inches from the tank wrap length that was cut to fold the tank wrap at the seam and neatly staple it together every two inches with a cinch stapler.
    d. If it is power vented or an electric tank, cut a circular piece of tank wrap that has a diameter two inches greater than the tank. Cut a second piece of tank wrap that is the same diameter of the tank and place that on top of the tank. Place the round section that is 2 inches greater in diameter on top of the tank and using the excess wrap, fold the edges of the side wrap and the top wrap together and fasten securely with the cinch stapler every two inches.

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9.4 DHW Pipe Insulation

9.4.1 Materials

1. Installed pipe insulation must be neoprene or closed-cell foam material of at least ½ inch thickness.
2. Seams must be sealed with suitable material to ensure a permanent firm seal. Acceptable materials include, but are not limited to:
    a. Nylon cable ties ("zip" ties)
    b. Electrical tape

9.4.2 Installation

1. The first three feet of hot water pipe exiting from the DHW tank must be insulated with ½ inch pipe insulation,
2. The first three feet of cold water pipe exiting from the DHW tank must be insulated with ½ inch pipe insulation.
3. All elbows must have mitered corners.
4. “T” connections must have fish mouths cut int o make a tight joint.
5. Pipe insulation must be installed with the seam facing downward. And must be secured using nylon cable ties spaced no greater than 12 inches apart. Pieces longer than 6 inches must have a tie on each end. Ties must be cinched hand tight and must not cause compression of the insulation. The protruding end of the tie must be cut off.
6. Pipe wrap must not come within six inches of single wall flue pipe or within three inches of double wall or b-vent flue pipe on fossil-fuel fired hot water tanks.

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9.5 DHW Temperature Setback

Checking the hot water temperature and adjusting the temperature to meet the occupants' needs can result at energy savings with very little effort.

9.5.1 Installation

1. The contractor must measure and document hot water temperature at the fixture farthest from the hot water source. The fixture must be opened fully with only hot water running and be allowed to run long enough so that the hot water line is fully charged.
2. If the measured hot water temperature exceeds 120 degrees F, the contractor should recommend to the occupant that the water heater setting be lowered so that it delivers water at 120 F. Upon approval of occupant, the contractor may lower the water heater thermostat to achieve 120 F delivery temperatures and must document the new thermostat setting.

   ○*OPTIONAL BEST PRACTICE*○ After testing the water temperature, invite the customer to adjust the water to their preferred shower temperature. Once set, measure the temperature and show the customer. In many instances, customers who prefer a "really hot shower" find that they are using water at a temperature of around 108 degrees. This can be a real eye-opener when you are discussing temperature setbacks.

3. In the case of electric water heaters:
   a. Circuit breaker should be turned off prior to adjusting settings
   b. If the water heater contains two heating elements, both heating elements must be adjusted.
   c. The contractor must ensure that the circuit is turned back on upon completion of adjustment.
4. ○*OPTIONAL BEST PRACTICE*○ In the case of natural gas or propane water heaters, temperature settings are not typically identified on the dial. The contractor may mark the original setting, turn down the dial an estimated amount based on original temperature setting, and instruct the household member how to make further adjustments if necessary.
5. Note: Common water heater thermostats are not very accurate and the contractor will have limited ability to make a precise adjustment. It is not feasible to re-measure the outlet water temperature because the water heater will need to purge its existing contents and refill. The contractor must make their best attempt to set the thermostat to the correct lower temperature.

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10. Appliances

10.1 General Requirements

10.1.1 Material Requirements

All replacement appliances must be ENERGY STAR ® rated except where noted otherwise.

10.1.2 Installation Requirements

1. All replacement appliances must be installed in compliance with manufacturer's installation specifications.
2. Circuit must be safe after installation.

10.2 Additional Requirements Specific to Dryers

10.2.1 Material Requirements

Dryers that are installed through the program must have a sensor that turns off the dryer automatically when clothes are dry.

10.2.2 Installation Requirements

1. The contractor must evaluate the appropriateness of installation:
    a. Location must allow dryer to be vented to the outside without an extensive dryer duct run.
    b. Natural gas must be available to the location where the dryer is to be replaced.
    c. If the pre-existing dryer is electric, the proposed dryer is propane or natural gas, and there are indications that the house is very tight, adding another combustion appliance may not be advisable. In these cases, the contractor must contact the Program Implementer and discuss the option of blower-door testing to ensure safe installation.
2. Dryer installations must include metallic vent ducts (not vinyl).
3. CAZ and gas leak testing must be completed as required by BPI.

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10.3 Other Electric Reduction Measures

In evaluating options for reducing energy use, it is important that the contractor review household usage patterns to identify additional measures. Some examples are as follows:

1. Opportunity to reduce or eliminate electric space heater use by enhancing or repairing the main heating system's distribution system, air sealing or insulating.

2. Programmable thermostats may be installed in homes heated by electricity. See Section 7.1 for further information.
3. A motion sensor light or time for a high-wattage outdoor light that is currently left on all night.
4. Repairs to well pump systems that cycle continuously due to a leak in the system.
5. Insulation and air sealing to reduce or eliminate use of roof heat tape installed to counteract ice damming.
6. Leaking hot water pipes or faucets.
7. Provide timers for TVs or other appliances left to run continuously.

APPENDIX A: Example Pictures

Top Plates Sealed with 1-Part Foam (Click to Return to Section)

Dropped Soffit Sealed with XPS and 1-Part Foam (Click to Return to Section)

Knee Wall Transition Sealed with XPS and 1-Part Foam (Click to Return to Section)

Attic Hatch Weather-stripped (Click to Return to Section)

Pull Down Staircase Enclosure (Click to Return to Section)

Chimney in Attic Sealed with High-Temp Caulk and Metal Flashing (Click to Return to Section)

Bath Fan Sealed with 1-Part Foam (Click to Return to Section)

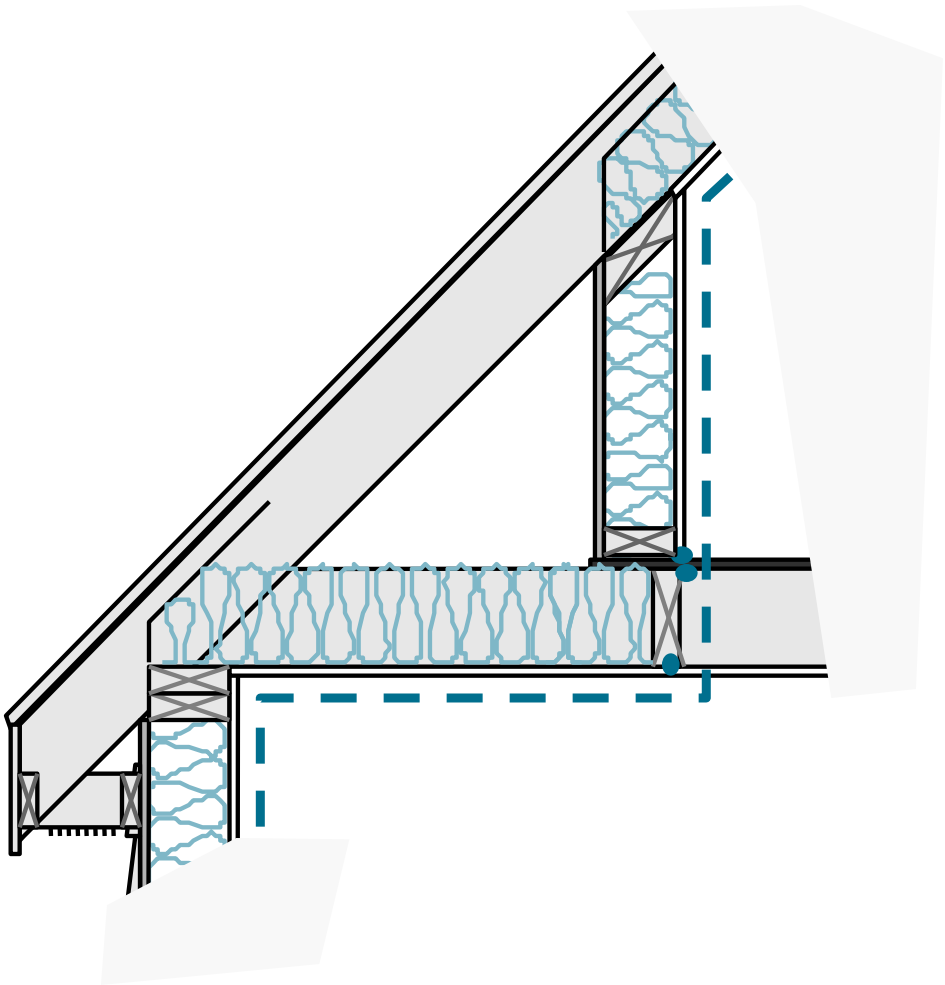
Open Attic Chase Sealed with Sheet Metal, Duct Mastic and Acoustical Sealant (Click to Return to Section)

Plumbing Wet Wall Sealed with Fiberglass Batt Backer and 1-Part Foam
(Click to Return to Section)

Ceiling Height Transition Wall Sealed with 2-Part Foam (Click to Return to Section)

Chimney in Basement Sealed with Sheet Metal and High-Temp Caulk (Click to Return to Section)

Kneewall Attic Air Sealed Along Rafter Line (attic space within thermal/pressure boundary) (Click to Return to Section)



Kneewall Attic Diagram for Air Sealing Along Wall/Floor Framing (attic space outside thermal/pressure boundary)

(Click to Return to Section)

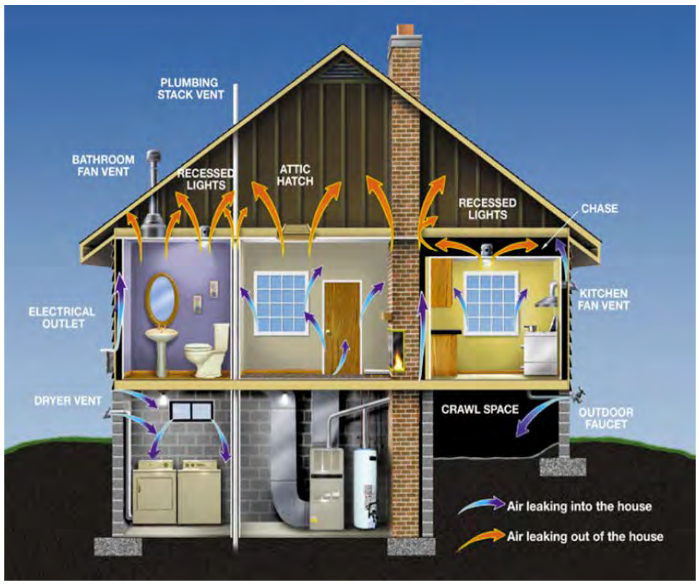
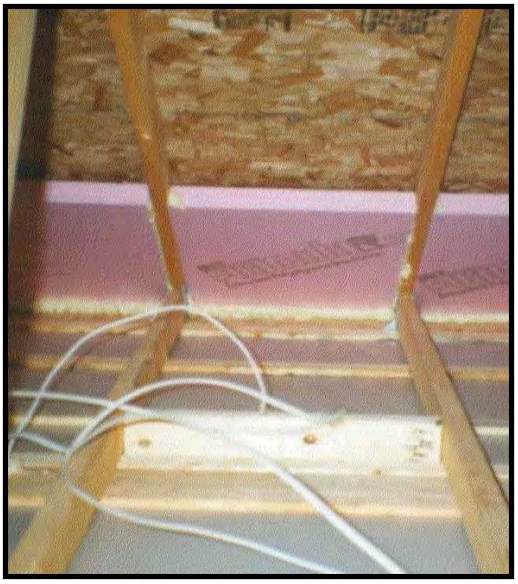


Diagram of General Air Leakage Paths (Click to Return to Section)


Insulation Wind Wash Baffle
(Click to Return to Section)

Loose Fill Attic Insulation Evenly Installed (Click to Return to Section)

Attic Insulation Dammed Away from Chimney (Click to Return to Section)

Smoke Testing Dense pack (Click to Return to Section)

Crawlspace Ground Cover (Click to Return to Section)

Rim Joist Insulated (and Sealed to Sill) with Foam Board and 1-Part Foam
(Click to Return to Section)

Metal Ductwork Sealed with Mastic (Click to Return to Section)

Air Handler Sealed with Silicone Caulk (Click to Return to Section)

Sealed Vapor Retarder on Attic Ductwork (Click to Return to Section)

In-line Exhaust Fan Ventilation (Click to Return to Section)

APPENDIX B: Spray-applied Polyurethane Foam (SPF)

B.1 Appendix Scope

1. This appendix applies to plural component polyurethane products.
2. High Pressure Polyurethane Foam systems are systems where the materials are generally delivered in unpressurized containers. Application equipment includes generators, compressors, pumps, heaters, heated hoses, and other associated equipment. Pressures used are usually between 800 and 1200 PSI on the hoses.
3. Low Pressure Polyurethane foam systems are application systems delivered in pressurized containers that require ambient conditions be acceptable for installation. There is no apparatus on these systems to heat them. The only auxiliary apparatus needed is a small non-heated hose and/or an application gun. Pressure on materials is below 30 psi.

B.2 General Requirements

1. All materials, products and equipment must be delivered, handled, stored, fabricated, assembled, installed and operated in accordance with the manufacturer's printed instructions.
2. Installation must comply with all federal, state and municipal codes, laws and regulations for thermal insulation and vapor retarders.
3. The contractor must maintain a copy of Safety Data Sheets (SDS), technical data sheet, and jobsite conditions log on file and at the job site at all times and make available upon request to the Customer, Project Inspector, Program Implementer, or NYSERDA.
4. Prior to initiating the project, the contractor must provide customers with access to accurate information regarding spray foam installation, including SDS, information on requirements to vacate premises, odors related to the work.
5. The contractor must list the names and makes of the specific products used on invoices to the customer contract or invoice and all invoices to NYSERDA programs.
6. Saving estimates must be based on the rated R-value for the specific product used.
7. The rigs used to process high pressure foam systems must be self-powered. Using power from the client property by opening a client electrical panel and inserting a circuit breaker or connecting wires to an existing circuit breaker is strictly prohibited.
8. The jobsite conditions log must contain the following:
    a. Contractor name and contact information
    b. Names of crew members on site
    c. Material manufacturer name and contact information
    d. Specific product name and manufacturer lot number
    e. Processing equipment type, pump size, gun type, tip size

f. Quantity of materials used measured in strokes or pounds
g. The following data must be collected at the start of foam ops, any time a drum is changed out, and at the completion of foam ops:
    - Ambient temperature, RH, Dew Point
    - Surface Temperature, % Moisture
    - Acceptable ranges for these measurements as per the product installed
    - Measured ventilation rate in confined spaces where applicable

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B.3 Health and Safety Requirements

1. Contractors must ensure that occupants and staff are informed of, and follow, manufacturer's requirements, regarding: who may be present during spraying; how far away occupants and pets must be kept during work; and when occupants and pets can re-enter premises.
2. Contractors must ensure that staff on-site during spraying are provided with and use proper equipment such as goggles, respirators, clothes and gloves, as required by manufacturer.
3. Temporary space heating required during foaming operations must be provided by vented or non-open flame sources. Smoking must be prohibited.
4. During foaming operations, two air changes per hour of ventilation must be maintained for installation personnel, and the installer must otherwise ensure an acceptable level of indoor air quality as per OSHA standards.

○*OPTIONAL BEST PRACTICE*○ It is recommended that all staff involved in application obtain training from the suppliers of SPF to help ensure installation quality and use of all equipment as well as safe handling, use, and disposal of all chemicals used in the process. The Spray Polyurethane Foam Alliance (SPFA) offers additional training and accreditation for SPF applications. The American Chemistry Council website www.spraypolyurethanefoam.org offers two certifications, one for Low Pressure Polyurethane Foam Systems, and another for High Pressure Polyurethane Foam Systems. These courses may be used for BPI CEU credits.

B.4 Materials

B.4.1 Protection of Materials

1. Contractors must follow manufacturer's guides regarding transportation and storage of materials.
2. Insulation materials must be protected from physical damage and from becoming wet, soiled, or covered with ice or snow between phases of the work or after the completed

installation. Materials must not be exposed to sunlight, except to the extent necessary for period of installation and concealment.

3. Insulation materials must be protected against ignition at all times.
4. Materials must be protected from freezing or extreme heat. Chemical components must be maintained at a minimum of 60 degrees while stored on site.

B.4.2 Specifications

1. Polyurethane foam product to be a two-component mix for producing high quality rigid insulation.
2. All products must be labeled with Model Building Code approvals and ICC ESR, UL, or FM listings where required.
3. Surface-burning characteristics: Maximum flame-spread and smoke developed indices of 25 and smoke <450, respectively, when tested in accordance with ASTM E-84 or UL 723.
4. ASTM C-518 Aged R Value, meet or exceed as follows:
   - Low Pressure Closed Cell SPF: R-5 per inch of thickness
   - High Pressure Closed Cell SPF: R-6 per inch of thickness
   - High Pressure Open Cell SPF: R-3.5 per inch of thickness

5. ASTM 1622 Core Density within the range of:
   ii. Closed Cell SPF: 1.7 to 2.2 pounds per cubic foot
   iii. Open Cell SPF: 0.5 to 0.7 pounds per cubic foot

6. ASTM D6226 Closed-cell content: 90 percent minimum.

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B.5 Fire Protection

1. In situations where the foam insulation is installed in a space that is difficult to access, is segregated from other interstitial or occupied space by a prescriptive thermal barrier, and has no floor in it, but where there may exist an HVAC device, wiring, piping, or ductwork, it is a “space accessible only to service mechanical devices”. Foamed plastic in interior applications in these spaces must be protected by an approved IGNITION barrier, as follows:

   a. Prescriptive ignition barriers including, but are not limited to, the following:
      - 1 ½ -inch-thick (38 mm) mineral fiber insulation;
      - ¼ -inch-thick (6.4 mm) wood structural panels
      - 3/8-inch (9.5 mm) particleboard;

- ¼ -inch (6.4 mm) hardboard;
- 3/8-inch (9.5 mm) gypsum board
- Corrosion-resistant steel having a base metal thickness of 0.016 inch (0.406 mm).

b. Other materials that can stop ignition as well as or better than the prescriptive materials listed above and tested in accordance with International Code Council Evaluation Services Acceptance Criteria 377 Appendix X (ICC-ES AC 377 Appendix X). In cases where ICC-ES AC 377 Appendix X is used, proper ICC ESR documentation is required.

2. A thermal barrier is not required for the installation of foam on a sill plate/rim joist area, provided that the maximum thickness of the foam is 3 ¼ inches.
3. In all other cases, including all areas that could be used for storage, foam must be covered by a THERMAL Barrier, as follows:
    - ½ inch thick Sheetrock.
    - Other materials that will delay the surface of foam from experiencing surface temperature increase equal to or more than 250°F in 15 minutes AND are proven to remain in place under fire conditions. The alternate products must have ICC ES reports proving that they are acceptable alternate thermal barriers for the specific foam product installed.

B.6 Preparation

1. Prior to beginning work, the contractor must examine all substrates and conditions for compliance with installation requirements to determine if conditions affecting performance of insulation are satisfactory. Examine all substrates for soundness, such as tightness of connections, crumbling or looseness of surface, level tolerance of surface, and other conditions which would affect the installation. Joints in insulation, sheathing, and other substrate components must be solidly supported and fastened.
2. The contractor must clear all cracks, spaces, voids, cavities, and openings to be sealed of debris, moisture, ice, and materials prior to the commencement of foaming operations. Clean substrates of substances harmful to insulations, including moisture, dirt, or un-bonded coatings that will affect the insulation or prevent an airtight seal. Remove projections which might puncture vapor retarders.
3. To prevent foam leakage, all joints must be sealed and openings in the sheathing closed off in the areas to be sprayed.
4. Wiring, conduit, boxes, etc. must be braced or fastened securely so that expansion of foam sealant must not cause wiring to "float." Wiring must be located within the wall/ceiling cavity to be foamed so as to prevent damage to wiring during the trimming and/or planing of the foam. Ensure that all electrical connections are made in a box, and that all boxes

have covers securely screwed shut. Non-metallic electrical wiring in the areas to be sprayed must be Type NMB or NMC-B.

5. Areas, belongings and gas and water pipes to be protected must be masked from over-spray. ○*OPTIONAL BEST PRACTICE*○ Wrap copper water lines in pipe insulation before spraying around them because hot water makes the pipes move. When they move undesirable sounds may occur if foam is applied directly to them.
6. The contractor must not proceed with installation until unsatisfactory conditions have been corrected in a manner acceptable to the customer, the installer and the Program Implementer.

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B.7 Installation

1. The component ratio must be maintained and the components of the polyurethane chemicals mixed in accordance with the manufacturer's product specifications and processing instructions in order to achieve the desired density and physical properties. Product should be test-sprayed off target and must be periodically checked to be sure it is on ratio, has correct “froth” state, and has proper density.
2. The component temperatures must be maintained in accordance with the manufacturer's product specifications and processing instructions to achieve the desired mix, density, and physical properties. For example, 2-part foam in canisters typically must be at or above 70° F for 24 hours before and throughout use of the product.
3. Continuity of the air/vapor barrier created by the spray-applied polyurethane foam insulation system must be maintained at all intersections of the building assemblies (floor to foundations, walls to floors, walls to roofs, etc.), across expansion and control joints, and around elements penetrating through the building envelope (doors, windows, louvers, vents, etc.) by sealing as per Program air sealing and insulation installation requirements.
4. Insulation must be applied onto the substrate to a minimum or average cured depth/thickness in consecutive passes of no more than the maximum lift thickness recommended by the manufacturer. Thickness specifications must be at invoiced levels. Areas determined to be less than this tolerance must be re-coated to the minimum and areas greater than this tolerance, if extending beyond the framing that will be enclosed, must be trimmed to the maximum specified thickness.
5. The ambient and substrate temperatures at the time of application must be at or above the minimum required by the manufacturer before and during the foam installation. The manufacturer’s minimum cure temperature must be maintained for the required period after the foam has been installed. For example, foam from 2-part foam canisters must typically be applied to surfaces at or above 50° F. No foam may be applied if the surface temperature at the time of application is within 5 degrees of dew point.

6. In colder climates (IECC zones 5&6) the SPF used must be installed at a thickness of at least Class II vapor retarder or have at least Class II vapor retarder coating or covering in direct contact with the inside surface of the SPF.
7. Foam must be trimmed flush with the inside surfaces. Foam must be removed from finished surfaces such as window glass, casings, and gypsum board.
8. The contractor must ensure that any access panels or openings required for maintenance remain accessible.

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APPENDIX C: Health and Safety: Additional Worker Considerations When Working in Attics

Extreme Heat

During hot sunny periods the temperature in the attic can climb to 120 degrees, and as high as 150+ degrees. During these periods care must be taken to ensure worker health. During off times workers must be sure to drink plenty of fluids and be assessed for signs of heat related illnesses. ○*OPTIONAL BEST PRACTICE*○ Limit worker limit in the attic to 15 minutes on and 15 minutes off.

Inadequate Light

Adequate lighting must be provided and care must be taken to avoid potential dangerous situations.

Hazardous Materials

Asbestos, molds, and animal feces are all possible materials found in an attic.

Electric Shock Hazard

Exposed wires, uncovered boxes, perspiration caused by extreme heat and exertion can combine to create a dangerous situation.

Falling Hazard

1. Attic level changes or loose debris can result in falling in the attic. Care must be taken when moving about the attic.
2. The contractor must ensure that workers are provided with adequate fall protection for open-joist attic work.

Confined Spaces

Some attics may have low head room or severely limited access. The contractor must follow OSHA safety regulations when attic spaces qualify as confined spaces.

Residential Single Family

Quality Assurance Policies and Procedures

January 2019

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Residential Single Family
Quality Policies and Procedures

Quality Overview

As a public benefit corporation, NYSERDA strives to deliver the most effective residential energy efficiency Programs possible and to protect rate payer money. To achieve these goals, the Residential programs contain a quality component at no cost to the consumer. The Quality process is used to verify that projects in the Program meet all requirements while maintaining healthy and safe living conditions for the occupants and serves as a learning and teaching tool supporting the application of sound building science principles and the delivery of highest quality services to the homeowners of New York State.

Quality Compliance

Quality Assurance Inspections by 3rd Party

Quality Assurance (QA) post-completion field inspections are performed by an independent third-party to verify compliance with program requirements, building performance standards, customer satisfaction and to ensure homes are left in a healthy and safe condition. Deficiencies identified during the field inspection may be required by NYSERDA to be corrected with all remediation activity documented via the corrective action resolution process.

No cost to Homeowner (standard)

To maintain high standards of performance, NYSERDA randomly selects recently completed projects for post-completion field inspection at no cost to the homeowner. Homeowners may also request inspections at any time. These inspections are performed by an independent building science expert paid by NYSERDA. Participating contractors are encouraged to be present to receive feedback firsthand.

Sampling Protocol

Projects completed through the Program are subject to post-completion field inspection by NYSERDA or its Quality designee. Although projects selected for inspection generally occur within 30 days and generally not more than 90 days from the date of completion, NYSERDA reserves the right to inspect projects at any time should specific concerns be brought to our attention. The QA Contractor shall not regularly schedule QA Field inspections later than ninety (90) days from project completion unless in response to special circumstances.

Market Rate:

It is anticipated that quality field inspections will be provided to 15% of completed market rate projects on average across the program. A rational sampling approach allows Contractors with high quality scores and who prove to have well defined and effective internal quality assurance and quality control practices to benefit from a lower inspection rate. The Program average inspection rate will not be reduced to less than 5%.

Low and Moderate Income (LMI):

It is anticipated that quality inspections will be provided at a 15% inspection rate for Low Income home performance services and moderate-income home performance services, and a 10% inspection rate for low-income, electric reduction only services. Contractors with high quality scores and who prove to have well defined and effective internal quality assurance and quality control practices may benefit from a lower inspection rate. The Program average inspection rate will not be reduced to less than 5%.

Targeted Inspection Rate by Production Volume and Performance

The targeted rational sampling approach is based on the overall quality performance using the 1 to 5 scoring method, where 3 is the minimum quality requirement versus the average annual production volume of the Participating Contractor. An example of this sampling approach is presented below.

NYSERDA will determine the specific sampling rate and provide notice to the Quality Services Provider as necessary to achieve desired Program objectives. The sampling rates may be specified uniquely for whole-house "Home Performance" projects versus Electric Reduction (ER-Only) projects such as in the example outlined below.

ER-Only Projects

- Large Production/Good Performance = 2%
- Large Production/Bad Performance or high variation = 5%
- Medium Production/Good Performance = 10%
- Medium Production/Bad Performance w/high variation or negative correlation coefficient = 30%
- Small Production/Good Performance = 10%
- Small Production/Bad Performance = 30-100%

Low Income and Moderate Income Home Performance Services

- Large Production/Good Performance = 2%
- Large Production/Bad Performance w/high variation or negative correlation coefficient = 15%
- Medium Production/Good Performance = 15%
- Medium Production/Bad Performance = 30%
- Small Production/Good Performance = 15%
- Small Production/Bad Performance = 30-100%

Table 1: Inspection Rate by Production Volume and Performance

*Annual Production Volume**	*Average Quality Score*		
	< 3	*= 3*	*4 - 5*
Large (More than 300)	Average 5% (up to 15%)	Average 5% (5-15%)	Average 2% (1-5%)
Medium (100 to 300)	Average 30% Up to 100%	Average 12.5% (10-15%)	Average 2% (1-5%)
Small (Less than 100)	Average 30% Up to 100%	Average 12.5% (10-15%)	Average 12.5% (10-15%)

*Production volume definitions subject to change at the discretion of NYSERDA

Target Inspection Rate by Status

Below are the established sampling protocols based on the Participating Contractor's participation status or upon special request from NYSERDA or the homeowner.

Provisional Status:

Newly Participating Contractors are designated as 'Provisional' status and must complete a minimum of three projects meeting the minimum standard Quality requirements. These Quality requirements must be met by the sixth inspected project or within a period of one year from the date of completion of the first completed project, whichever comes first. Provisional contractors are strongly encouraged to attend at least the first three (3) field inspections as it provides an opportunity to learn first-hand the Program quality expectations and field inspection process.

Full Status:

The target inspection rate for Full status contractors is 15% of completed projects, with a minimum of one (1) inspection per quarter. NYSERDA reserves the right to adjust the field inspection rate based on the individual performance of each contractor.

Special Status Request:

Projects may be selected for inspection at the request of program customers (home owners) or NYSERDA within one year of signing the Project Incentives and Financing Eligibility Summary Report. All field inspections conducted beyond 90 days from signing this form will not be scored and will be limited to specific concerns, and may include, but not be limited to: (a) health and safety testing such as gas leaks, combustion appliance drafting, and CO measurement, (b) verifying that the contracted energy conservation measures are installed, (c) verifying that the measures on the contract are present and have been installed correctly.

Probationary Status:

Up to 100% of projects completed while on Probationary status may be subject to field inspections, at the sole discretion of NYSERDA. Inspection findings will be used by the Program Technical Services team as one of many factors in determining a contractor's future participation status.

Suspended Status:

Up to 100% of projects completed while on a Suspended status may be subject to field inspections, at the sole discretion of NYSERDA. Inspection findings will be used by the Program Technical Services team as one of many factors in determining a contractor's future participation status.

Terminated Status:

Depending on the circumstances of termination, NYSERDA may at its sole discretion, conduct field inspections on a percentage of projects as deemed appropriate.

Scheduling Field Inspections

Setting up the Customer Call List

The Quality Services Provider is responsible for scheduling field inspections of completed projects within the assigned region(s) using the QACSS. The Quality Services Provider shall strive to conduct field inspections within thirty (30) days of project completion and to meet the specified average Program inspection percentage rate, and rational sampling plan for individual contractors as stipulated by NYSERDA. The QA Contractor shall not regularly schedule Field Inspections later than ninety (90) days from project completion unless in response to special circumstances.

Obtain Project Data Prior to Conducting Field Inspections

Once sites are selected and inspections are scheduled using the QACSS, the Scheduler shall obtain the complete project file from the Program Portal and upload required information to the QACSS to support the retrieval, review and field use of project files by the Field Inspectors.

Contractor Invitation to Field Inspection

Customers contacted by NYSERDA's Quality Service Provider to schedule a field inspection will have the option of allowing the Participating Contractor to be present at the time of inspection.

Customers are encouraged to allow the Participating Contractor to attend so that any questions can be answered, and minor fixes may be made on site. If the customer agrees, the Participating Contractor shall be notified of the upcoming inspection via email and shall RSVP via the QACSS Portal. Inspections shall be scheduled at least two weeks in advance and no less than Five (5) business days.

Customers have the right to request that the Participating Contractor not attend the field inspection. In these situations, the Participating Contractor will not be notified of the scheduled inspection but will receive the result of the inspection within five (5) business days after inspection.

Field Inspection Procedures

Field inspection procedures are generally outlined below and are used to assess the performance of participating contractors and their level of compliance with technical standards and programmatic rules. To view a detailed list of all field inspection check points, please refer to the ***Residential Single Family Field Inspection Checklist***.

Field Inspection Types

There are three "Inspection Types" outlined by Project Type and Market Sector in Table 2 below. The Inspection Type, "Field Inspection: Comprehensive" includes all elements described in the "On-site Field Inspection Protocol" below, whereas the Inspection Type, "Field Inspection: Electric Reduction" includes only those elements required for low-income projects.

Table 2: Inspection Type by Project and Market Sector

Project Type	*Market Sector*	*Inspection Type*
Comprehensive or Single Measure requiring blower door testing	LMI and Market	Field Inspection: Comprehensive
Electric Reduction Measures	LMI	Field Inspection: Electric Reduction
Special requests by NYSERDA	LMI and Market	Non-Standard Inspection

Preparation for Field Inspection and Homeowner Orientation

The Quality Services Provider's Field Inspector shall conduct one of three inspection types based on the Project Type and Market Sector as outlined in Table 2 above. Each inspection type requires the following:

- An introduction to the customer, including the QA Field Inspector's name and company;
- A description of the inspection and testing procedures;
- An overview of the Residential Program and answers to customer questions; and
- Ask customer questions about any identified project concerns after having reviewed project documentation.
- Determine whether health and safety issues were identified by the Participating Contractor audit and assess whether the approved Participating Contractor work scope addressed those issues.
- Determine whether the most cost-effective energy efficiency measures were recommended by the Contractor, whether the approved and contracted measures were installed and whether the installed measures meet Program standards.

RES SF (1-4 units) Field Inspection: Comprehensive (Whole House)

Application: LMI and Market Rate Comprehensive Whole House projects

- Complete exterior visual inspection (i.e., chimneys, ventilation, roofing, siding, windows, foundation, obstructions, and landscaping);
- Complete interior inspection (*i.e.*, visual inspection, place home under winter conditions, test CO levels, and set up blower door);
- Complete basement inspection (i.e., visual inspections of condition, insulation levels and distribution system, measure CO in combustion appliance zone [CAZ], gas leak detection, combustion efficiency testing, and worst-case depressurization);
- Complete attic inspection;
- Conduct blower door test;
- Complete building shell inspection with thermal imaging infrared scan required for all times when temperature delta allows for good imaging results (i.e. insulation levels in walls, attics, floors, windows, and doors);
- Verify wall insulation installation using a combination of the following:
  - Probing outlets or drilling holes (required on all projects);
  - Pulling and checking under siding;
  - Borescope
  - Infrared scans (conditions permitting); and
  - Core sampling to verify density as directed by NYSERDA.
- Appliance and lighting inspections to determine if the recommended measures were the most cost-effective; and
- Ensure all approved energy conservation measures are installed, operating, and in compliance with building efficiency standards and Program requirements.

RES SF (1-4 units) Field Inspection: Comprehensive (Single Measure w/Blower Door)

Application: LMI and Market Rate Single-measure projects with Air Sealing and Insulation

- Ensure approved energy efficiency measure(s) were installed, functioning properly, and in compliance with technical/manufacturer standards, applicable BPI building science standards and Program requirements;
- Conduct blower door test and inspect for air leakage in the structure;

- Complete building shell inspection with thermal imaging infrared scan required at all times when temperature delta allows for good imaging results (i.e. insulation levels in walls, attics, floors, windows, and doors);
- Verify wall insulation installation using a combination of the following:
  - Probing outlets or drilling holes (required on all projects);
  - Pulling and checking under siding;
  - Infrared scans (conditions permitting); and
  - Core sampling to verify density as directed by NYSERDA.

RES SF (1-4 units) Field Inspection: Electric Reduction

Application: LMI Electric Reduction projects

- Appliance and lighting inspections to determine if the recommended measures were the most cost-effective; and
- Determine whether all energy efficiency and conservation measures approved by the Program were installed, that they operate properly and in compliance with technical/manufacturer standards, applicable BPI building science standards and Program requirements.

RES SF (1-4 units) Desk Review: Measure Verification (Non-standard Inspection)

Application: LMI and Market Rate projects

- Participating Contractor will provide equipment technical data sheet and nameplate photo for the installed energy conservation measure (e.g. appliance, heating equipment, water heater, etc.).
- Desk Reviewer will verify installation with the customer, including total cost and homeowner cost-share;
- Complete a customer survey through QACSS during verification contact with customer.

RES SF QACSS Scoring System

QACSS Scoring Algorithm

Each field inspection will receive a score from 1 to 5, using a five point scoring system, where a score of three (3) represents the minimum quality requirements for the Program.

Overall QA Inspection Scoring Criteria

Each inspection will receive a score, on a five point scale. This score is an indicator of the overall quality and compliance with Program requirements, based on the number and type of non-conformances observed. Specific criteria are given in Table 3, for scores of one (1), three (3), and five (5).

Table 3: QA Inspection Scoring Criteria

Defect Category	*Number of Defects by Defect Category (Effect on QA Score)*		
	Score of 5	*Score of 3*	*Score of 1*
Incidental	Up to 3	Allowed	Allowed
Minor	0	Up to 3	Allowed
Major	0	0	2 or more
Critical	0	0	1 or more

In calculating the score, the highest level of observed non-conformance is the most important factor. For example, projects with two (2) major non-conformances would receive a score of one (1), even if it had no minor or incidental non-conformances. Projects with any critical non-conformance will automatically receive a score of one (1). A project with four (4) minor non-conformances, and no others, would receive a score of two (2), and if there are additionally incidental non-conformances, would receive a score of one (1). Similarly, a project with only one (1) or two (2) minor non-conformances would receive a score of four (4), since it does not quite meet the requirements to get a five (5) but exceeds the thresholds to achieve a score of three (3). The final score, however, will be informed by the field inspector, who will have the latitude, if necessary, to recommend a higher or lower score, based on a holistic view of the project.

Score of 5: Project Meets All Program Criteria

A project receiving a score of five (5) is generally well-installed, with no noticeable defects in assessment quality, work quality, health & safety and overall Program compliance. These projects are examples of best practices in RES SF installation.

Score of 3: Project Meets Key Program Requirements

A project achieving a score of three (3) meets basic program requirements but may require some modification to be considered fully compliant.

Score of 1: Project Does Not Meet Program Requirements

Projects receiving a score of one (1) have failed to meet key Program requirements and are not expected to safely deliver mmBTU and carbon benefits aligned with the statement of work and Program records. These projects may require urgent attention to address safety concerns.

Field Data Collection

Assessment Quality

The Assessment Quality component covers the quality of the contractor's submitted assessment documentation in comparison to the on-site conditions verified by the Quality Inspector, summarized in the following table. This includes general data collection about the home, measurements, existing conditions and recommendations.

Table 4: Assessment Quality

Rating	*Description*
Pass	Conditions were recorded, measurements were performed, and recommendations were made correctly.
Conditional Pass	Conditions were recorded, measurements performed, and recommendations were made but minor issues were found that should be communicated to the contractor.
Fail	Conditions were recorded, measurements performed, and recommendations were made poorly or not at all.
Not Inspected	Conditions, measurement or recommendations could not be inspected due to site conditions and therefore is not included in point calculations.
Not Applicable	Conditions, measurement or recommendation was not applicable to the site, and therefore is not included in the point calculations.

Work Quality

The Work Quality component represents the largest portion of a project score as it is paramount to achieving predicted energy savings, has a large impact on customer satisfaction and is integral to a positive evaluation of the overall program. Each Energy Efficiency Measure (EEM) installed by a contractor has a grouping of required tasks to properly install the EEM. The quality of work is established through a field inspection to evaluate installed measures against a set of clearly defined tasks.

Table 5: Work Quality Ratings	
Rating	*Description*
Pass	Work was performed correctly.
Conditional Pass	Work was performed but minor issues were found that should be communicated to the contractor.
*Fail	Work was performed poorly or was not performed. Return visit or billing adjustment will almost always be required. *Note: Measures corrected by the Participating Contractor during the inspection will be documented and assessed at the condition first found by the Quality Inspector.
Not Inspected	Work that could not be inspected due to site conditions and therefore is not included in point calculations.
Not Applicable	This task was not applicable to the site, and therefore is not included in the point calculations.

Some tasks have been identified as being critical to the successful completion of that measure. When one of these tasks is rated as fail, it will result in a significant reduction in the scoring.

Health and Safety

The Health & Safety Quality component covers the quality of the contractor's submitted Health & Safety (H&S) documentation in comparison to the on-site conditions verified by the Quality Inspector. This includes an assessment of the combustion appliance safety testing data and a visual inspection of the home to determine potential H&S conditions were treated properly. A full list of the inspection points is included in the Field Inspection Checklist.

Table 6: Health & Safety Quality Ratings	
Rating	*Description*
Pass	Combustion Safety testing results are within Program and BPI testing limits and all potential H&S hazards were properly addressed.
Conditional Pass	Combustion Safety testing results indicates a recommendation to service an appliance should have been made but no recommendation was made.
*Fail	Combustion Safety testing results are outside of Program or BPI testing limits and one or more H&S hazards were not properly addressed. *Note: Measures corrected by the Participating Contractor during the inspection will be documented and assessed at the condition first found by the Quality Inspector.
Not Inspected	Work that could not be inspected due to site conditions and therefore is not included in point calculations.
Not Applicable	This task was not applicable to the site, and therefore is not included in the point calculations.

Handling Non-Conformance and Corrective Action

Projects that have non-conformances related to critical (Health & Safety) or major (Project Performance) attributes will automatically fail. Projects that have only non-conformances to minor or incidental attributes may pass or fail based upon their overall merit.

All non-conformances are expected to be addressed and corrected with regard to future work conducted in the Program. Acknowledgement and plans for preventing future problems may be requested by NYSERDA.

While some non-conformances cannot be corrected post installation, others can be remedied through corrective action to the documentation, incentive applied to the project or remediation of the project or certain energy conservation measures that have not met Program requirements.

When corrective action is required by NYSERDA, it will be indicated as such on the Inspection Report issued via email from the QACSS to the Participating Contractor. Failed Inspection Reports must be remediated within 30 days or disputed within 15 days of the issue date.

Sufficient evidence of the remediation must be provided to NYSERDA to document the completion of the required corrective action and resolution approved by NYSERDA within 30 calendar days. NYSERDA may at its option conduct a field verification of the remediated installation.

NYSERDA retains the right to provide a copy of the Inspection Report or specific information from the field inspection directly to the homeowner, all authorities having local jurisdiction or other stakeholder based upon health, safety and compliance concerns.

NYSERDA may, at NYSERDA's discretion, communicate by voice and/or written format with any customer (homeowner) with respect to any matter relevant to a proposed or installed project. Such communications may be in reply to an inquiry from a customer or at NYSERDA's initiation.

Reporting

Inspection Report

The Inspection Report all non-conformances that were identified during the field inspection along with the overall project score and whether this result passes or fails Program requirements.

Corrective Action Report

The Corrective Action Report (CAR) lists all non-conformances where NYSERDA requires remediation and response from the Participating Contractor. Requirements as to whether photo evidence of the completed correction are stipulated in the CAR.

Performance Reports

Each Participating Contractor shall have the ability to access all field inspection results through the QACSS as well as having access to the following formatted reports.

QA Performance Summary Report:

This report includes the total number of projects completed in the previous month, quarter and 12 months; the total number of field inspections during the previous month, quarter and 12 months; and the average quality score, and component scores for Assessment Quality, Work Quality, and Health & Safety Quality for the previous 12 months.

QA Scheduling Report:

This report includes a count of completed projects, inspections, contractor attendance at inspections, and the number of customers who refused an inspection.

QA Detail Report:

This report includes a list of all completed field inspections over designated period and the respective score, and summary of all measure/task deficiencies.

Pareto Analysis:

This statistical technique to guide decision-making quantifies the findings of a specific deficiency divided by the cumulative sum of all deficiencies found during field inspections over a defined period. The cumulative percent of each deficiency is tabulated to prioritize corrective action such that the priority reflects the deficiency with the greatest cumulative impact. It's based on the Pareto Principle (also known as the 80/20 Rule), the idea that 80 percent of problems may be caused by as few as 20 percent of causes.

Defect Frequency Analysis:

This statistical technique to guide decision-making quantifies the count of a specific deficiency divided by the sum of occurrence where the measure was included in the statement of work over a defined period. The relative percentage of times a defect is found as function of time a measure is implemented is tabulated to prioritize corrective action within certain measure categories which often relate to specific crew assignments.

Category	Measure	QuestionID	TaskRequirement	Defect Categor	Reference
2021 Appliances	Dehumidifier	Q000000844	Contracted unit installed per manufacturer requirements	Major	Contract/EmCalc, Manufacturer
2021 Appliances	Fridge and Freezer	Q000000845	Fridge and Freezer - contracted unit installed per manufacturer requirements	Major	Contract/EmCalc
2021 Assessment Quality	Data Collection	Q000000847	Customer signatures provided by contractor are authentic, the customer is certain they signed the document.	Major	Program Requirement
2021 Assessment Quality	Data Collection	Q000000848	Heating system nameplate efficiency and age of unit matches contractor`s documented numbers	Minor	Program Requirement
2021 Assessment Quality	Data Collection	Q000000849	Projects with APwES work scope the customer received the Comprehensive Home Assessment	Incidental	Program Requirement
2021 Assessment Quality	Data Collection	Q000000850	Projects with AHPwES work scope confirm with the customer that the contracted costs for each measure are accurate and do not include work performed for measures not listed. For Assisted and Coordinated projects, verify that the customer incurred out of pocket expenses (unless there was a loan).	Major	Program Requirement
2021 Assessment Quality	Data Collection	Q000000851	Projects with AHPwES work scope the customer received the "So What's Next" brochure, or contractors brochure that outlines the next steps after an energy	Incidental	Program Requirement
2021 Assessment Quality	Recommendations	Q000000852	Smoke detector was proposed in homes not equipped with a smoke detector	Incidental	EmCalc
2021 Assessment Quality	Recommendations	Q000000853	CO detector was proposed in homes not equipped with a CO detector	Critical	EmCalc
2021 Assessment Quality	Recommendations	Q000000854	Air sealing has been recommended where measurable infiltration reduction is achievable and there are no unresolved roadblocks	Incidental	EmCalc
2021 Assessment Quality	Recommendations	Q000000855	Insulation has been recommended where it is cost effective and there are no unresolved roadblocks	Incidental	EmCalc
2021 Assessment Quality	Recommendations	Q000000856	Heating system and/or domestic hot water system have been recommended where the existing system(s) are in poor condition or pose a health risk	Incidental	EmCalc
2021 Assessment Quality	Recommendations	Q000000857	Windows and doors have been evaluated for performance and air sealing, resulting in appropriate recommendations	Incidental	EmCalc
2021 Assessment Quality	Recommendations	Q000000858	Major appliances were recommended for replacement with ENERGY STAR® models where the refrigerator or freezer was manufactured prior to 2000 or other major appliances are not ENERGY STAR®	Incidental	EmCalc
2021 Assessment Quality	Recommendations	Q000000859	Viable direct install/energy reduction measures have been recommended including LED bulbs, low flow shower heads, programmable thermostats, domestic hot water heater pipe insulation and domestic hot water temperature setback.	Incidental	EmCalc
2021 Assessment Quality	Recommendations	Q000000860	Insulating hydronic and steam heating system pipes in unconditioned spaces was recommended unless this measure could cause water pipes to freeze	Incidental	EmCalc
2021 Direct Install	CO & Smoke Detector	Q000000862	Contracted, CO, smoke or combination CO/smoke detector(s) have been installed as contracted	Critical	Contract/EmCalc
2021 Direct Install	CO & Smoke Detector	Q000000863	CO, Smoke or combination CO/smoke detector installed per manufacturer specifications	Incidental	Manufacturer specifications
2021 Direct Install	CO & Smoke Detector	Q000000864	CO, Smoke or combination CO/smoke detector powered by battery with 10 year service life	Incidental	Program requirement
2021 Direct Install	Hot Water Temperature Setback	Q000000869	Hot water temperature is set for 120 degrees F	Incidental	Program requirement
2021 Direct Install	Hot Water Temperature Setback	Q000000870	Homeowner has been instructed how to set temperature	Incidental	Program requirement
2021 Direct Install	LEDs	Q000000871	Contracted quantity of LEDs have been installed	Major	Contract/EmCalc
2021 Direct Install	LEDs	Q000000872	Bulbs are Energy Star rated	Incidental	Program requirement
2021 Direct Install	LEDs	Q000000873	Bulbs installed in areas where they are used 2 hours or more per day	Incidental	Program requirement
2021 Direct Install	Low Flow Showerhead	Q000000874	Contracted quantity of low flow shower heads installed	Major	Contract/EmCalc
2021 Direct Install	Low Flow Showerhead	Q000000875	Showerhead flow rate meets program requirements (2.5 GPM max)	Incidental	Program requirement - EmPower NY ER measure criteria
2021 Direct Install	Low Flow Showerhead	Q000000876	Connections are leak free	Incidental	Program requirement
2021 Direct Install	Pipe Insulation	Q000000865	Contracted quantity of insulation installed on hot water piping	Major	Contract/EmCalc
2021 Direct Install	Pipe Insulation	Q000000866	Insulation has required clearance from heat sources	Minor	Program requirement - EmPower NY ER measure criteria
2021 Direct Install	Pipe Insulation	Q000000867	Pipe insulation is R-3 neoprene or close cell foam	Incidental	Program requirement, NYS RC (N1103.5.3(R403.5.3))
2021 Direct Install	Pipe Insulation	Q000000868	Insulation is neatly mitered, tight fitting around all fittings and fastened securely	Incidental	Program requirement
2021 Direct Install	Programmable Thermostat	Q000000877	Contracted quantity installed	Major	Contract/EmCalc
2021 Direct Install	Programmable Thermostat	Q000000878	Thermostat has been programmed	Incidental	Program requirement
2021 General	General	Q000000880	Project has been cleaned up and construction debris have been removed	Incidental	Program requirement
2021 Health & Safety	Roadblocks	Q000000890	There is no clear evidence the contractor caused significant damage to the property (spray foam insulation blew out a wall, etc.)	Major	Program requirement
2021 Health & Safety	Roadblocks	Q000000891	Blower door depressurization tests were not preformed in homes where there is a risk of PACM becoming airborne and being drawn into the dwelling.	Major	BPI Technical Standards for the Envelope Professional
2021 Health & Safety	Roadblocks	Q000000892	Insulation has not been installed in areas where live knob and tube wiring exists	Major	BPI Technical Standards for the Envelope Professional NREL SWS 4.1001.2
2021 Health & Safety	Roadblocks	Q000000893	Moisture sources have been mitigated through elimination of the source, isolation of the source, or ventilation of the space around the source	Major	BPI Technical Standards for the Envelope Professional
2021 Health & Safety	Roadblocks	Q000000894	Clothes dryers, regardless of fuel type, and bathroom exhaust fans must be vented directly outside using appropriate duct materials	Major	BPI Technical Standards for the Envelope Professional
2021 Health & Safety	Roadblocks	Q000000895	Areas having MLS greater than 10 square feet have not been depressurized	Minor	Program requirement
2021 Health & Safety	Roadblocks	Q000000896	Vapor barrier has been installed on exposed dirt floors using 6 mil polyethylene (minimum) or equivalent. The vapor barrier is sealed along all seams, penetrations and walls. Exceptions made only where access is impossible due to low clearance.	Major	Program Requierment
2021 Health & Safety	Testing Inspection	Q000000882	Gas Leak Testing - Pre-Existing Lines - Indoor ambient air sampled at each floor of the home with a Combustion Gas Detector has a LEL of 0%. When LEL is above 0%, gas leak testing performed on all gas piping and leaks tagged and photo documented.	Minor	Program requirement
2021 Health & Safety	Testing Inspection	Q000000883	Gas Leak Testing - Contractor Installed Lines - Gas leak testing performed on all gas lines and combustion appliances. All gas leaks shall be tagged and photo documented.	Major	ANSI/BPI-1200 Section 7.5
2021 Health & Safety	Testing Inspection	Q000000884	Combustion appliances pass spillage assessment under greatest depressurization achievable	Major	ANSI/BPI-1200 Section 7.9
2021 Health & Safety	Testing Inspection	Q000000885	Combustion appliance CO is below threshold limit under greatest depressurization achievable	Major	ANSI/BPI-1200 Section 7.9.5
2021 Health & Safety	Testing Inspection	Q000000886	Ambient CO throughout the building, including utility rooms, is below 9 ppm	Major	ANSI/BPI-1200 Section 7.3.3
2021 Health & Safety	Testing Inspection	Q000000887	Gas piping system has no open fittings or ends and all valves at unused outlets are plugged or capped	Critical	NYS RC (G2417.6.2)
2021 Health & Safety	Testing Inspection	Q000000888	Oil supply system is leak free	Minor	ANSI/BPI-1200 Section 7.6.1
2021 Health & Safety	Testing Inspection	Q000000889	CAZ and appliance related safety issues including, detached or corroded flue pipes, problems with flue/vent size or pitch, heat exchanger integrity, unvented heaters are not ANSI Z21.11.2 listed.	Critical	ANSI/BPI-1200 Sections 7.8.1.1, 7.8.1.3, 7.8.1.5, 7.8.2.2, 7.8.4
2021 Heating and Cooling	Clean and Tune	Q000000925	Heating appliance cleaned and tuned as contracted	Major	Contract/EmCalc
2021 Heating and Cooling	Ductwork	Q000000915	Duct to duct and duct to equipment connections are mechanically fastened and sealed with appropriate material	Minor	NYS RC (M1601.4.1)

Category	Measure	QuestionID	TaskRequirement	Defect Categor	Reference
2021 Heating and Cooling	Ductwork	Q000000916	Ducts in semi or unconditioned space must be insulated to the minimum R-value	Minor	NYS RC (N1103.3.1)
2021 Heating and Cooling	Ductwork	Q000000917	Contracted ductwork has been installed	Major	Contract/EmCalc
2021 Heating and Cooling	Ductwork	Q000000918	Ducts are supported at the proper intervals	Incidental	NYS RC (M1601.4.4)
2021 Heating and Cooling	Ductwork	Q000000919	Duct return has not been installed in CAZ	Major	
2021 Heating and Cooling	Ductwork	Q000000920	Contracted amount of insulation was installed and meets or exceeds the specified R-value	Major	Contract/EmCalc
2021 Heating and Cooling	Ductwork	Q000000921	Duct sealing in accessible areas was completed as contracted	Minor	Contract/EmCalc
2021 Heating and Cooling	Ductwork	Q000000922	None of the contracted duct sealing was completed	Major	Contract/EmCalc
2021 Heating and Cooling	Ductwork	Q000000923	Duct sealing materials are UL181B or UL181A listed	Incidental	NYS RC (M1601.4.1)
2021 Heating and Cooling	Ductwork	Q000000924	Filter slot cover has been installed as specified	Incidental	BPI Technical Standards for the Heating Professional
2021 Heating and Cooling	Exhaust Fan	Q000000926	Contracted exhaust fan(s) installed	Major	Contract/EmCalc
2021 Heating and Cooling	Exhaust Fan	Q000000927	Exhaust fan and venting installed to manufacturers specifications. The fan vents to the exterior of the structure.	Major	Manufacturer specifications
2021 Heating and Cooling	HVAC Equipment	Q000000898	Contracted equipment was installed and the efficiency rating matches or exceeds the contract	Major	Contract/EmCalc
2021 Heating and Cooling	HVAC Equipment	Q000000899	Air filter is accessible and is not compromised when replaced	Incidental	NYS RC (M1401.2)
2021 Heating and Cooling	HVAC Equipment	Q000000900	Maintenance access is accessible	Minor	NYS RC (M1401.2)
2021 Heating and Cooling	HVAC Equipment	Q000000901	No electrical safety issues	Major	NYS RC (E3705, E3702.11, E4101.4)
2021 Heating and Cooling	HVAC Equipment	Q000000902	Electrical shutoff installed within sight of the appliance	Minor	NYS RC (E4101.5)
2021 Heating and Cooling	HVAC Equipment	Q000000903	Condensate drain is installed properly and discharges with air gap or other approved place of disposal	Major	NYS RC (M1411.3)
2021 Heating and Cooling	HVAC Equipment	Q000000904	Airflow through duct system must meet manufacturer`s specifications to provide the design airflow	Major	Manufacturer specifications
2021 Heating and Cooling	HVAC Equipment	Q000000905	Replaced equipment has been removed from the home when included in the contract	Incidental	Contract/EmCalc
2021 Heating and Cooling	HVAC Equipment	Q000000906	Ancillary equipment related to the installed appliance has been installed as contracted	Incidental	Contract/EmCalc
2021 Heating and Cooling	HVAC Equipment	Q000000907	Equipment has been installed with clearances in accordance with their listing and label	Major	NYS RC (M1402.2, M2001.2)
2021 Heating and Cooling	HVAC Equipment	Q000000908	Vent/flue system is properly sized, pitched and has proper clearance to combustibles	Minor	NYS RC (M1801.3.1, M1801.3.4)
2021 Heating and Cooling	HVAC Equipment	Q000000909	CSST gas piping is properly bonded/grounded	Major	NYS RC (G2411.2)
2021 Heating and Cooling	HVAC Equipment	Q000000910	Gas piping properly sized	Major	Manufacturer specifications
2021 Heating and Cooling	HVAC Equipment	Q000000911	Temperature & pressure relief valve installed	Major	NYS RC (M2002.4, P2804.6.1)
2021 Heating and Cooling	HVAC Equipment	Q000000912	Temperature & pressure relief valve discharge tube installed to proper specifications	Minor	NYS RC (M2002.4, P2804.6.1)
2021 Heating and Cooling	HVAC Equipment	Q000000913	Fuel oil piping is leak-free and sized to provide adequate oil supply to all connected appliances	Major	Manufacturer specifications
2021 Heating and Cooling	HVAC Equipment	Q000000914	OEM manual left with the installed unit	Incidental	Program Requirement
2021 Leakage Testing	Blower Door Testing	Q000001035	Blower door test-in and test-out results were submitted	Incidental	Program requirement
2021 Leakage Testing	Blower Door Testing	Q000001036	Blower door results are within 10% of test out	Minor	Program requirement
2021 Leakage Testing	Blower Door Testing	Q000001037	Test-out results are above 70% of Building Airflow Standard (BAS), or mechanical ventilation has been installed to achieve the BAS	Major	BPI Technical Standards for the Envelope Professional
2021 Plumbing	Hot Water Heater	Q000001039	Contracted equipment was installed and the efficiency rating matches or exceeds the contract	Major	Contract/EmCalc
2021 Plumbing	Hot Water Heater	Q000001040	Hot water heater installed in location meeting the manufacturer specifications	Major	Manufacturer specifications
2021 Plumbing	Hot Water Heater	Q000001041	OEM manual left with the installed unit	Incidental	
2021 Plumbing	Hot Water Heater	Q000001042	The old hot water heater has been removed, unless the contract specifies otherwise	Incidental	Contract/EmCalc
2021 Plumbing	Hot Water Heater	Q000001043	Temperature and pressure relief valve installed	Major	NYS RC (P2804)
2021 Plumbing	Hot Water Heater	Q000001044	Temperature and pressure relief valve discharge tube installed to proper specifications	Minor	NYS RC (P2804)
2021 Plumbing	Hot Water Heater	Q000001045	Drain pan has been installed when water heater is located where leaks could cause damage. The pan must have a discharge tube to an appropriate drain	Minor	NYS RC (P2801.6)
2021 Plumbing	Hot Water Heater	Q000001046	Vent/flue system is properly sized, pitched and has proper clearance to combustibles	Minor	NYS RC (M1801.2), BPI-1200, Manufacturer specifications
2021 Plumbing	Hot Water Heater	Q000001047	No electrical safety issues	Major	NYS RC (E4101.4, E4101.5)
2021 Plumbing	Hot Water Heater	Q000001048	Electrical shutoff installed within sight of the appliance	Incidental	NYS RC (3705.1)
2021 Plumbing	Well Pump Repair	Q000001049	Contracted repairs to well pump completed	Major	Contract/EmCalc
2021 Plumbing	Well Pump Repair	Q000001050	Well pump cycles on/off based on demand/pressure, does not run continuously	Minor	
2021 Shell Measures	Air Sealing	Q000001052	All items stated in contract have been sealed (top plates, knee wall transition, plumbing and wiring penetrations, drop ceilings, soffits, chases, bath fan housings, windows, doors, recessed fixtures, air register boots, interior sheathing voids repaired, etc.)	Major	Contract/EmCalc
2021 Shell Measures	Air Sealing	Q000001053	Bypasses around chimneys, vents and flues have been air sealed using non-combustible materials	Major	NREL SWS 3.1001.1d
2021 Shell Measures	Air Sealing	Q000001054	Non insulation contact fixtures air sealed with rigid enclosure to provide space between fixture and insulation	Major	NREL SWS 3.1003.5c, 4.1001.1
2021 Shell Measures	Air Sealing	Q000001055	Attic and/or basement access, if contracted, is sealed using permanently mounted weather stripping and the access is secured with metal fastenings	Minor	NYS RC (R402.2.4)
2021 Shell Measures	Air Sealing	Q000001056	IR scans indicate little to no air leakage pathways	Major	Program Requirement
2021 Shell Measures	Air Sealing	Q000001057	Contracted weatherstripping installed on exterior doors	Minor	Contract/EmCalc
2021 Shell Measures	Air Sealing	Q000001058	Air leakage paths between attached or tuck-under garages and the living space have been sealed	Major	BPI Technical Standards for the Envelope Professional, NREL SWS 3.1501.1a, 3.1501.1b, 3.1501.1c, 3.1501.1d
2021 Shell Measures	Air Sealing	Q000001059	Contracted weather stripping installed on windows	Minor	Contract/EmCalc
2021 Shell Measures	Insulation	Q000001060	Insulation R-value and quantity installed matches contract	Major	Contract/EmCalc
2021 Shell Measures	Insulation	Q000001061	Installed insulation type matches the contract or provides equal performance to contracted material(s)	Major	Contract/EmCalc
2021 Shell Measures	Insulation	Q000001062	Loose fill insulation must be installed according to manufacturer`s specifications and installed to a level condition	Minor	Manufacturer specifications
2021 Shell Measures	Insulation	Q000001063	Insulation has been dammed to maintain minimum clearances to heat sources such as chimneys, flues, recessed lights or bath fans with heat lamps.	Major	BPI Technical Standards for the Envelope Professional NREL SWS 4.1001.3
2021 Shell Measures	Insulation	Q000001064	Insulation is dammed to allow maintenance access and manufacturer required clearances. Damming installed to prevent intrusion of insulation into whole house fans, condensate pans, etc.	Major	Program Requirement

Category	Measure	QuestionID	TaskRequirement	Defect Categor	Reference
2021 Shell Measures	Insulation	Q000001065	Attic access is insulated to R-14 or greater	Minor	BPI Technical Standards for the Envelope Professional
2021 Shell Measures	Insulation	Q000001066	Blocking/baffles have been installed at each soffit vent to ensure appropriate air flow to roof, protect insulation from wind-washing and restrain loose-fill insulation from congesting the soffit vents	Minor	BPI Technical Standards for the Envelope Professional
2021 Shell Measures	Insulation	Q000001067	Insulation is contained using a permanent damming around storage areas, hatches and pulldown stairs.	Incidental	Program Requirement
2021 Shell Measures	Insulation	Q000001068	Sufficient roof ventilation has been provided	Major	NYS RC (R806)
2021 Shell Measures	Insulation	Q000001069	Dense packed insulation has been installed to a density of 3.5 lbs./cu. ft. for cellulose and 2.2 lbs./cu. ft. for blown fiber that is manufactured for dense pack installation.	Minor	NREL SWS 4.1003.2a, 4.1004.1b, 4.1005.5b, 4.1005.6a, 4.1101.1b, 4.1103.1a, 4.1103.2c
2021 Shell Measures	Insulation	Q000001070	Insulation protected from wind washing (kneewalls, underside of floor framing in vented crawl space, etc.)	Minor	BPI Technical Standards for the Envelope Professional
2021 Shell Measures	Insulation	Q000001071	Vapor retarder is against the building surface exposed to warmer conditions for the majority of the year	Incidental	NYS RC (R702.7)
2021 Shell Measures	Insulation	Q000001072	Seams in rigid board Insulation are sealed when installed against the foundation wall, the insulation is secured to the wall and the insulation and air barrier material used on the rim/band areas must be connected to the insulation and air barrier used on the foundation wall.	Incidental	NREL SWS 4.1402.3h
2021 Shell Measures	Insulation	Q000001073	Basement walls without ground water leakage have a continuous air barrier on the warm side of the insulation. When absorbent insulation is installed the assembly is vapor permeable into the interior	Major	NREL SWS 4.1402.2
2021 Shell Measures	Insulation	Q000001074	Basement walls with ground water leakage have a continuous drainage plane to the drainage fields. Rough walls (e.g. rubble) have a waterproof membrane between wall and insulation, insulation is non-absorbent, such as closed cell foam.	Major	NREL SWS 4.1402.3
2021 Shell Measures	Insulation	Q000001075	Exposed rigid foam board or spray foam has required thermal and ignition barrier	Major	NYS RC (R316.4)
2021 Shell Measures	Insulation	Q000001076	Densepack insulation drill holes have been plugged, drainage plane repaired and the exterior finish has been securely reinstalled	Minor	NREL SWS 4.1103.2e
2021 Shell Measures	Replacement Doors & Windows	Q000001077	Contracted replacement windows and doors have been installed	Major	Contract/EmCalc
2021 Shell Measures	Replacement Doors & Windows	Q000001078	Replacement doors and windows function smoothly (open/close, tilt in, etc.), the perimeter has bee air sealed, the interior and exterior finishes have been	Minor	Program Requirement

User Guide
NY Home Performance Portal

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NYSERDA

Revised 1-6-2016

NYSERDA HP Portal

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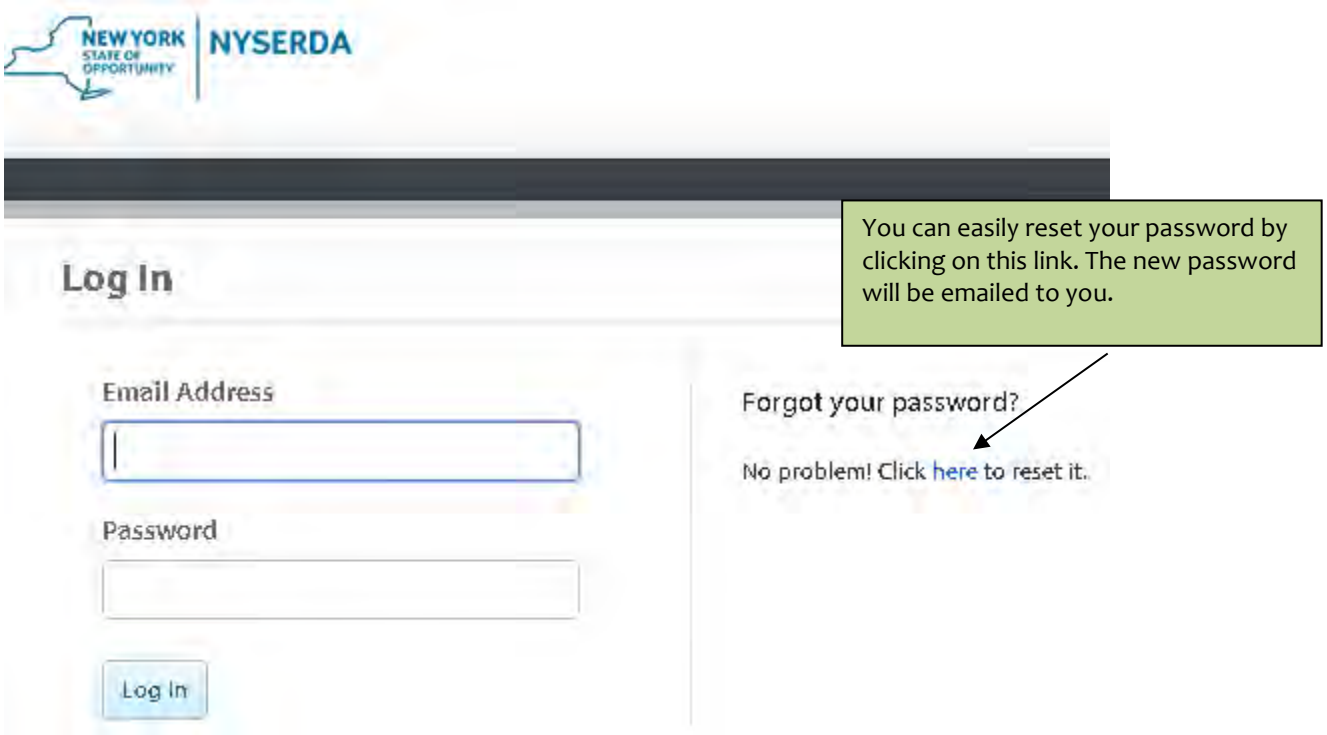
Logging In/Password Reset

You will receive an email with a link to set a password once your username has been created. Follow that link to create your password. You will then use the new password and your email address to log in. Once you have created your account, you can log in at the following URL: https://nyserda.energysavvy.com/
There can only be 1 account per email. There can be more than one account per contractor. To request a new account, please contact Contractor Support at contractorsupport@clearesult.com, 1-800-284-9069, or http://hpwescontractorsupport.com/ and select Help Center.



Contractor's Customer Facing Profiles

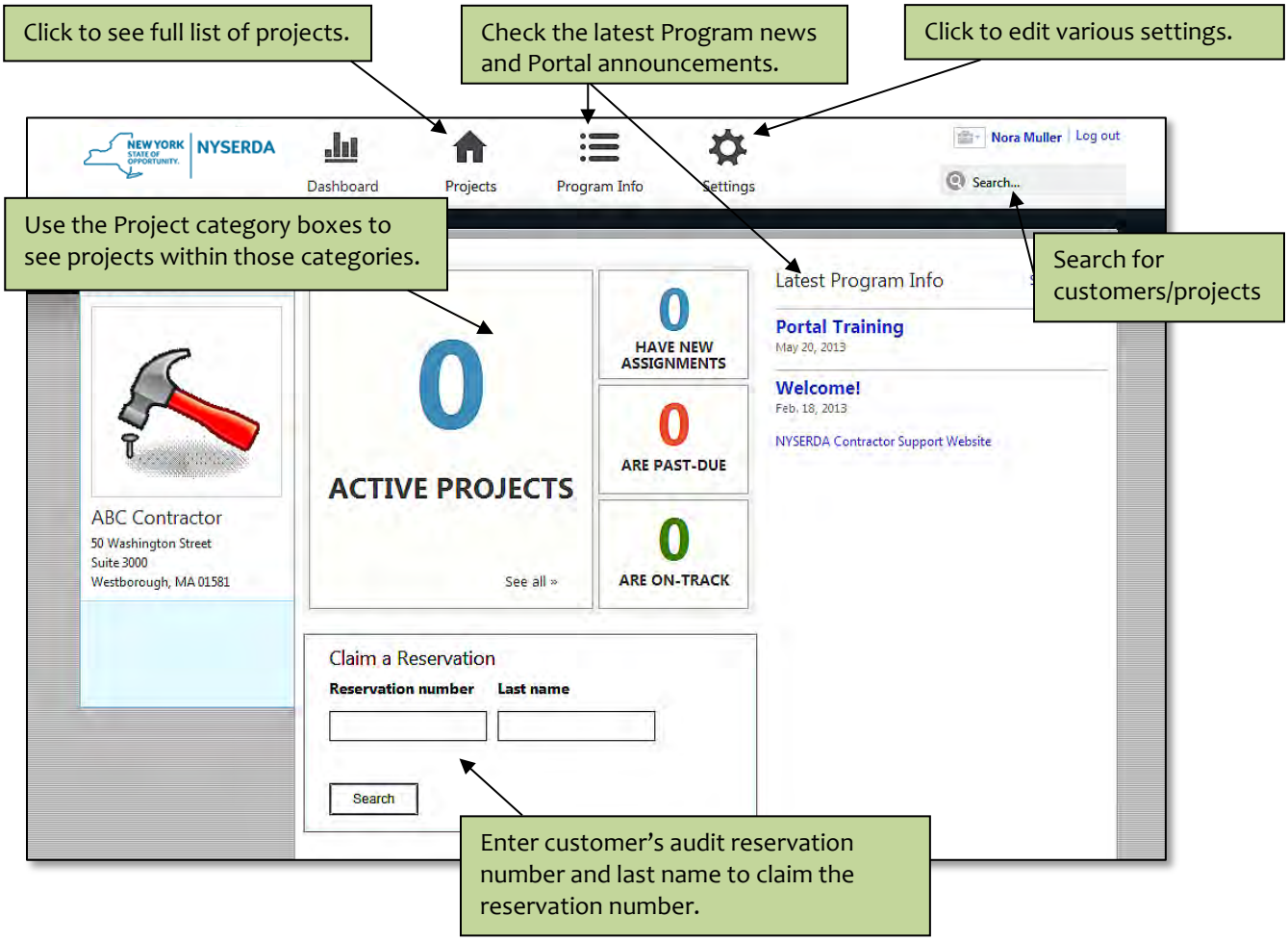
Contractor profiles are driven by information provided in the 2014-2015 NY Home Performance with ENERGY STAR® Contractor Participation Agreement SIGNATURE FORM. Contractors can request updates to their customer facing profile information by contacting Contractor Support.

Dashboard

Once you have logged in, you will see a Dashboard with a list of tasks that need attention. Any new tasks will be highlighted in the 'Have New Assignments' box and any past-due tasks will be highlighted in the 'Are Past-Due' box.

The search box in the upper right corner of the screen can be used to locate any project associated with the contractor, even if that project has no active tasks for the contractor to complete. You can search by last or first name, street address or city, or Project ID.

NOTE: Read the 'Claim a Reservation Number' section of this document for an explanation of the 'Claim a Reservation' section of the Dashboard.



Projects Overview

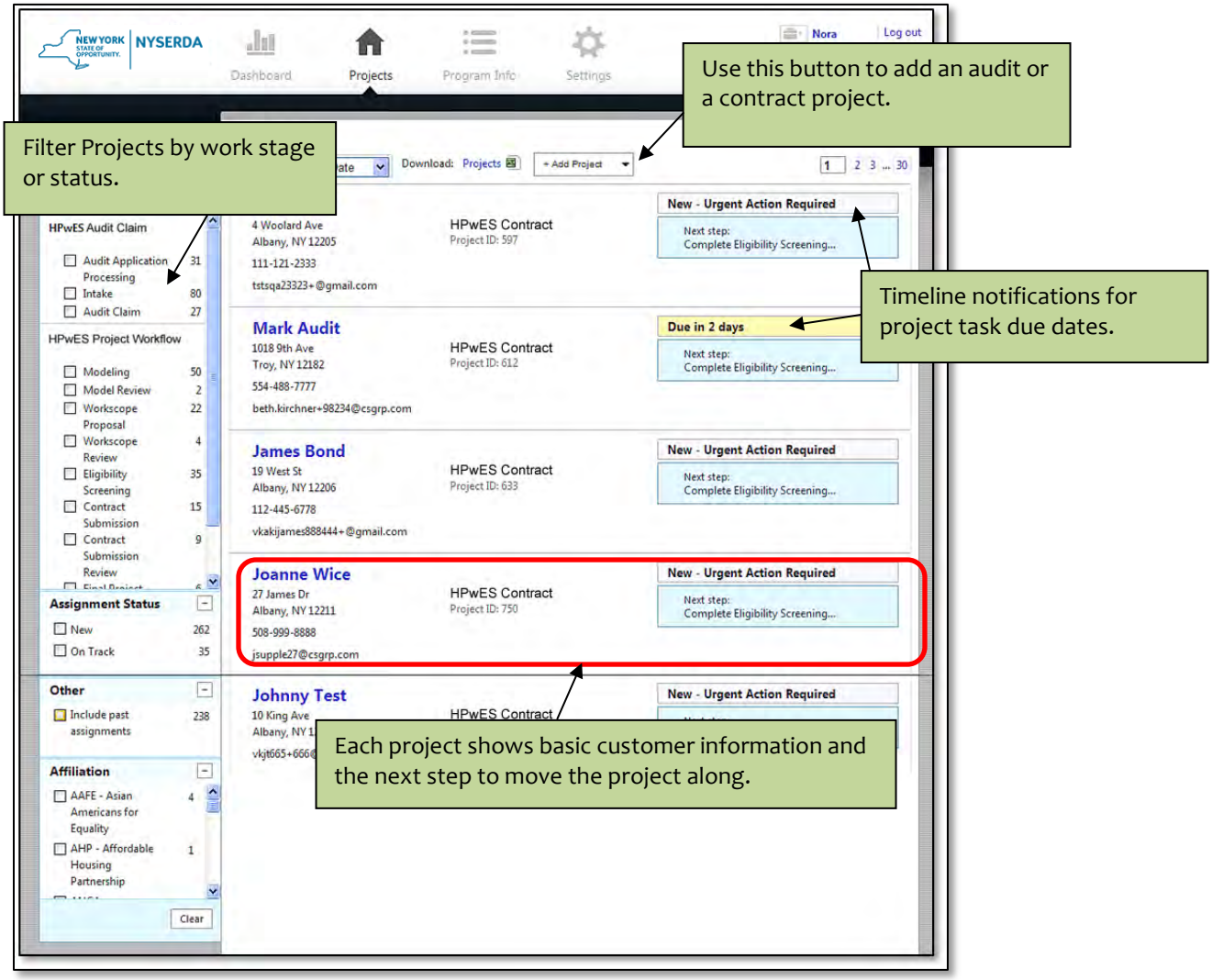
By clicking on the 'Projects' button, you will see an overview of all your projects. You can use the filters on the left side of the page to sort your projects by a variety of criteria (such as program stage, assignment status, affiliation, etc.). You can also sort by due date, last name, and last update.

You can download an Excel spreadsheet of all projects in the filtered view by clicking the download 'Projects' link. To submit an audit application on behalf of a customer, click the '+Add Project' drop down arrow button and select 'HPwES Audit' option. This will bring you to the online application page where you can fill out the required customer information.

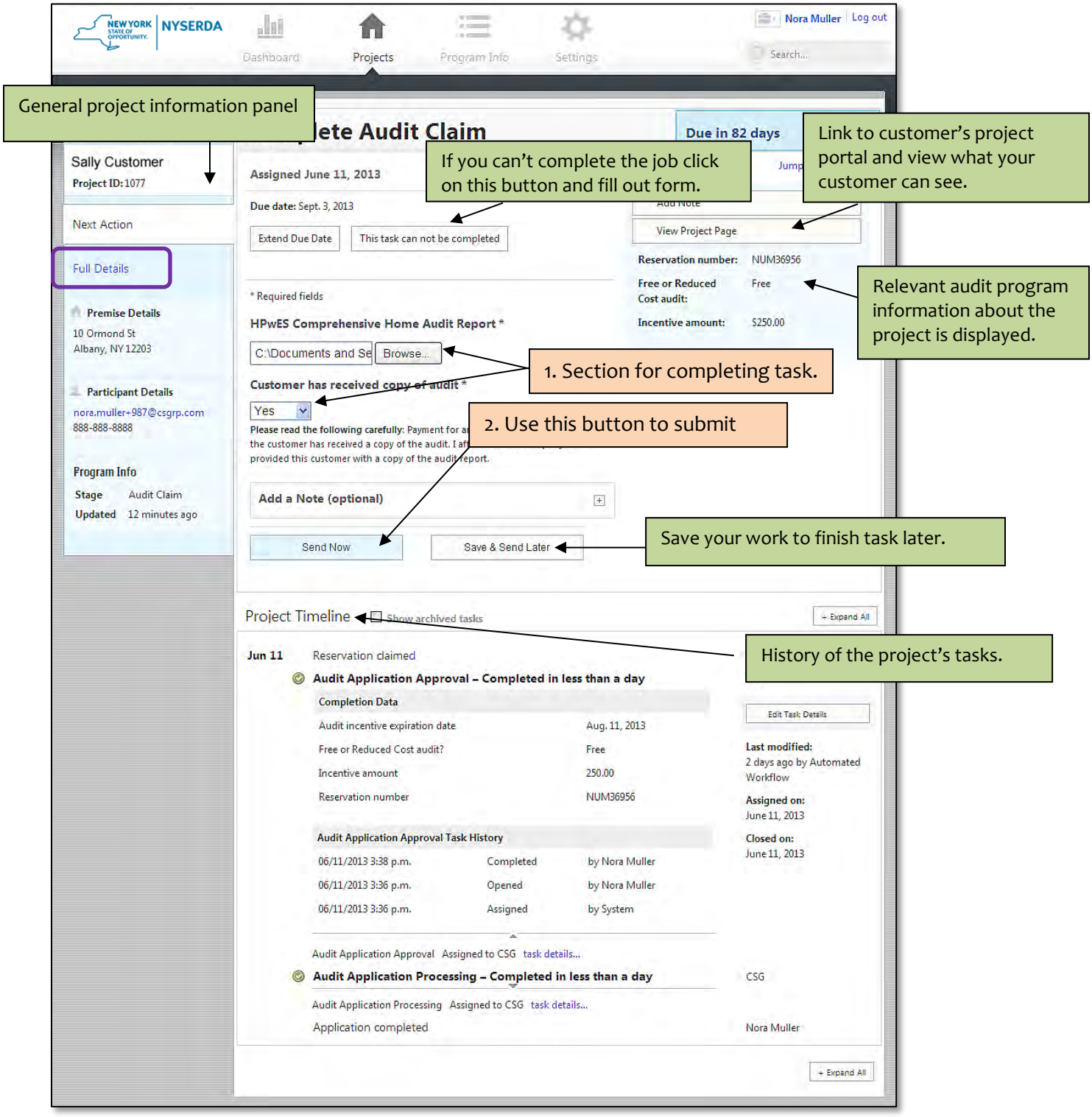
To add a new HPwES Contract project click the '+Add Project' drop down arrow button and select 'HPwES Contract'. This will open an application that is similar to the audit application. Once the 'HPwES Contract' application gets filled out it will create a project in the modeling stage. See the FAQ section on page 58 for reasons why a project may not show up after you submitted the HPwES Contract application.

Clicking on a specific project will take you to that project's page where you will be able to complete the next task assigned to you for that project.

NOTE: Due dates and service level agreements (SLAs – *see Glossary on page 51*) are not punitive. They have been established for the Program to gather data about the processes and identify areas where efficiencies could be made.

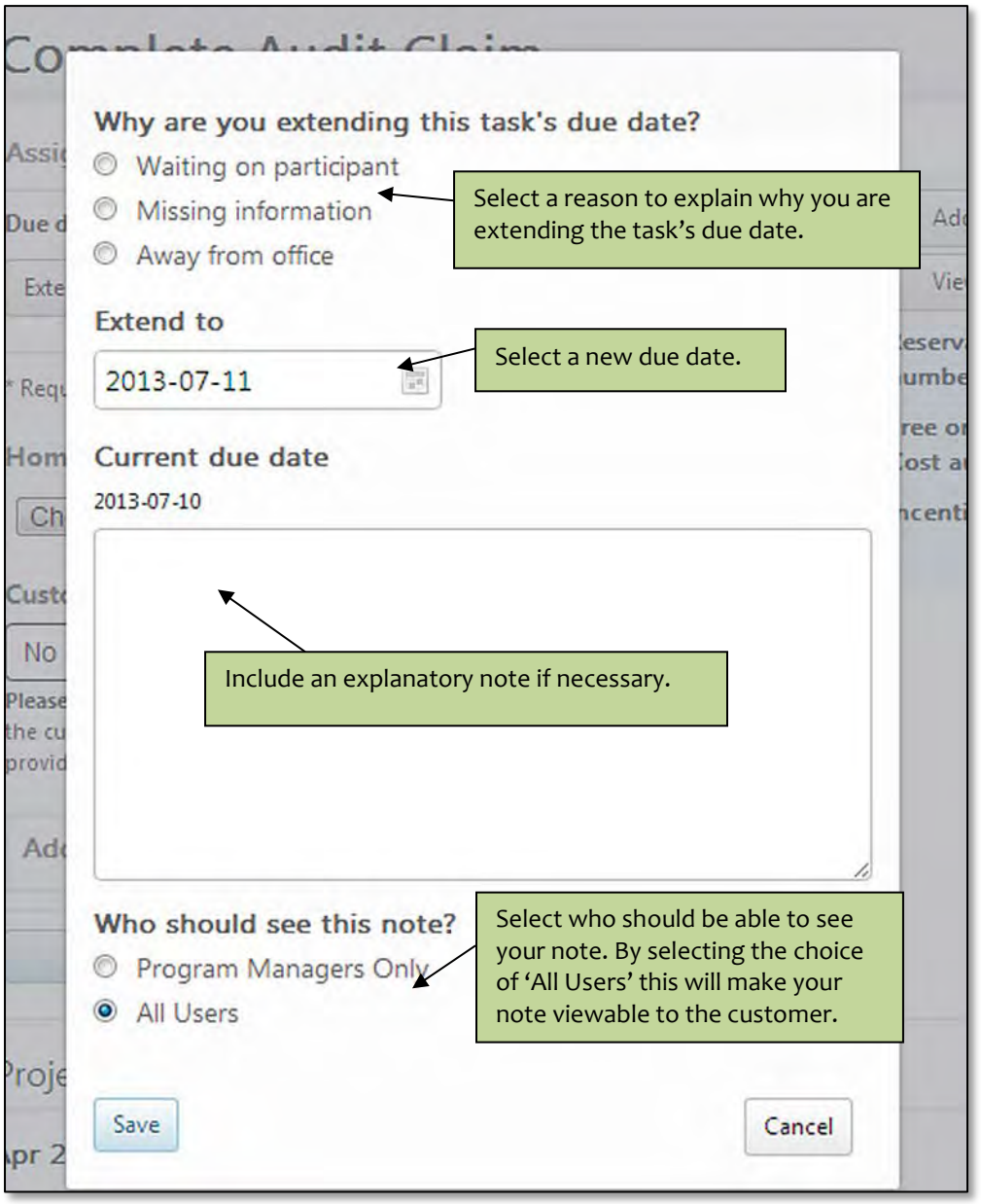


Clicking on a specific project (in this case, 'Sally Customer') will take you to the next task you need to complete for that project. On the left side of the screen you will see general information about the project and in the middle of the screen you will see relevant information for completing the task. You can click '**Full Details**' on the left side of the page to see additional details about the project including location on a map, building type, and more.

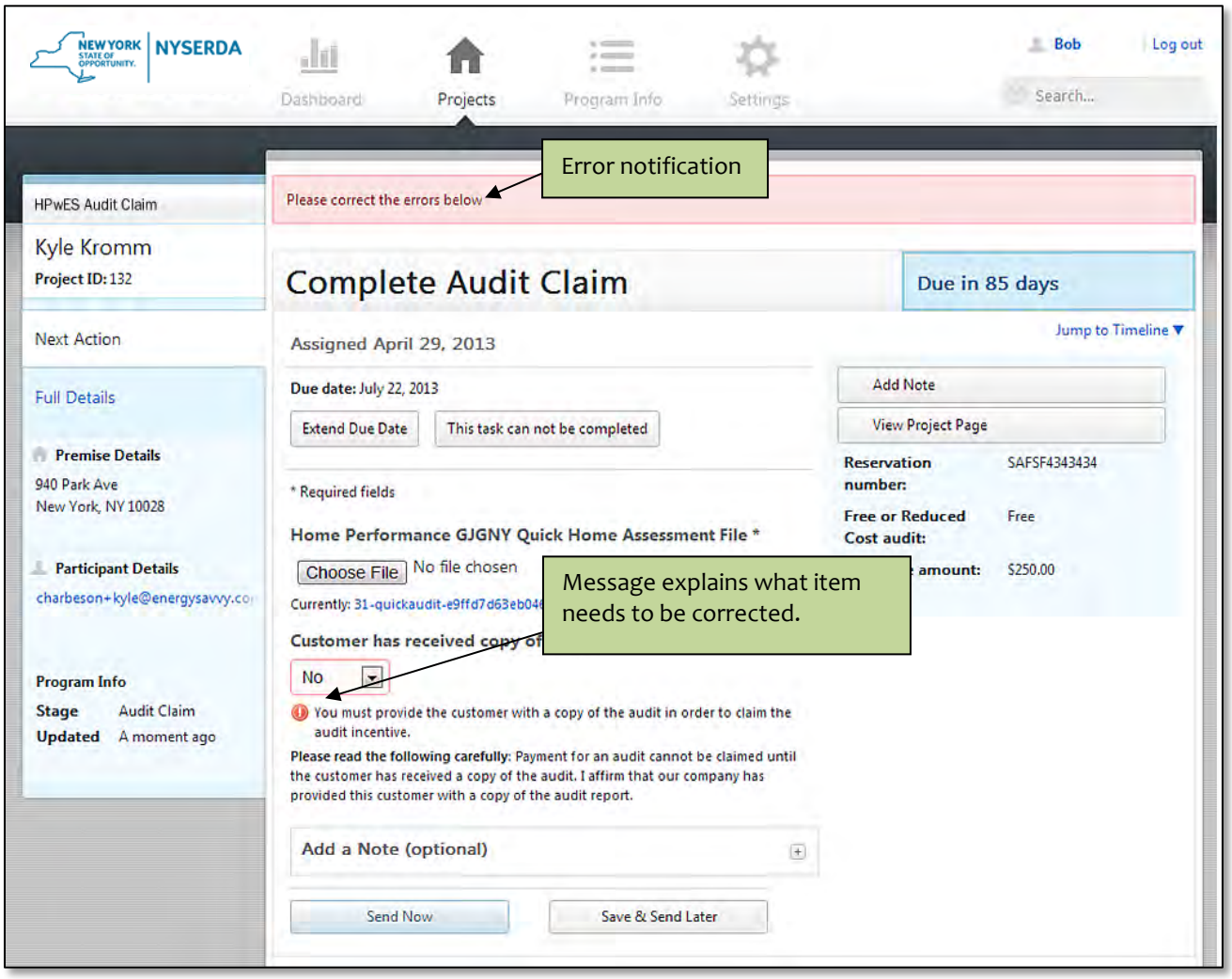


Extend Due Date

The 'Extend Due Date' button only extends the due date of the task you are working in (i.e. Audit Claim, Modeling and etc.). It doesn't extend the due date of an HPwES reservation number or workscope approval. The 'Extend Due Date' options are generally the same from stage to stage. The screenshot below provides an example of the options displayed when you click 'Extend Due Date'.



If you forget to complete a certain part of the task, the Portal will automatically prompt you to correct the mistake. See the screenshot below for an example:



Portal Work flow

The Portal workflow has two parts. The first part is for the HPwES Audit project and the second part is for the HPwES Contract project. Each task is either assigned to the Partner, CLEAResult, or EFS. Contractors are considered Partners in the Portal. Your project moves through each task in the assigned workflow and all tasks must be completed in order and finishes when the last task is complete.

1. HPwES Audit

a) Customer or Partner submits HPwES online audit application <OR> Customer Service Representative (CSR) enters paper application into the Portal. - task for Participant or Partner
b) Audit Application Approval – task for CLEAResult
c) Contractor claims reservation number on dash board - task for Partner
d) Audit Claim - task for Partner

2. HPwES Contract

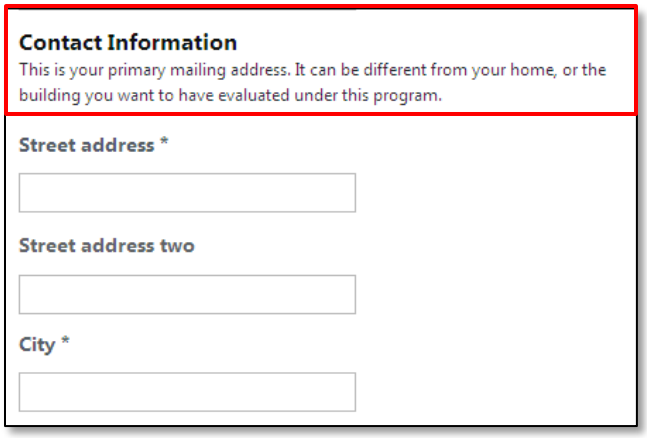
a) Completion of step 1d of the above HPwES Audit Portal Workflow automatically creates a follow on project in the modeling stage <OR> Partner creates an HPwES Contract Project which will create a new project in the modeling stage.
b) Modeling - task for Partner
c) Workscope Proposal - task for Partner
d) Eligibility Screening - task for Partner
e) Contract Submission - task for Partner
f) Contract Submission Review - task for CLEAResult
g) Financing Approval - task for EFS
h) Final Project Submission - task for Partner *(You won't be able to proceed to the Final Project review task if EFS hasn't finished their Financing Approval task.)*
i) Final Project Review - task for CLEAResult
j) Financing Disbursement - task for EFS

(For further Project Work flow details see page 52)

Contractor Workflow for Entering Audit Applications into the NY HP Portal (Helpful Hints)

Online Audit Application Screen 1

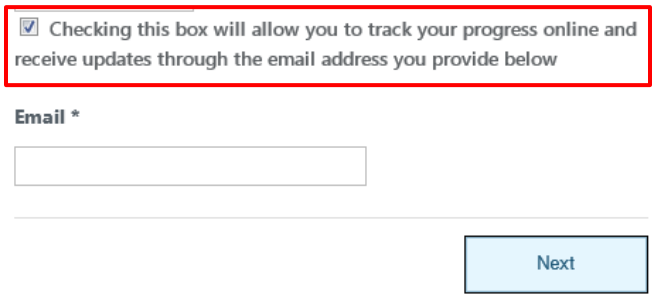
Please note: You cannot copy and paste into Zip Code, Home Phone, or Cell Phone number fields. You will need to type in these fields.



The address requested on the first screen is the ***mailing*** address, not the building address (unless the building and mailing addresses are the same).

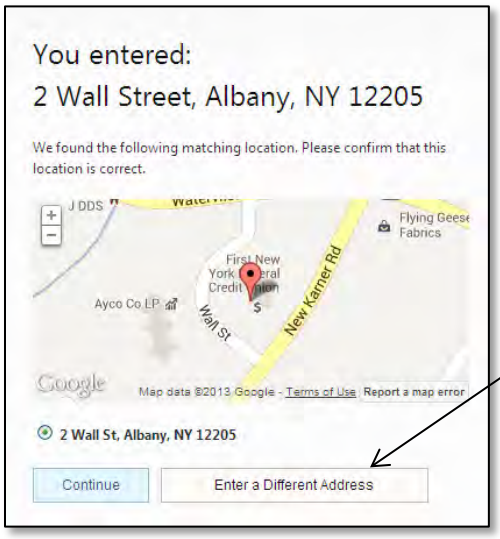
A home phone number is a required field and a cell phone number is optional. If the customer has only supplied a cell phone number, enter it into the "home phone" box.

If the customer has not provided a phone number and you are unable to obtain a phone number, please enter 999-999-9999.



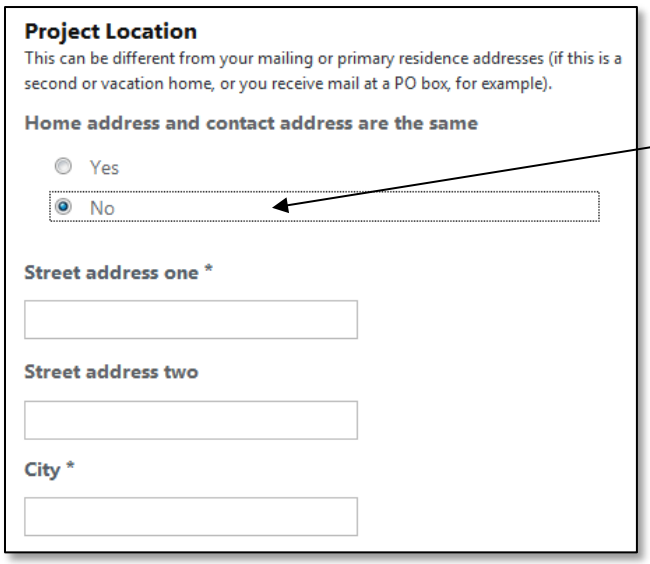
If a customer has included their e-mail address on their application, select the checkbox. Customers will receive an e-mail directing them to a Customer Portal page where they can track their progress through the Program.

If the customer has not included an e-mail address on their application, uncheck this box.



After pressing "next" on the first page of the application, an address verification box will appear. Check for obvious errors in the address. If any corrections need to be made, click "Enter a Different Address." If no corrections need to be made, click "Continue."

Application Screen 2



If the mailing address is different than the building address, select No. Enter the building address.

If the mailing and building addresses are the same, leave the selection as Yes.

How did you first hear about the Home Performance with ENERGY STAR program?

- Constituency-Based Organization (CBO)
- Contractor
- EDGE Regional Outreach Contractor
- Home Show/Event
- Internet
- Neighbor/Friend/Family
- NYSERDA
- Print Ad
- Radio
- Real Estate Professional
- Town, Village, City, County
- TV
- Energize NY
- Other

There is only the ability to select one of these options on the application. If multiple options are selected on the application and "Constituency-Based Organization" is one of the options selected, click "Constituency-Based Organization" in the Portal.

If multiple options are selected on the customer application and "Constituency-Based Organization" is not one of the selected options, just pick one of the selected choices to include in the Portal.

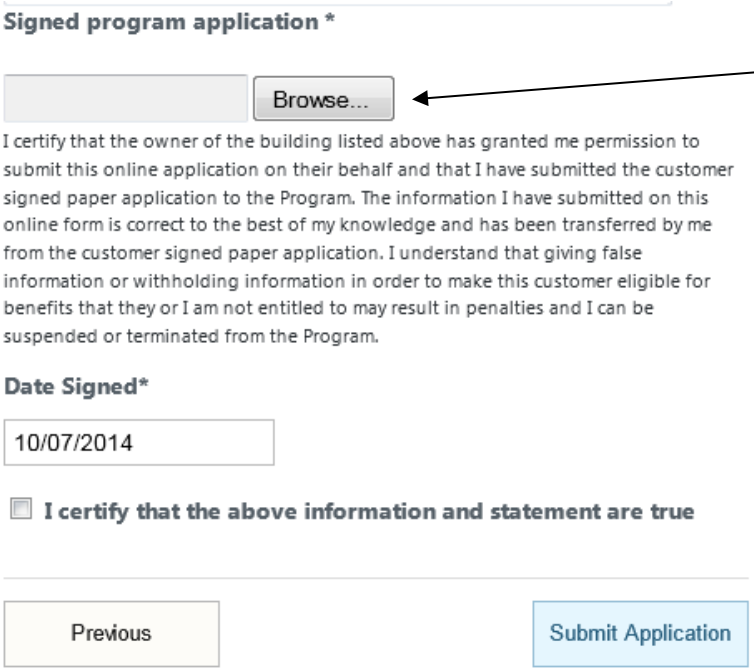
Application Screen 3

Your household income and the type of I
contribution to the cost of the assessmer
household's annual income range from b
cost.

- Up to $156,600
- $156,600 up to $195,750
- $195,750 up to $234,900
- $234,900 up to $274,050
- $274,050 up to $313,200
- Over $313,200

The online application now displays monetary income ranges based on the customer's Zip Code. Please use the chart below to select the correct income range when submitting applications into Portal on behalf of customers.

Paper Application	Online Application	Example
Customer answers "Yes" to "Is your household income less than $99,600?"	Up to 200% AMI	Up to $156,600
<200% AMI	Up to 200% AMI	Up to $156,600
<250% AMI	200% to 250% AMI	$156,600 to $195,750
<300% AMI	250% to 300% AMI	$195,750 to $234,900
<350% AMI	300% to 350% AMI	$234,900 to $274,050
<400% AMI	350% to 400% AMI	$274,050 to $313,200
No listing	Over 400% AMI	Over $313,200



Contractors submitting applications on behalf of customers still need to upload the signed paper application to verify customer permission.

Electronic signatures are currently not accepted.

Audit Applications Over the Phone

Customers in condos, co-ops, mobile homes, and not-for-profits should call the HPwES Audit Call Center to be pre-screened for eligibility. If eligible, the CSR will fill out the application on the customer's behalf while on the phone.

If a contractor wants to submit an application for a condo, co-op, not-for-profit, or mobile home, the following steps can be taken:

1. The contractor can call the HPwES Audit Call Center to answer the pre-screening questions and the application can be completed over the phone, if eligible.
2. The contractor will e-mail the customer-signed paper application.
3. The reservation number will not be issued until the paper application is received.

Aggregation Audit Applications

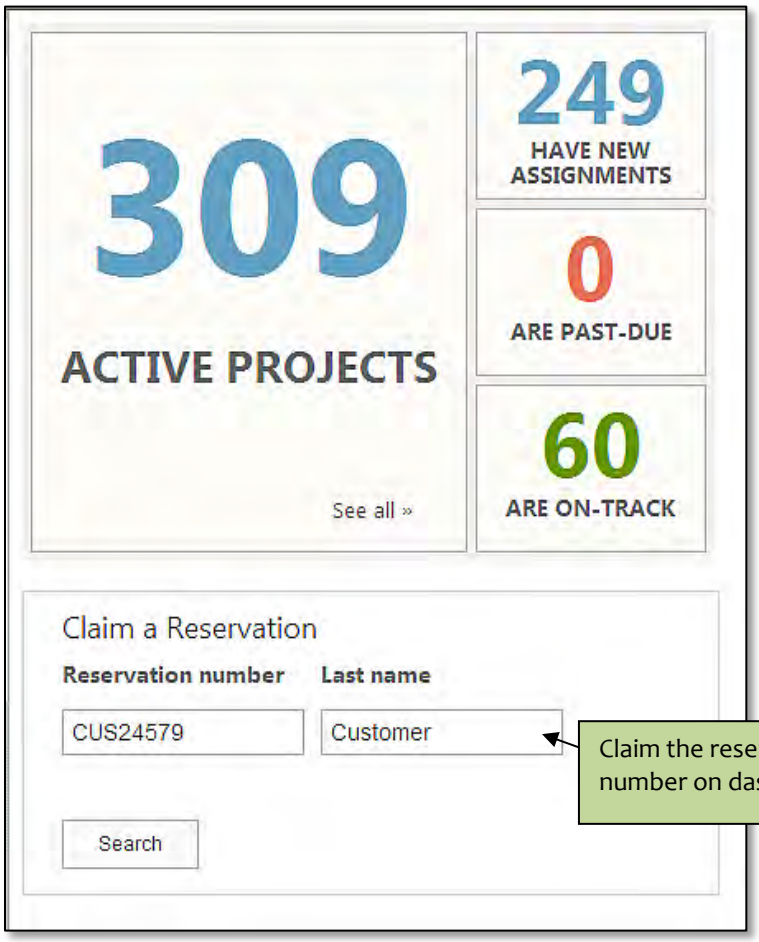
Audit applications that are marked "Aggregation" can now be entered into the Portal.

A project that moves forward with work, the contractor may submit the Aggregation Project via Portal. If you are an Aggregation contractor, please see the separate Aggregation Projects HPwES Work Scope Submission and Approval Process Quick Guide.

Claim a Reservation Number

The 'Claim a Reservation' box at the bottom of the Dashboard is used to claim a homeowner's audit reservation number by entering the reservation number and last name of the homeowner. This information should be obtained from the homeowner or if the homeowner requested the contractor to be copied on the approval letter. After clicking search, a list of projects matching the reservation number and last name will be displayed (there should only be one project in this list). The contractor can claim the audit project by clicking 'Claim Reservation' on the 'Claim A Reservation' window. The project will then be added to the contractor's active projects.

An error message will be displayed if an incorrect reservation number or customer last name is entered. If no match is found, verify that the last name and reservation number are correct. If it has been at least 24 hours since the reservation was issued, contact the HPwES Audit Call Center at 1-855-838-7818 (option 1) for assistance.

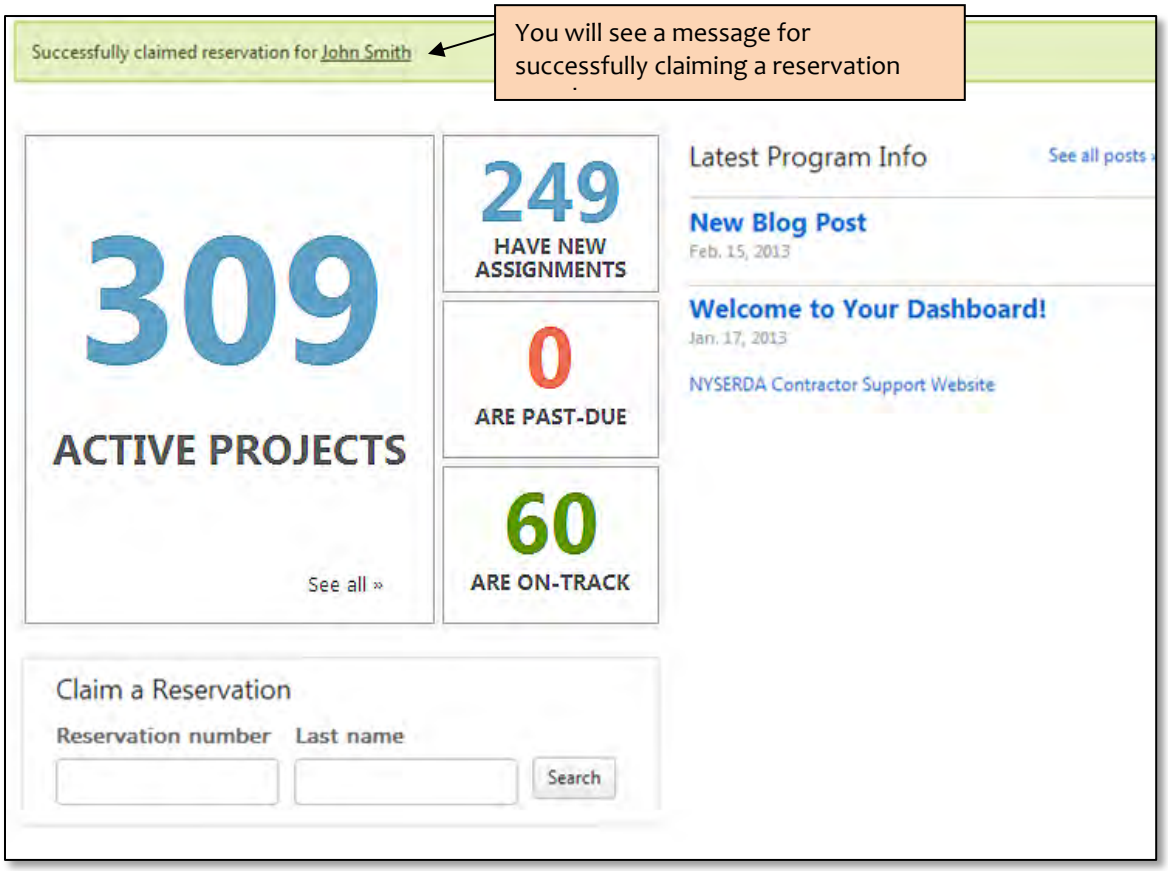


Error message will show if wrong reservation number or customer last name is input.

Claim the reservation number on dashboard.

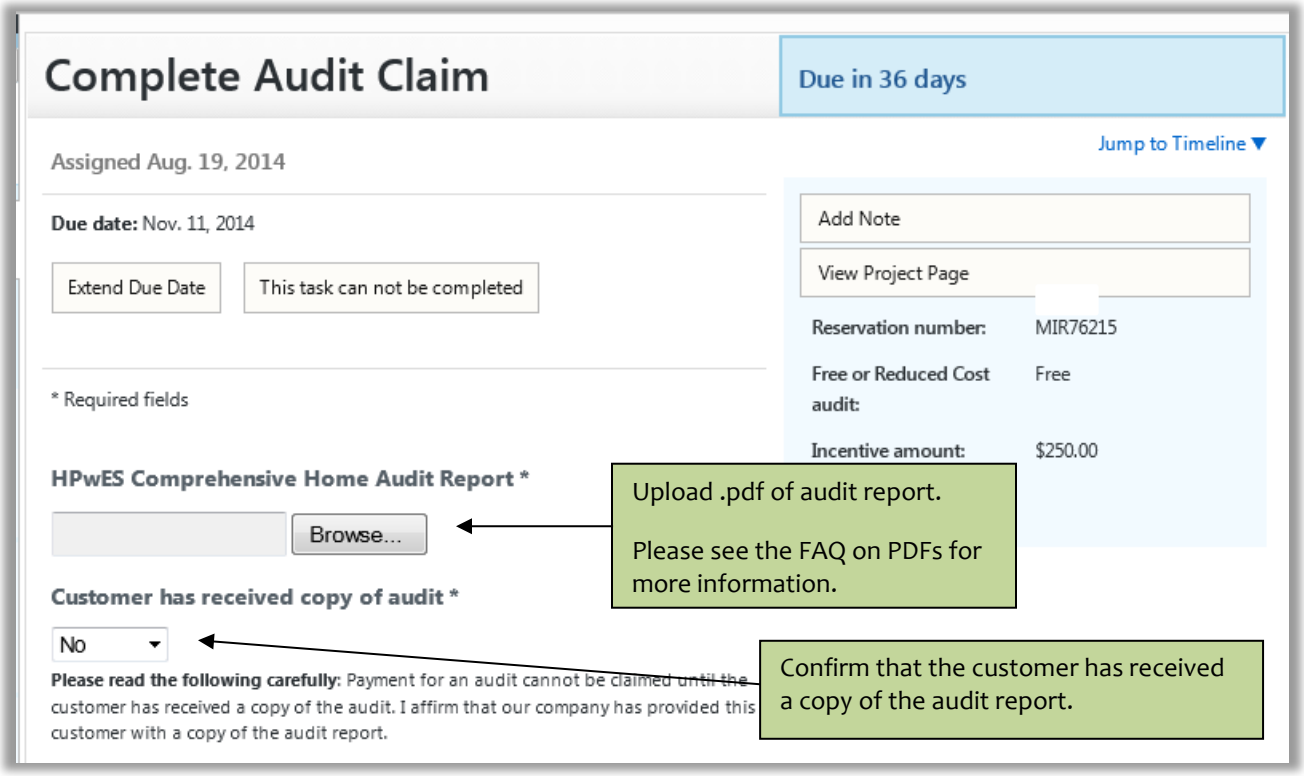
In this screenshot, the contractor correctly inputted John Smith's reservation number and his last name. Thus, the contractor is given the option to claim this reservation

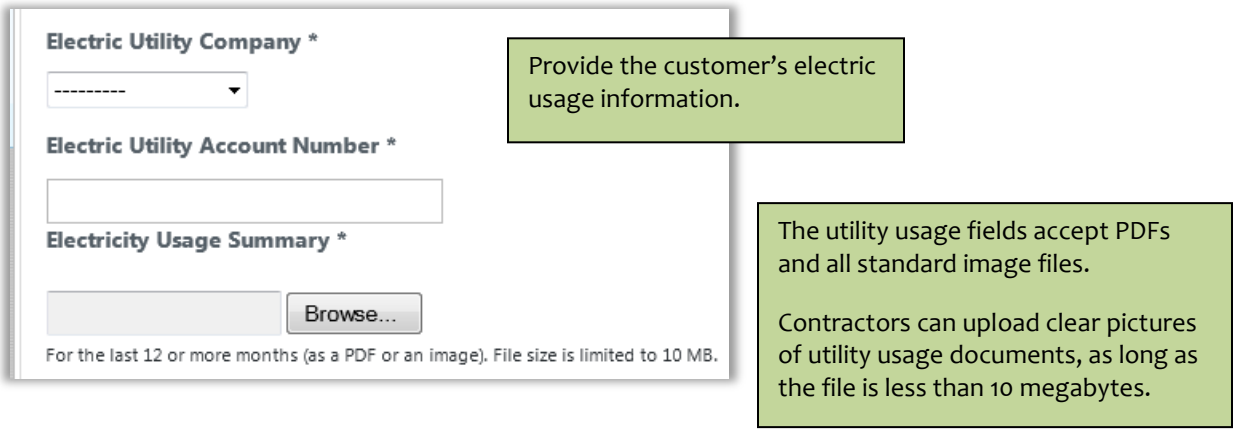
After clicking on 'Claim Reservation', the Portal displays a message saying the contractor successfully claimed the reservation number. The contractor can click on the homeowner's name in the message to go directly to the homeowner's project page. Upon clicking this link, the contractor will be taken to a page where they can complete the Audit Claim stage (see the next section for a discussion of this stage).

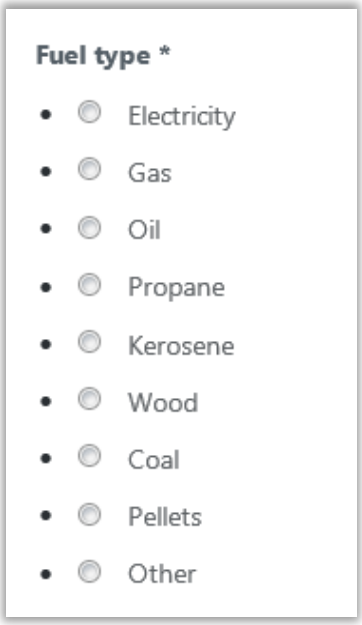


Audit Claim Stage

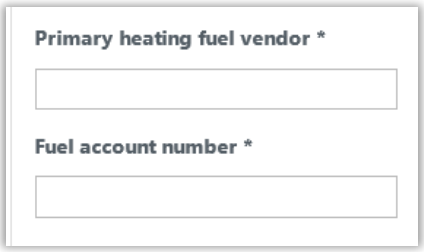
In this stage, you will submit the results of the audit, submit energy usage documents, and confirm that the homeowner has received a copy of the audit report. Upon successfully completing this stage, the audit incentive is automatically claimed, the HPwES Audit project is closed, and a new HPwES Contract project with the same information is automatically created in the Modeling stage. To access this new project, you must return to the main Projects page and select the customer's HPwES Contract project.

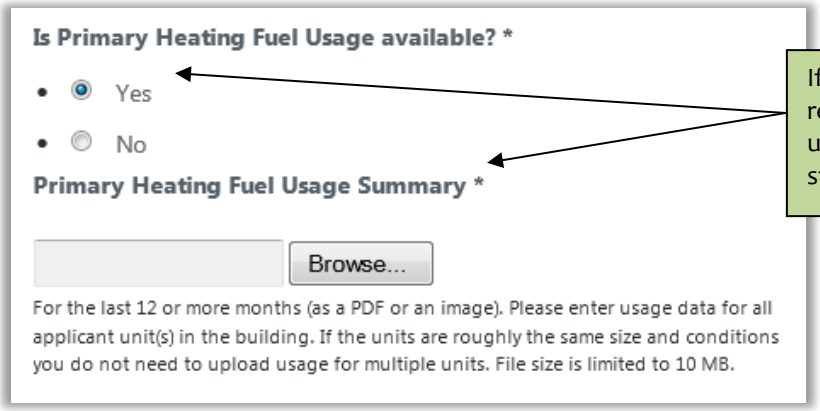




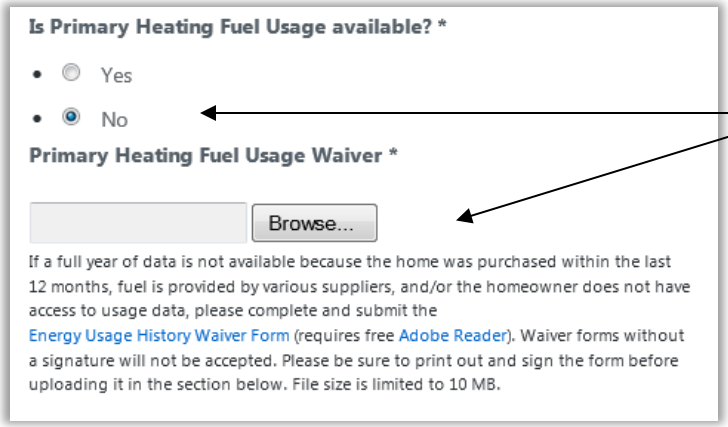


Select the customer's fuel type. Depending on the fuel selected, additional boxes will display, asking for fuel vendor name and customer account number.

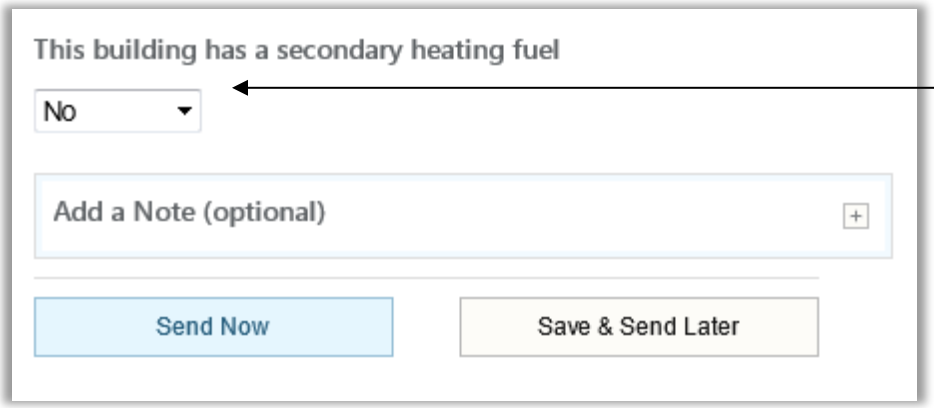




If fuel usage is available, a box will display requesting the fuel usage summary. The utility usage fields accept PDFs and all standard image files.



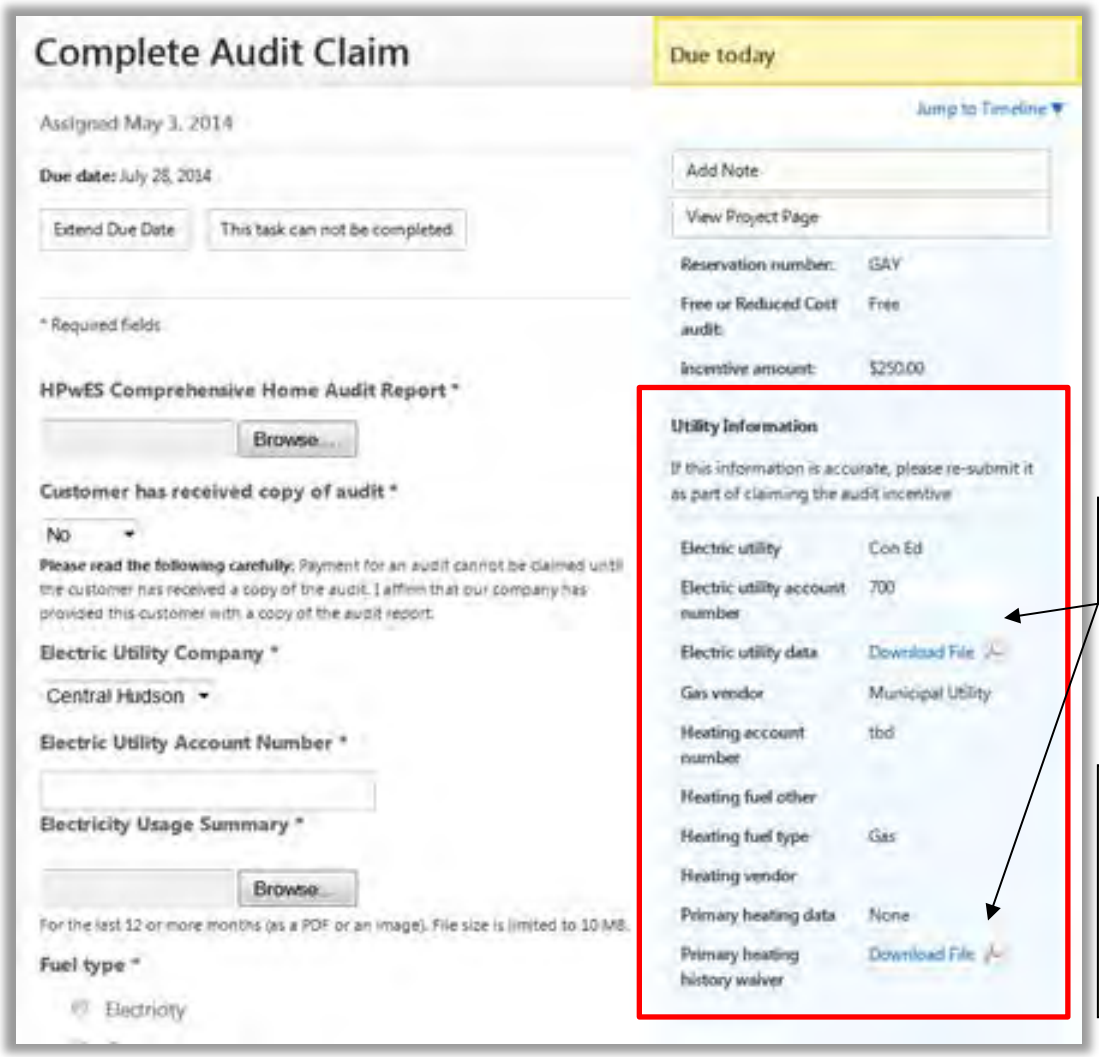
If fuel usage is not available, a box will display requesting the fuel usage waiver.



If no secondary heating fuel source, select "No" and no further action is needed.

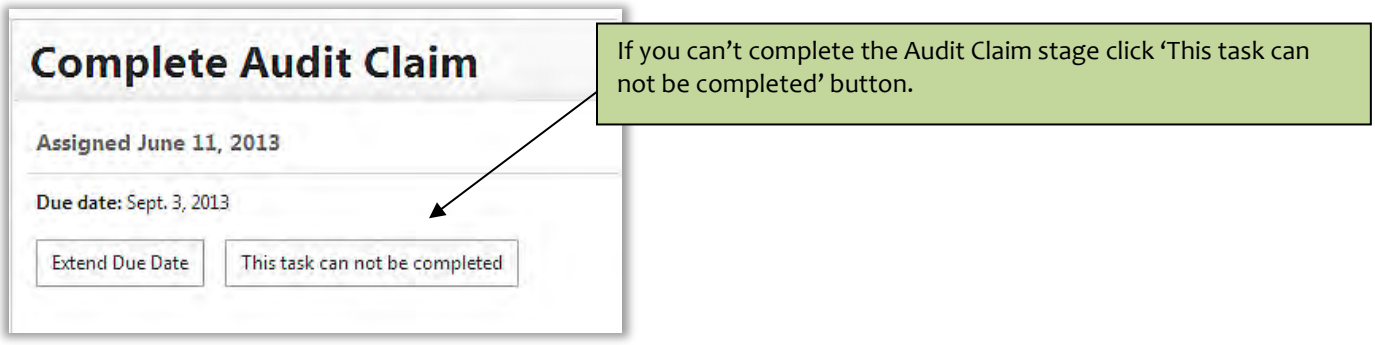
If the customer does have a secondary heating fuel source, select 'Yes.' Additional boxes will display to input the fuel type, fuel vendor, and fuel account number.

Customers who completed the previous version of the audit application were required to upload their energy usage documents at the time of application submission. For these customers, the submitted energy usage documents will be available on the right side of the Audit Claim screen.



Submitted energy usage documents

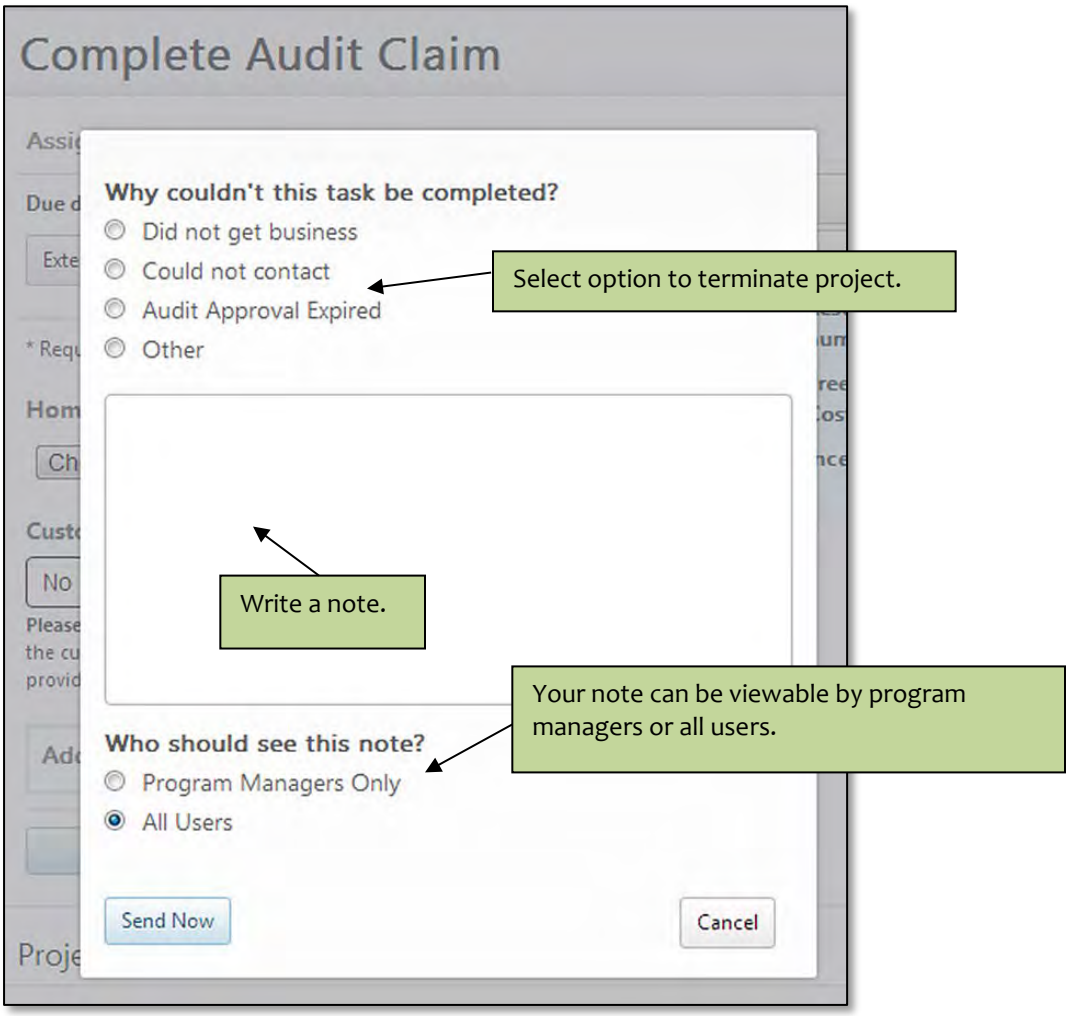
Review the information to confirm it is correct (12 months of usage for heat and electric) and re-upload in the appropriate sections to claim the audit incentive.



Clicking on the 'This task can not be completed' button will display the following choices:

- Did not get business
- Could not contact
- Audit Approval Expired
- Other

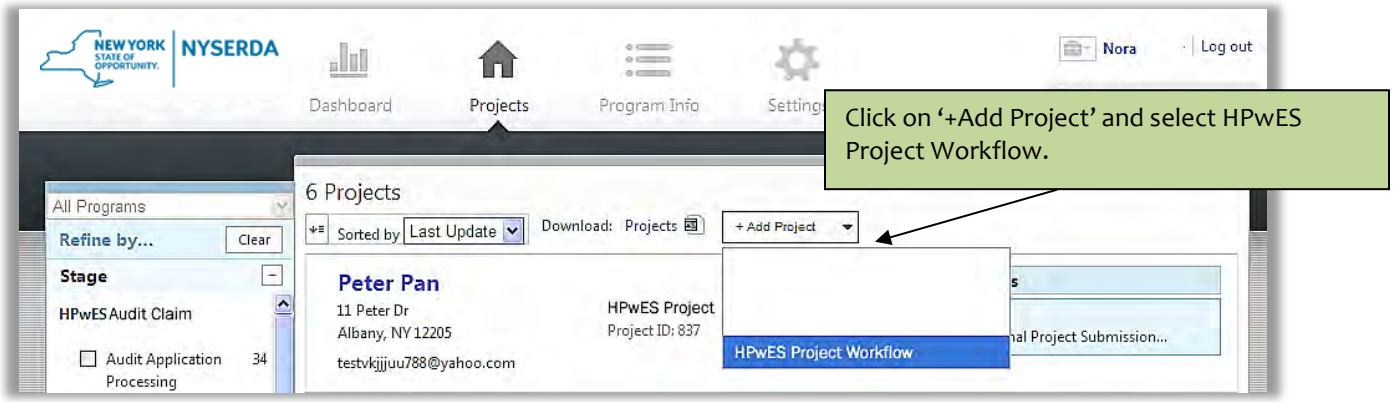
If any of these four choices is selected, the project will be marked as Closed and the project will be removed from your queue.



Creating a New Contract Project

Customers that did not originate with an HPwES Free/Reduced Cost Audit through your company will need to be entered.

Click on '+Add Project' and select 'HPwES Contract'. This will open a window for the Homeowner Application for HPwES Contract. Upon filling out the form and submitting it will create a new project for your customer. The new project will begin at the Modeling stage. The new project will be in the projects list within a few minutes of submitting the form. You can see the new project by reselecting 'Last Update' in the Sorted by filter or you can refresh your web browser.

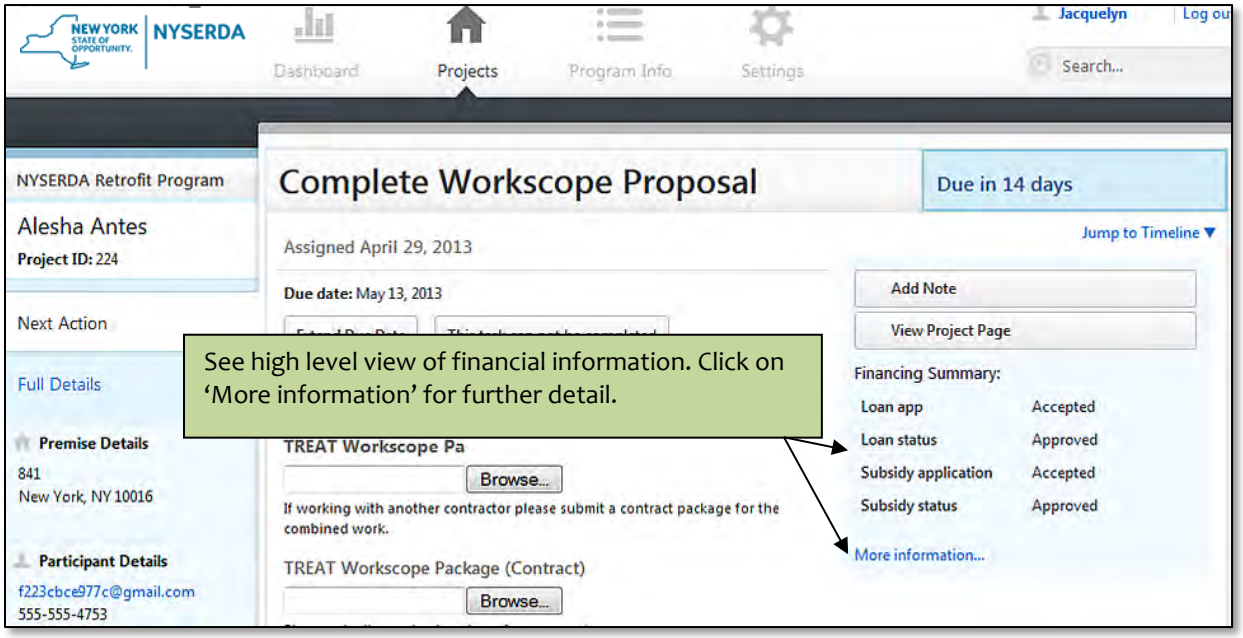


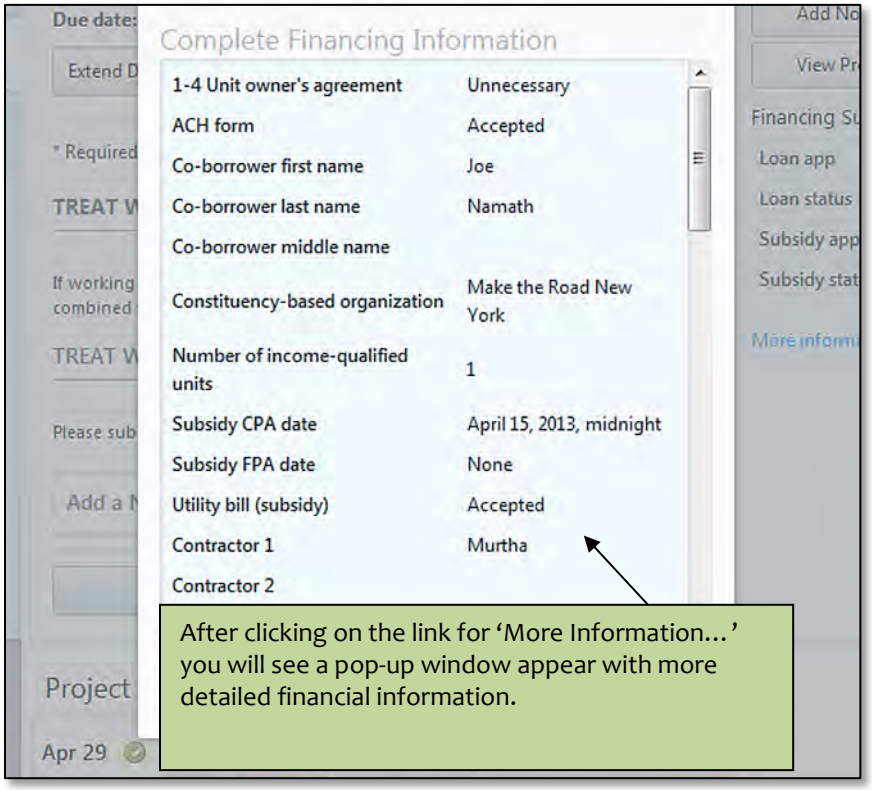
Note:

If you do not see your project appear in your project list please contact Contractor Support. Please do not fill out additional HPwES Contract applications.

Financing Integration

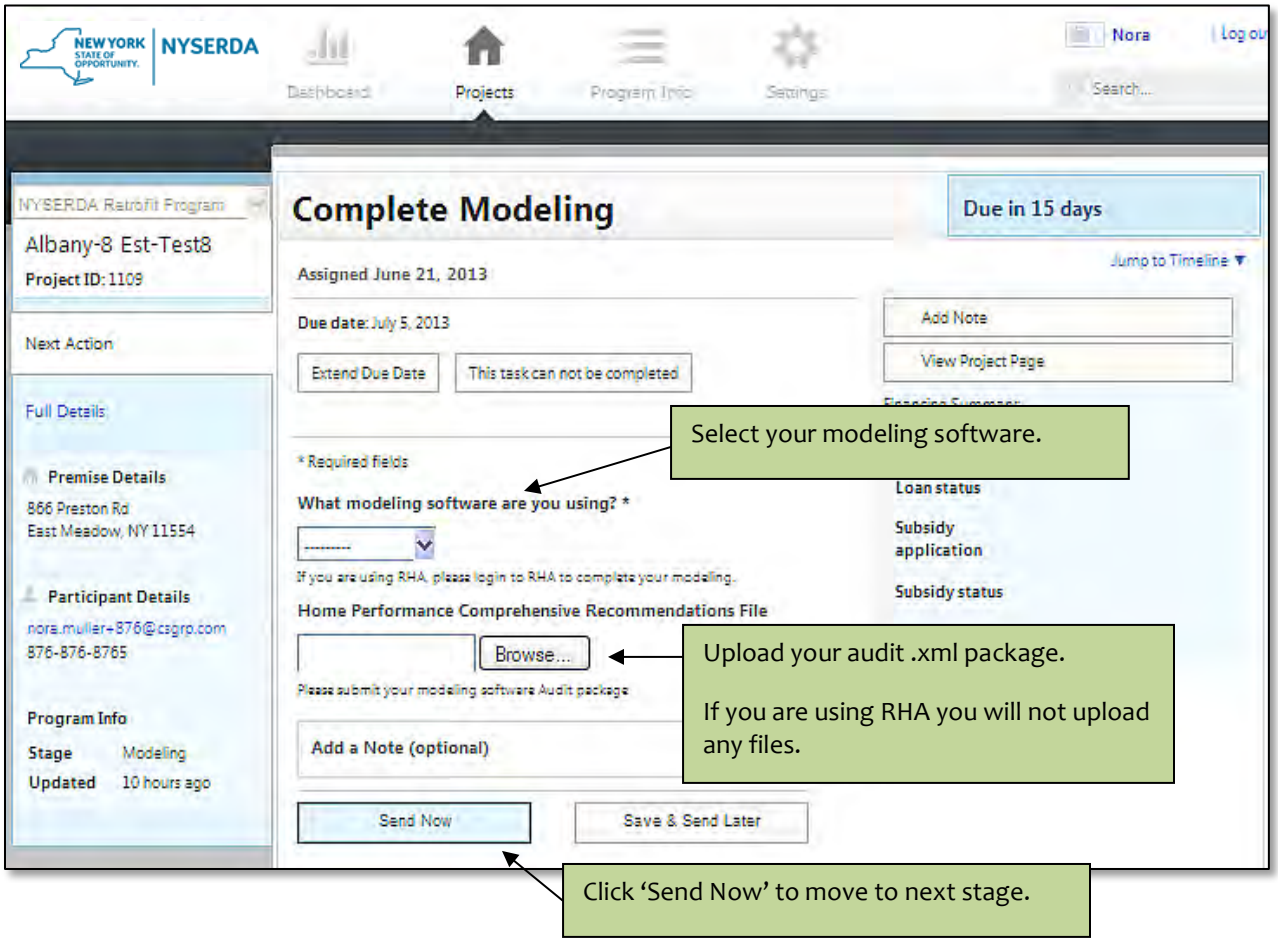
If a project has relevant financing and assisted subsidy information through Energy Finance Solutions (EFS), you will be able to view this information on the right portion of the screen under 'Financing Summary'. By clicking on the 'More information…' link in the Financing Summary section you will see more detailed information.

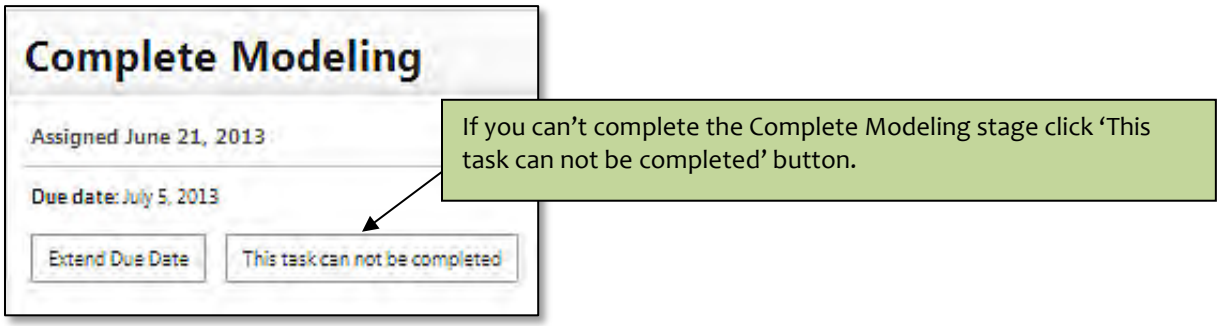




Modeling Stage

In this stage, you will indicate the modeling software that is being used and upload the relevant audit modeling file. Upon successful completion of this stage, the project will move to the Workscope Proposal stage. If there are any errors in your .xml file the Portal will indicate issues with an error message in red and the task will return to the Modeling stage. If RHA is the software that is used then the project will pass directly to the Workscope Proposal stage upon successful creation of the RHA contract.





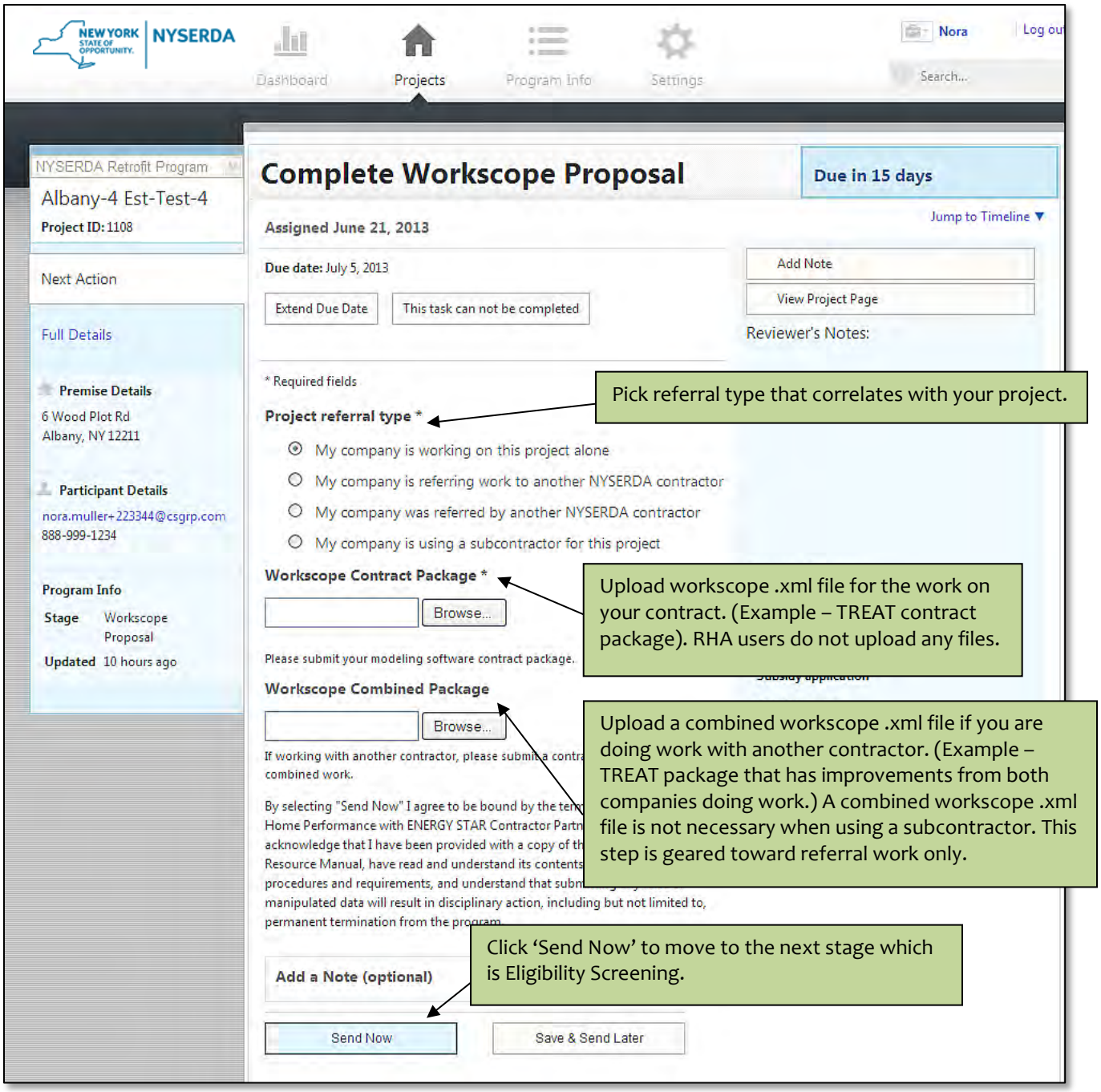
Clicking on the 'This task cannot be completed' button will display the following choices:

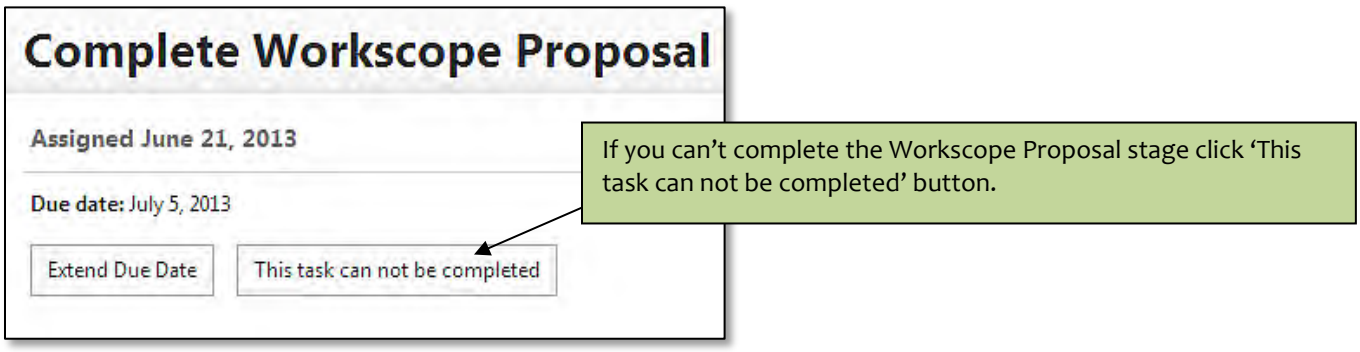
- Did not get business
- Could not contact

If either of these two choices is selected, the retrofit project will be marked as closed and the project will be deactivated. Projects can be reactivated by contacting Contractor Support.

Workscope Proposal

In this stage, the contractor submits a proposed workscope for the project. Upon successful completion of this stage, the project will move to the Eligibility Screening stage. If the contractor uses RHA, the project will move directly to the Eligibility Screening stage after the Workscope Proposal 'Project referral type' question is answered.





Clicking on the 'This task cannot be completed' button will display the following choices:

- Making corrections to the existing building model → Rolls project back to Modeling stage
- Did not get business → Deactivates (closes) project
- Could not contact→ Deactivates (closes) project

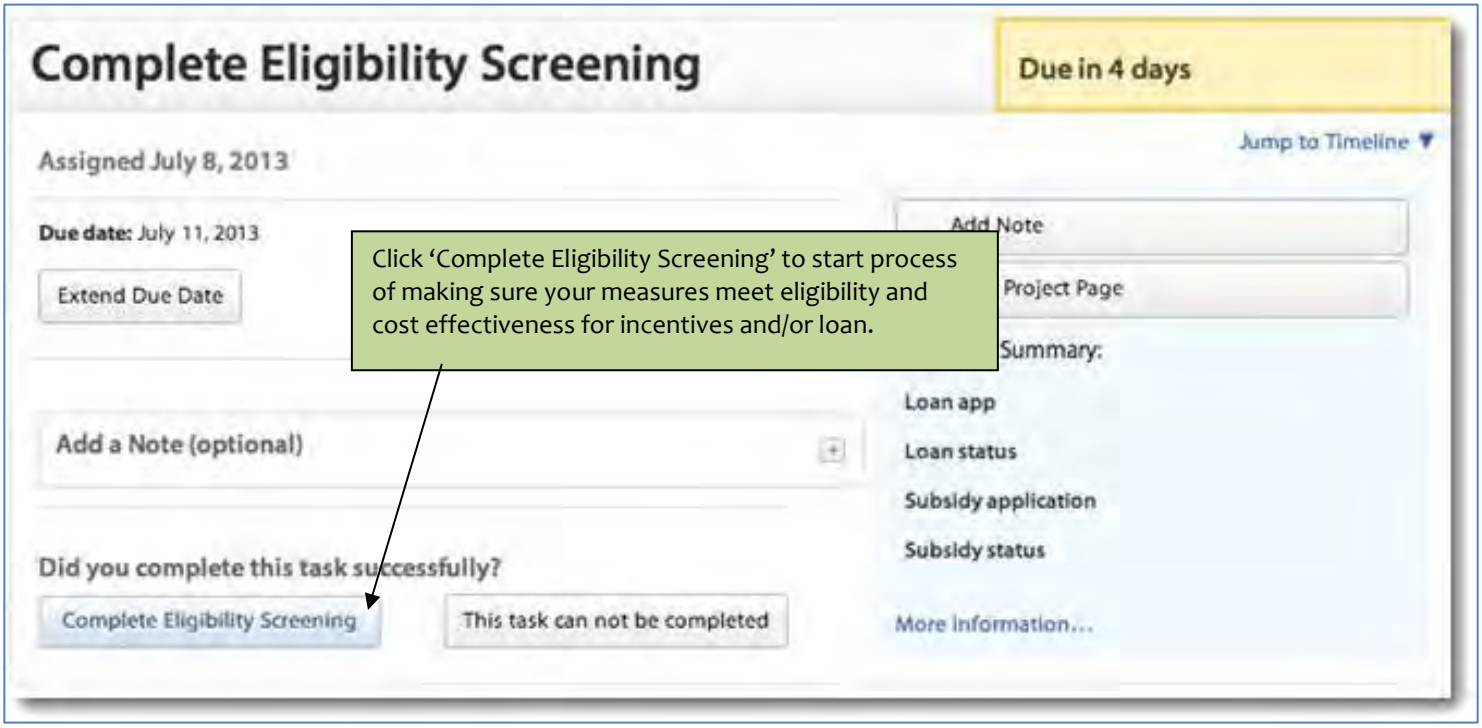
If the 'Making corrections to the existing building model' option is selected, the project will automatically move to the Modeling stage for you to input the changes to the existing building model and upload the corrected file. If either of the other two choices is selected, the project will be marked as closed and the project will be deactivated.

Deactivated projects can be reactivated by contacting Contractor Support. Please provide the name and address of your customer when making reactivation request.

Eligibility Screening

In this stage, you will use the Eligibility Screening Tool (EST) to verify that the project meets eligibility and cost effectiveness requirements for the program. EST takes the place of manually running your project through the ProForma worksheet. EST also includes an area to claim customer and contractor incentives.

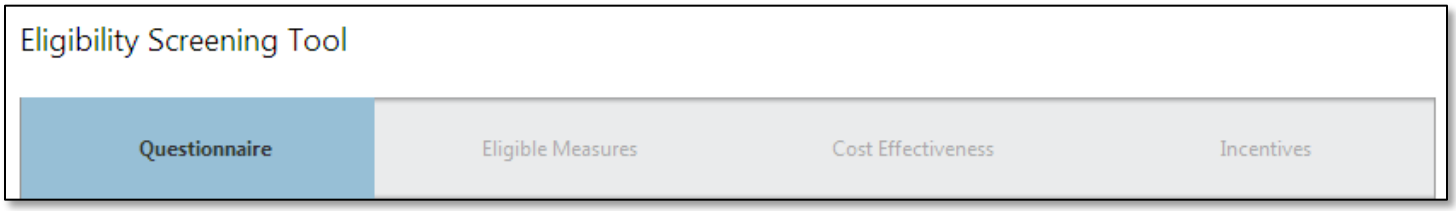
Clicking on the 'Complete Eligibility Screening' button will bring you to the EST. The EST will open in a new window and be completed outside the Portal.



Eligibility Screening Tool (EST)

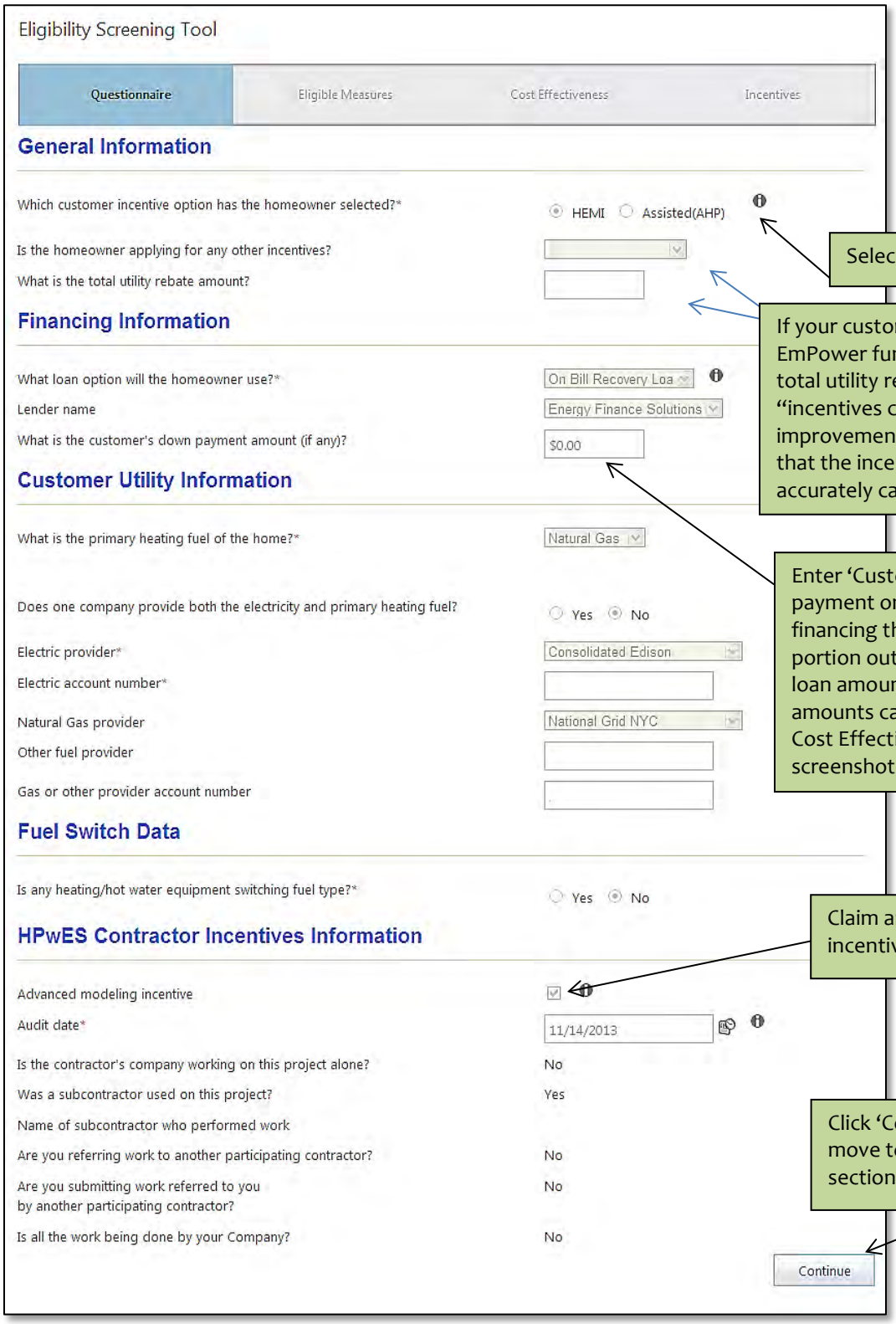
EST has four sections that must be navigated through before coming back to the Portal and advancing to Contract Submission. However you can move backwards within EST by clicking an earlier section (within the EST menu) and then proceed from that screen.

Contractors must review the results shown in EST before submitting for CLEAResult approval. The program will approve what was submitted. For example, if you modeled a measure incorrectly and it shows as not eligible for incentives and financing, it will *not* be approved for incentives or financing.



Questionnaire

The Questionnaire is the first section of EST where you answer questions on basic information about the incentive options the customer is choosing as well as other questions. Projects that originated from HPwES Free or Reduced audit applications will have certain information pre-populated. The Questionnaire also asks questions about fuel switching for proposed heating and hot water equipment as well as contractor incentive claiming for the Advanced Modeling Incentive.



Select customer incentive type.

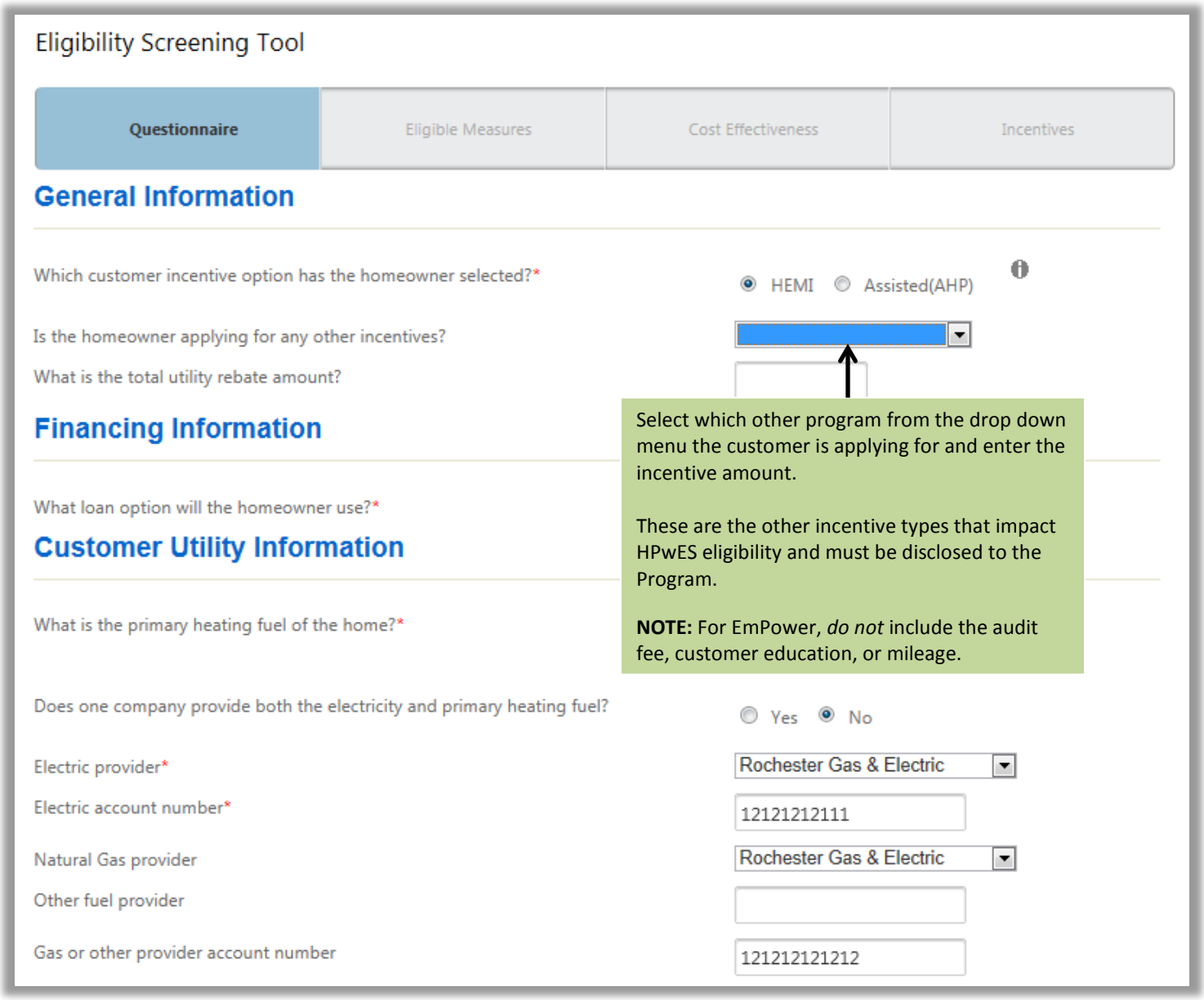
If your customer is receiving utility rebates or EmPower funding select "yes" and then enter the total utility rebate amount. Please check the "incentives claimed" option under the individual improvements on the Eligible Measures screen, so that the incentive and loan amounts are accurately calculated.

Enter 'Customer Contribution' payment only if the customer is financing the project and also paying a portion out-of-pocket to reduce the loan amount. Customer contribution amounts can be found on bottom of Cost Effectiveness Section. See screenshot on page 32.

Claim and verify contractor incentives.

Click 'Continue' button to move to Eligible Measures section.

Utility Rebates & AHP/EmPower Coordination



The other incentives will be deducted from the loan amount, along with any HEMI or AHP that was claimed on additional measures in the package.

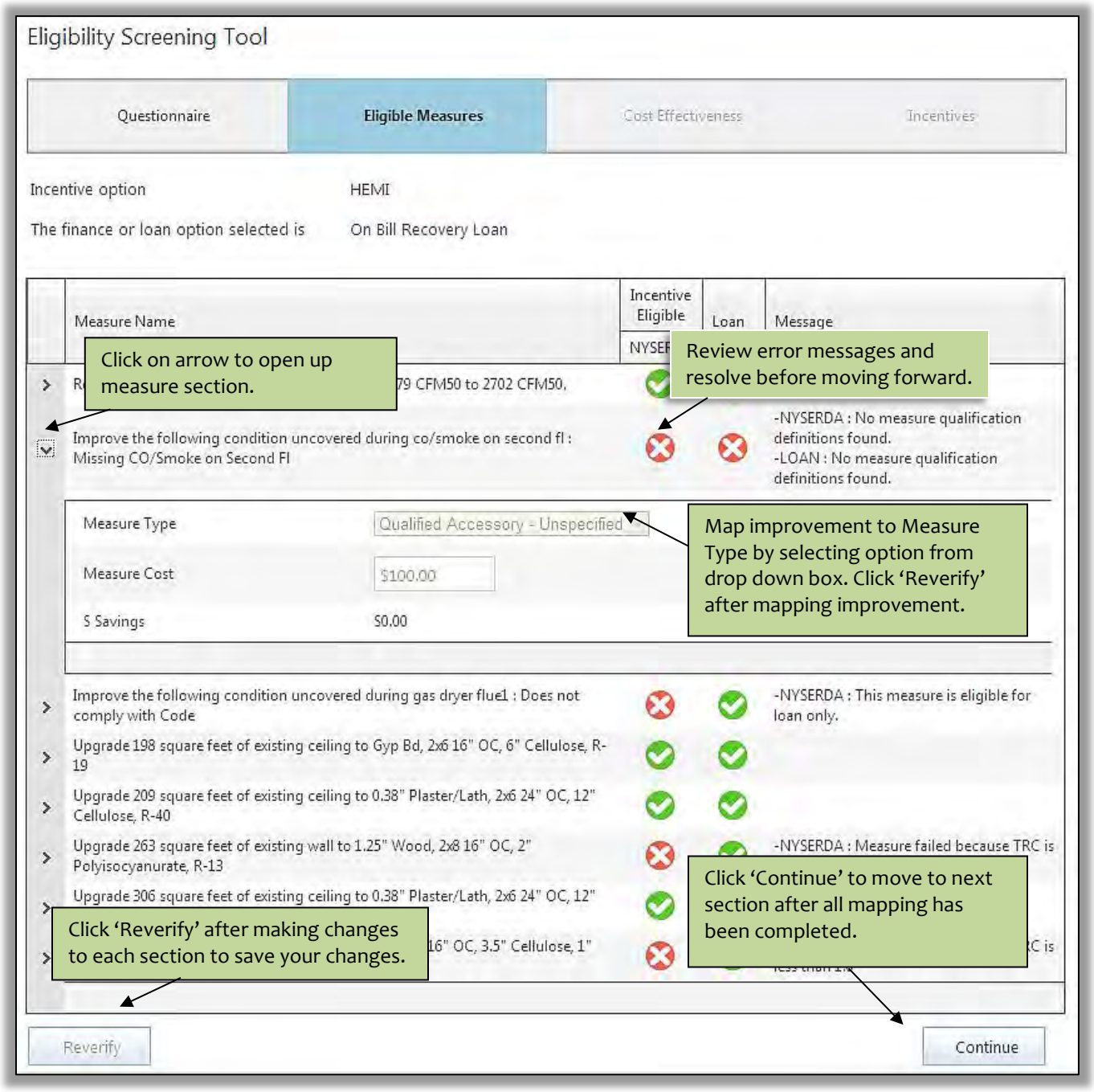
NOTE: Make sure the sum of the modeled improvement costs for measures covered by EmPower equals the other incentives amount, or the loan amount will be incorrect.

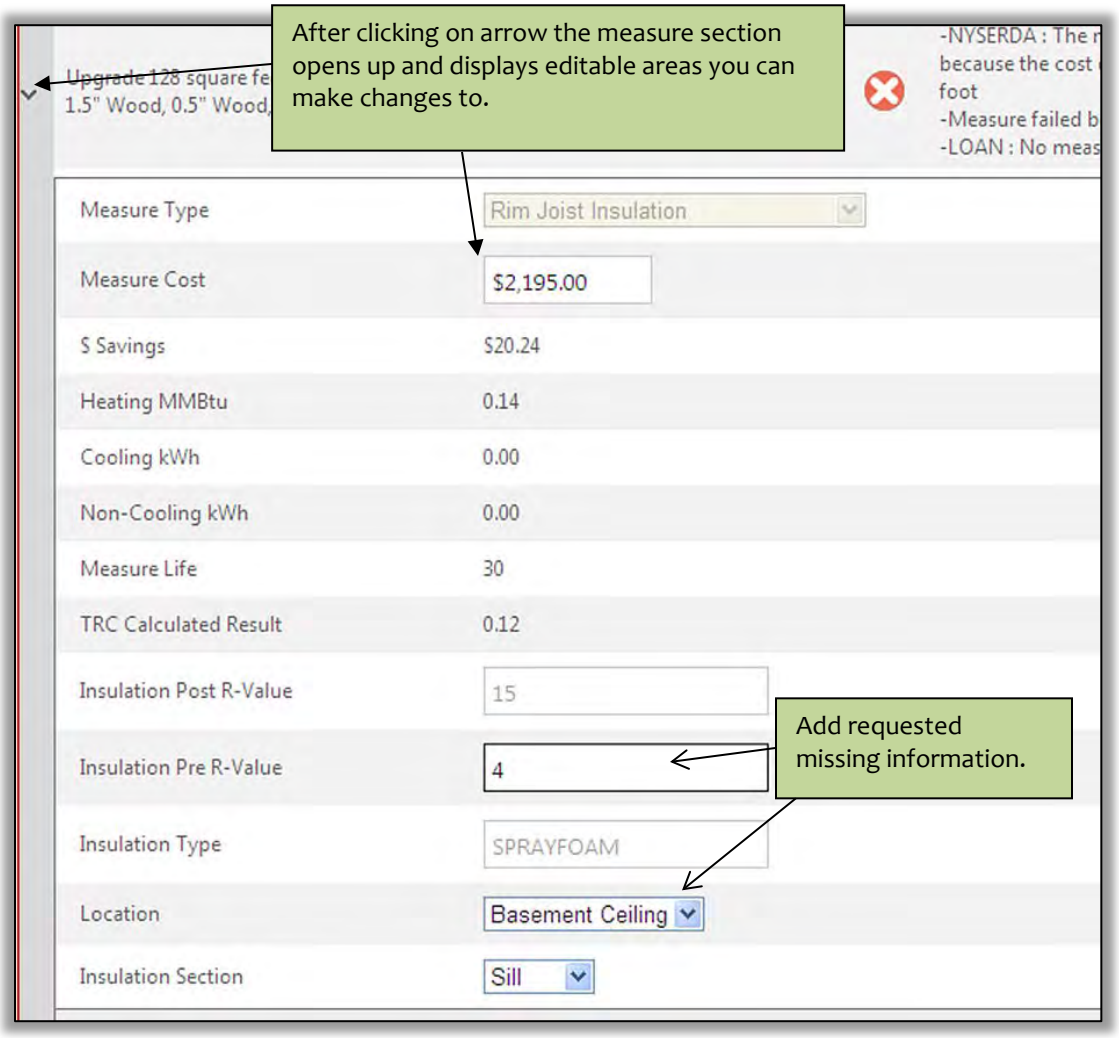
If you require additional assistance on how to submit EmPower/Assisted Coordinated Projects, please reference the separate User Guide: How to Submit EmPower/Assisted Coordinated Projects Utilizing the NY HP Portal Quick Guide.

Eligible Measures

The Eligible Measures section of EST lists the measures and indicates whether that measure is eligible for an incentive or loan. A green checkmark indicates measure is eligible and red x indicates it is not eligible or if more information needs to be given to determine eligibility. If your improvement needs more information it will be listed in red at the top of the page. You need to click on the drop down arrow to fill in necessary information. The reverify button needs to be clicked after making changes to each improvement. The message section explains why measure is not eligible.

This section can also be used as a 'What If Scenario' to see what changes need to be made to your measure in order for it to pass eligibility and cost effectiveness. After making changes to the measure information you will click on the 'Reverify' button to test your changes and see if they qualify for the incentive or loan. Once all your changes are reverified you can proceed through the next screens and then send your project back on the 'Incentives' section to the correct stage to make changes to your building model file.

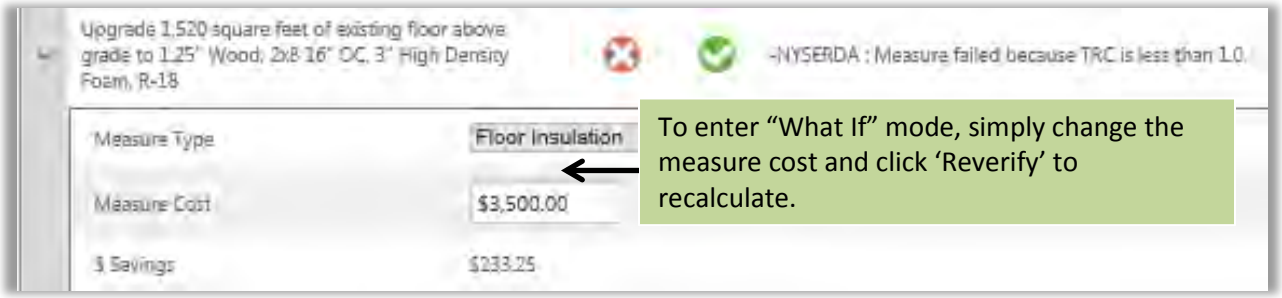




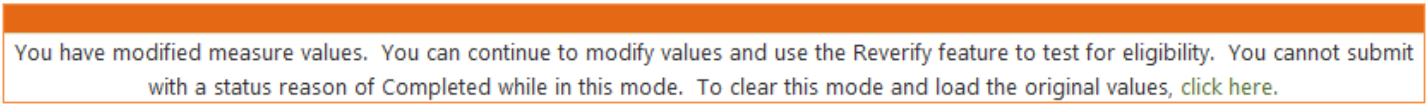
Click 'Continue' to proceed to the Cost Effectiveness section

What-if Analysis Mode

EST allows the user to check the eligibility of the measures in the project, as well as the project as a whole, in *What-If Analysis* mode.



Once the cost of a measure is changed, the header of the Eligible Measures section will indicate:

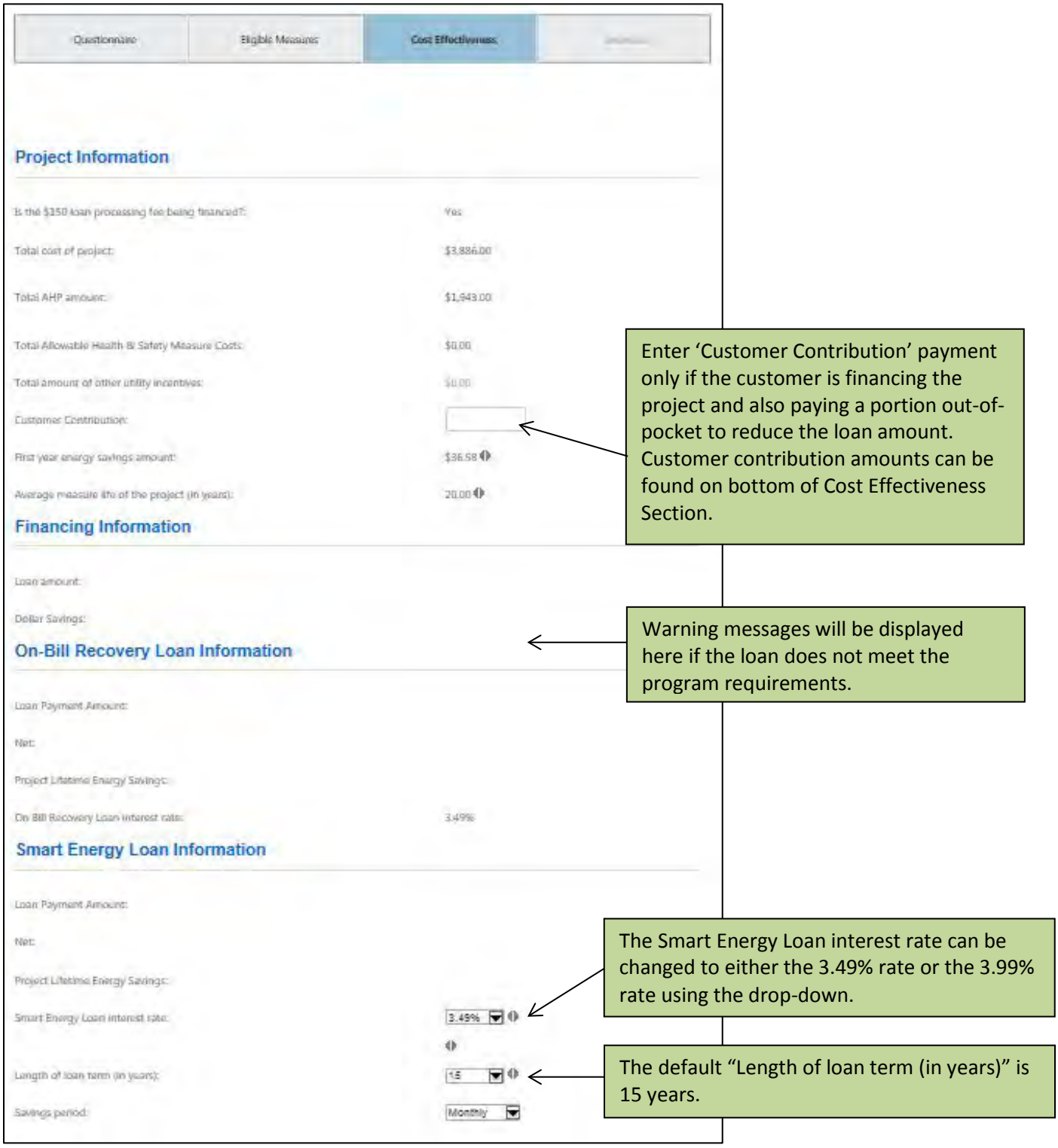


As the message indicates, clicking the link will return the measure costs to the original ones found in uploaded contract package. After you clear the 'What if' mode and reload the original value go back to Portal project in Eligibility Screening by clicking back button on your browser. Click on 'This task can not be completed' and select option for 'Adding or removing measures and /or costs in the workscope.' RHA users will need to delete the old RHA contract and create a new one or other software users will need to create a new contract package with price changes. Once contract improvement pricing changes have been made the revised package will get uploaded and project will advance through EST once again.

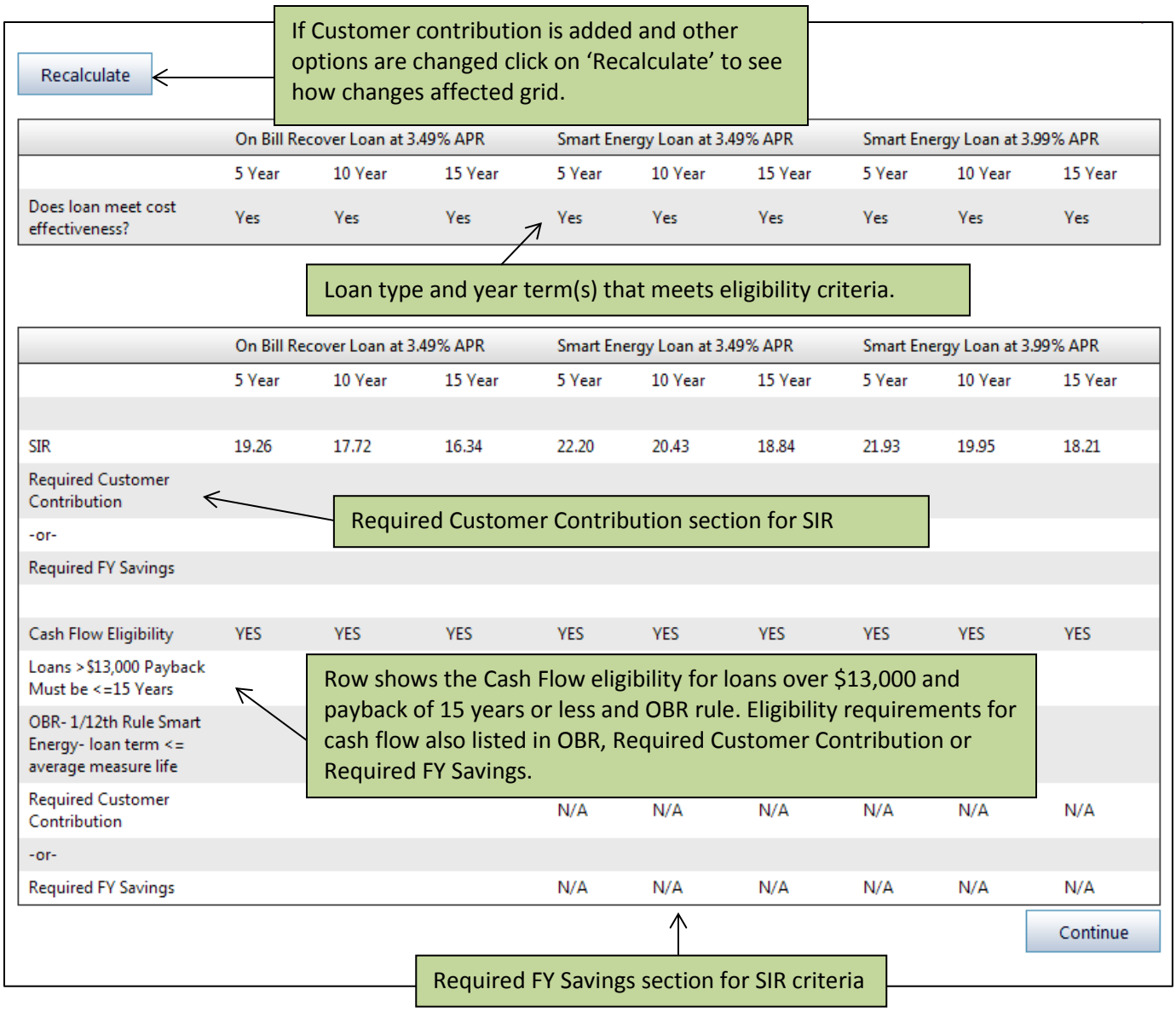
Important Note: The user should not submit the EST with a "Reason" of "Complete" in the fourth section of EST, "Incentives," without first reverting the measure costs back to their original values. Before the project can go through EST again it will need to be reset to clear out the old information. Please contact Contractor Support to request that EST be reset for you project. Please include customer's name, address and Portal or HUB Project ID.

Cost Effectiveness

The 'cost effectiveness' section is similar to the 'loan calculator' portion of the ProForma worksheet. Some sections are pre-populated based on previous selections that were made earlier in the portal. The customer's contribution can be changed in this section within 'project information' to help the project pass the loan cost effectiveness.



Continuation of Cost Effectiveness screen shot shown below.



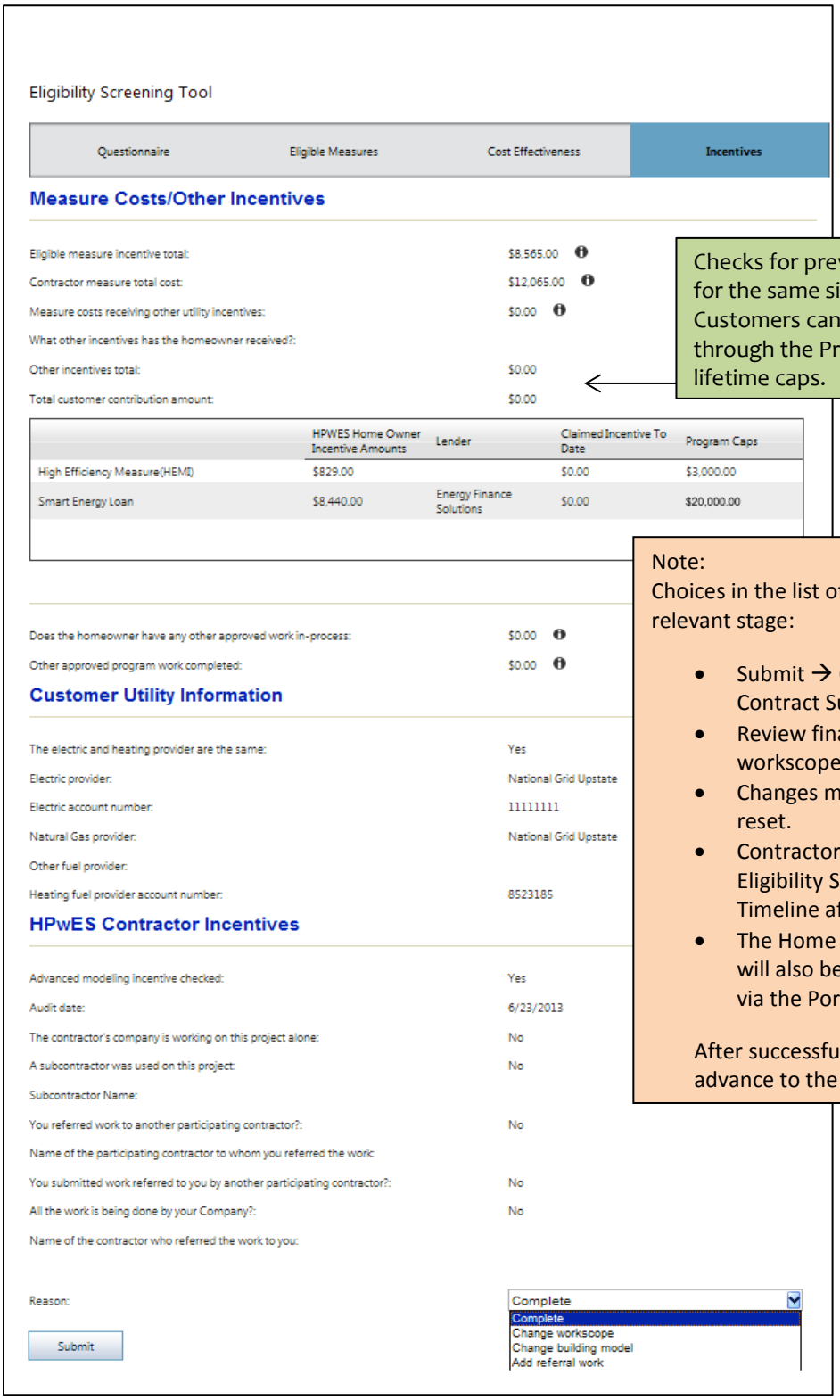
If EST determines that the project is eligible for a certain loan type it will show as 'YES' in the row of where the question 'Does loan meet cost effectiveness?' shows underneath the specified loan type and year of loan term. If certain criteria need to be met in order to use a particular loan type and year term it will show below in the grid in the rows for 'Required Customer Contribution' or 'Required FY Savings' for both criteria; SIR and Cash Flow.

If loan fails cost effectiveness, the options are:

- Choose a different loan term that does pass.
- Increase the project savings by adding some low cost measures to the workscope, like CFLs.
- Reduce or remove any high cost, low savings measures from the workscope, like windows.
- Ask the customer to pay the required out-of-pocket costs.
- OBR customers can switch to the Smart Energy Loan, which is less restrictive. Must change loan type selected in Questionnaire

Incentives

The Incentives section shows the customer incentives amounts, project cost and other associated measure costs under Measure Costs/Other Incentives. The sections for Customer Utility Information and HPwES Contractor Incentives will be pre-populated based on previous selections you made. Corrections to incentives can still be made by jumping backwards to Questionnaire and when changes have been made you proceed through rest of EST screens until you get back to Incentives.



Checks for previous incentives paid for the same site/customer. Customers can put multiple projects through the Program up to the lifetime caps.

Note:
Choices in the list of reasons direct the project to the relevant stage:

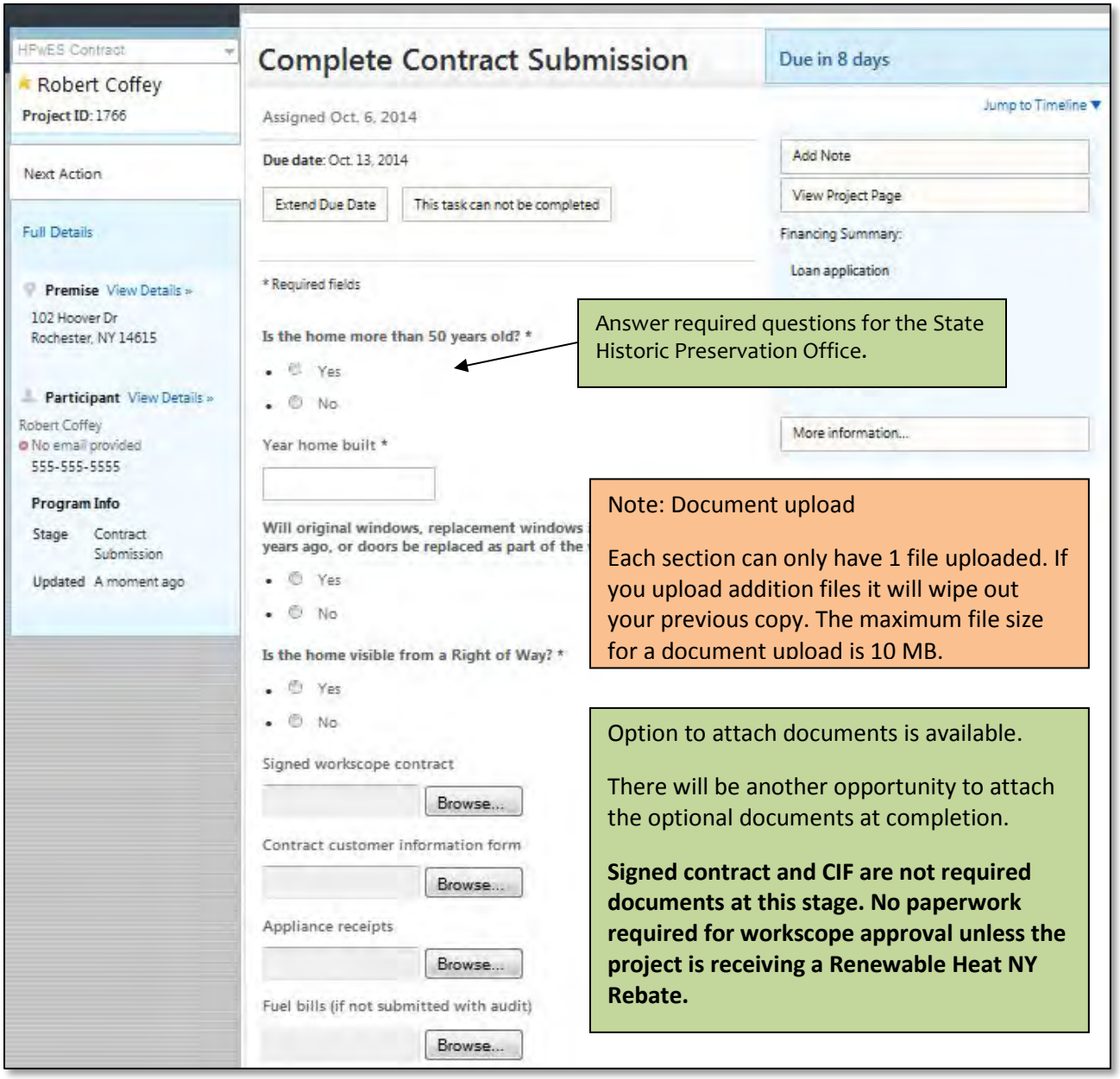
- Submit → Completes EST and advances project to Contract Submission stage.
- Review final EST results before submitting workscope to ensure they are correct.
- Changes made after this point will require EST reset.
- Contractors can download the Home Performance Eligibility Summary Report from the Project Timeline after CLEAResult approval.
- The Home Performance Eligibility Summary Report will also be sent to EFS for Loan and AHP projects via the Portal after CLEAResult approval.

After successfully completing EST, the project will advance to the Contract Submission stage.

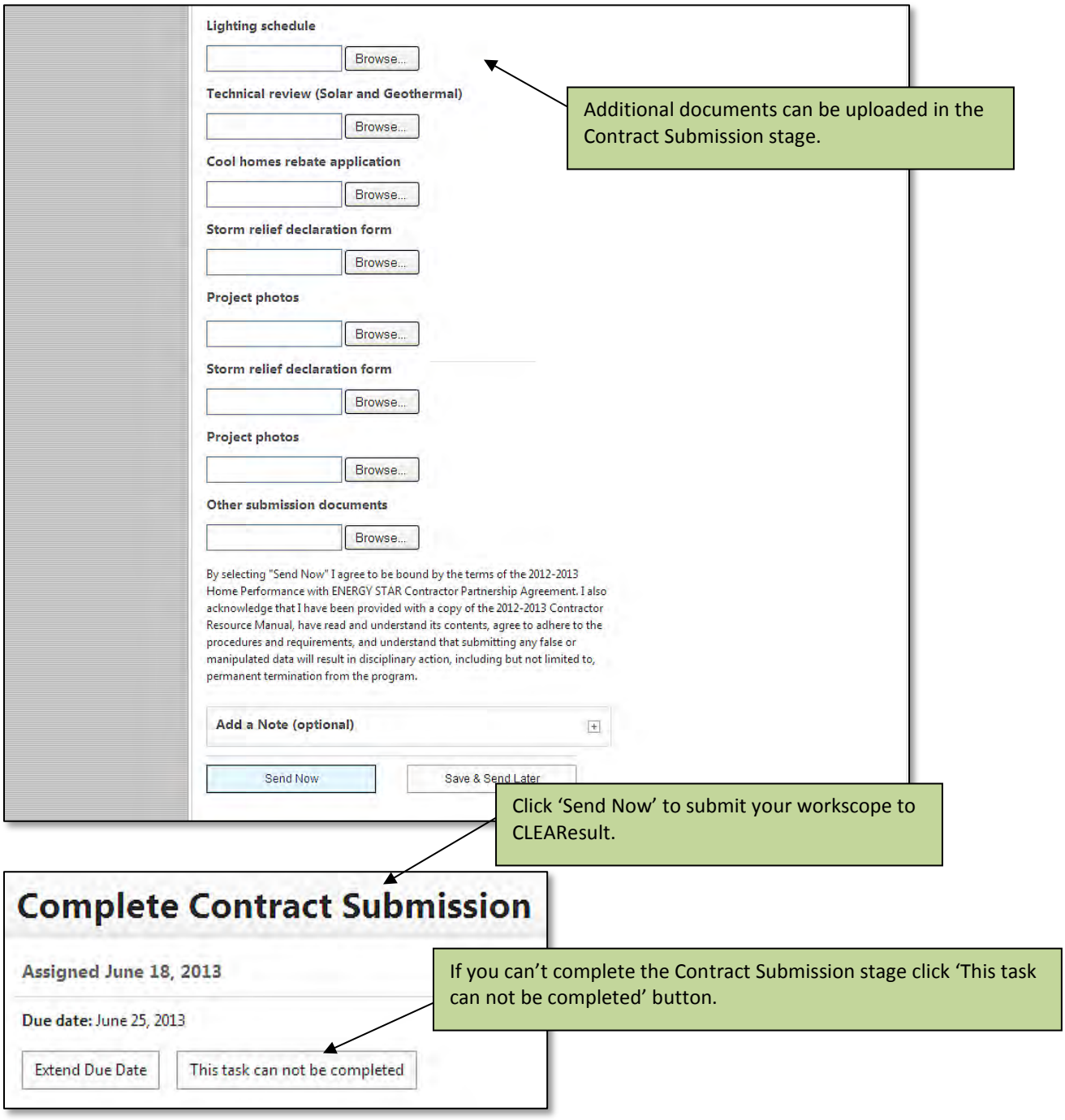
Contract Submission

In this stage, you will answer several questions related to State Historic Preservation Office (SHPO) requirements, submit contract documents, and upload other relevant project documents. Upon successfully completing this stage, the project will advance to the Contract Submission Review stage. Upon passing the Contract Submission Review stage and passing the Financing Approval stage (if applicable), the project advances to the Final Project Submission stage.

Project will still advance to Contract Submission stage, but signed contract and CIF are no longer required documents to be uploaded at this stage. Contractors may attach any applicable supporting documents, such as the AHRI certificate.



The documents that get uploaded for each section must be a single file. For example a signed contract could be 5 pages long but it will only be in one file that gets uploaded under the 'Signed workscope contract' section. There are many PDF programs available that allow you to scan documents and merge multiple pages together as one file.



This stage has several options for incompletion and each option rolls back the project to the necessary stage for corrections:

- Adding or removing measures and/or costs in the workscope → Workscope Proposal stage
- Only changing customer incentive type(s) or loan amount → Eligibility Screening stage
- Making corrections to the existing building model → Modeling stage
- Referral work is being added to this project → Workscope Proposal stage
- Did not get business → Closed (project is terminated)
- Could not contact → Closed (project is terminated)

NY HPwES Project Incentives and Financing Eligibility Summary Report/Home Performance Eligibility Summary Report

Upon successfully completing the Contract Submission stage, CLEAResult will receive a copy of the NY HPwES Project Incentives and Financing Eligibility Summary Report also known as the Home Performance Eligibility Summary Report. CLEAResult will be approving projects based on this report which is generated after submission of the EST results. Contractors will see this new report as the approval transmittal.

Home Performance Eligibility Summary Report generated by Portal replaces:

- ProForma worksheet
- CLEAResult Approval Transmittal
- Certificate of Completion (COC); both Statement of Work and Signature Page

NEW YORK STATE OF OPPORTUNITY. | NYSERDA

HOME PERFORMANCE WITH ENERGY STAR

NY Home Performance with ENERGY STAR
Project Incentives and Financing Eligibility Summary Report

Participating in NY Home Performance with ENERGY STAR (HPwES) is an important step to reducing your energy costs and creating a healthier more comfortable home. This report provides a summary of your approved project, including the incentives you are eligible to receive and your selected financing package. Before signing, please review this entire report, including the terms and conditions.

Section 1.Customer and Contractor Information

Customer Name:	Joe Customer
Customer Building Address:	555 Address Ln Somewhere NY 12345
Customer Mailing Address:	555 Address Ln Somewhere NY 12345
Home Performance Contractor Name:	ABC Contracting Inc.

Section 2.Project Information and Scope of Work

HPwES Project Approval Valid Until: 10/4/2015
Amount of Work Eligible for Incentives: $18,375.00
Existing Primary Heating Fuel Type: Natural Gas
Fuel Switch: (Yes/No): No

List of Energy Efficiency Improvements	Eligible for HPwES Incentives	Loan Eligible (if applicable)
Wall Insulation	No	Yes
Attic Insulation	Yes	Yes
Rim Joist Insulation	Yes	Yes
Air Sealing	Yes	Yes
Boiler	Yes	Yes
Windows	No	Yes
Indirect Water Heater	Yes	Yes
Health and Safety - Unspecified	No	Yes
Health and Safety - Unspecified	No	Yes

Page: 1 of 7 Date/Time: 7/6/2015 1:00 PM

Home Performance Eligibility Summary Report

The first four pages are customer-facing and must be presented to the homeowner prior to work commencing. A sample of the report can be found here. (http://hpwescontractorsupport.com/program-documents-2/2014-2015-contractor-resource-manual/section-8-operational-forms/)

Customer Facing Report:

Section 1.Customer and Contractor Information

- Customer information. If the mailing address is different than the building address, please type the mailing address in the report to upload at project completion submittal. Mailing address is not captured in the Portal for customers who start with a contract project.

Section 2.Project Information and Scope of Work

- Project details
- Workscope
- Measure eligibility
- Approval expiration date

Section 3.Customer Incentives

- Details on customer incentives
- Customer payment assignment
    - Note: HEMI payment now defaults to Contractor unless customer indicates by initialing form.

Section 4.Financing Information (If Applicable)

- Loan type
- Loan details
    - Loan term defaults in EST to 15 years. Please change loan term if customer would like a shorter term.

Section 5. Certificate of Completion- Read and Sign after Work is Completed

- Section 5 is the Certificate of Completion, to be signed after all work has been installed.
- This document will be submitted at completion, along with a signed copy of the previous 3 pages (customer facing pages) and your signed contract with the homeowner

Administrative Facing Report Sections:

The last 3 pages are for Administrative Review. CLEAResult program staff spot checks this data for any red flags (such as unusually high or low savings). Contractors have the choice to share this section with their customers.

Home Performance Eligibility Summary Report Exceptions

Most projects will show correct results in EST when all information is entered correctly by the user.

A few rare exceptions may require CLEAResult to edit the incentives on the Home Performance Eligibility Summary Report prior to approval.

- AHP multi-family, EST currently defaults all AHP projects to 50% up to $5,000.
- Complex homes with more than one fuel switch of different types for multiple heating / hot water systems.

For these situations, submit the EST results "as is" and add a note to the Portal project.

A few project types cannot be submitted through the Portal / EST at this time. They will still require the old program forms to be faxed in and follow the full approval review process.

- Combined Solar PV & HPwES
- Phased Loans
- PSEGLI HPD / REAP follow-on work

These old process documents can be located here. (http://hpwescontractorsupport.com/program-documents-2/sample/old-process-documents/)

Home Performance Eligibility Summary Report Review

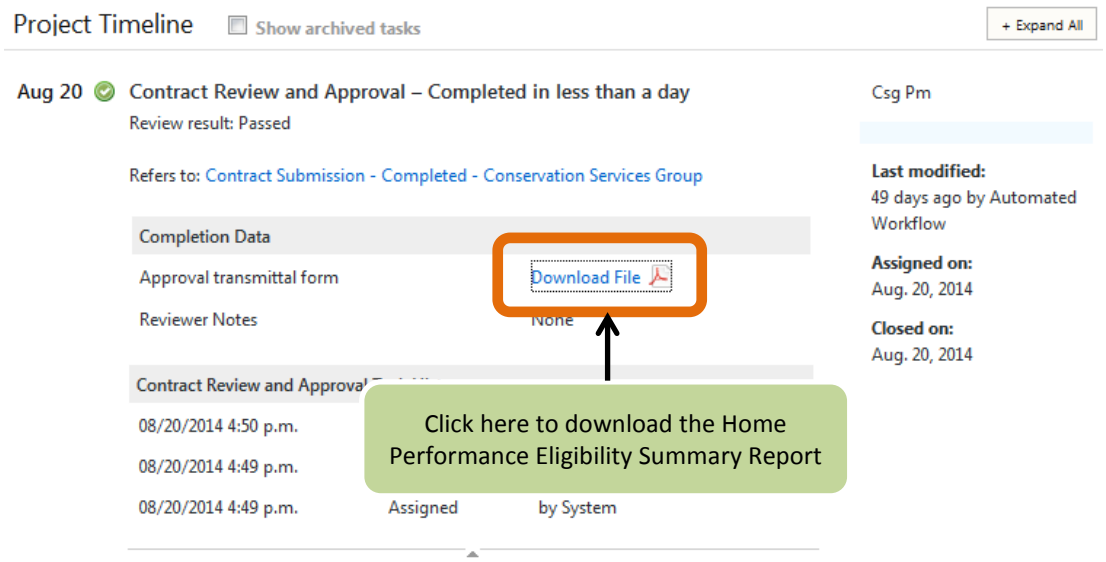
CLEAResult will review the Home Performance Eligibility Summary Report for Program compliance.

- Verify BPI Certification, EFS pre-approval, review the savings and cost effectiveness results on the report.
- If no red flags are found, project will be approved.
- Issues caught during the expedited review process will trigger a full model review, which may result in the project being placed on hold and sent back to the contractor for revisions.

While a 1 day turnaround is anticipated once all contractors are using the new process, it may take some time for all contractors to get up to speed. Contractor Support will be available to answer questions anytime during the process.

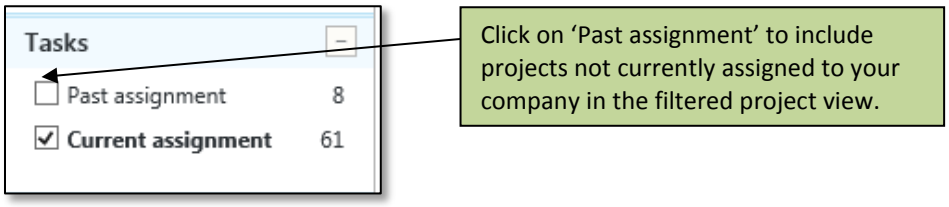
The Home Performance Eligibility Summary Report will be made available in the Project Timeline as the Approval transmittal form. If the customer created a Portal login, they will be able to view this document online.

The Portal also sends a notification email to the address in your partner profile when the project is approved.

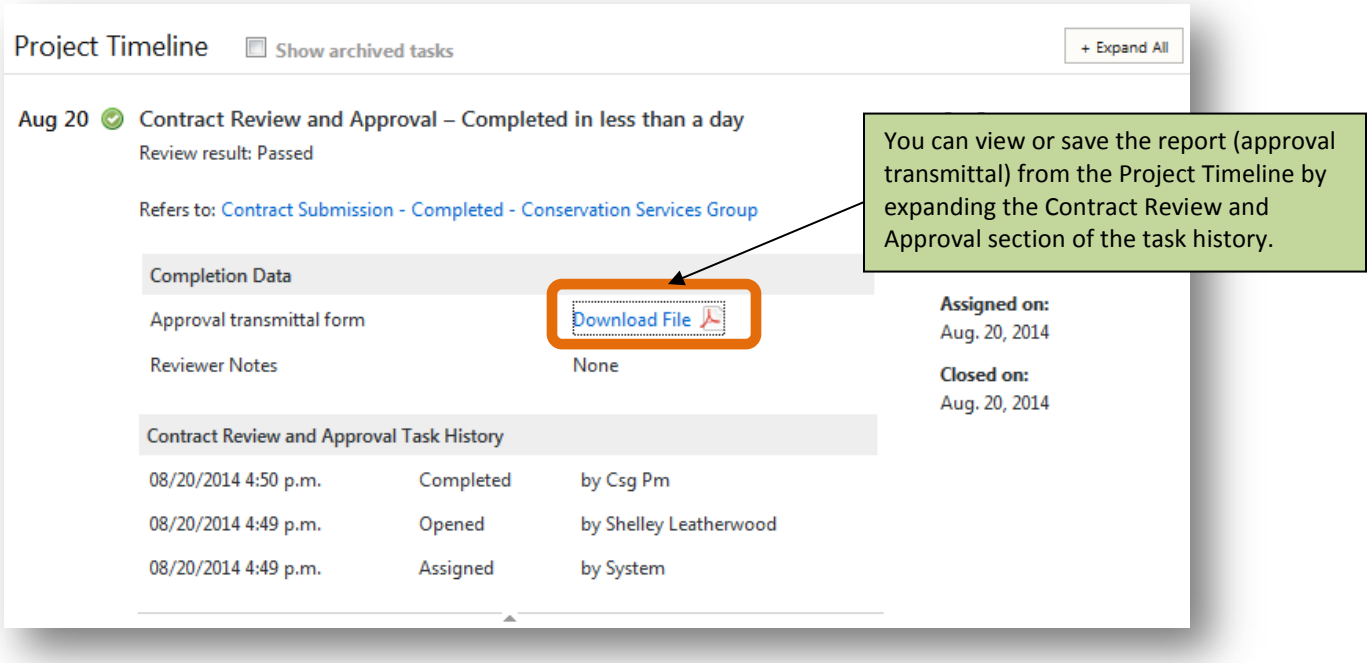


Contract Submission Review

Once you complete the Contract Submission stage, the next task is assigned to CLEAResult for Contract Review and Approval. You can see projects with tasks currently assigned to CLEAResult or EFS by selecting 'Past assignment' on your active project view filtering options.



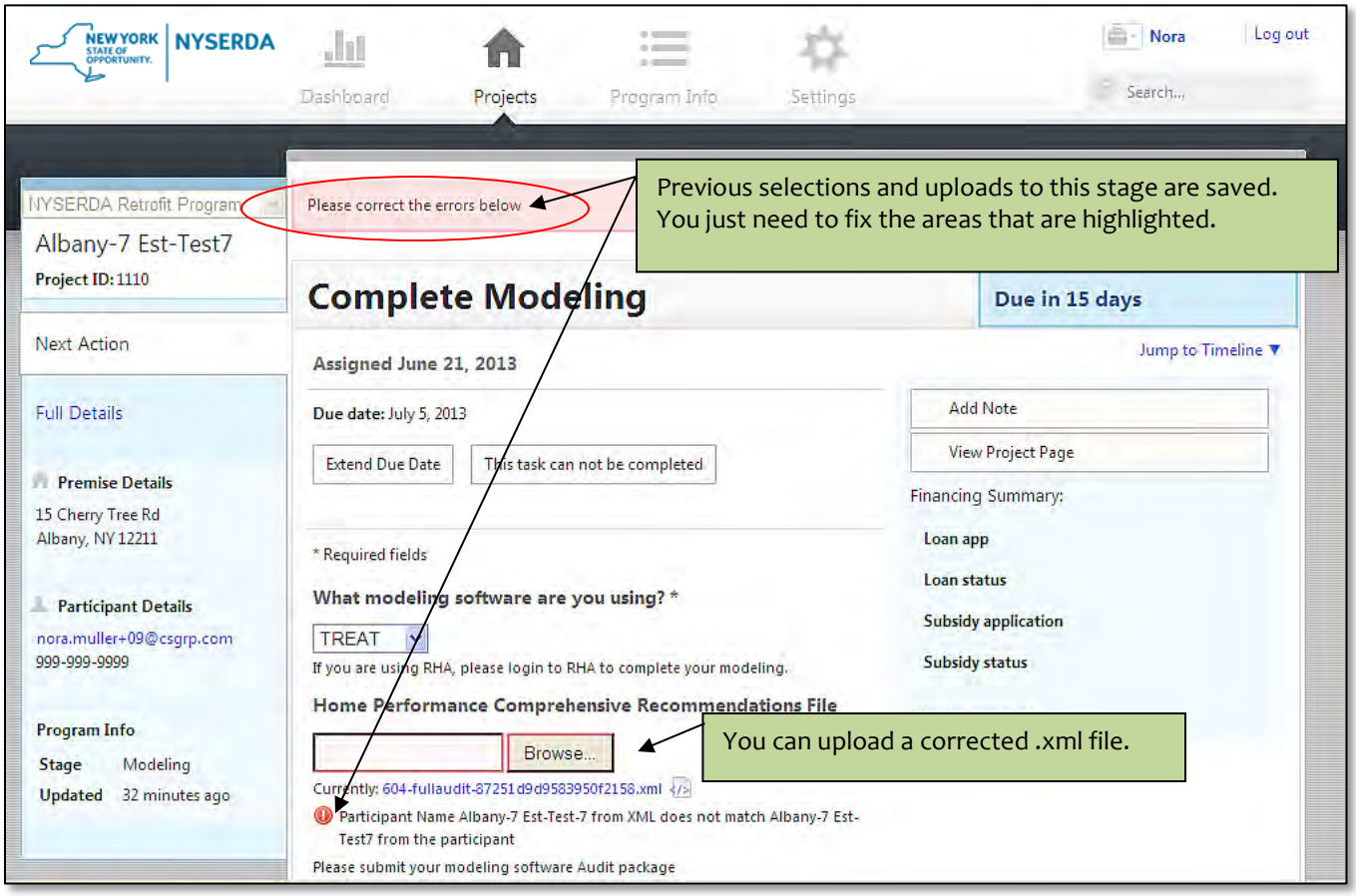
When the approval is issued by CLEAResult, you will receive a notification from the Portal. The Home Performance Eligibility Summary Report (Approval Transmittal) will be available in the Project Timeline. If the customer created a login, they will also be able to view this document.



Correcting a Failed Review Stage

In the event that any of the stages completed by you fail a subsequent review stage, you will receive an email notification of what needs to be corrected and the project will automatically be moved to the stage that needs correction. The notification will be sent to the email address established in the 'Settings' section under 'Task Options'. Your project can also fail the Modeling or Workscope Review stage if an error is found in your file. There will be an error message on the page under the upload section explaining what the error is. The file will need to be fixed and uploaded again.

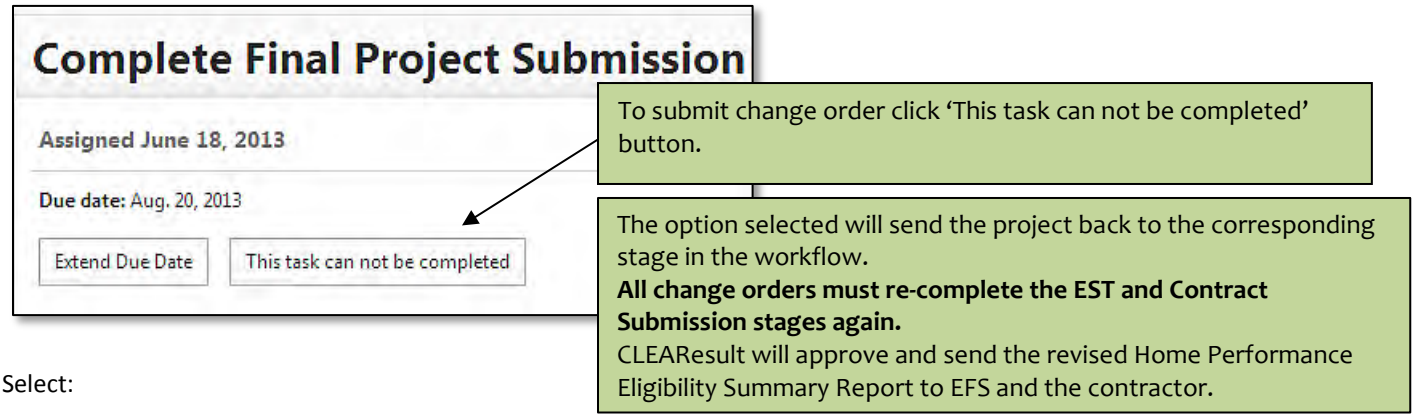
In the screenshot below, the project was returned to the Modeling stage from the Modeling Review stage because a mistake in the participant's name was picked up by the Portal during error checking. After correcting the file it must be uploaded again and then the project can continue through the workflow.



Change Orders

At any point after your project has been successfully reviewed you can submit a change order. This will generally occur when your project is in the final project submission stage. Click on the button 'This Task can not be completed' and selection option for 'Adding or removing measures and/or costs in the workscope'. The change order file will get uploaded in the same section as the contract package. If you are doing referral work then the combined package will need to be updated as well. RHA users will need to delete the original RHA contract and create a new one. The project will then advance through Eligibility screening. Before the project can go through EST it will need to be reset to clear out the old information.

Please contact Contractor Support to request that EST be reset for you project. Please include customer's name, address and portal or HUB project ID.



Select:

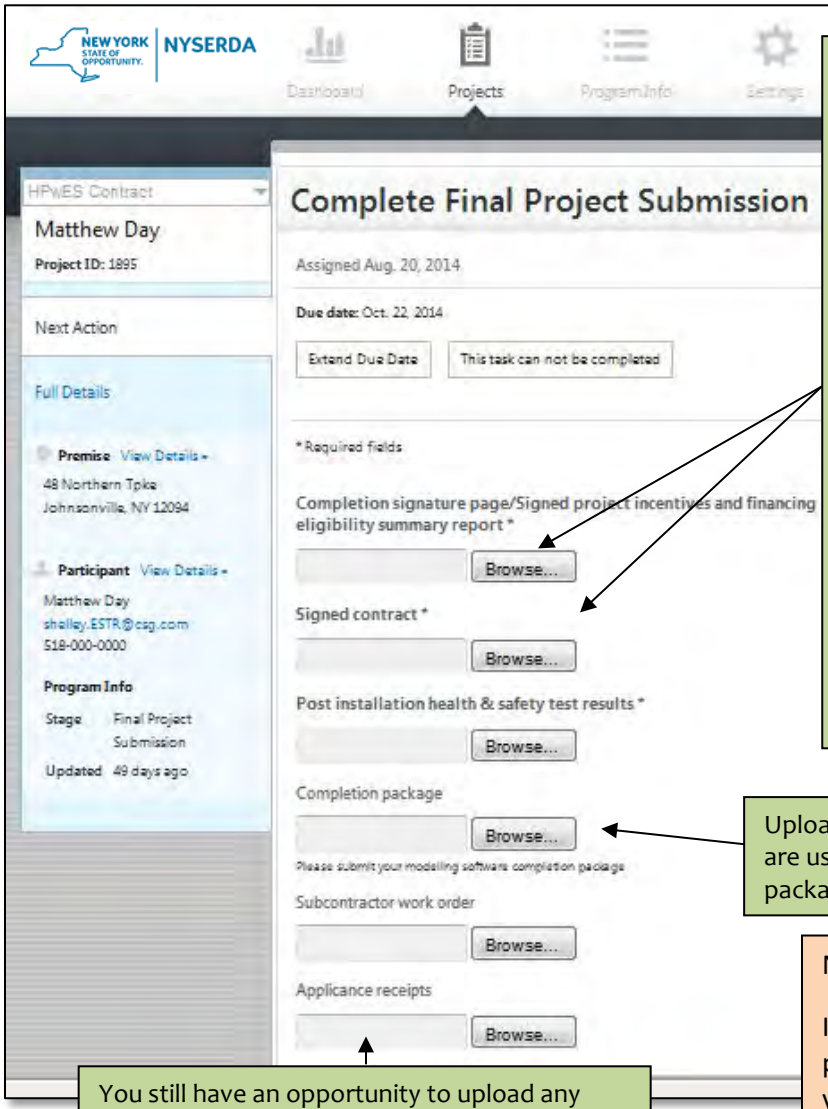
- Adding or removing measures and/or costs in the workscope → Workscope Proposal stage

Financing Approval

Any project that is linked to an EFS loan number (either from an AHP or Loan application) will automatically enter this stage before proceeding to Final Project Submission. The job submission and approval documents are communicated to EFS via the Portal. EFS must then complete this task, which includes generating any loan documents, before the project will move to the next stage. You can see projects with tasks currently assigned to CLEAResult or EFS by selecting 'Past assignment' on your active project view filtering options.

Final Project Submission

In this stage, the contractor completes the project work and submits completion data from the project to the program. Assuming the contractor successfully completes this stage, this is the last stage in the NYSERDA workflow that is the responsibility of the contractor.



Upload your required completion documents.

Data required at completion:

- Signed and initialed Home Performance Eligibility Summary Report
- Signed contract with the homeowner (on company letterhead and compliant with NYS contract law)
- Post Installation Health & Safety Test Results
- Completion package from modeling tool with test-out results entered
- Signed Customer Information Form

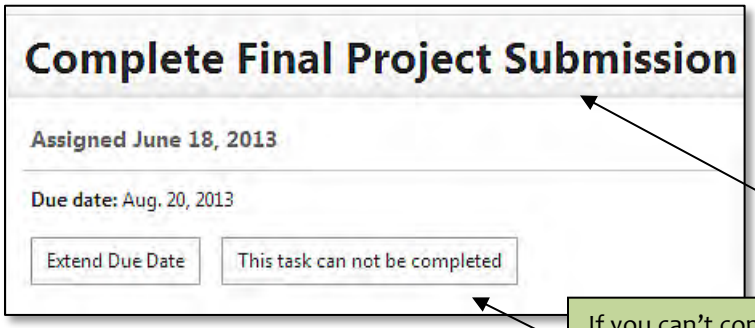
Upload your .xml completion package. If you are using RHA you do not need to upload a package.

You still have an opportunity to upload any other necessary documents at this time.

Note:

If there is an issue with your completion package after error checking has occurred you will be sent back to Final Project Submission. You will need to correct your file and upload again.

(Example: The completion package doesn't match the pricing or measures of the last approved package…)



Click 'Send Now' to send your project off for final review.

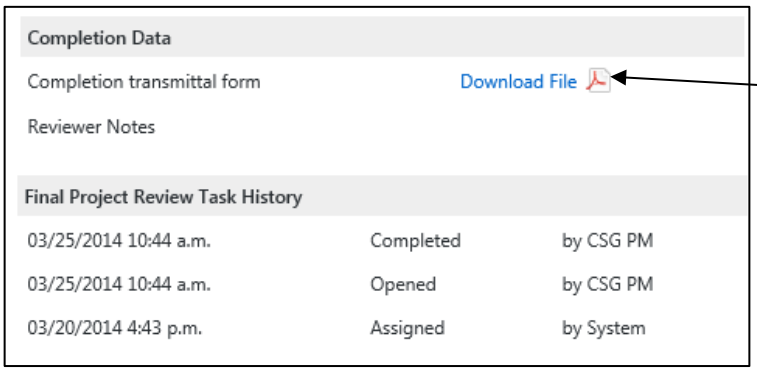
If you can't complete the Complete Final Project Submission stage click 'This task can not be completed' button.

This stage has several options for incompletion and each option rolls back the project to the relevant stage for correction:

- Only changing customer incentive type(s) or loan amount → Eligibility Screening stage
- Adding or removing measures and/or costs in the workscope → Workscope Proposal stage
- Referral work is being added to this project → Workscope Proposal stage
- Making corrections to the existing building model → Modeling stage
- Updating workscope documents on file. Project costs and measures remain the same → Contract Submission stage
- Could not contact → Closed (project is terminated)
- Did not get business → Closed (project is terminated)

Final Project Review

Once you complete the Final Project Submission stage, the next task is assigned to CLEAResult for Final Project Review. You can see projects with tasks currently assigned to CLEAResult or EFS by selecting 'Past assignment' on your active project view filtering options. When the completion is processed by CLEAResult, you will receive a notification from the Portal. The completion transmittal will be available in the Project Timeline. If the customer created a login, they will also be able to view this document.



You can view or save the completion transmittal from the Project Timeline by expanding the Final Project Review section of the task history.

Financing Disbursement

Any project that is linked to an EFS loan number (either from an AHP or Loan application) will automatically enter this stage before proceeding to Closed - Complete. The completion submission and completion transmittal documents are communicated to EFS via the Portal. EFS must then complete this task, which includes authorizing payment to the contractor, before the project will be marked as complete in the Portal. You can see projects with tasks currently assigned to CLEAResult or EFS by selecting 'Past assignment' on your active project view filtering options.

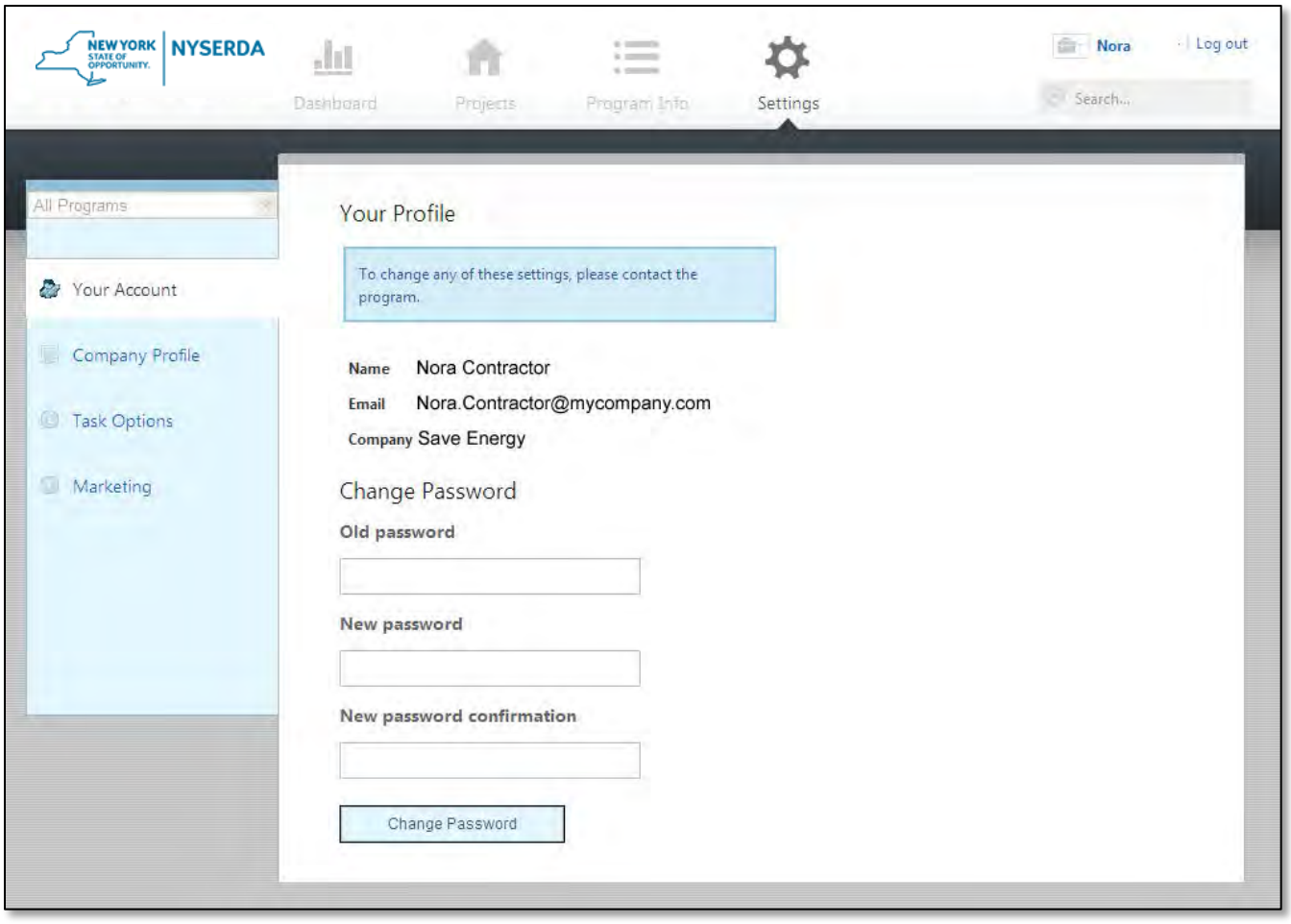
Settings

Your Account/Your Profile

Once logged in, click on the Settings tab found on the upper right hand side of the Portal.

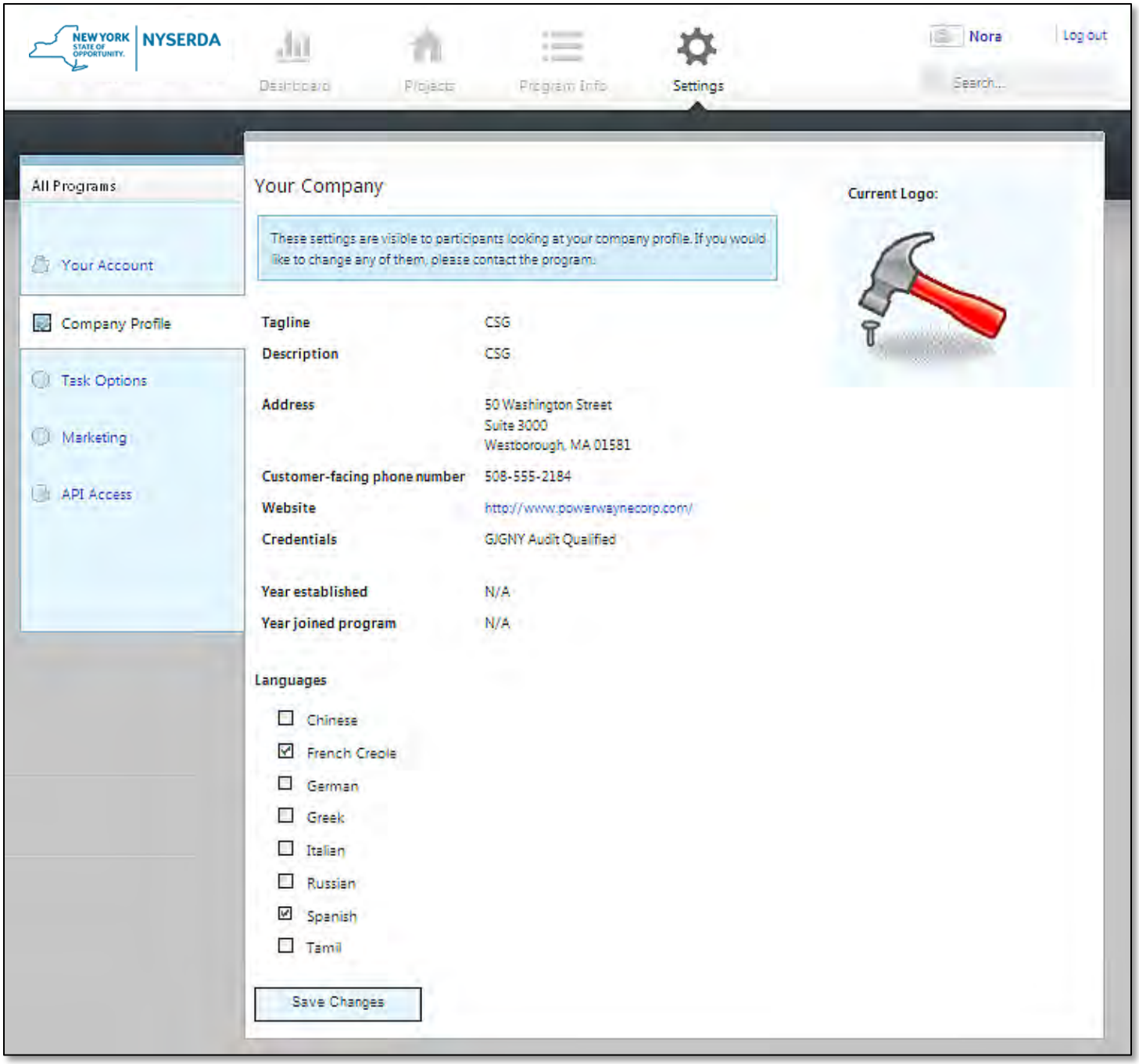
Within the Settings page, you can take the following actions:

- Change your password (Your Account tab)
- Set the languages your company supports (Company Profile tab)
- Set the email and phone number for notification of new tasks (Task Options tab)
- Create marketing campaigns (Marketing tab)



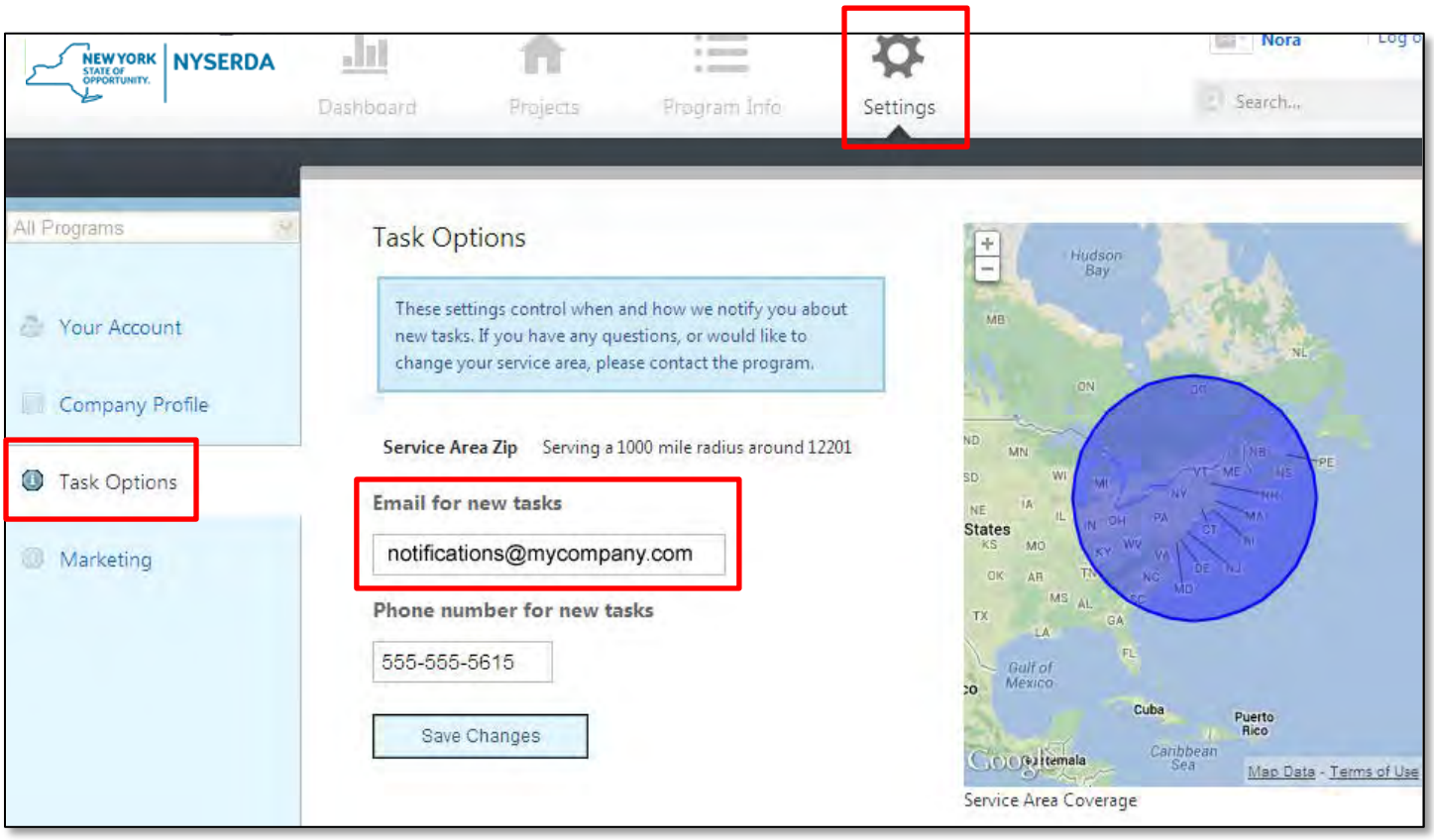
Company Profile

On the company profile section you have the option to change the languages that potential customers can see. The other information must be changed by NYSERDA HPwES staff. Contractors can request updates to their customer facing profile information by contacting Contractor Support.



Task Options

The task options control which phone number or email gets tasks notifications. Only one email address can be used for task notifications. It is suggested that a group email account be set up for these purposes. This is based on the counties in which the contractor has a signed participation agreement. Contractors can request changes to add or remove individual user accounts by contacting Contractor Support.



Marketing

Use the Marketing section to generate and track your marketing efforts via campaign codes. Contractors can create individual campaigns and track the number of leads generated from those initiatives. Campaigns might include a mailer, home show event, radio or print advertisement, etc. These are self-created so you can generate a campaign for anything you'd like to track. You can also choose start and end dates. Creating a campaign can generate a unique application URL and your company name will auto populate in the audit application. You can post a general application campaign URL to your own website. Therefore any customers filling out the audit application from your website will be tagged with your company name.

To generate the URL of the online audit application based on your unique company campaign code and marketing campaigns:

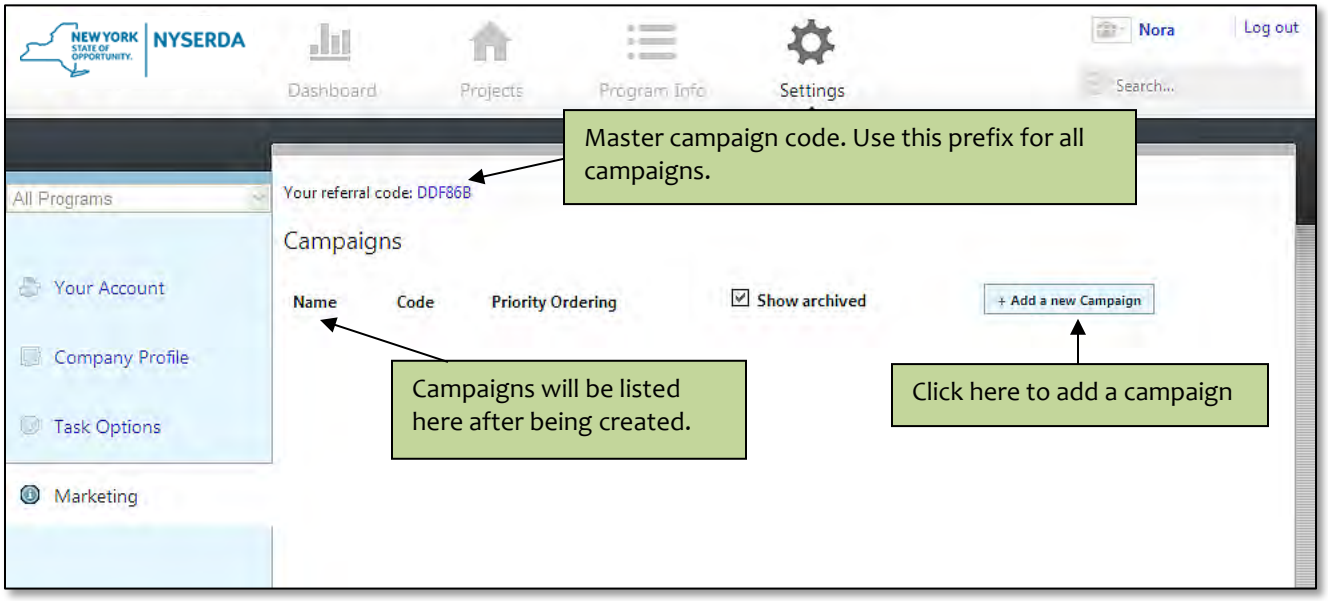
Create the URL: https://nyserda.energysavvy.com/start-your-project/hpwes/?src=PutYourReferralCodeHere

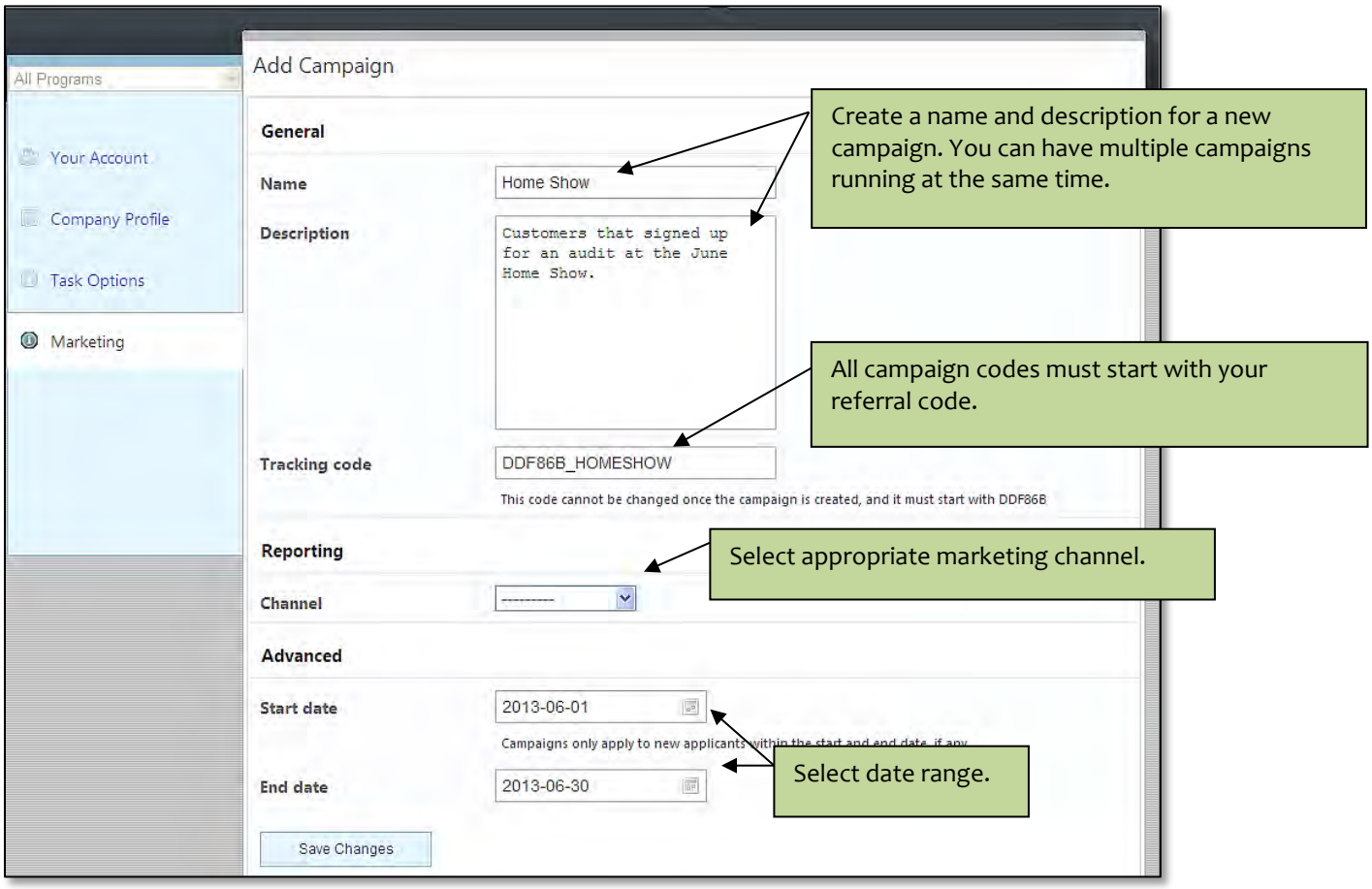
Example:
Master Campaign Code: DDF86B
Marketing Campaign Code: DDF86B_HOMESHOW
https://nyserda.energysavvy.com/start-your-project/hpwes/?src = DDF86B_HOMESHOW

To enter an application with a Marketing Campaign Code, use the generated URL link. Fill out the application per the usual process and attach the paper copy of the audit application.

Please note: You must log out of Portal before you enter the application or the URL may revert to the contractor- generated Portal account and will not properly log the campaign code.

Please note: You must either click the hyperlink URL or type the URL into a web browser. If you copy and paste the URL from a document, the campaign code gets corrupted and will not tag properly in Portal.

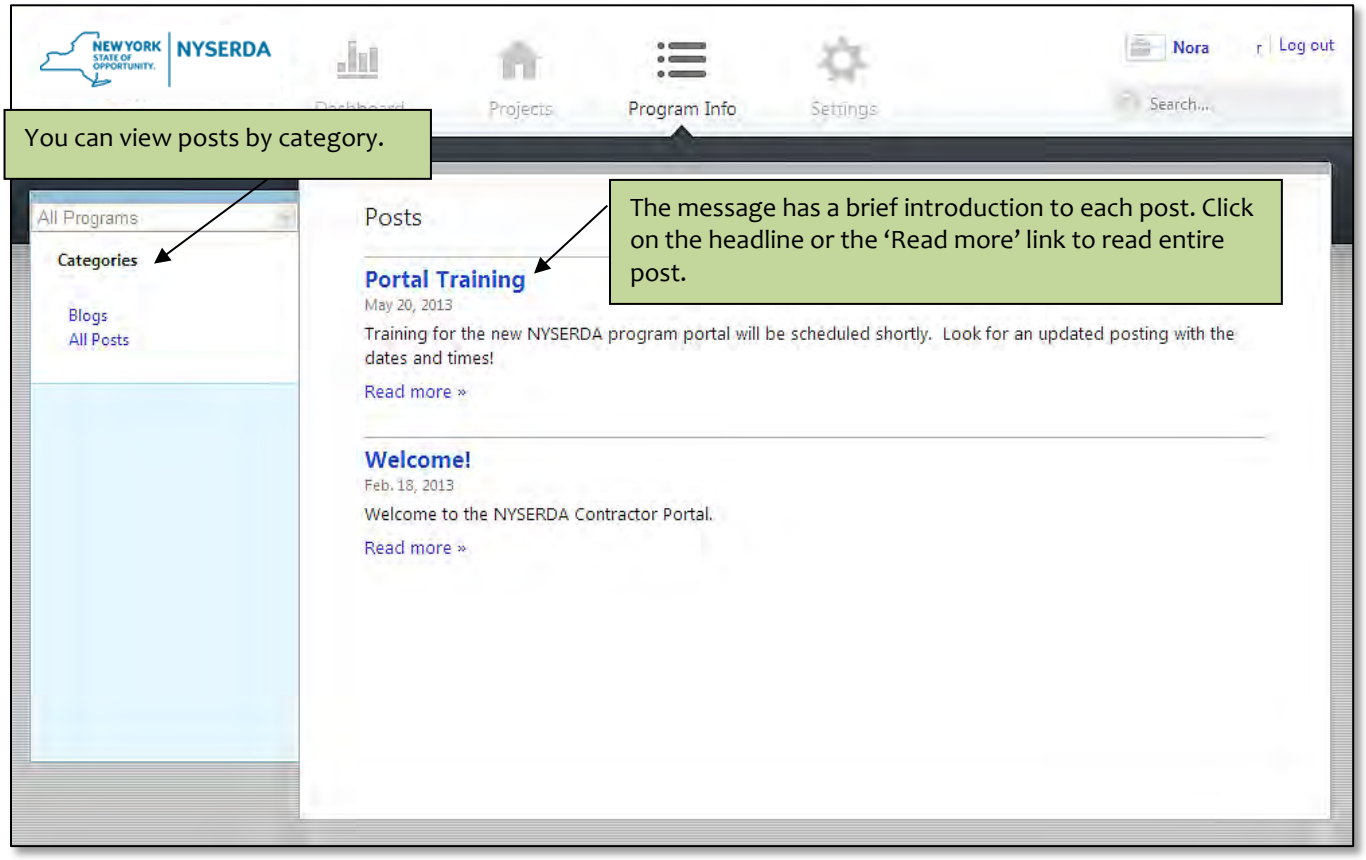



All Programs
Your Account
Company Profile
Task Options
Marketing
Add Campaign
General
Name
Home Show
Description
Customers that signed up for an audit at the June Home Show.
Tracking code
DDF86B_HOMESHOW
This code cannot be changed once the campaign is created, and it must start with DDF86B
Reporting
Channel

Advanced
Start date
2013-06-01
Campaigns only apply to new applicants within the start and end date, if any
End date
2013-06-30
Save Changes
Create a name and description for a new campaign. You can have multiple campaigns running at the same time.
All campaign codes must start with your referral code.
Select appropriate marketing channel.
Select date range.

Program Information

The program publishes information that is useful for partners. The newest posts are highlighted on the Dashboard when you log in, but you can always visit the Program Info section to learn more. You can read an entire post by clicking on the post title or on the 'Read more…' link.



Glossary

Affiliation	A project may have an association with a Constituency Based Organization who is helping the customer with their energy efficiency work.
CPA	Subsidy CPA (Conditional Preapproval) means that the customer has been income-qualified for the subsidy, but there are additional documents required, in addition to project approval by CLEAResult.
CSG / CR	CLEAResult (CR) formerly Conservation Services Group (CSG)
Eligibility Screening	The process by which an improvement is deemed eligible for the HPwES program.
FPA	Subsidy FPA (Final Preapproval) means that the customer has been income-qualified for AHP and the only item needed to move forward is project approval by CLEAResult.
HPwES	Home Performance with ENERGY STAR®
HPwES Audit	A project type where the reservation number is claimed, audit report is uploaded, and audit incentive is claimed.
HPwES Contract	A project type that goes through various stages/tasks to bring it to a point for job review and ending with completion review. This stage tracks work that the contractor has submitted to the Program for approval until final financing disbursement.
Participant	The name and contact information of the Customer who is having the energy efficiency work done.
Partner	A Company that participates in the Home Performance with ENERGY STAR® Program.
Portal	The HP Portal is a web based Program workflow management tool that keeps track of projects for audits and retrofit work.
Premise	The physical address of the home where the energy efficiency work is being done (building address).
Program	Home Performance with ENERGY STAR®
Program Manager	CLEAResult manages the New York State Home Performance with ENERGY STAR® Program and oversees the Portal projects.
Project	A project can be of an HPwES Audit or an HPwES Contract program type.
SLA	A Service Level Agreement sets the maximum amount of time allotted to complete a certain task.
Task	Segment of work that needs to be done to move project to next stage

Project Work Flow in Detail

1) **HPwES Audit**
   a) Audit application processing (HPwES Audit Call Center Task)
      i) This is the first status for audit applications. This stage indicates that an audit application has been submitted through the Portal, either by customer, contractor, CBO, or Call Center Representative (CSR).
      ii) Paper, faxed, or e-mailed paper applications take twice as long to process since they require manual data entry into the Portal by CSRs before completing normal processing steps.
      iii) Applications in this stage have not yet been reviewed by CSRs
      iv) Applications in this stage are not visible to contractors or CBOS.
   b) Audit application approval (HPwES Audit Call Center Task)
      i) Applications are in this stage in Portal if they have been reviewed by a CSR but have been put on hold pending more information from the customer/contractor/CBO.
      ii) On-hold reasons are currently first communicated to the customer via a telephone call. Subsequent follow-up is completed via e-mail, if a customer e-mail address is included on the application. Contractors and CBOs will be included on the e-mail communication to customers if they are listed on the audit application.
   c) Awaiting Contractor selection (Contractor Task)
      i) Applications are in this stage in Portal if the application has been approved for a free/reduced cost audit
      ii) An approval letter is issued by e-mail or paper mail to customer and contractor. This letter includes:
         (1) Customer's unique reservation number
         (2) Incentive amount (whether or not the audit is free or reduced-cost)
         (3) Reservation number expiration date (90 days after the approval date)
      iii) Contractor searches in Portal by reservation number and last name to claim the reservation
   d) Audit claim (Contractor Task)
      i) Applications in this task have had the reservation number claimed by a contractor
      ii) In order to claim the audit incentive, a contractor must:
         (1) Affirm the audit report has been provided to homeowner
         (2) Upload a PDF version of the audit report
         (3) Upload utility usage documents
   e) Closed-Complete Inactive (no assignment)
      i) Audit projects in this status in Portal have had the reservation number and audit incentive claimed. This closes the audit project. No further action is required for the audit portion of the Program.
2) **HPwES Contract**
   a) Modeling (Contractor Task – formerly known as uploading the audit package or completing RHA building model)
      i) Select which modeling software is being used for the project
      ii) Contractor attaches XML or HPXML file for comprehensive audit package (RHA users skip this step)
   b) Model review (Automated Task – Portal sends the information to HUB where several data checks are run on the XML file and the results are communicated back to the Portal. Formerly part of the TREAT file import process.)
      i) Reviewer notes – presents any failure messages or warnings from the data checks
      ii) Review results – will pass or fail this stage automatically
   c) Workscope proposal (Contractor Task – formerly known as uploading the contract package or adding measures to a contract in RHA)

i) Contractor indicates if they are working with another participating contractor as a referral (claims the referral incentive)
ii) Contractor attaches XML or HPXML file for contracted package (RHA users skip this step)
iii) Referral jobs are also required to attach a combined package for the purposes of cost effectiveness screening in the EST

d) Workscope review (Automated Task – Portal sends the information to HUB where several data checks are run on the XML file and the results are communicated back to the Portal. Formerly part of the TREAT file import process.)
i) Review result – will pass or fail this stage automatically
ii) Reviewer notes – presents any failure messages or warnings from the data checks

e) Eligibility Screening Tool (Contractor Task – formerly known as the Claim Incentives screen, ProForma.)
i) Questionnaire – claim customer incentives, advanced modeling incentive, and fill out utility information (formerly claim incentives screen)
ii) Eligible Measures - fill out measure details. Also, "What If" mode available here.
iii) Cost Effectiveness – loan cost effectiveness results (formerly ProForma)
iv) Incentives – displays summary of incentives claimed

f) Contract submission (Contractor Task – formerly known as faxing job submission paperwork)
i) Answer SHPO questions
ii) Signed Customer Information Form
(1) Note - Required at completion
iii) Signed workscope or contract
(1) Note - Required at completion
iv) AHRI certification
v) SHPO review form
vi) Appliance receipts
vii) Rebate and storm relief forms
viii) Fuel bills (For projects started as a Contract Project when the customer is utilizing OBR financing)
ix) Lighting schedule
x) Project photos
xi) Technical review
xii) Subcontractor work order
xiii) Signed change order

g) Contract review and approval (CLEAResult Task – formerly known as job approval)
i) Home Performance Eligibility Summary Report (Approval transmittal form) – CLEAResult will attach the report document in the Contract Project on the Portal when the job is approved. It will not be emailed to the contractor separately.
ii) Reviewer notes – presents reasons why the job was placed on hold by the CLEAResult Program Coordinator
iii) Review results – will pass or fail this stage depending on whether job was approved or placed on hold

h) Financing approval (EFS Task – All projects with a loan or AHP application will be sent to this stage for EFS to generate the loan documents and/or issue final AHP approval. All conditions on the EFS pre-approval must be met at this stage in order for the project to move forward.)

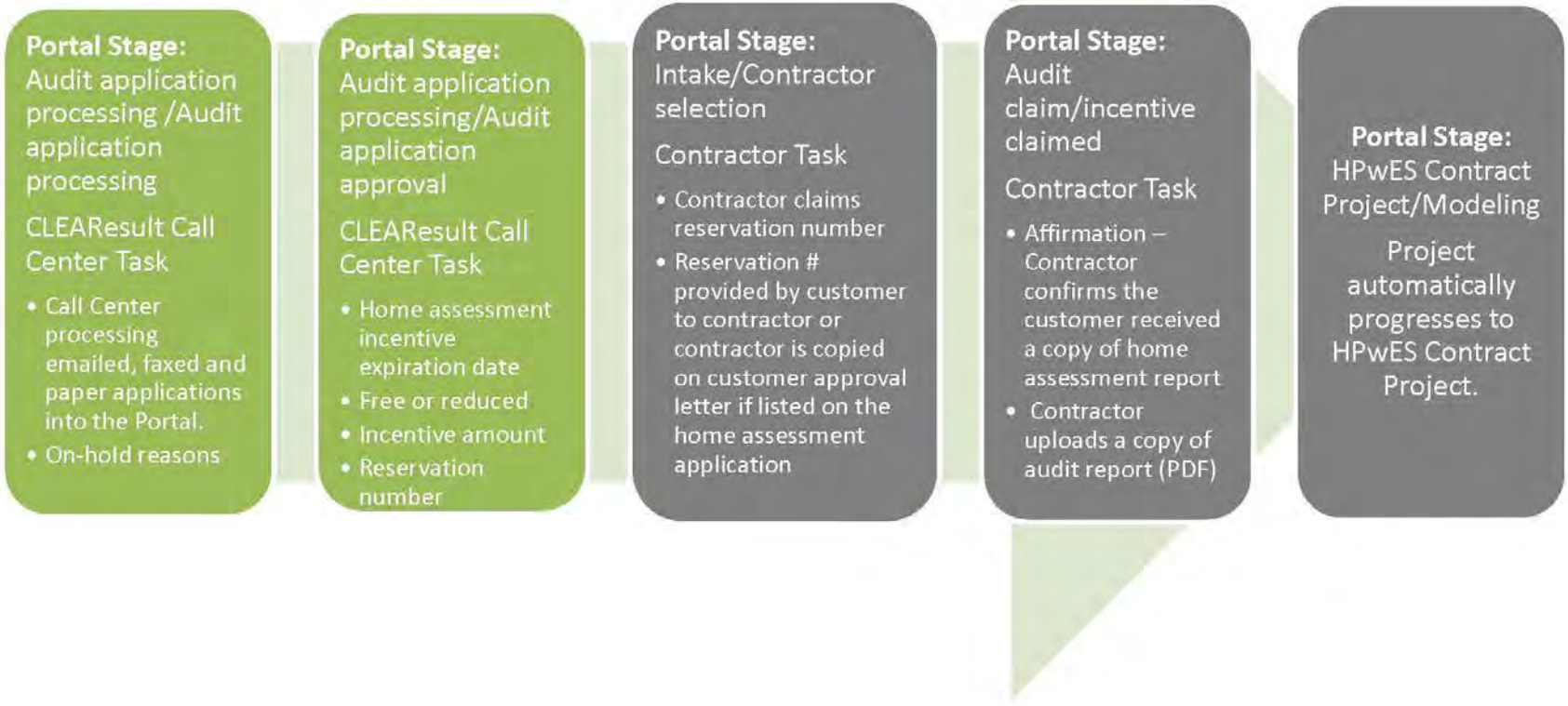
i) Final project submission (Contractor Task – formerly known as completion submission)

i) Modeling software completion package (Formerly known as uploading the completion package or flagging the RHA measures as installed. Contractor attaches XML or HPXML file for completed package. RHA users skip this step.)
ii) Completion signature page *Now part of the Home Performance Eligibility Summary Report
iii) Post installation health and safety test results *Now part of the Home Performance Eligibility Summary Report
iv) Appliance receipts.
v) Data required at completion:
(1) Signed and initialed Home Performance Eligibility Summary Report
(2) Signed contract with the homeowner (on company letterhead and compliant with NYS contract law)
(3) Post Installation Health & Safety Test Results
(4) Completion package from modeling tool with test-out results entered
(5) Signed Customer Information Form
vi) Other completion documents
vii) Storm relief declaration form
viii) Subcontractor work order

j) Final project review (CLEAResult Task – formerly known as completion processing)
i) Portal sends the information to HUB where several data checks are run on the XML file and the results are automatically communicated back to the Portal.
ii) Completion transmittal form – CLEAResult will create and attach this document when the job is approved
iii) Final reviewer notes – presents reasons why the job was placed on hold by the CLEAResult Program Coordinator
iv) Review results – will pass or fail this stage depending on whether job was approved or placed on hold

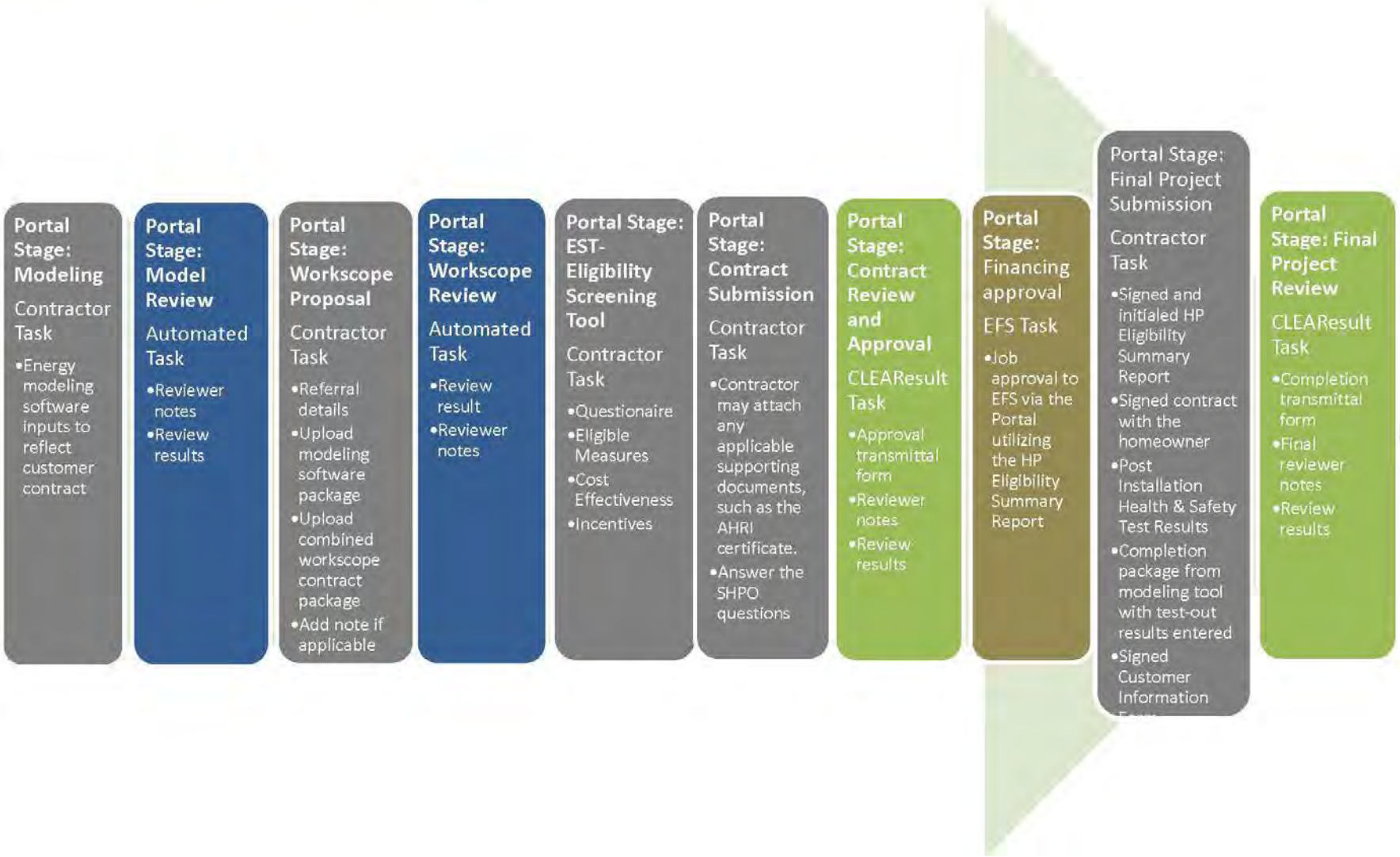
k) Financing disbursement (EFS Task – formerly known as loan closing. All projects with a loan or AHP incentive will be sent to this stage for EFS to release payment to the contractor.)
i) Contractors
ii) Final contractor payment dates
iii) Contractor loan amounts
iv) Loan specialist
v) Loan status
vi) Project loan amount
vii) Subsidy status and amounts paid
viii) Total amount financed

HPwES Audit Project Workflow



F

HPwES Contract Project Workflow



FAQ/Troubleshooting

Who do I contact for help?

To provide better software support services, CLEAResult has implemented a centralized ticketing system, ZenDesk, to track all HPwES Contractor Support requests. Whenever a support request is submitted, either through an email, ticket form, chat, or a phone call/voicemail message, an automated support ticket will be created. This system will provide greater transparency in the support process, providing insight into the status of all submitted support requests, from the time they are created, assigned, and resolved. Once a ticket is created, email notifications will keep you apprised of the progress of the ticket or you can log into your account and view via My Activities. The ticketing system will also keep a log of all the subsequent communication between CLEAResult and your company. When submitting a request for help always provide the customer's name, address and issue.

Ticket submission or chat via http://hpwescontractorsupport.com/.

Email: contractorsupport@clearesult.com

Call toll free: 800-284-9069 (option 2).

Is there any link between the Portal project and the projects in the HUB (NYSERDA Home Performance application)?

Portal projects are directly linked to a project in HUB. You still have access to log into HUB to see both old and new projects. If you deactivate a portal project it will also deactivate the linked HUB project. If a project gets deactivated by accident it can be reactivated by contacting Contractor Support.

How do I correct the customer's name or address?

You need to submit a correction request to Contractor Support. Please include the correct name and address as well as the incorrect name and address that were entered into the Portal.

I audited a customer's home and discovered it is >3500 square feet. How do I adjust the audit incentive?

Since audit applications do not request square footage, the Portal assumes that all homes are < 3500 square feet. If you perform an audit in a home >3500 square feet, call or e-mail the HPwES Audit Call Center prior to claiming the audit incentive and a Call Center Representative will make the adjustment.

What is a PDF and how I do create one?

PDF stands for Portable Document Format. For a greater explanation of what a PDF is there is a very informative article on Wikipedia (http://en.wikipedia.org/wiki/Portable_Document_Format). There are many software choices available for converting a document into a PDF document. A reliable place to research software choices is http://www.cnet.com/search/?query=pdf+converter.

How do I start the HPwES contract project before I submit my customer's audit application?

You can add a new HPwES Contract project to start your contract work. After the audit reservation number is approved and you claim it on the dashboard, the Portal will show you 2 projects for the customer. One project is an HPwES Contract and the other is an HPwES Audit. The HPwES Audit project will be in the 'Audit Claim' stage. Once the audit documentation is uploaded and 'Audit Claim' stage is completed the Portal will automatically create a follow on project in the 'Modeling Stage'. This additional follow on project will need to be deactivated since there is already another HPwES Contract project in progress.

How do I get an extension on my customer's expired reservation number?

Please contact Contractor Support.

I have an old project that I was working on before the Portal. Where do I go to do work?

Pipeline projects fall into a few different categories:

- Projects where the audit reservation number has been claimed
- Projects that were approved and are waiting to be completed
- Projects that are on-hold

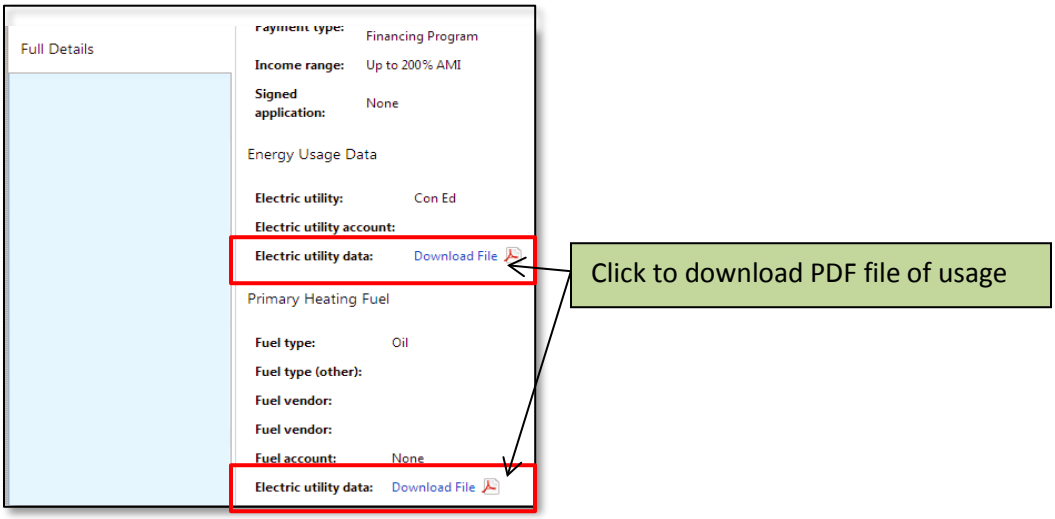
These projects must be finished in HUB. Paperwork for these projects will continue to be faxed in. If a reservation number has been claimed then you will continue to upload the audit documentation (either by TREAT/RHA audit package, PDF of audit report or Excel Quick Audit tool) in order to claim the HPwES audit incentive. This customer's follow-on project must also be completed in HUB.

Do I still fax in my job approval or completion approval paperwork?

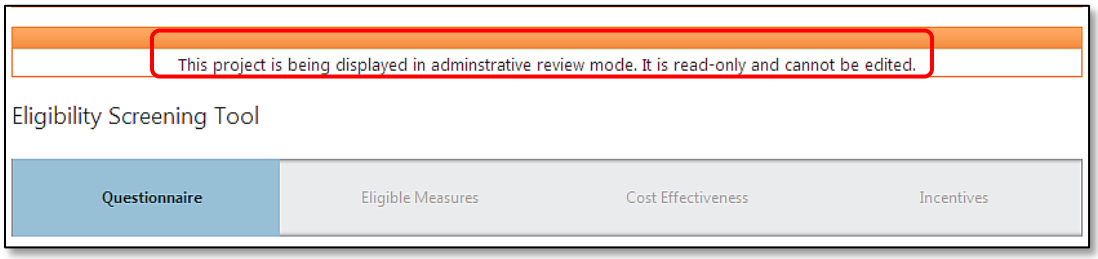
Contractors should only fax in paperwork for project which have started in HUB. Contractors should not fax in paperwork for new projects which start in the Portal. All paperwork for new Portal projects will be uploaded as individual files in the Portal. When submitting paperwork, the Portal will only allow for one file upload per section. If multiple documents are necessary, please compile these documents into a single file when uploading.

Where do I find my customer's energy usage docs so I can true up my building model?

Energy usage will be collected by the contractor at the time of the energy audit.



I am in EST and it is telling me it is in 'Read Only' mode. What do I do?



You will need to contact Contractor Support so EST can be reset. Please provide customer's name, address and project id in your EST reset request.

Do I need to submit a certificate of completion (COC) with my completion paperwork?

There will be no requirement to submit a certificate of completion in the 'Final Project Submission' stage, although customers will still be required to sign off on completed work.

I added a new project for my customer in the Portal and it is not showing up.

If your customer does not show up a few minutes after entering it in the Portal do not add more projects again for the same customer. Invalid or duplicate addresses entered through the Portal will not show up in Portal until it is corrected. Customer's addresses that are outside of your service area will not show up. Please contact Contractor Support if your customer that has been entered into the Portal as a new project doesn't show up in your project list. Please provide the customer's name and address in your request.

I claimed a reservation number and my HPwES Audit project isn't showing up. What do I do?

A Customer's address that is outside of your service area will not show up. Please contact Contractor Support and provide the customer's name and address in your request.

I deactivated my project and now the customer wants to do work. How do I reactivate my project?

Projects that have been deactivated can be reactivated by Contractor Support.

Are there special instructions for RHA users?

Once you receive your customer's reservation number you can log into the NYSERDA HP application and model your customer's building. After building is modeled the audit report can be saved a PDF file. The next step is to go back to the Portal and upload the audit report in the Audit Claim task.

After Audit Claim task has been completed log back into the NYSERDA HP application and create a RHA contract. When you are done creating your contract a message box will pop up stating 'This project originated in the NYSERDA HPwES Program Portal'. After clicking 'OK' continue your next steps in the NYSERDA HPwES Program Portal. You will no longer use the HPwES Incentive claim screen to claim incentives. Log back into the Portal to use the EST. When EST is completed and submitted you will proceed to next stage.

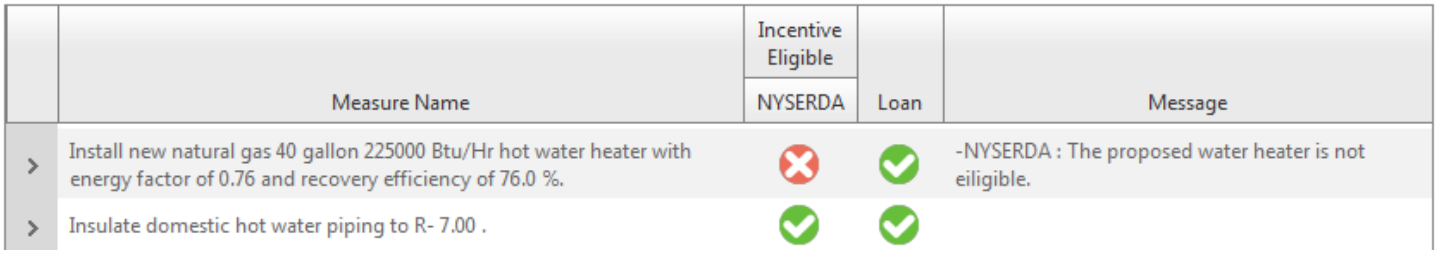
PSEG LI Cross program incentive claiming & HPD Projects

Optimization projects in which the audit originates in NYSERDA will be started in the HPwES Audit Claim Program and the follow-on project will go through the HPwES Project Workflow and be pushed over to PSEG LI. The Portal will accommodate the PSEG LI incentives.

HPD projects which originate in PSEG LI will continue to use same current process for their follow-on work. You will continue to use the cross-program claim incentive screen to push these projects over to NYSERDA. The only difference is that the audit reservation number will be claimed on the Portal's dashboard and you will continue to follow HPwES Audit Claim Process to complete your audit project.

Tips for EST (Eligibility Screening Tool)

There are two columns that will have either a green check mark, or a red "x," indicating whether a measure is eligible or not for the rebate and loan incentives. The measure-level details for the project can be found by expanding the carrot next to the title of each of the proposed measures in the package.



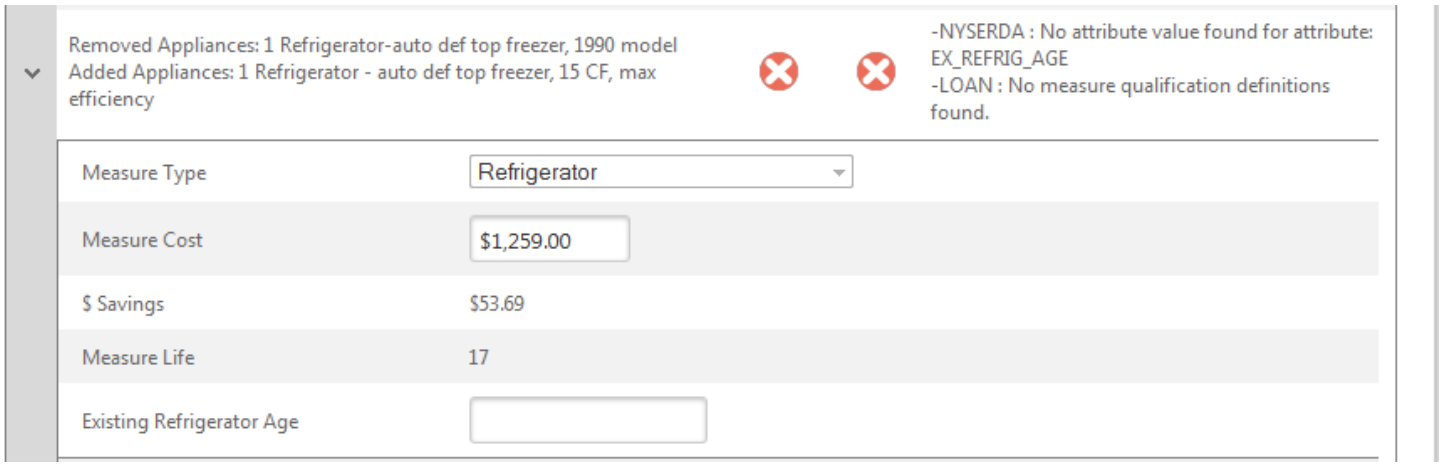
	Measure Name	Incentive Eligible NYSERDA	Loan	Message
>	Install new natural gas 40 gallon 225000 Btu/Hr hot water heater with energy factor of 0.76 and recovery efficiency of 76.0 %.	✗	✓	-NYSERDA : The proposed water heater is not eiligible.
>	Insulate domestic hot water piping to R- 7.00 .	✓	✓	

A. Error Messages

"No measure qualification definitions found"
This message means the measure is either ineligible for the incentive (rebate or loan) or the measure could not be interpreted from the software. If the measure is not mapped in the "Measure Type" the drop-down list, please select a similar measure from the list.

B. Entering Measure Level Information

Often, more information is required for each measure. Notice that the "Existing Refrigerator Age" is blank below:



The process for editing the measures populated in the "Eligible Measures" section is as follows:

1. If necessary, map the measure by selecting an item from the "Measure Type" drop down. Note, this was not required in the example above because EST correctly identified the measure as a "Refrigerator."

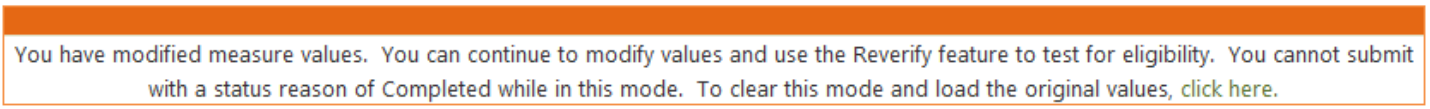
2. Press the "Reverify" button on the bottom left hand corner of the tool. Improvements that need to be mapped to the measure type need to be reverified in order to tell the system important information that it needs to help determine the eligibility of the improvement. After the improvements are all mapped the system will tell you what other information it needs for each measure.

3. Enter the missing data for the measures (i.e. “Existing Refrigerator Age”). The missing data that the system needs will show up in red text toward the top of the page.

4. Press the “Continue” button on the bottom right hand corner of the tool.

C. What-if Analysis Mode

EST allows the user to check the eligibility of the measures in the project, as well as the project as a whole, in *What-If Analysis* mode.



As the message indicates, clicking the link will return the measure costs to the original ones found in uploaded contract package.

Note: the user should not submit the EST with a “Reason” of “Complete” in the fourth section of EST, “Incentives,” without first reverting the measure costs back to their original values. Before the project can go through EST again it will need to be reset to clear out the old information. Please contact Contractor Support to request that EST be reset for you project. Please include customer’s name, address and portal or HUB project ID.

NY HP Portal
EmPower NY Workflow
Contractor User Guide

Last revised: 8/10/17

ENERGYSAVVY

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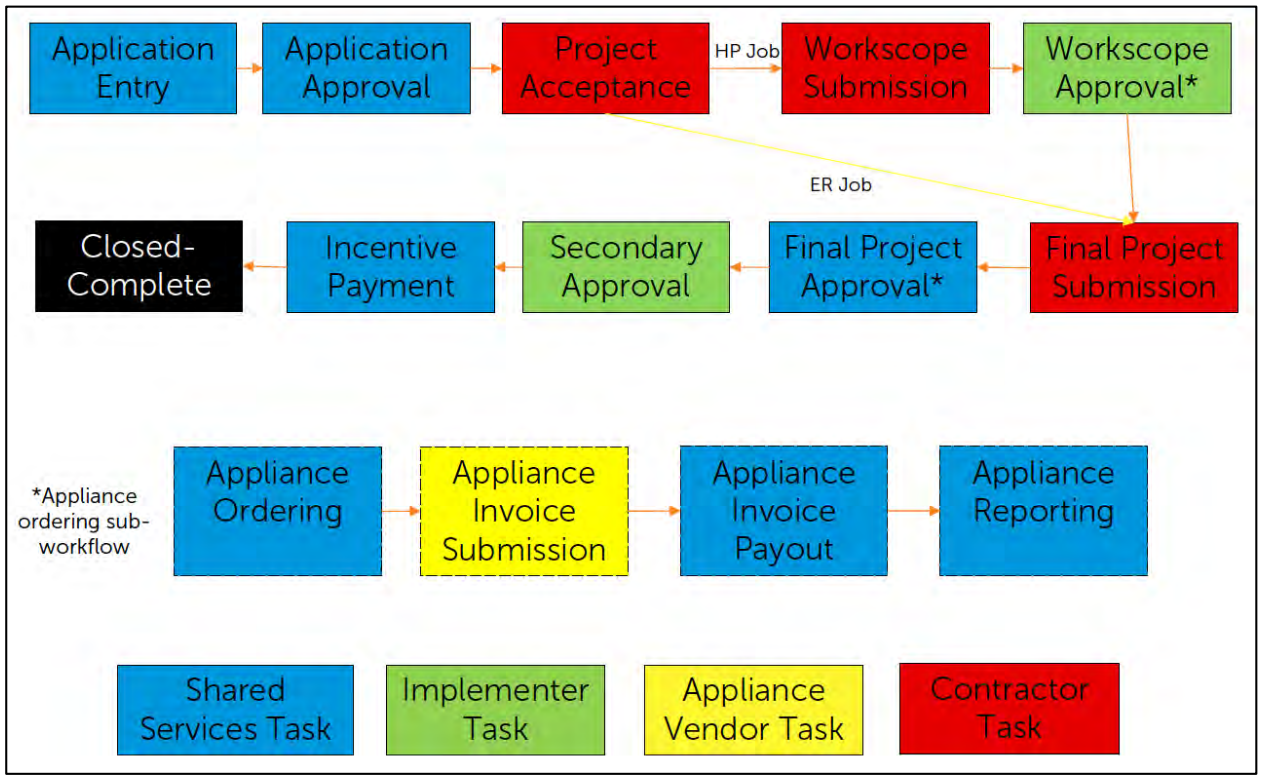
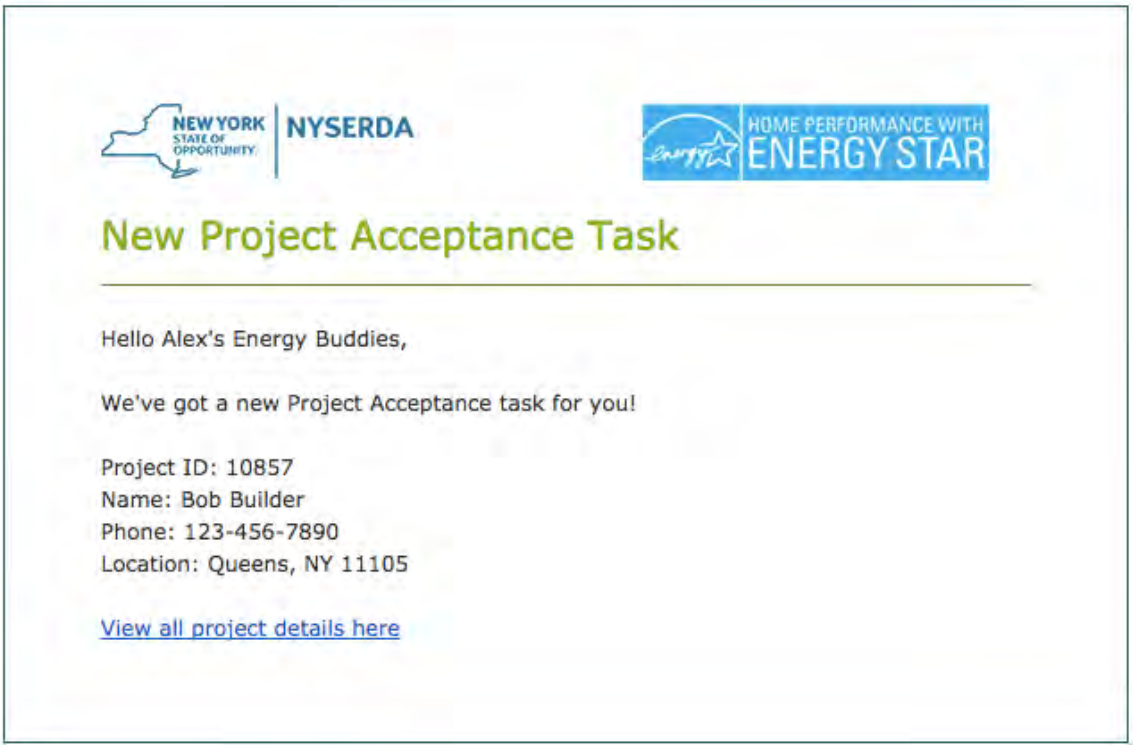
Introduction

- What is the EmPower workflow?
    - The EmPower workflow is a standalone, end to end solution created to enable project submission and management of EmPower New York projects. The workflow handles Home Performance (HP) and Energy Reduction (ER) jobs in addition to Appliance Ordering.
    - An overview of the EmPower workflow can be seen below

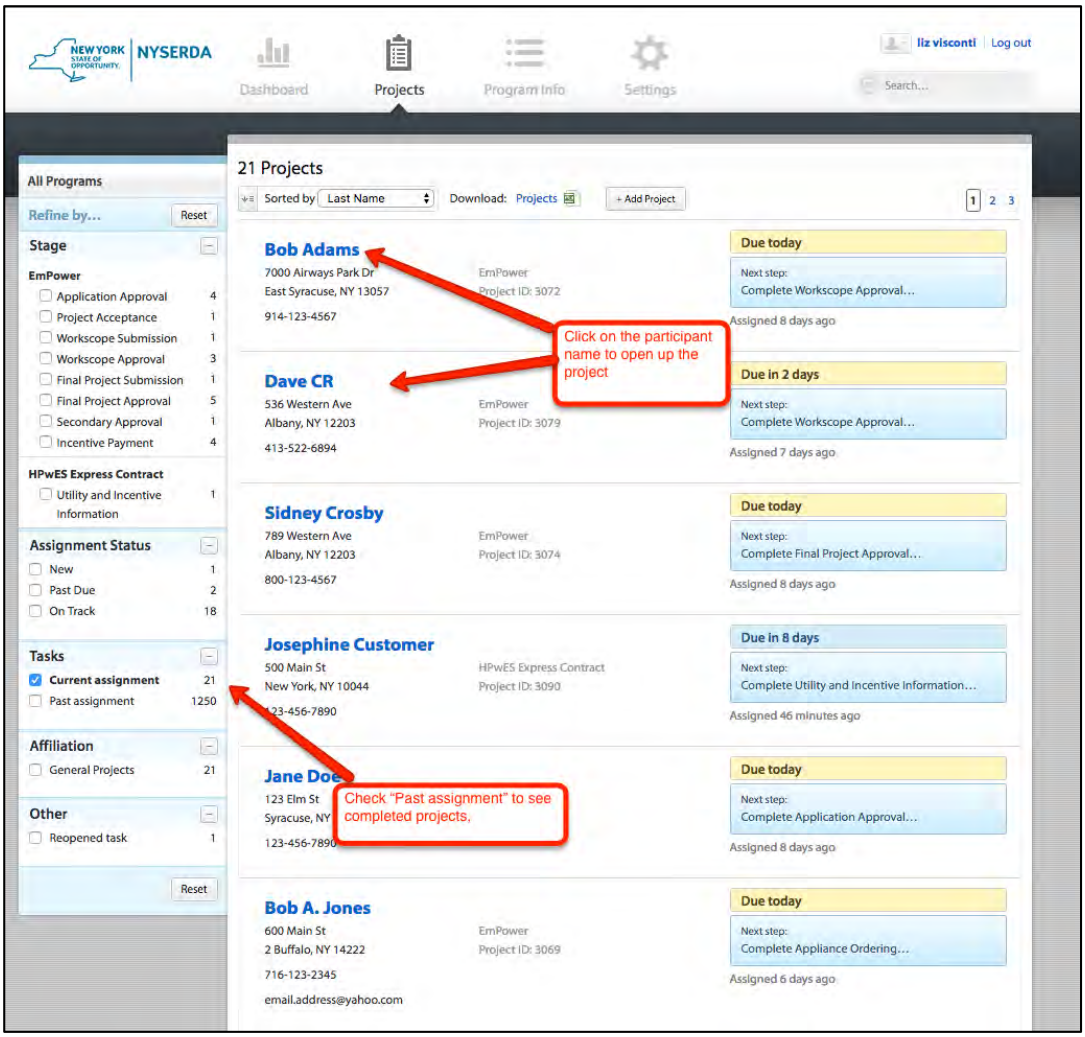


- Which tasks are completed by contractors?
    - If the project is an HP job, contractors are responsible for completing Project Acceptance, Workscope Submission, and Final Project Submission tasks.
    - If the project is an ER job, contractors are responsible for completing Project Acceptance and Final Project Submission tasks.

- How do contractors complete tasks in the EmPower workflow?
    - EmPower projects are created and assigned to contractors. Once the Application Approval task is completed by Program staff, and the contractor is selected for the project, the contractor will receive an email to their task notification email address notifying them of the new project. There is one task notification email address per contractor.

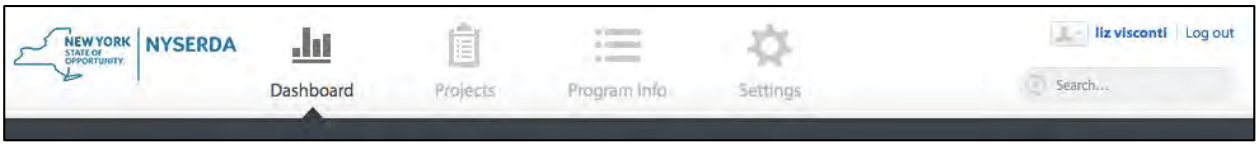


- The new project will also appear in the selected contractor's Projects list.



Partner Portal Orientation

The Partner portal is divided into four main sections, as shown in the screenshot below.



Each tab takes you to a different section of the Partner portal:

- **Dashboard**
  - View active projects and project statuses
  - View latest program updates

- **Projects**
  - Find, complete, and review assigned projects
  - Download list of projects as a .csv file

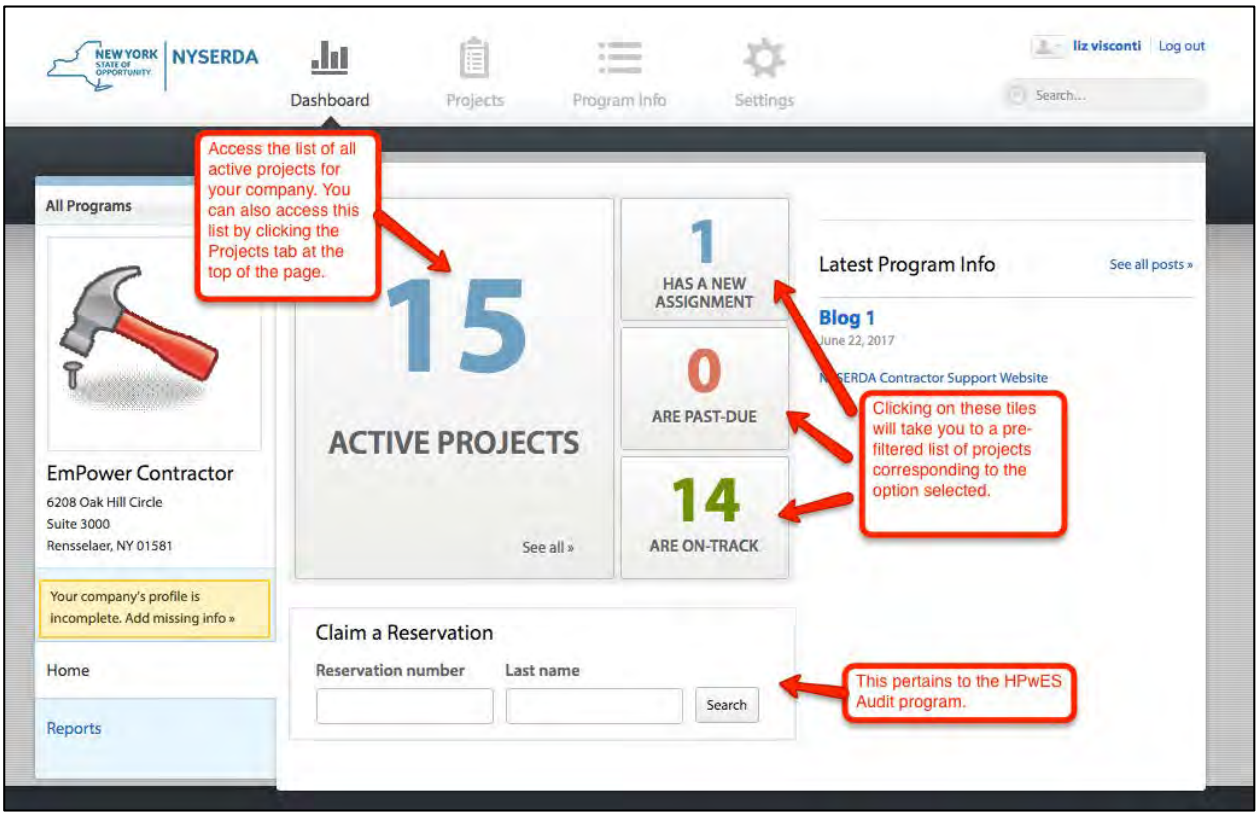
- **Program Info**
  - NYSERDA will post any relevant program information here
  - The latest posts will also be visible on Dashboard

- **Settings**
  - Edit password
  - Edit company info including the task assignment email, company profile, and service area.
  - In order to change a user's name or email or a add a user, please email support.residential@nyserda.ny.gov.

If you have questions that are not answered by this guide, please reach out to support.residential@nyserda.ny.gov.

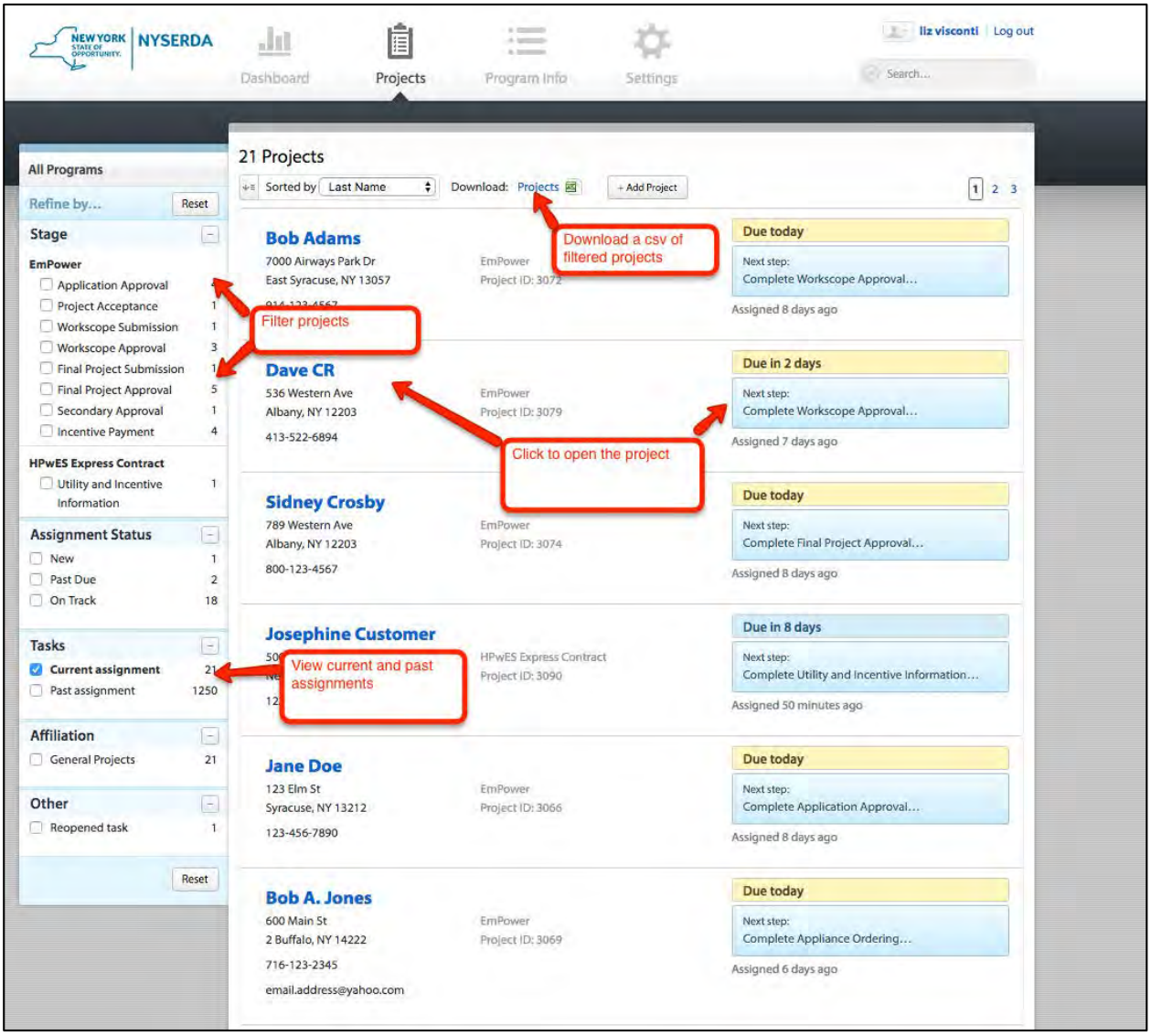
Dashboard

By clicking on the Dashboard tab, you can see a snapshot of tasks currently assigned to your organization. You can click into the various tiles of the dashboard to see the corresponding list of projects.



Project Management

By clicking on the Projects tab, you can access the list of projects with tasks assigned to your organization. You can filter for tasks using the various filter options listed on the left side of the page.



Viewing Current and Past Projects

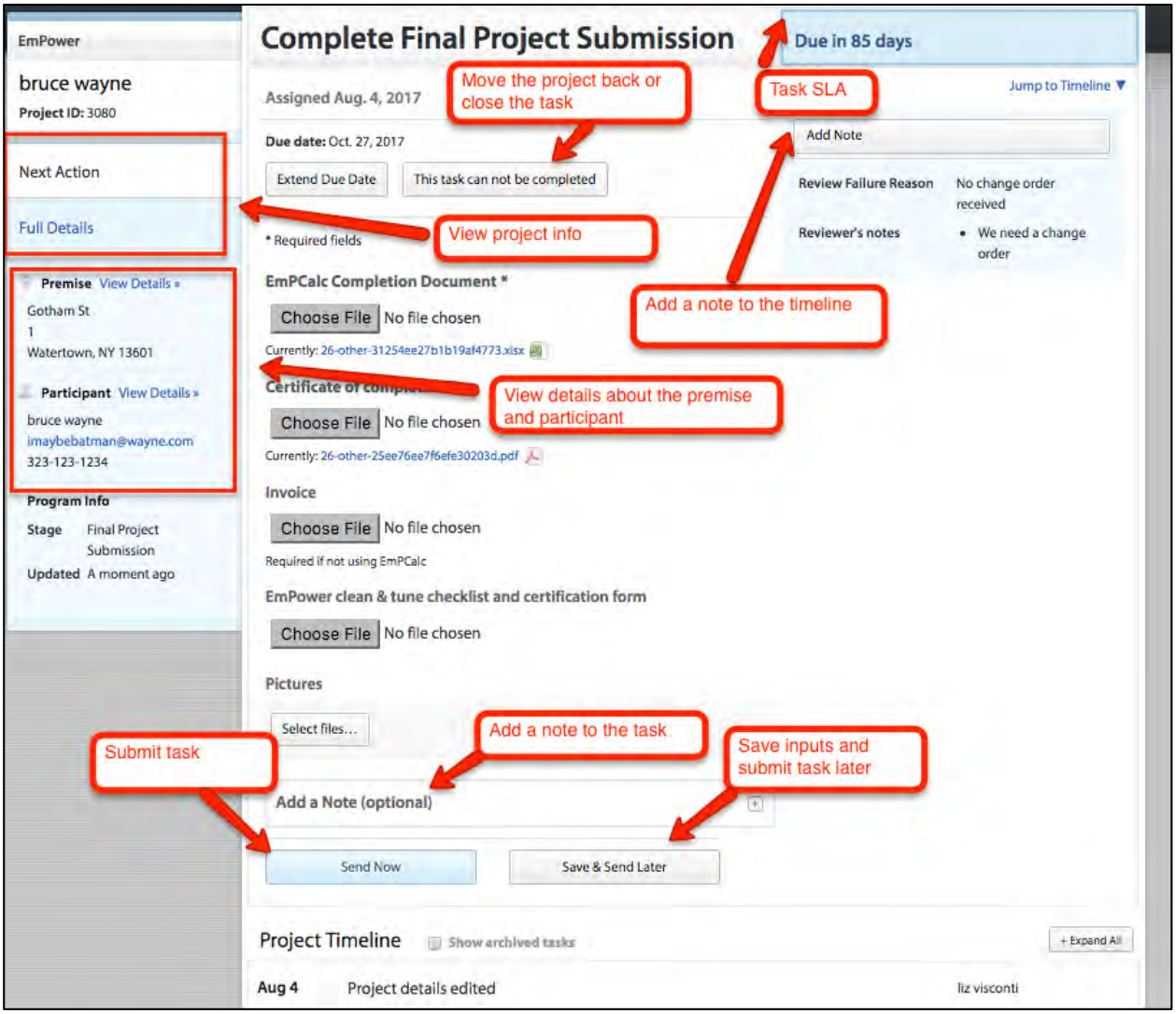
- Current projects: To see projects with tasks that your organization still needs to submit, use the "Current assignment" filter
- Past projects: To see projects with tasks that your organization has previously completed, use the "Past assignment" filter

Detailed Project View

To see more information about an individual project, click on the homeowner name or the blue box labeled “View Details…” to open the detailed project view.

- Task status
- Project timeline
    - Who was assigned and completed each task
    - When each task was completed
    - Any information gathered in completed tasks
- Information about the participant, project, and premise

Here is the view of a single project:



A variety of information about the project is accessible using the menu on the left side of the page:

- Next Action

    - Overview of next step in workflow for project as well as access to project timeline
- Full Details
    - Marketing information
- Premise - View Details
    - View the project's premise information and see other projects you have access to associated with the premise
- Participant - View Details
    - View the project's participant information and see other projects you have access to associated with the participant

Managing Tasks

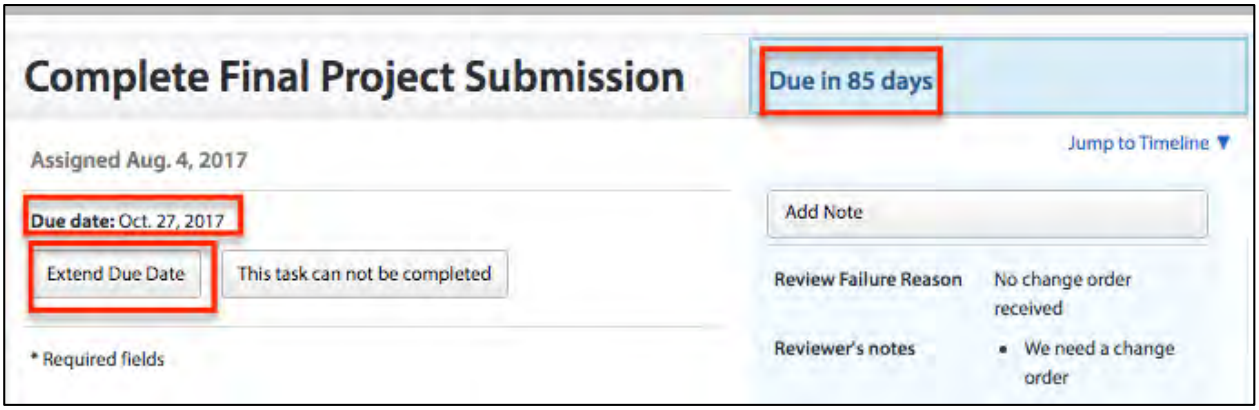
Submitting Tasks

To submit (i.e. complete) an assigned task, access the detailed project record for a project with an active task assigned to you and fill out all required information, review answers, and then click "Send Now."

There is no "auto-save" in the NY HP Portal, so if you can only partially complete a task, make sure to click the "Save and Send Later" button.

Service Level Agreements (SLA)s and Task Due Dates

Each task has a target due date that is displayed at the top right corner of the task. If the task cannot be completed in time, you can use the "Extend Due Date" button at the top of the task to choose a new due date and provide a reason for the extension.

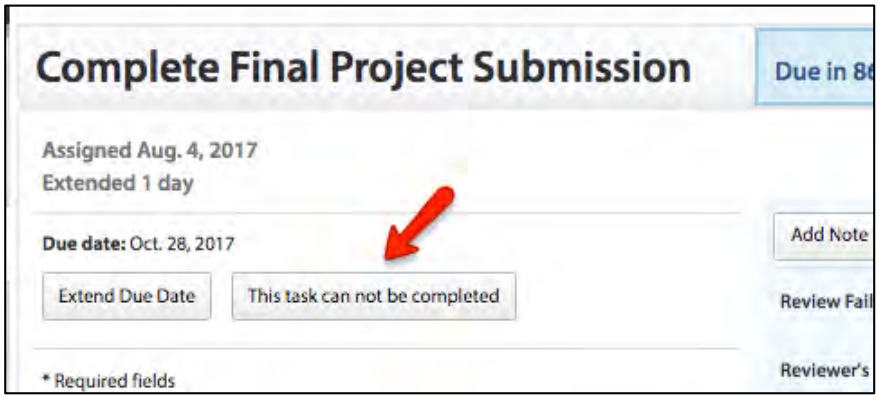


If a partner does not complete the task before the due date, the task will become past due. This does not close the task or the project. Affiliated partners and program managers will be able to see that a task is past due, but the task itself can stay past due indefinitely and can still be worked on and submitted after its due date. Partners can easily filter for past due projects using the filters on the project list.

- A task can only be extended a maximum of 90 days from the current date. However, the task can be extended as many times as needed.

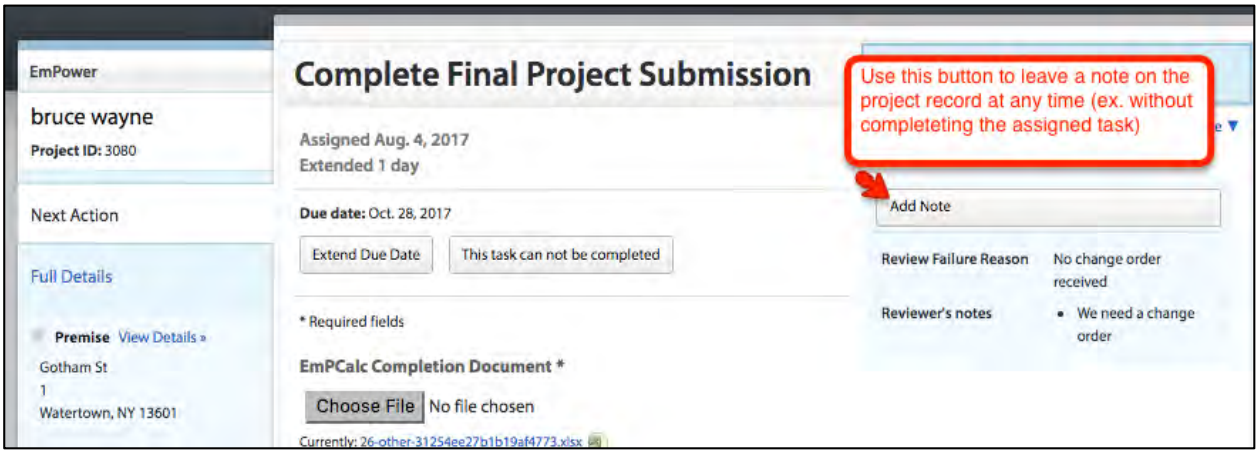
Rejecting Tasks

If previous tasks need to be modified or the active task cannot be completed, use the “This task canno be completed” button and select the appropriate reason to close the task. You can also leave a note explaining why you could not complete the task.

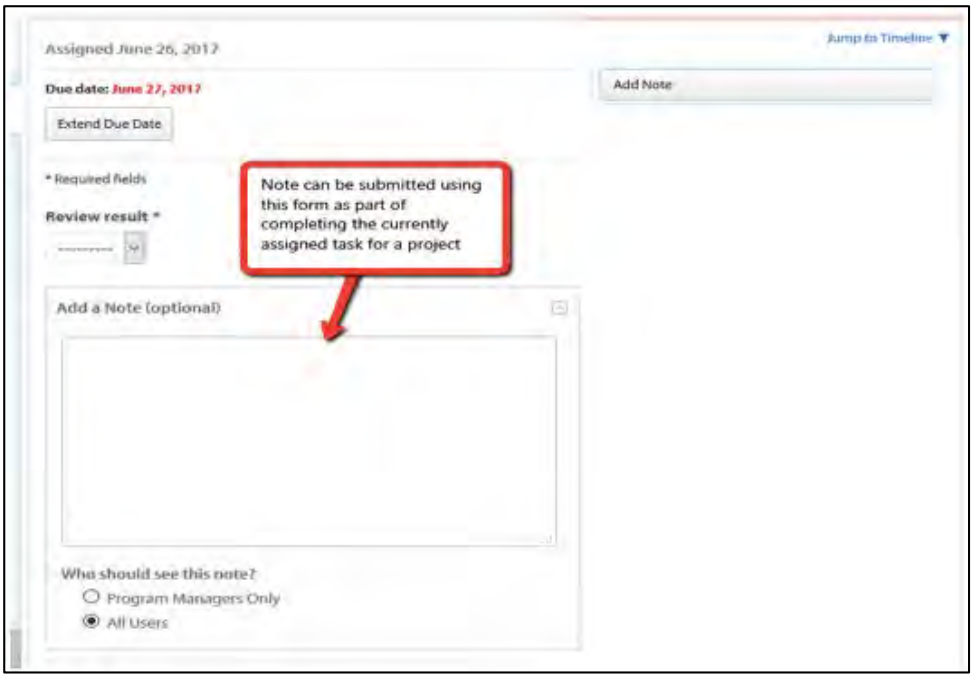


Adding Notes

There are two ways to add notes to a project record. At any time, you can add a note to the project by using the “Add Note” button on the upper right of the task.



In addition, as part of submitting a task, you can use the “Add a Note (optional)” section at the bottom of the task.



When you leave a note, you can make it visible to all users or to program managers only.

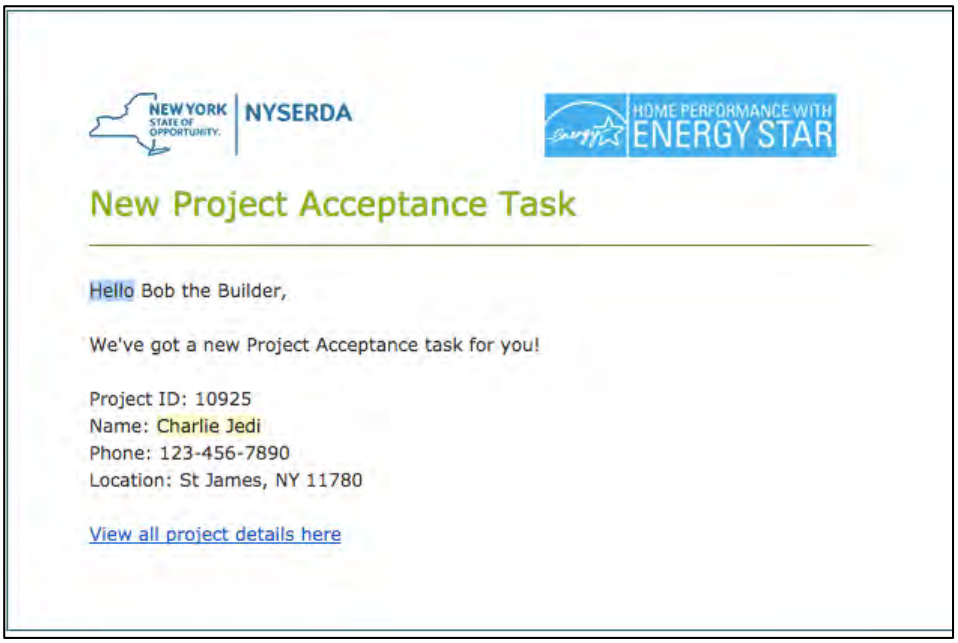
Notes cannot be edited or deleted by a partner after they have been posted. If you inadvertently leave a note that should be deleted, please contact support.residential@nyserda.ny.gov for assistance.

Email Notifications

Email notifications are sent to the task assignment email address associated with your partner account whenever a task is assigned, expired, re-opened, or needs revisions. There is one task assignment email per contractor company. If multiple people need access to the task notification emails, you may want to create a group email inbox. You can create email filters to make sure these notifications are forwarded to the appropriate staff.

Please note that the emails will be sent *from*: HPwESSupport@support.clearesult.com, please do not mark the emails as spam.

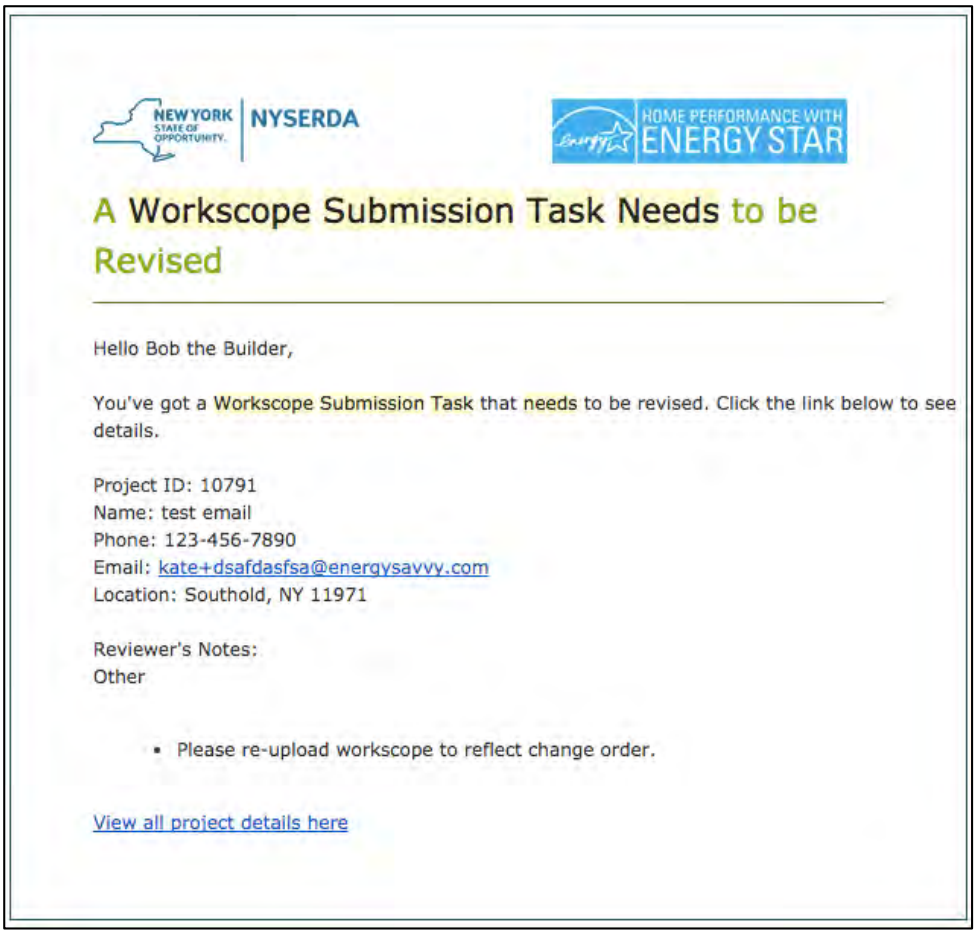
- Task assignment notification: Your partner has been assigned a new task in the workflow.



- Task expiration: A project is removed, rolled back, or the assigned task is expired and re-assigned by a program manager.

- Task reopened: An expired task is reopened for your partner.

- Task needs revision: If the project does not pass a review and is sent back to your partner for revision.



NEW YORK STATE OF OPPORTUNITY. NYSERDA

HOME PERFORMANCE WITH ENERGY STAR

A Workscope Submission Task Needs to be Revised

Hello Bob the Builder,

You've got a Workscope Submission Task that needs to be revised. Click the link below to see details.

Project ID: 10791
Name: test email
Phone: 123-456-7890
Email: kate+dsafdasfsa@energysavvy.com
Location: Southold, NY 11971

Reviewer's Notes:
Other

- Please re-upload workscope to reflect change order.

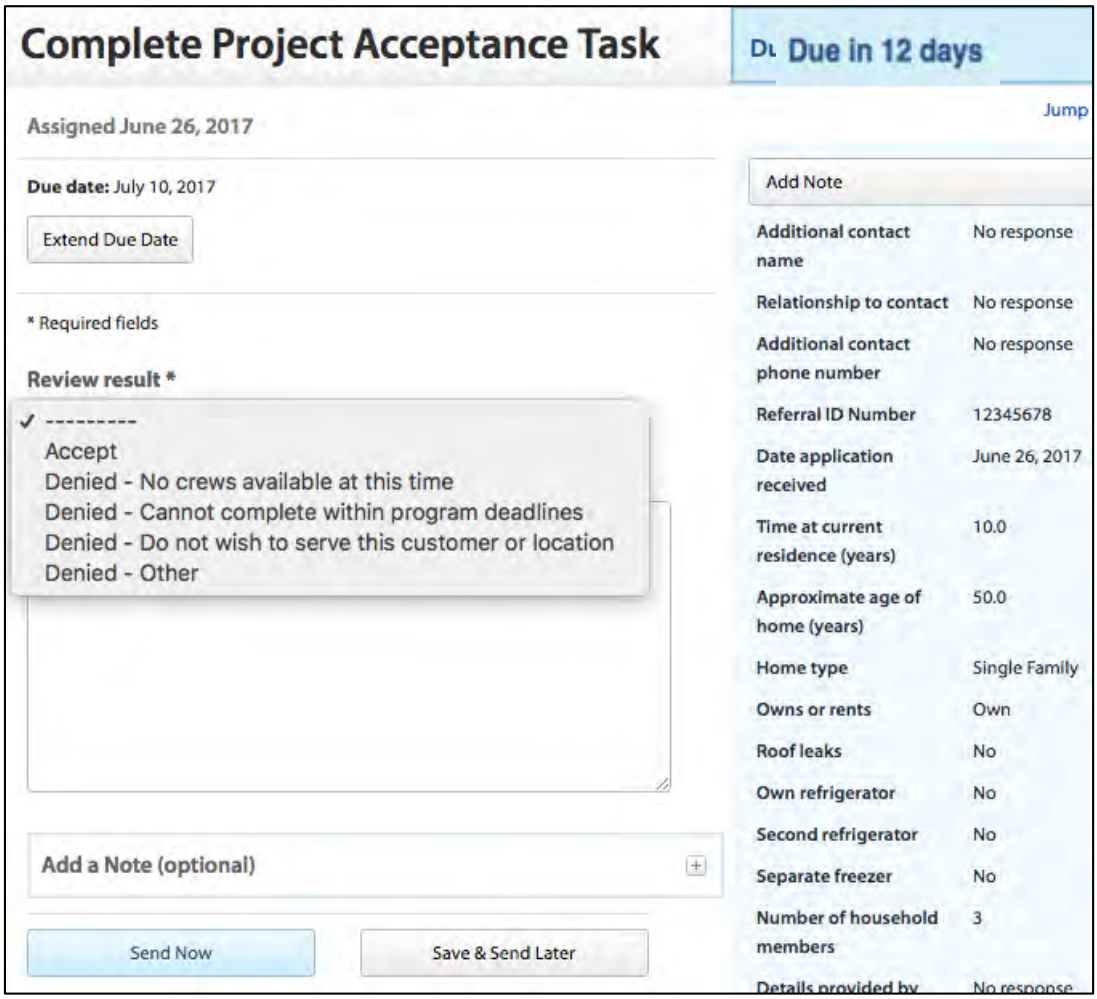
View all project details here

EmPower Workflow

Project Acceptance

After Program staff selects a contractor for the project in the Application Approval task, the Project Acceptance task is assigned to and completed by that contractor who can either accept or deny the project with one of the following reasons:

- No crews available at this time
- Cannot complete within Program deadlines
- Do not wish to serve this customer or location
- Other



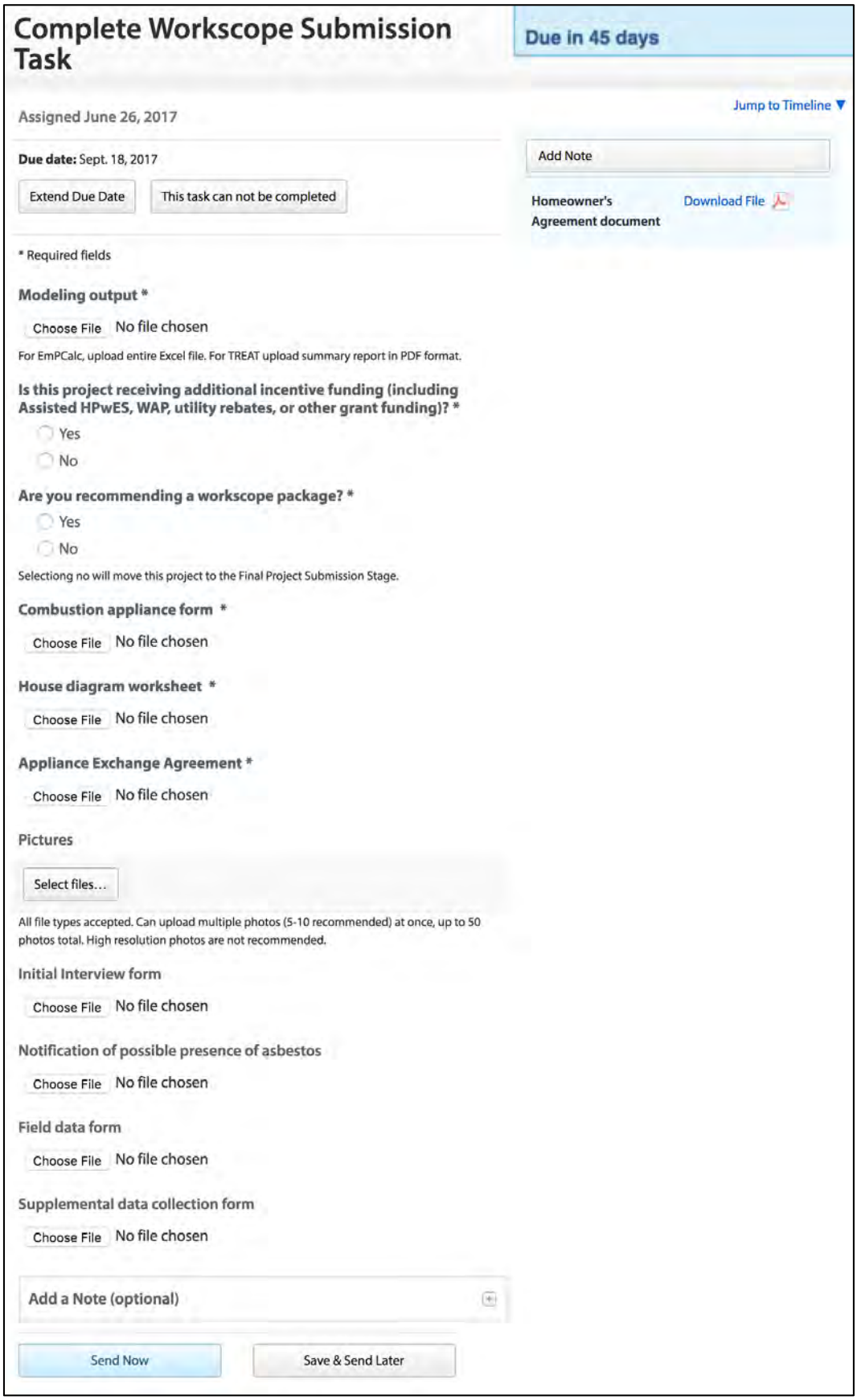
If the project is accepted, it will either move to the Workscope Submission stage (if an HP Job) or to the Final Project Submission stage (if an ER Job). If rejected, the project moves back to Application Approval so that Program Staff can reassign it to a different contractor.

There is also a "Notes" field available for the contractor to provide any relevant information about their decision to accept or deny the project.

If the task is open for more than 10 business days, it will automatically be declined with the reason "Contractor did not accept task" and moved back to Application Approval. At this point, the project will be assigned to a different contractor.

Workscope Submission

If the project is an HP Job, upon accepting the project in the Project Acceptance task, the contractor will complete the Workscope Submission task by uploading the workscope (via EmPCalc, TIPS, or TREAT) and any necessary supporting documents.


Complete Workscope Submission Task
Due in 45 days
Assigned June 26, 2017
Jump to Timeline
Due date: Sept. 18, 2017
Add Note
Extend Due Date
This task can not be completed
Homeowner's Agreement document
Download File
* Required fields
Modeling output *
Choose File No file chosen
For EmPCalc, upload entire Excel file. For TREAT upload summary report in PDF format.
Is this project receiving additional incentive funding (including Assisted HPwES, WAP, utility rebates, or other grant funding)? *
Yes
No
Are you recommending a workscope package? *
Yes
No
Selectiong no will move this project to the Final Project Submission Stage.
Combustion appliance form *
Choose File No file chosen
House diagram worksheet *
Choose File No file chosen
Appliance Exchange Agreement *
Choose File No file chosen
Pictures
Select files...
All file types accepted. Can upload multiple photos (5-10 recommended) at once, up to 50 photos total. High resolution photos are not recommended.
Initial Interview form
Choose File No file chosen
Notification of possible presence of asbestos
Choose File No file chosen
Field data form
Choose File No file chosen
Supplemental data collection form
Choose File No file chosen
Add a Note (optional)
Send Now
Save & Send Later

The answers to the following questions will drive the logic that determines whether the project proceeds to the Workscope Approval or to the Final Project Submission:

1. "Are you recommending a workscope package?"
2. "Is this a completed Direct Install only project?" (shown only if the answer to 1. is "Yes")

Depending on the answer combination below, the project will either move to Final Project Submission or to Workscope Approval:

Recommending Workscope?	**Pursuing only Direct Install?**	**Stage Transition**
Yes	Yes	Final Project Submission
Yes	No	Workscope Approval
No	Question not asked	Final Project Submission
No	Question not asked	Final Project Submission

If the project proceeds to final project submission, re-upload the final project modeling document.

Workscope Approval

A project in Workscope Approval is currently being reviewed by Program Staff. When this is completed, your project will be moved forward to Final Project Submission (is approved) or back to Workscope Submission (if edits are needed).

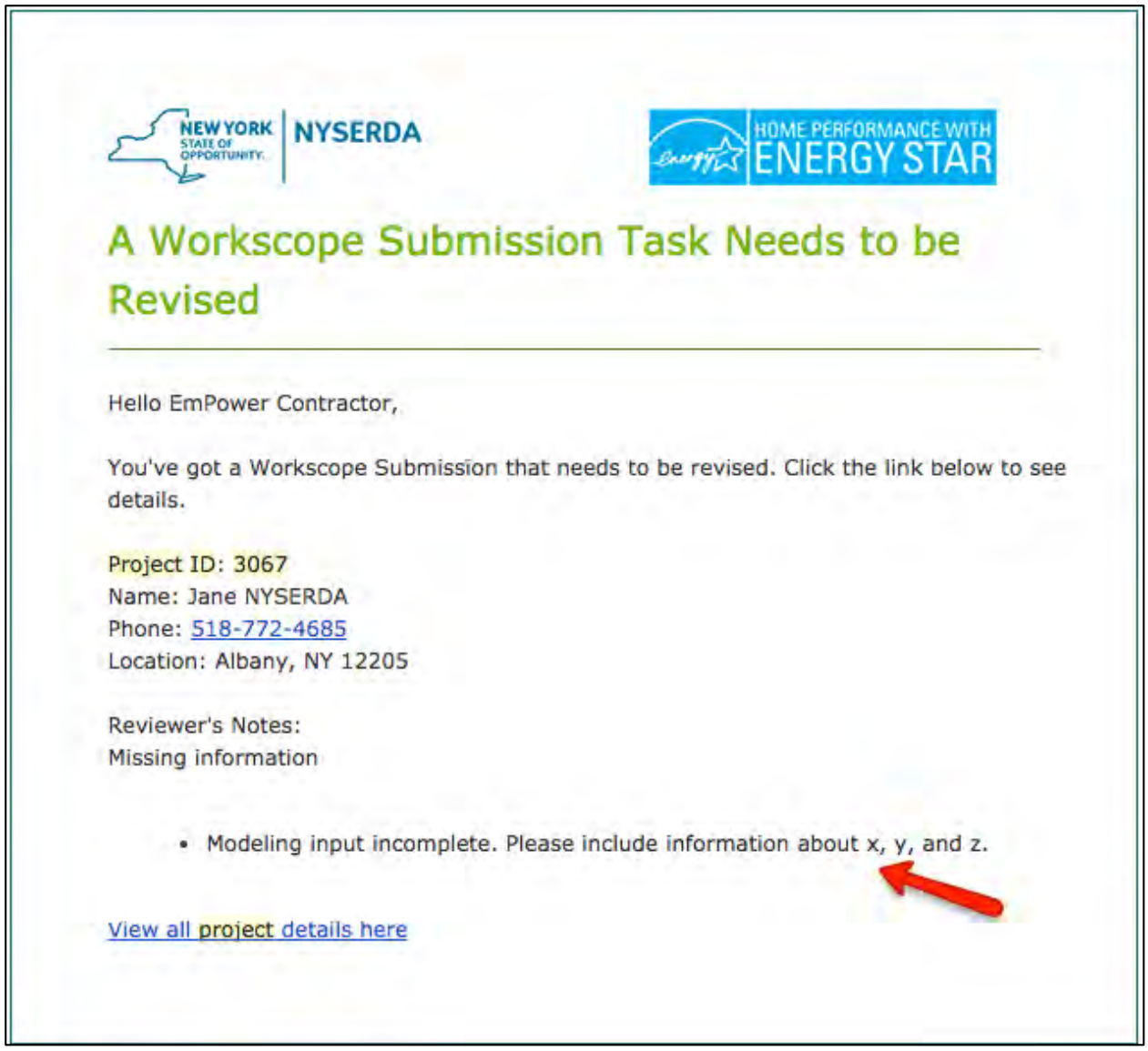
If the project:

- is an HP Job
- is recommending a workscope package
- is NOT pursuing only Direct Install measures

then the Workscope Approval task is completed by Program Staff who will review the Workscope and supporting materials to determine whether the project passes approval.

If the project does not pass approval, the project will be sent back to the contractor with review notes.

- The contractor will receive an email notifying them that the project has been returned to the Workscope Submission task and needs revision. The email will also include the reviewer's notes.



NEW YORK STATE OF OPPORTUNITY. NYSERDA

HOME PERFORMANCE WITH ENERGY STAR

A Workscope Submission Task Needs to be Revised

Hello EmPower Contractor,

You've got a Workscope Submission that needs to be revised. Click the link below to see details.

Project ID: 3067
Name: Jane NYSERDA
Phone: 518-772-4685
Location: Albany, NY 12205

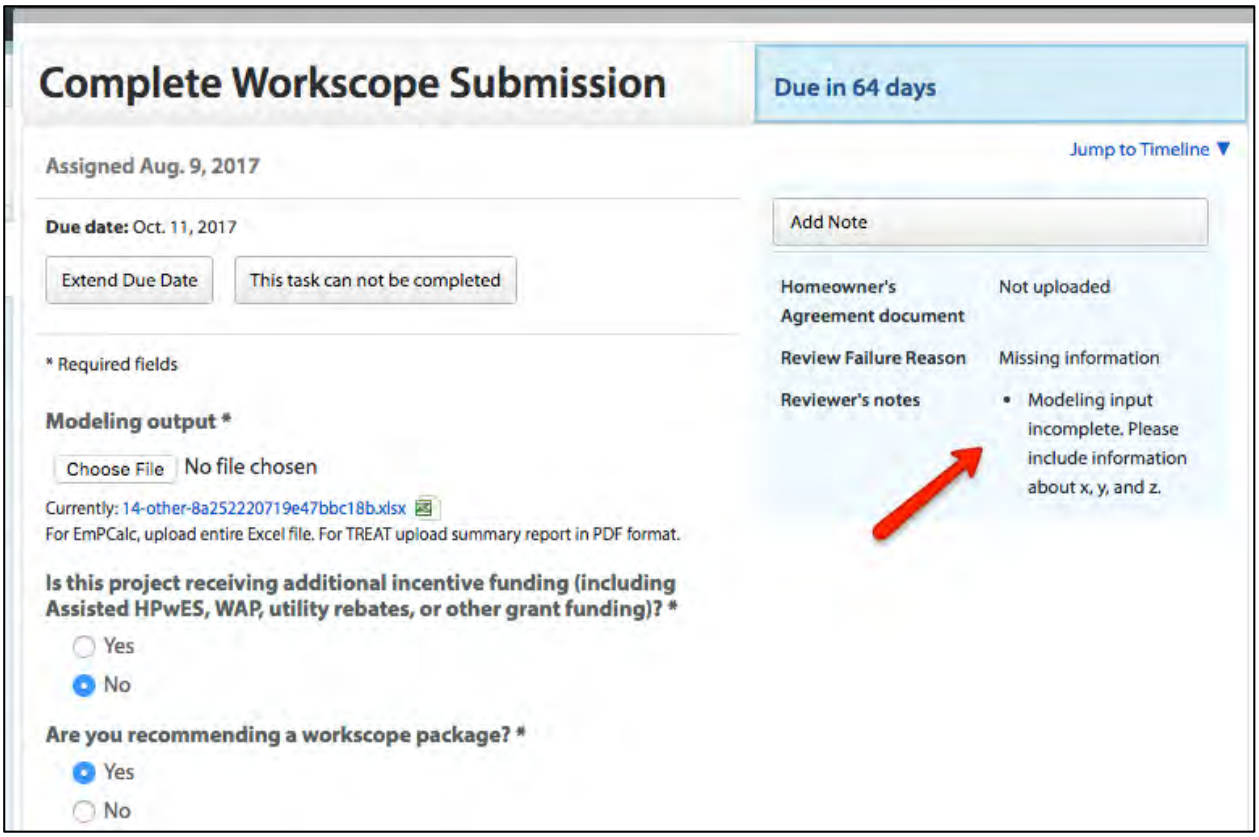
Reviewer's Notes:
Missing information

- Modeling input incomplete. Please include information about x, y, and z.

View all project details here

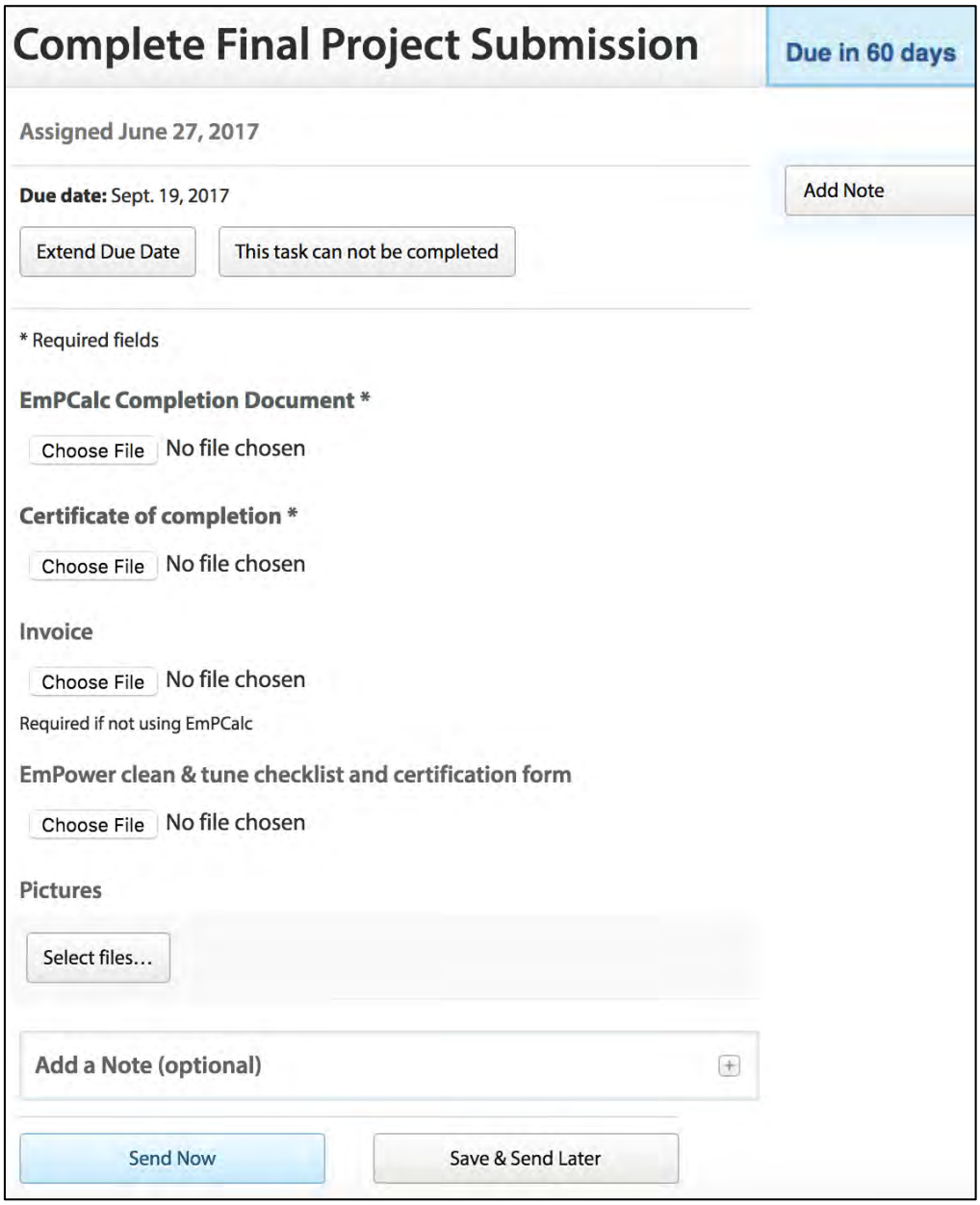
- The reviewer can reject the project with one the following reasons:
  - Missing Information
  - Modeling Errors
  - Program Rule Violation
  - Other

The notes will also appear in the task that was sent back.



Final Project Submission

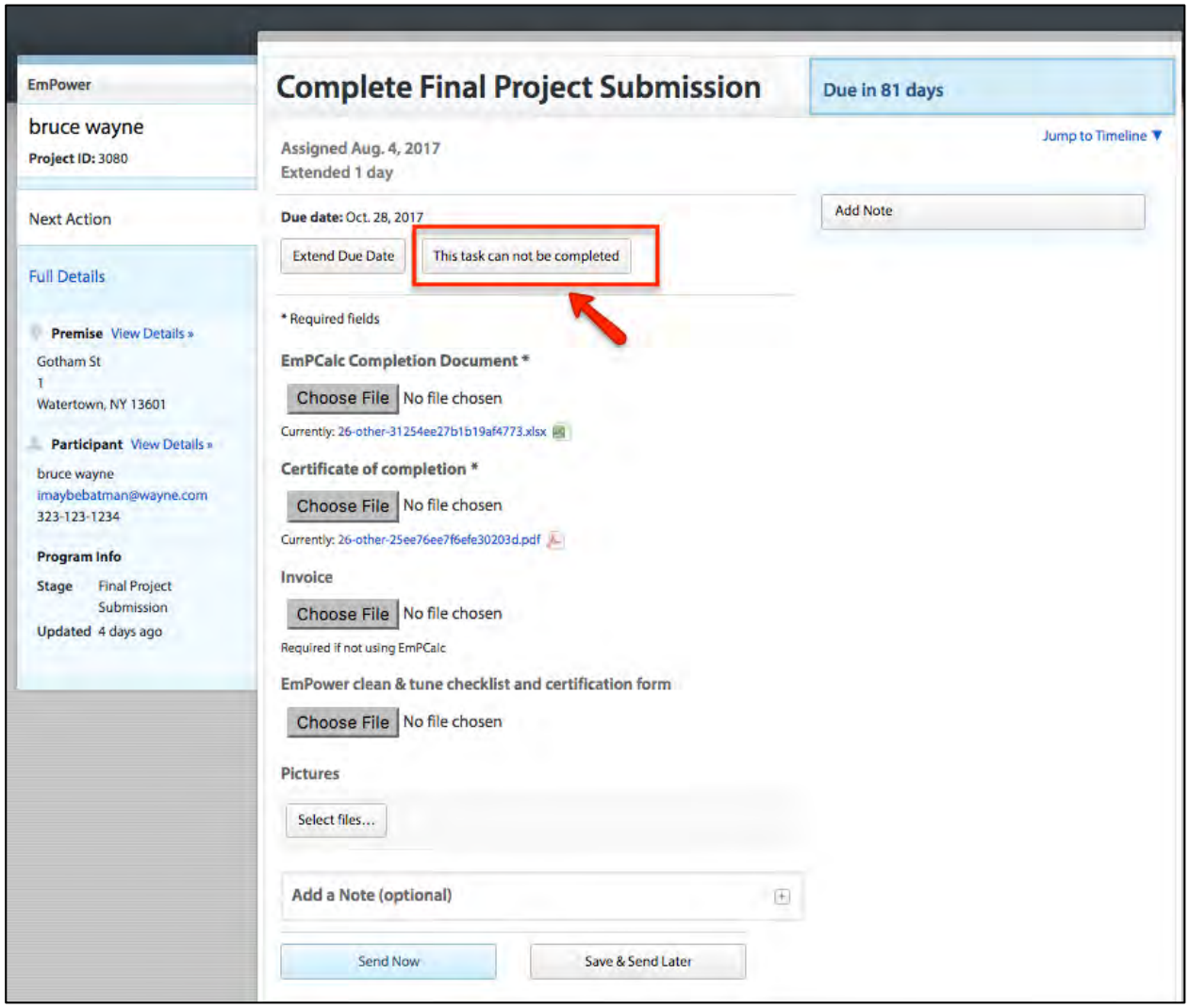
The Final Project Submission task is completed by a contractor who will upload the EmPCalc Completion Document (a TREAT PDF can also be uploaded in the EmPCalc Completion Document field) and any additional supporting documentation needed.



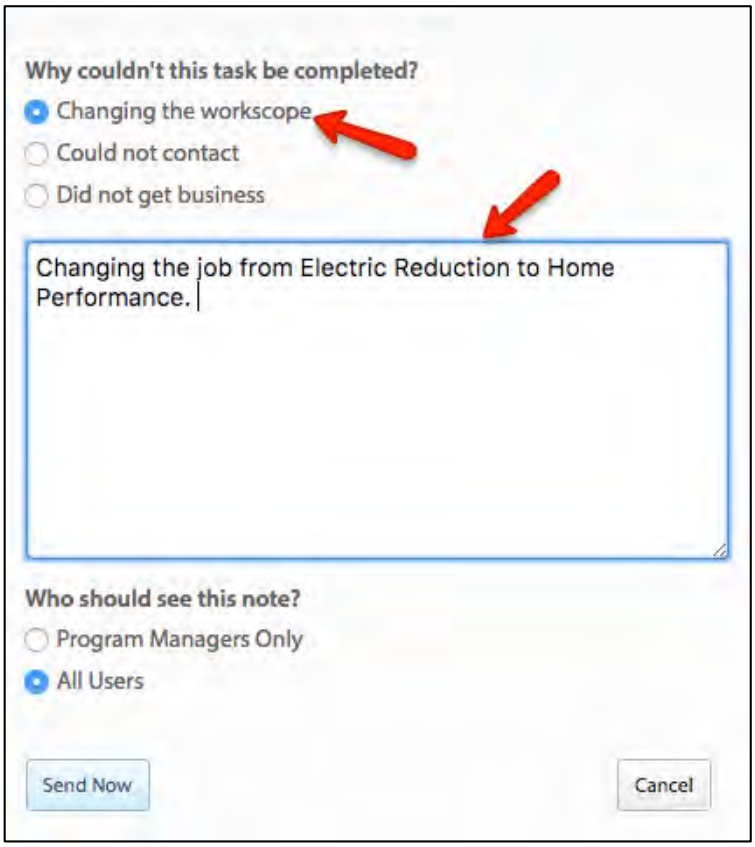
Change Orders and Changing Project Type

If the final project submission has changed by more than $200 from the workscope that was approved, OR if the project was originally designated as an Electric Reduction project but needs to be changed to a Home Performance job, use the “this task cannot be completed” button.

This button is available to you in all stages and provides reasons for you to select if you cannot complete the task. Choosing an option other than “Changing the workscope” will alert the program staff that you were unable to complete the task and they will take appropriate next steps. If you need to close the project, please see the Pipeline Cleanup section.



Then choose, “Changing the workscope,” and leave a note as to what is being changed.



Final Project Approval

The Final Project Approval is completed by Program Staff who will review the final project submission documents and will:

- approve to move the project to Incentive Payout task
- approve to move the project to Secondary Approval task, if technical review is needed
- deny project completion moving it back to Final Project Submission task

If the project does not pass, the project will be sent back to the contractor with review notes.

- The contractor will receive an email notifying them that the project has been returned to the Final Project Submission task and needs revision. The email will also include the reviewer's notes.

Secondary Approval

The project is sent to Secondary Approval if technical review of the project is needed. The Secondary Approval task is completed by Program Staff who will review the measure and incentive information to determine whether the project passes approval.

If the project does not pass it will be sent back to the contractor with review notes.

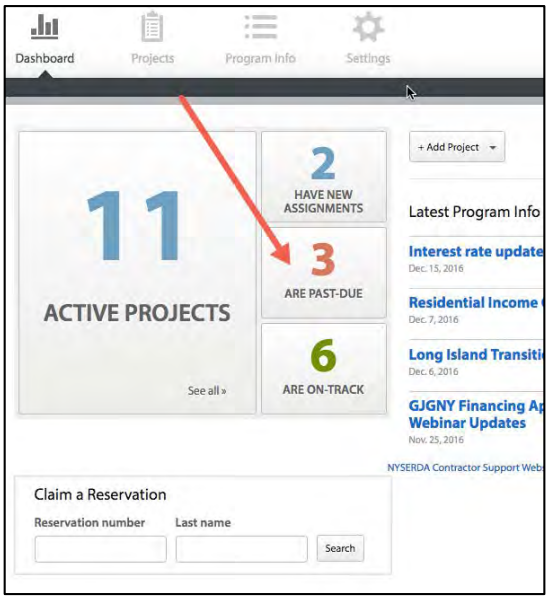
- The contractor will receive an email notifying them that the project has been returned to the Final Project Submission task and needs revision. The email will also include the reviewer's notes.

Appendix

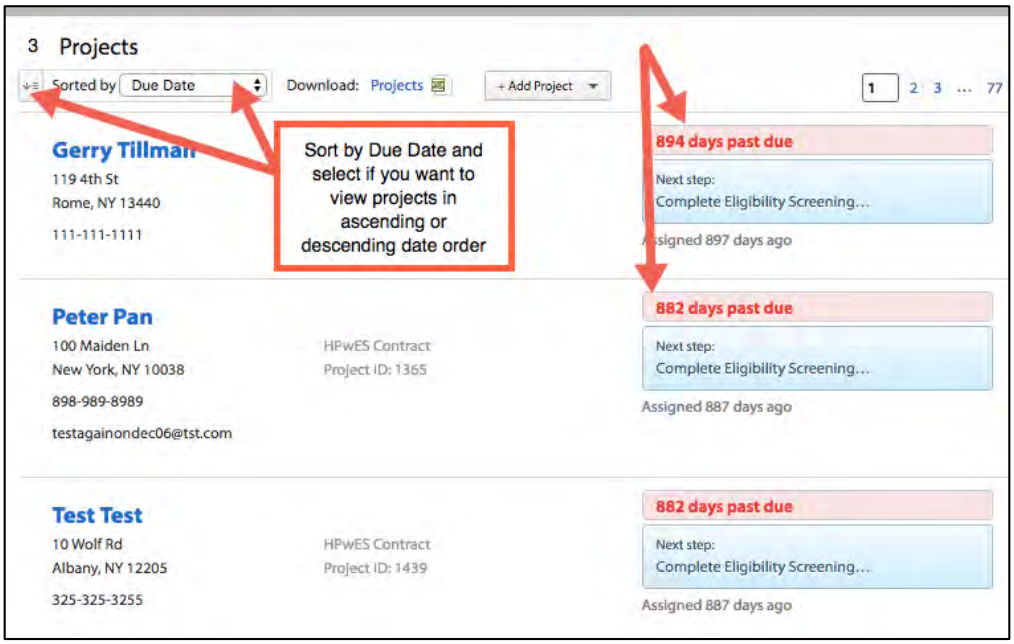
Pipeline Cleanup

Participants may cancel projects and projects may stop progressing forward in the workflow for a variety of reasons. It is important that these projects be appropriately handled so that the program pipeline is accurate and funding can be better planned. Please follow the steps below to close out past due projects that are known to have been abandoned.

1. From your dashboard click to view all past due projects.



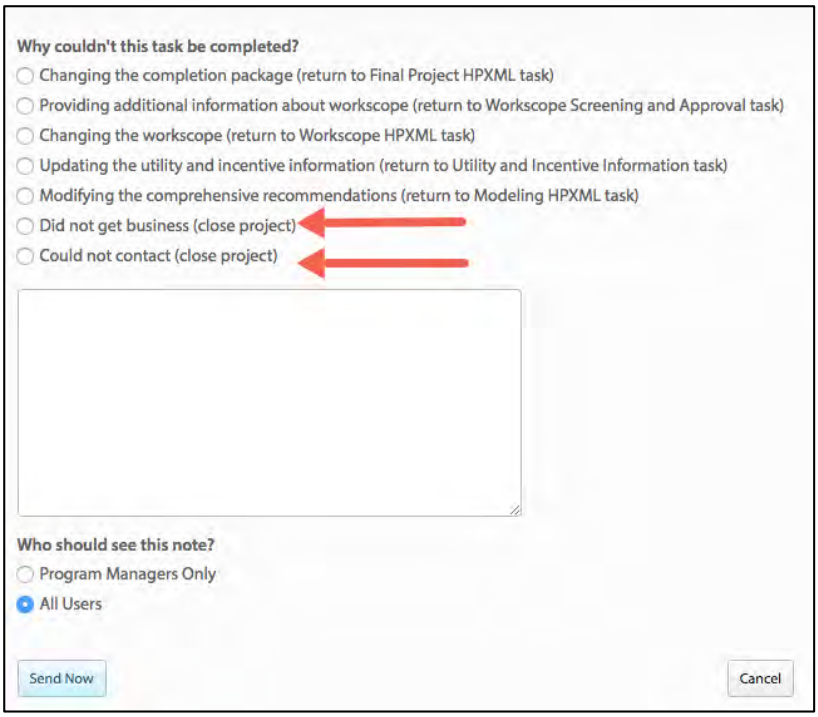
2. Sort by due date and view how many days past due each project is.



3. Click into each project and determine if it has been abandoned. Check comments in the timeline to refresh your memory.

4. If you determine that a project should be removed, select “This task cannot be completed” and select the appropriate reason. Ensure that you are closing only projects that were abandoned. Note: you can also send projects back to prior stages by selecting the appropriate reason.

5. Each contractor is responsible for keeping their project pipeline up to date and deactivating their dead leads on a regular basis. Please do not simply extend the due date repeatedly. Projects can be reopened if the customer changes their mind by contacting support.residential@nyserda.ny.gov.



Additional Resources

Please contact support.residential@nyserda.ny.gov with questions.

NY HP Portal
EmPower NY Workflow
Appliance Vendor User Guide

Last revised: 8/15/17

ENERGYSAVVY

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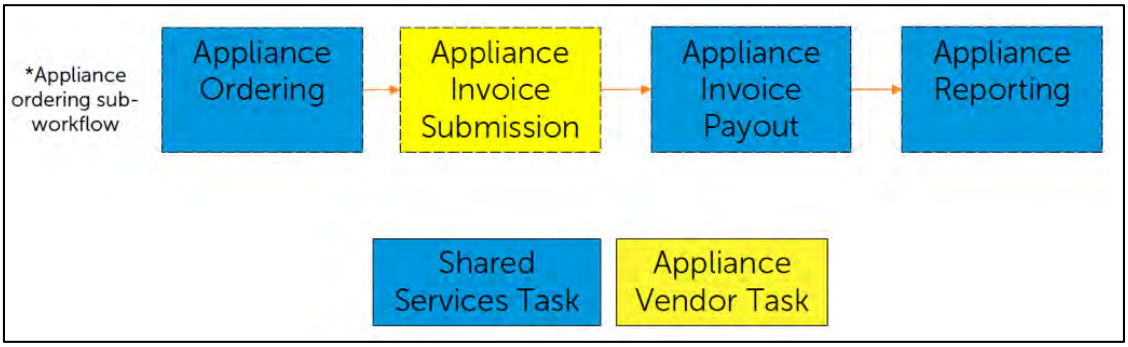
Introduction 2
Appliance Invoice Submission task 4
Additional Resources 5

Introduction

- What is the Appliance Ordering Sub-Workflow?
  - The appliance ordering sub-workflow is the part of the EmPower workflow that handles the appliance ordering process for participating income-eligible New Yorkers. This sub-workflow can occur in parallel to the remainder of the EmPower HP or ER job.

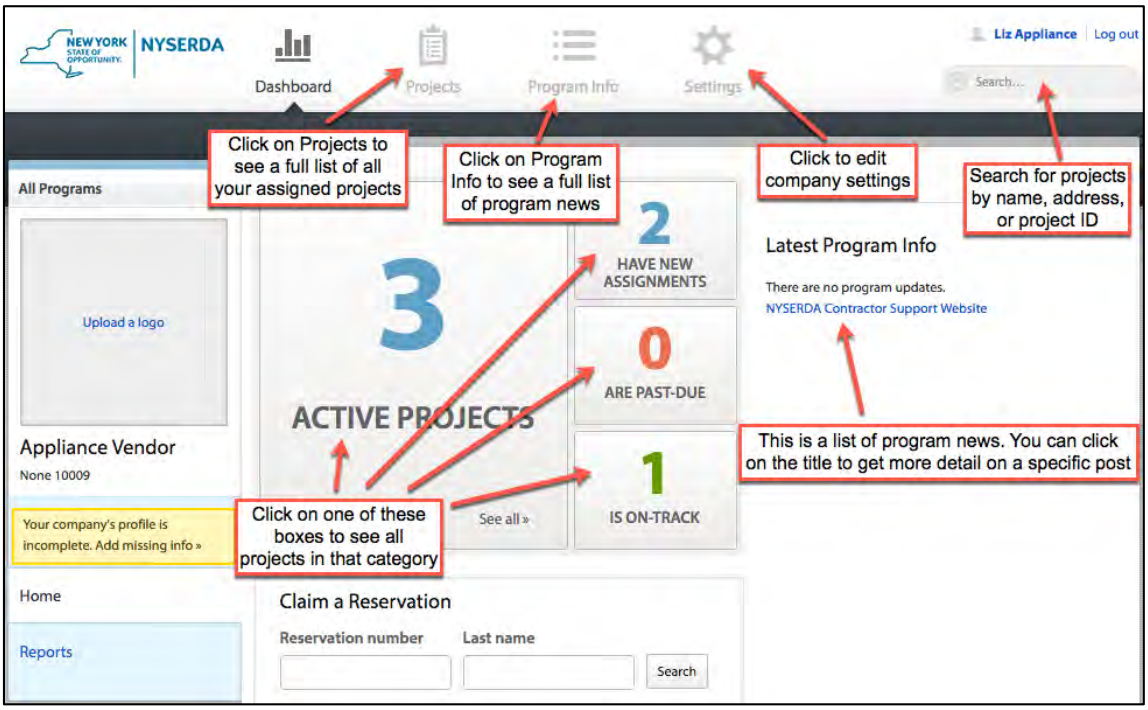
- What does the sub-workflow look like?
  - The appliance ordering sub-workflow consists of four tasks, of which only the Appliance Invoice Submission task is completed by the appliance vendor.



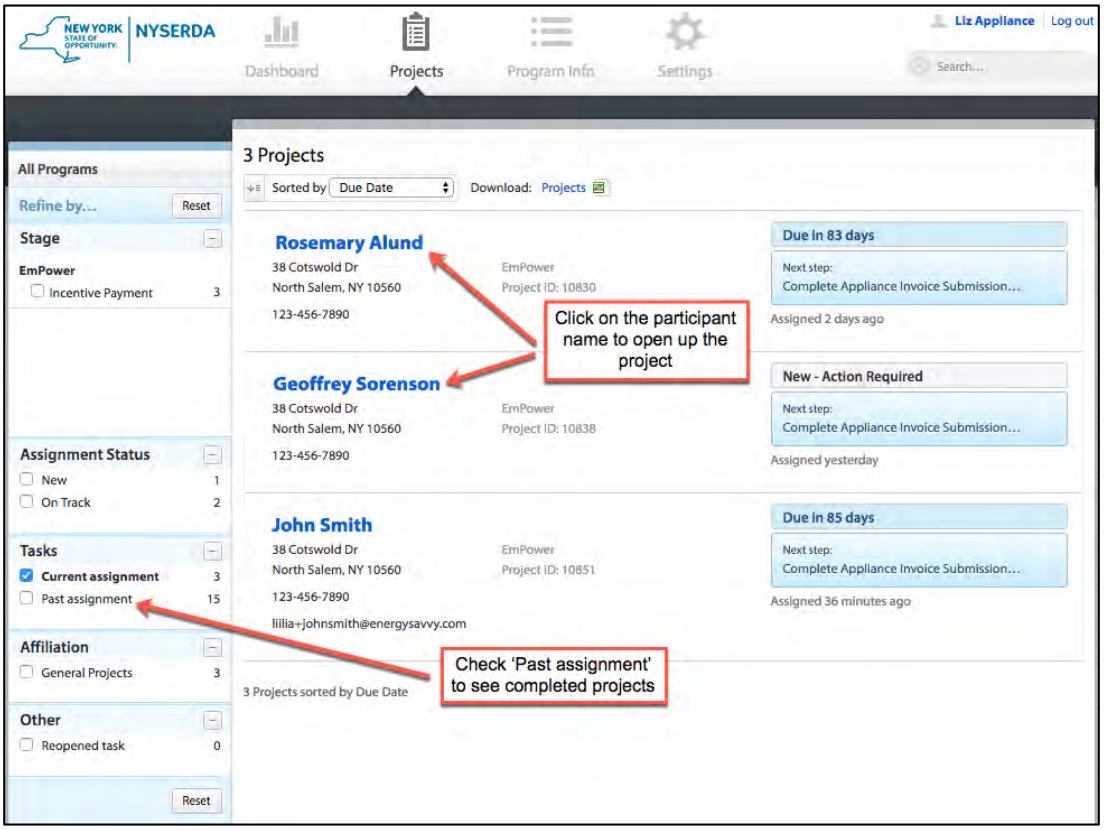
- Where do I find the Appliance Invoice Submission task?

  1. Go to https://nyserda.energysavvy.com/ to log in.

  2. Navigate to the project list via the 'Projects' tab at the top of the page or by clicking the relevant project category box:



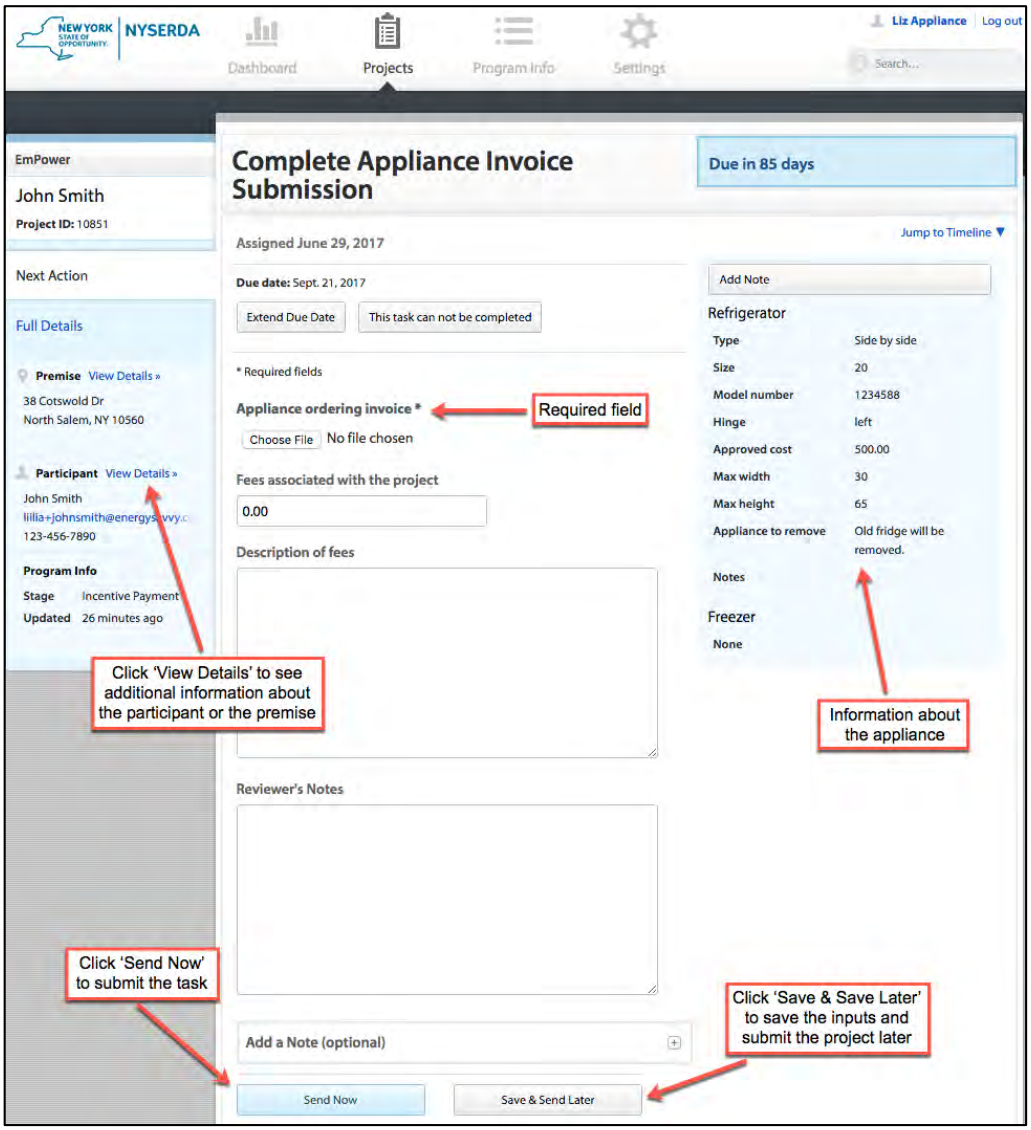
3. Click on the participant name to open the relevant project:



Appliance Invoice Submission task

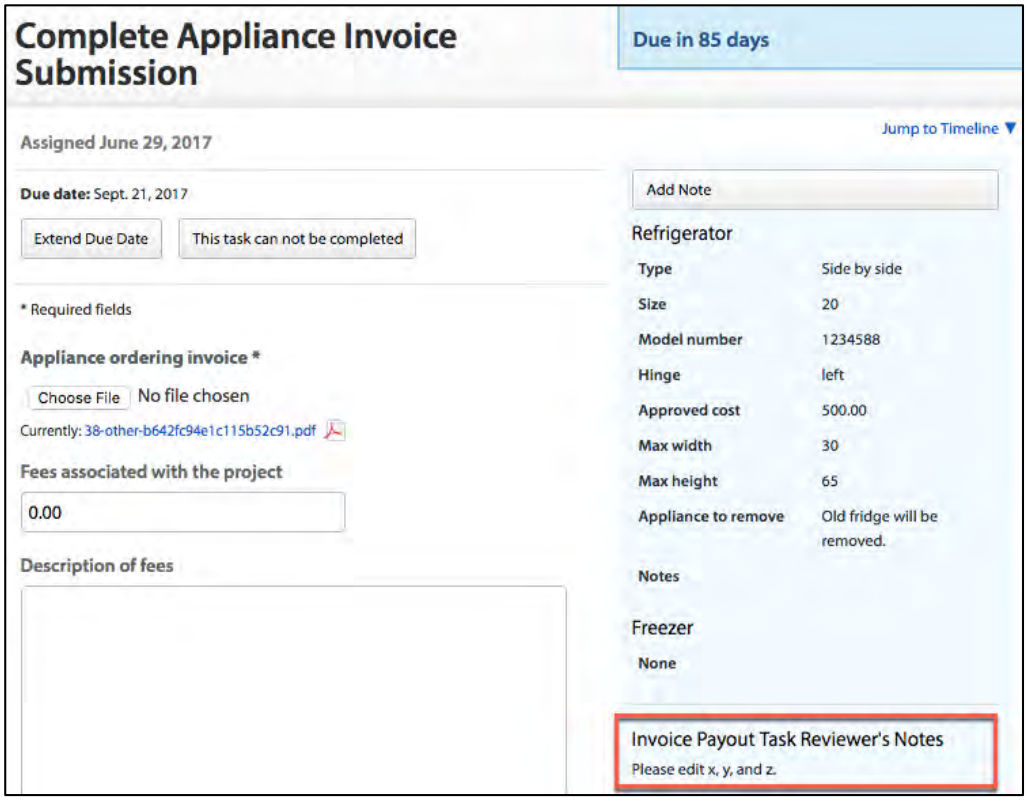
Once Shared Services completes the Appliance Ordering task and selects the appropriate vendor for the Appliance Invoice Submission task, the Appliance Vendor will receive an email notifying them of the new project. The new project will also appear in the selected vendor's Projects list.

To complete the task, the appliance vendor will order the appliance with the specifications listed on the right side of the page. Then, when the invoice is ready, the appliance vendor will upload the appliance ordering invoice and fill in other relevant fields, if applicable. Note that uploading the invoice is required and the task cannot be submitted without uploading the invoice.'



When the appliance vendor completes the Appliance Invoice Submission task, the project will move forward to the Appliance Invoice Payout task.

- The Appliance Invoice Payout task is completed by Shared Services who will either accept or reject the invoice.
- If the invoice is rejected, the project is sent back to the Appliance Invoice Submission task. The appliance vendor will receive an email with notes detailing why the invoice was rejected. The notes will also be listed in start data on the Appliance Invoice Submission task.



If the invoice submission task cannot be completed, the appliance vendor can send the project back to the Appliance Ordering task by selecting 'This task cannot be completed' with one of the following reasons:

- Customer not responsive
- Refusal
- Measurements not accurate
- Wrong appliance on site at the time of delivery
- Other

Additional Resources

Vendors may contact support.residential@nyserda.ny.gov with questions.

APPROVED ENERGY MODELING SOFTWARE FOR NY HOME PERFORMANCE WITH ENERGY STAR

APPROVED FOR:		AUDITOR	
EMPOWER	HPWES	WEBSITE: http://rheemdesignstar.com	
	✓	SYSTEM REQUIREMENTS: Current Internet Browser, Internet connection	
AUDIT	CONTRACTS		
✓		COST:	FREE

APPROVED FOR:		GREENPRO	
EMPOWER	HPWES	WEBSITE: http://www.drenergysaver.com	
	✓	SYSTEM REQUIREMENTS: Windows XP/Vista/7	
AUDIT	CONTRACTS		
✓		COST:	FREE Available only to franchisees of Dr. Energy Saver

APPROVED FOR:		OPTIMISER	
EMPOWER	HPWES	WEBSITE: http://optimiserenergy.com	
	✓	SYSTEM REQUIREMENTS: Windows 8/7/XP, 1.5 GHz multi-core processor, 2GB RAM, 64GB Hard Drive	
AUDIT	CONTRACTS		
✓	✓	COST:	Free 30-day trial https://www.omaudits.com for pricing details

APPROVED FOR:		SNUGGPRO	
EMPOWER	HPWES	WEBSITE: http://snuggpro.com	
	✓	SYSTEM REQUIREMENTS: Internet connection. Mobile Compatible	
AUDIT	CONTRACTS		
✓	✓	COST:	$25 per project for NYSERDA Participating Contractors http://snuggpro.com for pricing details
APPROVED FOR:		TREAT	
EMPOWER	HPWES	WEBSITE: http://psdconsulting.com/software/treat	
✓	✓	SYSTEM REQUIREMENTS: Download. No internet access required to run.	
AUDIT	CONTRACTS		
✓	✓	COST:	Free 30-day trial • Single Family - $495 per license • Bulk Discounts Available

Software Comparison Guide

Several software modeling options are now accepted by the NY Home Performance with ENERGY STAR® program. Use this guide to compare options to find the one that best fits your business.

For additional information or purchasing inquiries, please work directly with the software companies listed below.

CAKESYSTEMS™

OPTIMISER®
power | simplicity | accuracy

Snugg Pro

TREAT

NEW YORK STATE OF OPPORTUNITY. | NYSERDA

Contact Information:

CAKESYSTEMS™

John Spillman
(503) 968-7160 ext. 44
jspillman@earthadvantage.org

OPTIMISER®
power | simplicity | accuracy

Ryan Moore
(720) 306-1742
ryan@optimiserenergy.com

Snugg Pro

Sandy Michaels
(720) 663-7836 ext. 2
pro@snugghome.com

TREAT

Nate Asbeil
(215) 381-2929 ext. 313
Nasbeil@psdconsulting.com

CAKESYSTEMS™

Pricing Options	License is per user login, with two options available: • Pay Per Use – For low volume – $25.00 per site/audit • Premium Plan – Unlimited Audits, 1-3 users, tech support, and mobile app use – $99.99/month
HPXML Generation	Yes
User Interface	Online application. Can be used offline for data collection only with mobile app.
Select Features: Single Family	Single Family Detached or Attached Single Family.
Calibrated or Uncalibrated models	Uncalibrated models only.
Customizable Report	User can upload a logo or photo to customize the header of the report. Report content is standardized; for larger organizations, the report can be customized for an additional fee with an Enterprise Account.
Inputs	Core inputs for CakeSystems to generate an energy model are very streamlined and simple. More detailed inputs are available to be entered in the Proposal Generator feature.
Mobile Application	Data collection app works with Android and iOS operating systems. Tablet and smartphone compatible. Data collection only in offline mode. Synchronize and use the software directly when connected to the Internet.
Technical Support	Included with Premium Accounts.
Training	A 3- to 4-hour, self-paced online training and 2-hour live webinar are available for $199/user. 6 BPI CEUs for software training awarded.
Scenario Management	Proposal Generator feature provides the ability to create an unlimited number of project reports. Auditors can use the project reports to offer the homeowner different scenarios for improving their home which include both savings and estimated cost numbers.
Accreditation	Approved for the following programs: • Mass Save EPS • Washington Community Energy Efficiency Program • AEP Ohio In-Home Energy Program • Missouri Home Energy Certificate • Seattle City Light/Community Power Works • Clean Energy Works Oregon • Energy Trust of Oregon • NYSERDA - NY Home Performance with ENERGY STAR® Program • Energy Upgrade California® Home Upgrade • HPXML 2.1 compliant
Quality Management and Business Features	CakeSystems simple inputs are optimized to speed up your workflow, so you can spend more time selling work and doing jobs, and less time filling in forms. Report templates feature allows users to quickly insert commonly used text when creating the homeowner reports, saving time and standardizing the language auditors use across your organization. Enterprise Accounts include additional configurable options including: dashboard for tracking audit pipeline, system alerts, customized homeowner reports and a QA module. Data extracts can be created as a spreadsheet, HPXML, or optionally connected to databases and CRMs like SalesForce.
Initial Launch Pricing Promotion	CakeSystems introductory offer for NYSERDA participating home performance contractors: • 6 month Premium Plan for $499 with free training (save $300 total)

OPTIMISER®
power | simplicity | accuracy

Pricing Options	OptiMiser is free to try for 30 days from www.omaudits.com. Per-project and monthly license types are available: • Silver (per project) licenses cost $25 per project with a one-time setup fee. • Gold (monthly) licenses cost $150 per month per user for 40 projects per month - $3.50/project over 40 and NO setup fee. Complete details are available at www.omaudits.com.
HPXML Generation	Yes
User Interface	OptiMiser's user interface is downloadable and optimized for touch-enabled Windows tablets. It provides full offline access to real-time physics-based modeling, automated utility calibration, and customizable report generation. Complete hardware and software requirements are available at http://optimiserenergy.com/getting-started.
Select Features: Single Family	OptiMiser analyzes and reports on single-family buildings and single units in multi-unit buildings. OptiMiser also supports single-zone modeling of whole multi-unit buildings.
Calibrated or Uncalibrated Models	OptiMiser combines industry standard physics-based modeling (real-time hybrid degree-day/hourly) with the most advanced utility bill analysis and calibration system available for residential systems. An intelligent auto-calibration system maximizes available information – including anything from zero to 26 utility bills – and eliminates guesswork.
Customizable Report	Over 40 user-customizable PDF report pages are available to select from, or use a pre-selected report. Add: • Up to 90 photos with captions • Custom meaures and costs • Homeowner concerns • Project-specific notes and recommendations OptiMiser reports energy savings and payback in a variety of visual formats. Reports can include multiple packages and financing scenarios with configurable loan terms. In addition to homeowner reports, OptiMiser includes and automatically generates complete workscope/bid documents with your custom pricing and as many detailed line items as you want. Workscope documents can be saved separately and opened in Excel.
Inputs	OptiMiser is both streamlined AND extremely precise. OptiMiser's unique Audit Wizard interface revolutionized building modeling by overcoming the boundary between simple/low-precision tools and complex/higher-precision ones. Enter only information you know–don't waste time guessing to make the model work! OptiMiser makes the most out of all available information, from utility bills (if available), your inputs, local weather, and detailed age and location-based defaults to maintain the model in the most realistic state possible, all in real-time. And OptiMiser's calibration charts and load tables provide visual feed-back on how the model stacks up against historical usage, automatically adjusting with every click of a button.
Mobile Application	OptiMiser runs on Windows 7/8 touchscreen tablets such as the Microsoft Surface Pro 2/3, Acer Iconia W700, and many others. OptiMiser does not run natively on iOS or Android devices.
Technical Support	OptiMiser provides phone, email, and web-based support for all users. Start with up to an hour of one-on-one help, use our online forum and video library, and attend weekly free webinars. Easy issue-reporting is built into the interface. Typical response time is under 2 hours.
Training	OptiMiser provides free, live web-based training and self-service learning resources.
Scenario Management	OptiMiser can analyze and report on multiple improvement packages. Users can manually select packages or let OptiMiser automatically build optimal packages within specified cost bins. Users can also include financing and incentive details with configurable loan terms.
Accreditation	• DOE BESTEST • BPI-2100 • BPI-2200 • ANSI/BPI-2400-S-2012 • BPI-2101 • DOE Home Energy Score API Partner • NYSERDA - NY Home Performance with ENERGY STAR® Program • Home Performance with ENERGY STAR® compliant homeowner report • HPXML 2.1 compliant
Quality Management and Business Features	Deliver what clients want and meet program needs in less time with these quality management and business-friendly features: • Automatic reporting • Real-time quality assurance checks and messages that direct the user to critical inputs • Reduced double-entry with automated homeowner reporting, workscope, and incentive reporting • Flexible measure library with good defaults and unlimited customization • Can pre-fill PDF forms and capture signatures onsite • Connect to databases and CRMs like Salesforce • Unlimited customization potential — contact us to learn about fast, efficient options for customizing reports, forms, workscopes, even custom calculators and databases
Initial Launch Pricing Promotion	Use OptiMiser FREE for 30 days: www.omaudits.com
Utility Administration Pricing	OptiMiser is free to evaluate. Contact us for extended evaluation licenses: info@optimiserenergy.com.

Snugg Pro

Pricing Options	• Retail Price: $30 per project (based on each unique address entered into system)
	• Special Pricing for NYSERDA contractors: Single project: $25
	• Pre-paid subscription pricing:
	  • $200/month, 10 projects included, $20/project after that
	  • $300/month, 20 projects included, $15/project after that
	  • $480/month, 40 projects included, $12/project after that
	  • $1000/month, 100 projects included, $10/project after that
	• Unlimited users • No per-user fee or seat license • No setup fee • No annual fees
	• Free unlimited live chat, email and phone support
	• Easy and instant online signup at http://snuggpro.com

HPXML Generation	Yes
User Interface	• Cloud-based online tool: data is saved in the cloud. • Fast and powerful modern user interface that dynamically adapts to smartphones, tablets or computers. • Projects are always in sync across multiple devices. This means a contractor can walk through a house with a smartphone and then use a computer at the office to prepare the report. • Runs on PCs (Mac OS X & Windows), tablets (iOS, Android, Windows) and smartphones (iOS & Android).
Select Features: Single Family	Snugg Pro provides powerful calibrated results for single family units. Calibrated results are also available for multifamily units that are individually metered for both gas and electricity.
Calibrated or Uncalibrated models	SnuggPro supports both calibrated and uncalibrated modeling.
Customizable Report	Highly customizable audit and sales report designed to quickly convert audits into sales.
Inputs	Initial input screen allows for very simple inputs that can be gathered and entered in less than 20 minutes. Detailed inputs are available for more specific information gathering and increased accuracy.
Mobile Application	Specifically optimized for mobile devices. Works great on tablet computers and smartphones.
Technical Support	• Snugg Home's products are extremely easy to use. • All users receive comprehensive, free training and support. Our extensive in-house customer support (http://snuggpro.com/support) includes dedicated full-time tech support specialists that ensure fast response times via built-in live chat, phone and email. • An extensive online knowledge base ensures users are always accessing the latest help documentation.
Training	• Free webinars • Availability of custom trainings either via the Web or on location • Access to recorded training webinar • Searchable knowledge base with how-to articles: http://snuggpro.com/help
Scenario Management	Custom recommendations provide great flexibility to allow for complex scenarios, including those that go beyond energy efficiency into home improvements and renewable energy.
Accreditation	• BPI-2100 • BPI-2200 • ANSI/BPI-2400-S-2012 • BPI-2101 • DOE Home Energy Score API Partner (pending) • Green Button Partner (pending) • Energy Savvy Optix partner • Official software for Xcel Energy Colorado's Home Performance Program Approved for the following programs: • LEAP Virginia • Greater Cincinnati Energy Alliance • Efficiency Maine • ReEnergize Pgh • NYSERDA - NY Home Performance with ENERGY STAR® Program • Energy Upgrade California® Home Upgrade • APS • SRP • HPXML 2.1 compliant
Quality Management and Business Features	User management: • Easily invite users to join your company • Set user roles for individuals • Assign users to specific projects • See all projects across all users within your company • See all your companies with a single Snugg Pro account (useful if you work with multiple companies) Project management: • Move projects between stages in a process • Sort and search projects by program, company, auditor, stage and more • Export projects in CSV and HPXML • Offer program financing and/or custom financing with built-in loan calculator • Create company-wide or user-specific project templates • Beautiful homeowner report is flexible and optimized for conversion: http://snuggpro.com/report.pdf
Initial Launch Pricing Promotion	Pricing above is special pricing for the NYSERDA - NY Home Performance with ENERGY STAR program only. Snugg Pro does not have an introductory price— users can sign up for free anytime without a credit card. Each account comes with two fully functional, editable sample projects—one blank and one filled out with sample data (the report output is watermarked as 'Sample'). Users only need to enter a credit card and activate billings to create a real project.

Pricing Options	TREAT Single Family costs $495. Bulk discounts are available for larger organizations and start at 7 Single Family Licenses for 10% off. Each License is valid on one (1) computer only. TREAT comes with 1 year of free technical support. There are no additional per model costs.
HPXML Generation	Yes
User Interface	Downloaded and installed on a computer. No internet access is required to run.
Select Features: Single Family	Single Family TREAT supports up to 4 living units and offers the "New Building Wizard" to streamline the modeling process. Customizable preferences can help users make models quickly and easily. Projects can also be saved as general templates and customized to model the individual home. Visit https://psdconsulting.com/software/treat/treat-3-4/ for a full list of features or to try a 30-day demo
Calibrated or Uncalibrated models	TREAT supports both modeling use cases: baseline model with calibration, and baseline model without calibration. TREAT has a built-in billing analysis regression tool and provides feedback on the error of the baseline model as compared to the weather-normalized billing data by fuel type and end-use. This helps the user know which inputs need to be adjusted to properly calibrate the model, greatly increasing the accuracy of the savings estimates. TREAT models can be generated without model calibration if utility bills are unavailable.
Customizable Report	TREAT reports can be branded with your logo from within TREAT itself. Reports can also be exported to Microsoft Word for even greater customization as needed. TREAT has over 20 reports designed for customers and auditors. Compare billing data to model data (if available), highlight a specific home improvement package to engage with customers or compare up to 3 packages in an easy to read table. The New and Improved Home Performance Report is an attractive way to deliver information about the current status of a home and your proposed improvement. TREAT reports financial savings based on a Savings to Investment Ratio (SIR) with adjustable financial information. Show your customers the total cost of a project as well as the amount of savings of both energy and money on a yearly basis.
Inputs	TREAT building modeling software is flexible. The "New Building Wizard" streamlines the single-family modeling process and allows users to create a model in as little as 20 minutes. Inputs have varying levels of detail and complexity designed for users to be as general or specific as needed. The interface streamlines the modeling process by outlining the proper order to follow when building a model.
Mobile Application	TREAT runs on Microsoft Windows and works with any 2-in-1 tablet or laptop running Windows. Using TREAT on a Mac requires running Windows on a partitioned hard drive or parallels. Currently TREAT is not supported on Android or iOS.
Technical Support	TREAT purchases comes with 1 free year of technical support. During this year users can log help tickets or call the support hotline. This contract also allows users to upgrade to the latest versions of TREAT for free. After the first year there is an annual fee of $200 for Single Family TREAT users to maintain customer support and free upgrades. An active license is also a requirement for moving TREAT to a new machine.
Training	Free online introductory videos are available at http://psdconsulting.com/software/treat/treat-training-videos/. You can also take a tour of TREAT at http://psdconsulting.com/software/treat/tour-treat/ Online courses are offered for Single Family TREAT. These courses provide 6 BPI CEUs and an official certification of course completion by PSD.
Scenario Management	TREAT allows modelers to analyze a variety of improvement packages within one model. Individual improvements can be combined into any number of packages showing the interactive SIR of all measures within that package, as well as the total package SIR. Multiple packages can be created using the same base model for quick comparisons without having to build a new model. The Package Comparison Report easily compares up to 3 scenarios at a time and presents them to potential clients.
Accreditation	• Certified by the US Department of Energy (DOE) as a Weatherization Assistance Program Tool for all single and multifamily building types, including mobile homes • RESNET Accredited Existing Homes Tax Credit Compliance Tool • DOE BESTEST • ANSI/BPI 2400 Standard • NYSERDA - NY Home Performance with ENERGY STAR® Program • NYSERDA Multifamily Performance Partners (MPP) Program tool • TREAT is the official weatherization tool used by the State of Washington Weatherization program • New Hampshire Utility Home Performance Program tool • EmPOWER Maryland Low Income Energy Efficiency Program tool • Visit https://psdconsulting.com/software/treat/treat-accreditation/ for more information • HPXML 2.1 compliant
Quality Management and Business Features	TREAT runs a "model inspector" tool each time a user calculates the model. This tool examines the data that has been entered for the base building and each improvement package to catch common data input errors. The verification algorithms are general rules that check that the input and output data have a minimum level of consistency with a logical building model and with TREAT calculation algorithms. Users can create custom treatment workscopes to be used by technicians in the field. These workscopes ensure that the proper installation method is being followed, and can help engage with customers about the next steps in the retrofit process. TREAT has flexibility in reporting and data export formats (Word, Excel, PDF, HPXML) to support specific business model and reporting needs.
Special Pricing	Current TREAT users can upgrade to the latest version of TREAT for FREE as long as the license is active. Check your license status by visiting http://psdconsulting.com/software/treat/treat-license-checker/. If your license is not active simply pay the standard TREAT renewal fee to access FREE Upgrades and Customer Support for an entire year! Expired license renewals and new purchases will qualify for a 10% discount through July 31. Contact Nate Asbeil for details at nasbeil@psdconsulting.com or 215-381-2929 x 313.

HPXML Compliant EmPCalc 5.3

Reference Guide

Pilot Phase February 2019

Updated April 2019

http://hpwescontractorsupport.com/empcalc-hpxml-pilot/

DATA VALIDATIONS

Utilizing the Data Validations:

There are two ways to use the Data Validations (highlighted fields) in EmPCalc.

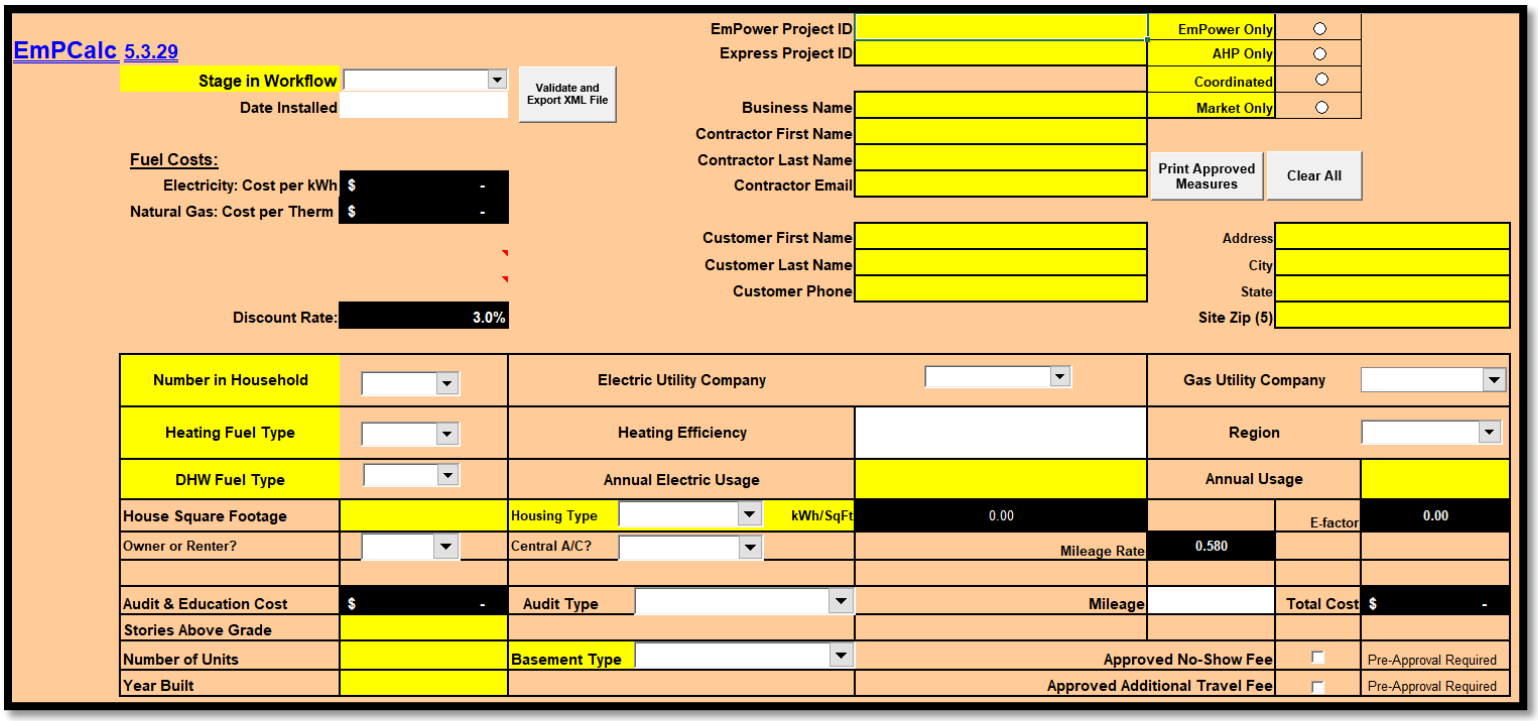
1. As a data validation at the end of modeling - Enter the required data at the top of the Cover Tab (Project, Customer, and Contractor Information.) Proceed through the individual tabs and enter your proposed measures. Lastly, on the Cover tab check off your proposed measures. Validate/ Export your XML. You will receive a Validation error message if any data is missing. The Validation error message will direct you to the tab where the data is missing, and those cells will be highlighted.
2. As a guide to entering required fields as you go - Enter the required data at the top of the Cover Tab (Project, Customer, and Contractor Information.) Check off your proposed measures on the Cover Tab. Proceed through the individual tabs, you will see required cells highlighted in yellow.

Required Fields:

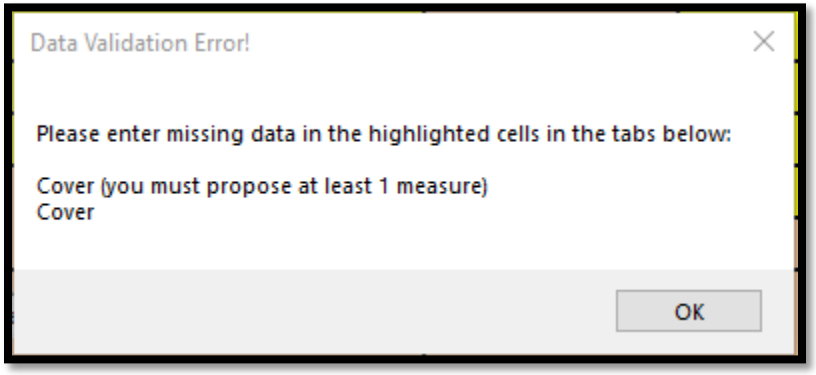
1. **Cover Tab** - The following fields are required.

   a. **Stage in Workflow**
   b. **Installed Date** (Final Project HPXML only)
   c. **Number in Household**
   d. **Heating Fuel Type**
   e. **DHW Fuel Type**
   f. **House Square Footage**
   g. **Stories Above Grade** – Must be whole number, no decimal value can be entered in this field.
   h. **Number of Units** – Must be whole number, no decimal value can be entered in this field.
   i. **Year Built**
   j. **Either EmPower Project ID or Express Project ID or both IDs** - ID numbers can be found in the NY HP Portal.
   k. **Contractor Information**
   l. **Customer Information** – Customer first and last name must match Customer first and last name in the NY HP Portal.
   m. **Annual Electric Usage**
   n. **Housing Type**
   o. **Basement Type*** *See note under Modeling Limitations*
   p. **Project Type Selection**
   q. **Project Address, City, State, Site Zip (5)** – Site Zip must match zip code entered in the NY HP Portal.

r. **Annual Usage**

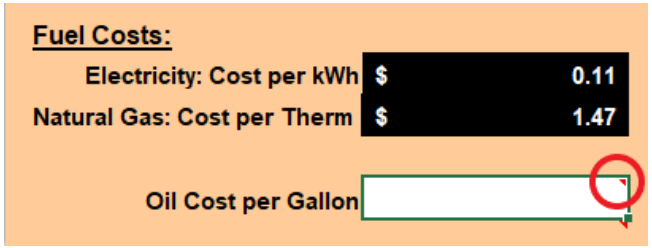


Additionally, at least *one* measure must be proposed. If no measures are proposed, you will be met with the **Data Validation Error!** below:



The **red caret** circled in the screenshot below indicates a comment that appears when you hover over it.

- **Fuel Cost**: "Fuel rate must equal DHW and HVAC fuel rate if switching to same fuel."



2. **Test In – Test Out Tab** - Highlighted cells must be completed and are required based on the XML file you are attempting to validate and export. **Modeling HPXML and Workscope HPXML require the Test In data be completed.** Additionally, the **Test Out Air Infiltration** is required at **Modeling HPXML and Workscope HPXML** as the proposed blower door number if Air Sealing is proposed, or the same number as the Test-In Air Infiltration if Air Sealing is not proposed. **Final Project HPXML requires the Test Out data be completed.** Additionally, the **Test Out Air Infiltration is required**. Any Measurement Types that cannot be completed require the **Check If Measurement Can't Be Tested** to be checked, and a note must be included in the **Notes** section below the table.

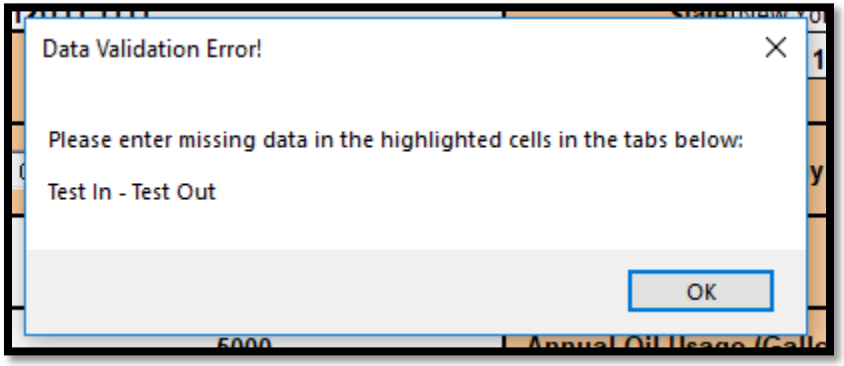
   If a blower door test could not be run the Test In and Test Out Air Infiltration should be entered in ACH (indicated with a comment by hovering over the **red caret**.) We have provided a table in EmPCalc to help guide your ACH calculation. Additionally, entering an ACH value requires the **Check If Measurement Can't Be Tested** to be checked, and a note must be included in the **Notes** section below the table explaining why a blower door could not be run.

   Note – The Test In and Test Out blower door numbers automatically populate the Pre and Post CFM50 cells on the Air Sealing tab.

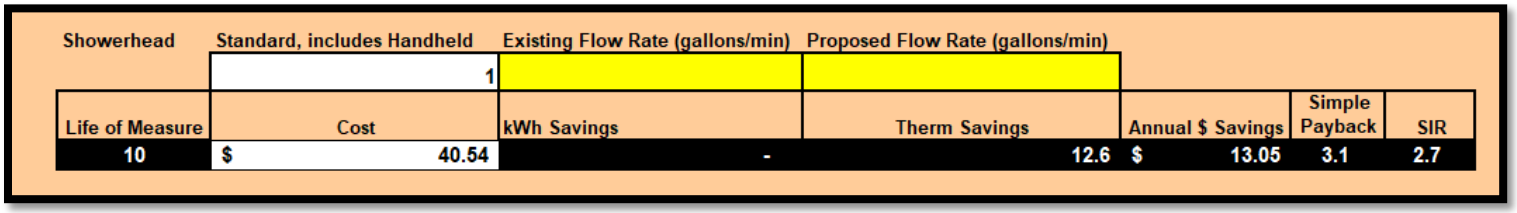
If any of the above is not completed appropriately, you'll be met with an error message.

Measurement Type	Measurement	Test In	Test Out	Check If Measurement Can't Be Tested
General	Air Infiltration (CFM50, ACH if measurement can't be tested)			☑ ACH
General	Max ambient CO concentration (ppm) in living space			☐
General	Max ambient CO concentration (ppm) in CAZ			☐
General	CAZ worst case test pressure (Pa)			☐
Heating System 1	Spillage test result (passed/failed)			☐
Heating System 1	CO concentration (ppm) worst case scenario			☐
Heating System 1	CO concentration (ppm) natural scenario			☐
Heating System 1	Gas leaks present?			☐
Water Heater 1	Spillage test result (passed/failed)			☐
Water Heater 1	CO concentration (ppm) worst case scenario			☐
Water Heater 1	CO concentration (ppm) natural scenario			☐
Water Heater 1	Gas leaks present?			☐
Oven	CO concentration (ppm) natural scenario			☐
Bath	Fan present?			☐
Bath	Fan vented properly?			☐
Kitchen	Fan present?			☐
Kitchen	Fan vented properly?			☐
Clothes Dryer	Clothes dryer vented to exterior?			☐
CO Detector Present?	CO detector present?			☐

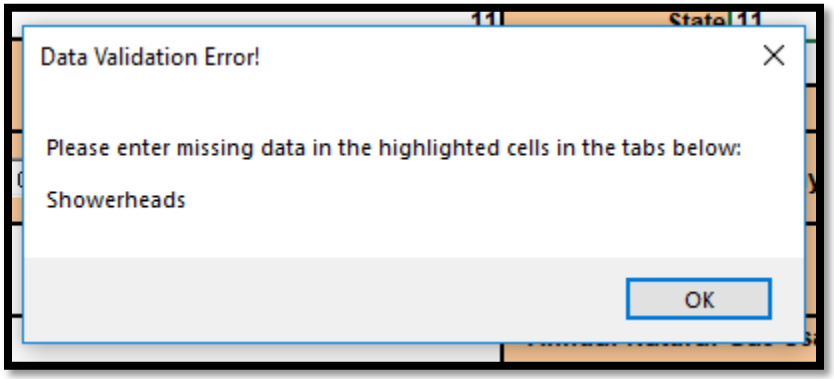
Notes:



3. **Showerhead** – When proposing a showerhead measure, once the quantity has been entered, the **Existing Flow Rate** and **Proposed Flow Rate** fields become required. If these fields are not populated, you will be prompted with an error message when you try to Export your XML file.



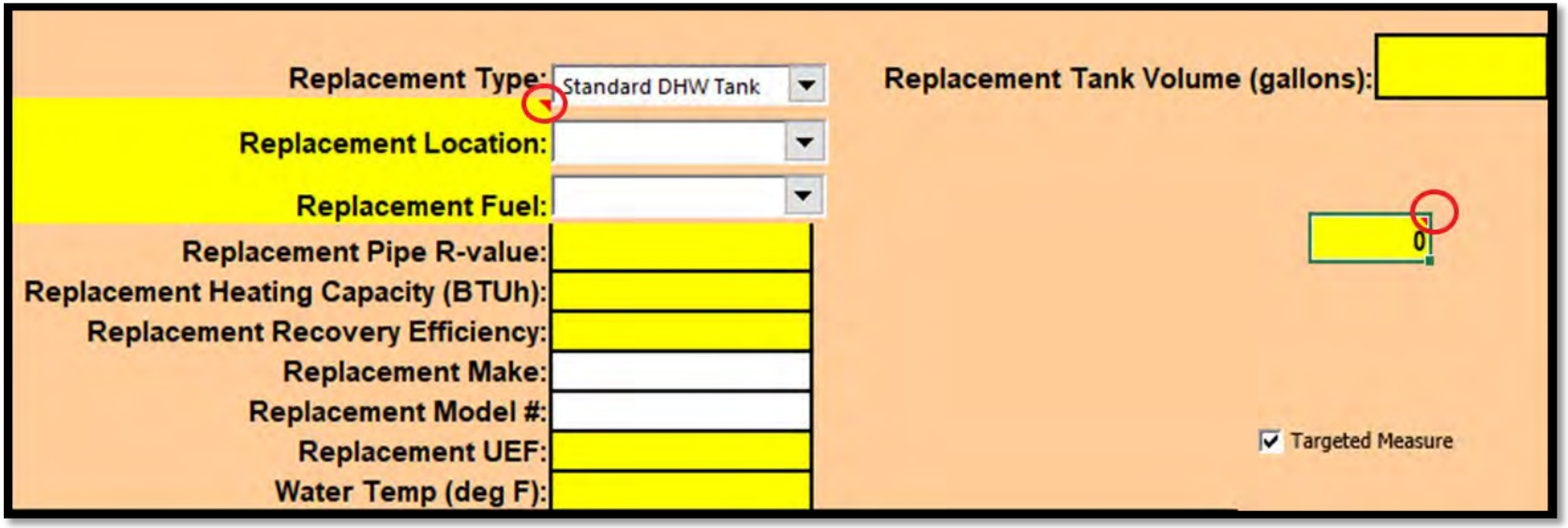
Showerhead	Standard, includes Handheld	Existing Flow Rate (gallons/min)	Proposed Flow Rate (gallons/min)			
	1					
Life of Measure	Cost	kWh Savings	Therm Savings	Annual $ Savings	Simple Payback	SIR
10	$ 40.54	-	12.6	$ 13.05	3.1	2.7

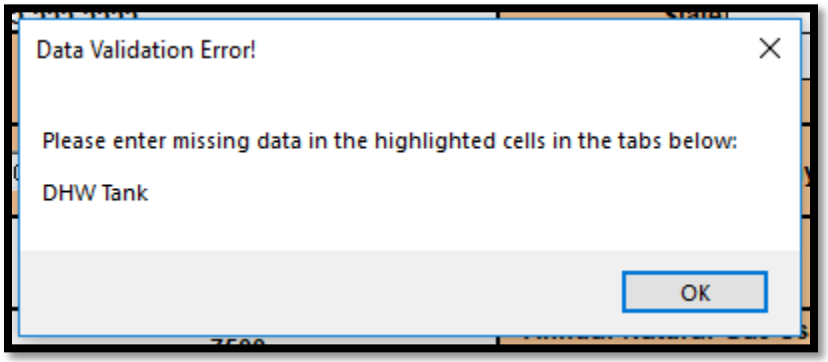


4. **DHW Tank** – When proposing a DHW Improvement, the fields below are required. If these are not populated, you will be prompted with an error message when you try to Export your XML file.

   The **red carets** circled in the screenshot below indicate comments that appear when you hover over them.

   - **Replacement Location**: "If unit is not being replaced, select existing unit location."
   - **Fuel Cost**: "Value must equal HVAC value, if replacing with same fuel."

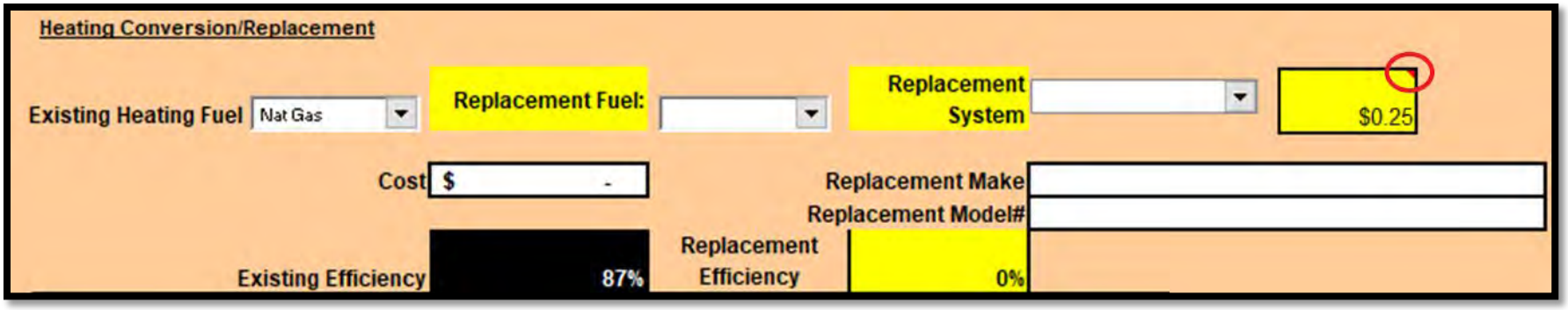


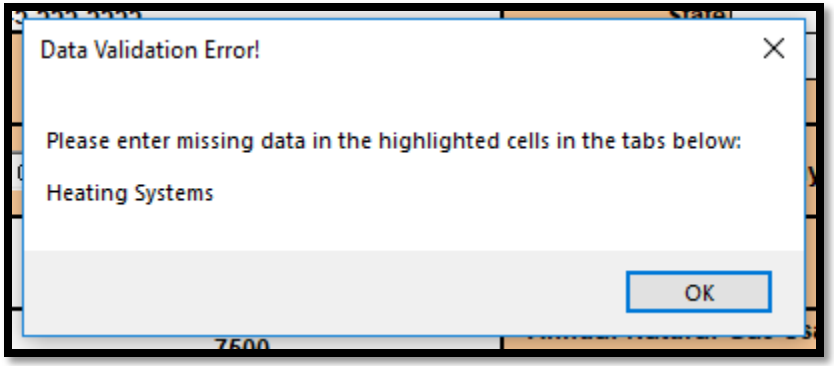


5. **Heating Systems** – When proposing a Heating Replacement, the field below is required. If this field is not populated, you will be prompted with an error message when you try to Export your XML file.

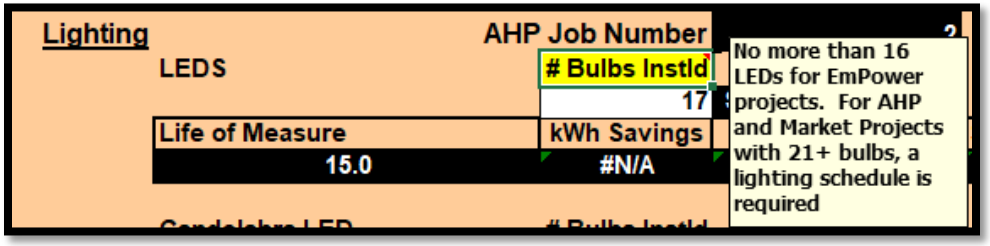
   The **red caret** circled in the screenshot below indicates a comment that appears when you hover over it.

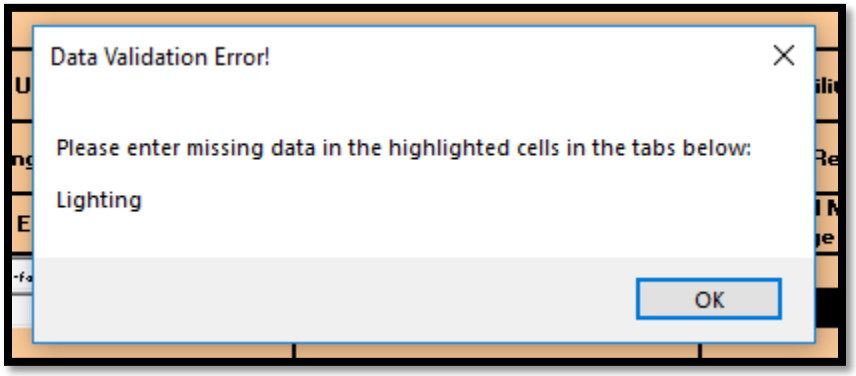
   - **Fuel Cost**: "Value must equal DHW value, if replacing with same fuel."



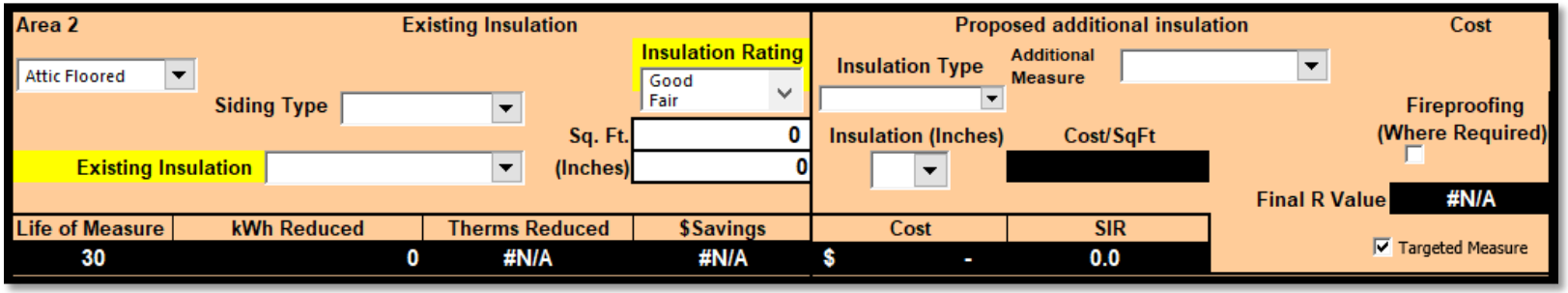


6. **Lighting** – When Program selection is **AHP** or **Market**, a note is present when hovering over the **# Bulbs Instld** header, reminding contractors to submit (via the NY HP Portal) a lighting schedule when proposing **more than 21 LEDs**. When Program selection is **EmPower**, the **# Bulbs Instld** header will become highlighted when **more than 16 LEDs are proposed**, and when that header (**red caret**) is hovered over a message is displayed that states that no more than 16 LEDs can be proposed through EmPower. If the quantity is not corrected to 16 or less, a **Validation Error** will display when trying to export the .xml file.



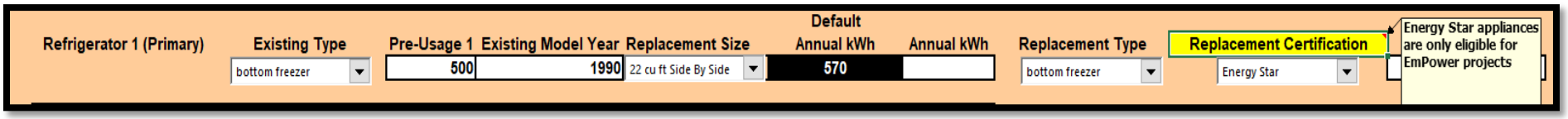


7. **Insulation** – When an insulation measure is Targeted on the Insulation tab and the Cover, the **Existing Insulation** will become highlighted indicating that the field must be identified. If any selection *other than OTHER* is selected, the **Insulation Rating** will become highlighted indicated that the rating must be selected.

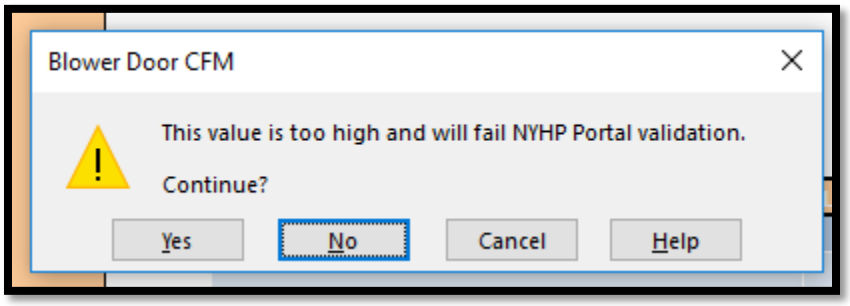


Value Out of Bounds:

- **Refrigerator** – When selecting a refrigerator replacement through AHP or Market Rate, you can only choose the following two Replacement Certifications: **CEE Tier 2** or **CEE Tier 3**. Selecting **EnergyStar** will highlight the Replacement Certification, and when you hover over the **red caret**, a note will appear when the Replacement Certification field is hovered over.

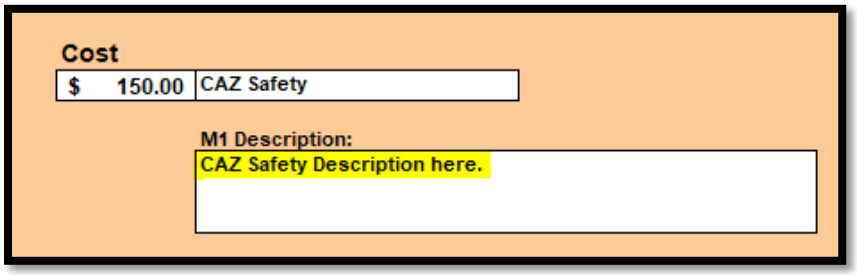


- **Air Sealing** - If the **Pre CFM** value entered is too high, you will be prompted with an error message.



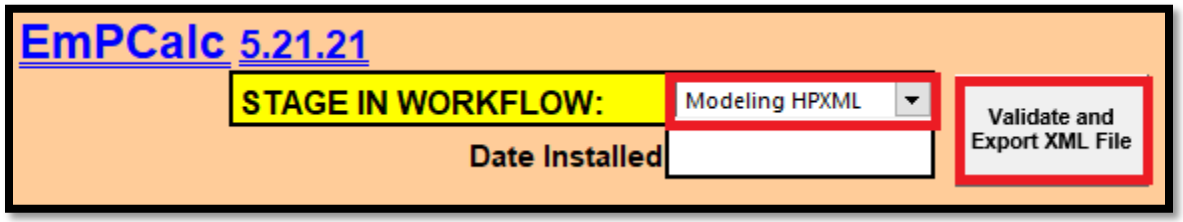
- **Health&Safety** – Description fields are required anytime a Health & Safety measure is proposed. When the field is not populated you are prompted with a warning message.

Additionally, the attic ventilation and additional attic measures should be entered in the Health&Safety tab using the Insulation Accessories drop-down selection. Please be sure to account for EmPower pricing when applicable and enter the measure quantities in the Description box. Each attic ventilation and additional attic measure should be entered as an individual measure.

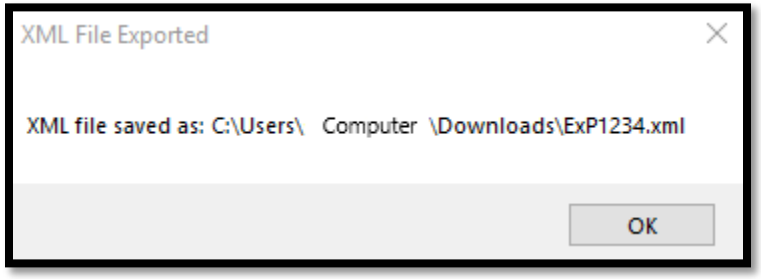


Additional Notes:

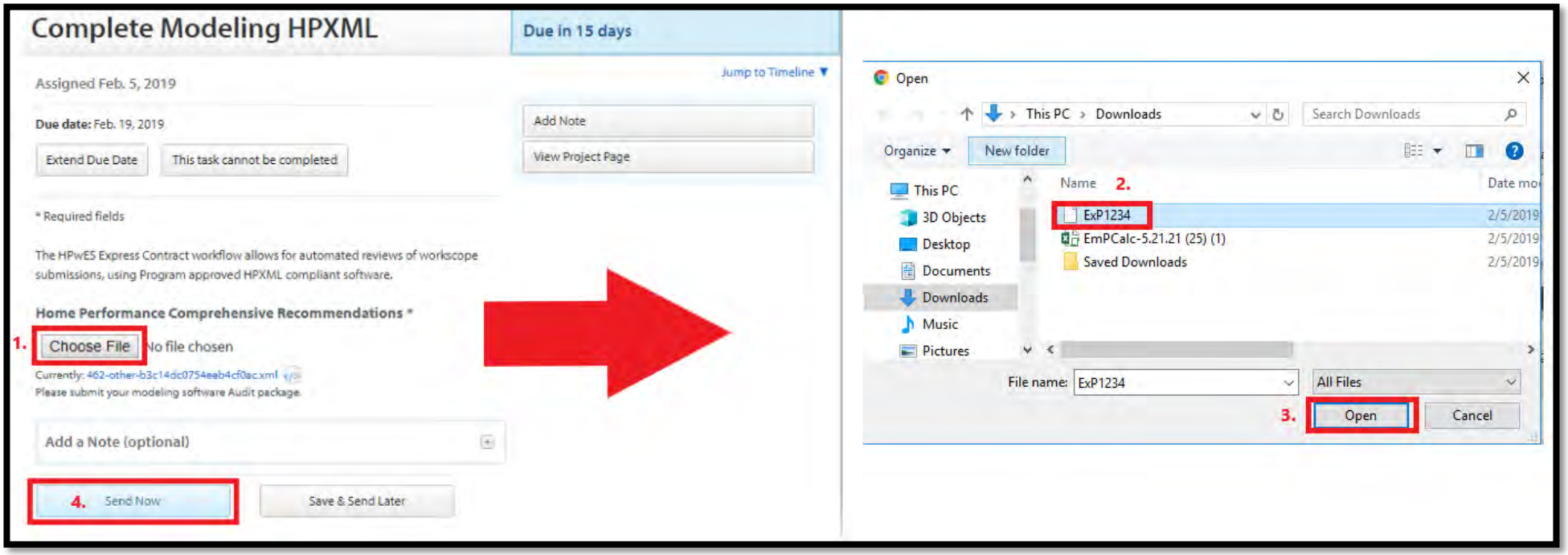
- To validate and export the Modeling HPXML .xml from EmPCalc from the Cover Tab:
  - Select Modeling HPXML from the **Stage in Workflow** drop-down menu and then click **Validation and Export XML File**.



  - For **validation purposes**, you will be prompted with a Validation message should your EmPCalc be missing any required data. (See Validation messages above in document.)
    For **export purposes**, the .xml file will export locally to your computer, likely to your Downloads folder. You will receive a message in EmPCalc once your .xml file has successfully exported.

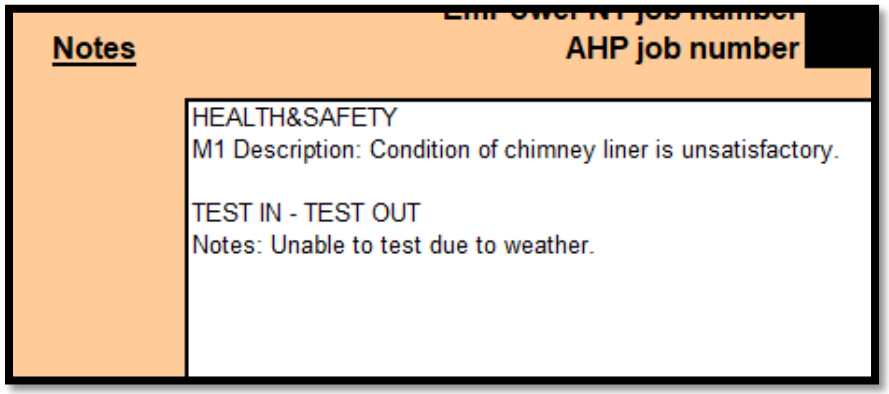


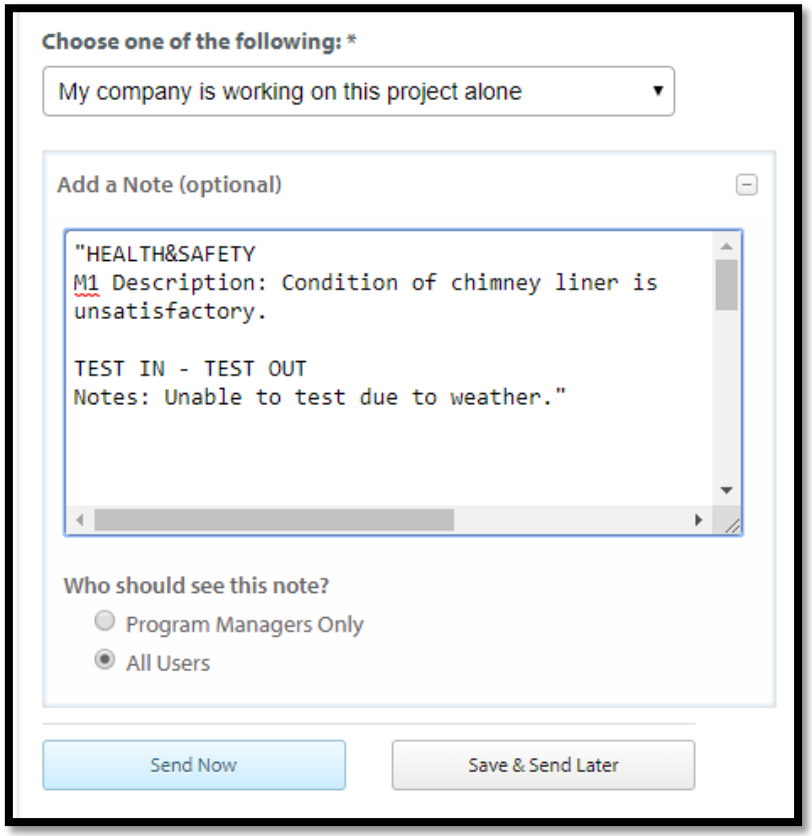
- **Export**) In the Portal, click **Choose File** which will prompt you to locate and select your exported .xml file (named with the Project ID you entered in EmPCalc.) Once the file is selected and in the NY HP Portal (by clicking 'Open'), click **Send Now**.



- (**Export**) Follow the instructions above for exporting the Workscope HPXML and Final Project HPXML .xml files. The only difference is your selection of the **Stage in Workflow**. Your selection should match the stage in the NY HP Portal you are working in.

- At the Workscope HPXML stage in the NY HP Portal, copy the notes out of the **Notes** tab in EmPCalc. Paste the notes into the **Add a Note** section in the Portal *before* sending your Workscope Contract Package over.





Modeling Limitations:

- Only one DHW unit replacement can be modeled at a time.
- Only one heating system replacement can be modeled at a time.
- Boiler pipe insulation
- Central Air Source Heat Pump
- Central Air Conditioner (split system)
- Mini Split (Ductless) Air Conditioner
- Duct Insulation
- Duct Sealing
- Windows
- Storm Windows
- Window Insulation
- Exterior Doors
- Storm Doors
- Dishwasher
- Clothes Washer
- Dehumidifier
- Room Air Conditioner

- Currently, the NY HP Portal cannot support clothes dryer improvements.
  - Measure 'clothes-dryer-measure-1' must have between 1 and 1 installed_system system(s) only, or a valid MeasureCode.
- When you are insulating a MH Belly you must select one of the following for the Basement Type on the Cover: **Crawlspace, SlabOnGrade, Combination, Ambient, Other**.
  - Insulation system 'mh-belly-1p' (of type 'floorinsulation') did not meet the following requirements: (foundation_type: Value must be one of: Crawlspace, SlabOnGrade, Garage, AboveApartment, Combination, Ambient, RubbleStone, Other).
- Regardless of whether you are proposing an air sealing measure, Modeling HPXML and Workscope HPXML .xml exports require a test-in CFM50 (or estimated ACH.) Final Project HPXML .xml export requires a test-out CFM50 (or estimated ACH.) If these values are missing, the Portal will prompt the following error message:
  - systems: The following installed systems require air sealing, yet no air sealing systems were installed: attic-3p wall-1p

Feedback:

We need your feedback to make this tool better. All constructive feedback should be sent to Sarah Knoell (Sarah.Knoell@clearesult.com) and cc Pete Hoke (Peter.Hoke@clearesult.com) with the following information:

1. Contractor Name
2. Project ID
3. Explanation of issue
4. Screen shots as applicable

NYSERDA Portal User Guide for Participating Contractors

NY Residential Existing Homes Programs
Contractor Support: Case Management

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Section 1: General

1.1 Purpose

The NYSERDA Portal User Guide for Participating Contractors is intended to provide instructions to contractors working in the NY Residential Existing Homes Programs regarding the use and functionality of the case system for contractor support and related issues.

Use of the system allows for (1) communication between the implementation team, the participating contractor, and NYSERDA to facilitate resolution of the case; (2) a central location to document the issue from start to finish; and (3) the ability for the program to monitor the volume of case types.

The case management portion of the NYSERDA Portal operates similarly to the legacy ticketing system used in Home Performance with ENERGY STAR ®, ZenDesk, expanding its scope to include the EmPower New York program and other initiatives involving NY Residential Existing Homes Programs.

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1.2 Overall Design

The case management portion of the NYSERDA Portal works similarly to a help desk ticket system in that requests for assistance from contractors may be submitted, assigned to a team, and managed through a case. This allows for streamlined resolution management of contractor related questions or concerns and a centralized location for communications relating to the support request. All participating contractors are given access to the NYSERDA Portal, allowing them to log in and submit help requests.

Participating contractors can submit support requests in three primary ways: (1) call the contractor support phone line, 1-800-284-9069, and the phone support staff creates a case in the NYSERDA Portal to document the question or issue; (2) log in to the NYSERDA portal at https://portal.nyserda.ny.gov/login and create a new case, and (3) send an email to support.residential@nyserda.ny.gov which auto-generates a case in the NYSERDA Portal.

As a reminder, all program partners, including participating contractors are required to treat customer information appropriately. Be mindful when submitting cases in the NYSERDA Portal to only include pertinent information and not include sensitive data such as social security number or bank account number. As general guidance:

A. If submitting a case by logging into the NYSERDA Portal: Name, address, phone number and utility account name are acceptable.
B. If submitting a case by sending an email through support.residential@nyserda.ny.gov : Customer information should be limited to only that which is needed to find the projects in program systems. Preferred identifiers when available include; Portal ID, GJGNY Audit Reservation #, or other project ID numbers.

All cases are reviewed by a triage team. The triage team either addresses the contractor support request or routes the request to the appropriate program team for resolution management (e.g., technical services, shared services, finance,

etc.). A person from the appropriate program team is then assigned as the Case Owner. The Case Owner manages the case to ensure it progresses toward resolution.

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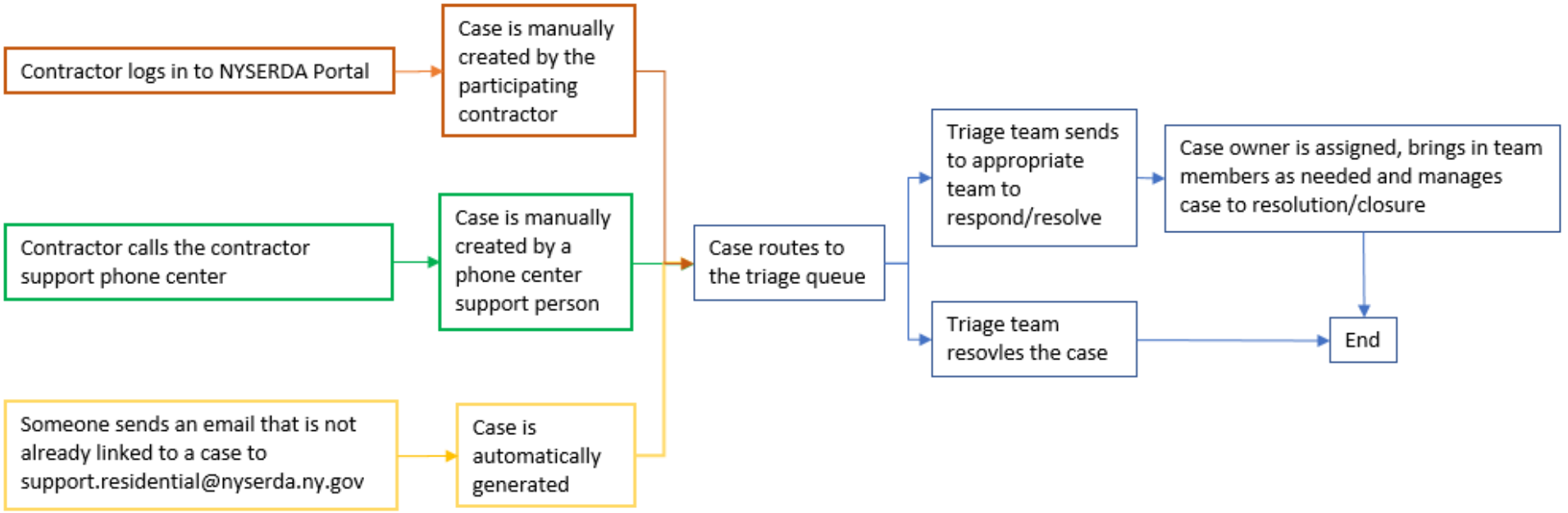
1.2.1 High-Level Process Map



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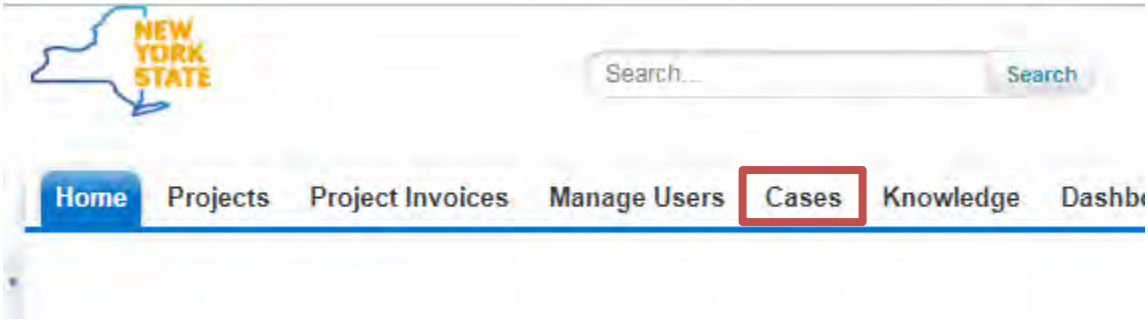
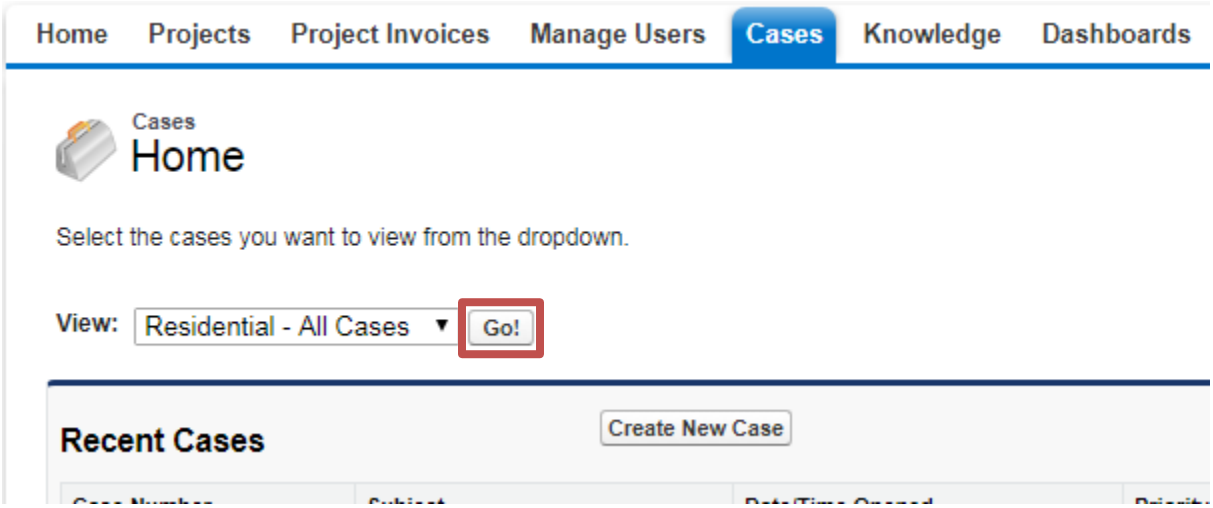
1.3 Quick Start

1. Log in to the NYSERDA Portal: https://portal.nyserda.ny.gov/login
2. Click on the Cases tab to navigate to the Cases Home page



To see all your cases:

1. From View: field dropdown, select Residential – All Cases
2. Click the Go! button



To create a new case:

1. Click on the Create New Case Button to go to New Case/Select Case Record Type page
2. From the Record Type in the new record field dropdown, select one of the three applicable options:
    a. Residential – General Program Questions
    b. Residential – Project Specific Questions
    c. Residential – Project/Customer Concern
3. Click the Continue button to go to the Case Edit/New Case Page.
4. Populate as many fields as possible.
5. Provide a full description of the support request in the Description field.
6. Click the Submit button.

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1.4 Definitions

The Definitions section is intended to give guidance and familiarity with terminology used in and in reference to the NYSERDA Portal case management system for the NY Residential Existing Homes Programs. The general definitions section defines terms that are used across the system and in various types of cases.

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1.4.1 Program Definitions

1. **Implementation Contractors:** Entities that have entered into agreements with NYSERDA to help manage all or portions of a program under NYSERDA's guidance and direction (e.g., Technical Services, Shared Services, etc.).
2. **NY Residential Existing Homes Programs:** A NYSERDA program that offers incentives to install energy efficiency improvements to occupants of one to four-unit existing homes and includes the following: Home Performance with ENERGY STAR (HPwES), Assisted Home Performance with ENERGY STAR (AHPwES), EmPower New York (EmPower), and Residential Financing. The list of programs may expand with future initiatives as the program evolves.
3. **Participation Agreement:** An agreement between NYSERDA and a contractor allowing that contractor to participate in the program provided terms and conditions set forth by the agreement are met.
4. **Participating Contractor:** A contractor who has been accepted by NYSERDA into the program and has signed a Participation Agreement.
5. **Program Staff:** NYSERDA staff and contracted implementation teams working in the NY Residential Existing Homes Programs.

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1.4.2 General Definitions

1. **Account:** A record documenting the details associated with a company in the NYSERDA Portal. Contacts and users are grouped together by their associated account. Each participating contractor has his or her own account in the NYSERDA Portal.
2. **Account Administrator (Admin):** The designated person from a company with permissions to add/remove user access to the company's cases in the NYSERDA Portal.
3. **Account Name:** The company name associated with the requester.
4. **Account Primary:** The designated person from a company that is the default contact to receive email communication from a case. NYSERDA recommends that participating contractors establish a centralized email box for this purpose.
5. **Attachments:** Relevant documents (e.g., pictures) that have been uploaded to the case.
6. **Case:** The mechanism used to communicate, track, and resolve questions, issues, or concerns. It is the primary tool for participating contractors to request assistance from the program, ask questions, and resolve customer concerns.
7. **Case Comments:** Notes regarding status, details, or other notes.
8. **Case Number:** A system-generated unique identifier that is assigned to all cases.

9. **Case Origin:** A one-word description of the means used to initiate the assistance request (e.g., web, phone, etc.).
10. **Case Owner:** The person responsible for overall monitoring and managing of a case to ensure progress and resolution/closure.
11. **Case Record Type:** The first level of classification of a case and general indicator of the type of case being submitted.
12. **Contact Name:** The person requesting assistance, who could be someone from a participating contractor, customer, NYSERDA, implementation team, etc.
13. **Contractor Account Name:** The name of the participating contractor associated with the case.
14. **Created By:** A field documenting the person who created the case and includes a date/time stamp.
15. **Customer Name:** The person receiving services through one of the programs.
16. **Description:** A detailed explanation of the assistance requested in the case.
17. **EmPower ID Number:** A unique identifier assigned to a project when it is entered into the EmPower New York database. This database and ID number has been retired and is only used for older projects. EmPower projects have transitioned into the New York Home Performance Portal (NY HP Portal) and will be assigned portal ID numbers moving forward.
18. **Feed**: Detailed description of events in chronological sequence that have taken place concerning the case.
19. **GJGNY Reservation Number:** The unique identifier assigned to a customer when signing up for a free or reduced rate energy audit.
20. **Knowledge:** A searchable area of the NYSERDA Portal where self-help articles are posted regarding the program and the system.
21. **Last Modified By:** The person that last modified the case with a date/time stamp.
22. **List View:** A customized list of records based on predefined criteria (e.g., Recent Case list shows all cases that the user has recently viewed).
23. **Modeling Software:** The software used by the participating contractor to calculate energy savings and savings-to-investment ratios.
24. **NY HP Portal:** The system used by the program to manage applications, work scope development, and approvals as well as project completions in the NY Residential Existing Homes Programs.
25. **Portal ID Number:** The unique identifier assigned to a project when the project is entered in the NY HP Portal.
26. **Priority:** Indicates the level of urgency required for a case and helps the case owner manage caseloads.
27. **Project Completion Date:** The day the program has received all completion paperwork and closed the project in the NY HP Portal.
28. **Project ID Number:** A unique identifier assigned to a project when it was entered into HUB. HUB has been retired; therefore, this number only applies to older projects. All new projects are issued a portal ID.
29. **Project/Premise Address:** The physical location of the project receiving service.
30. **Queue:** A grouping of cases that have been routed to a specific team for resolution management.
31. **Request Type:** The second level of classification for a case. Setting the appropriate Request Type assists in triage and reporting.
32. **Status:** The status of the case (e.g., open, on-hold, etc.)
33. **Subject:** A brief sentence that describes the assistance requested in the case.
34. **Task:** An action relating to a case that needs to be accomplished and can be assigned to a case team member or participating contractor.
35. **User:** An individual with login credentials and access to the NYSERDA Portal.
36. **View:** A list of available list views.

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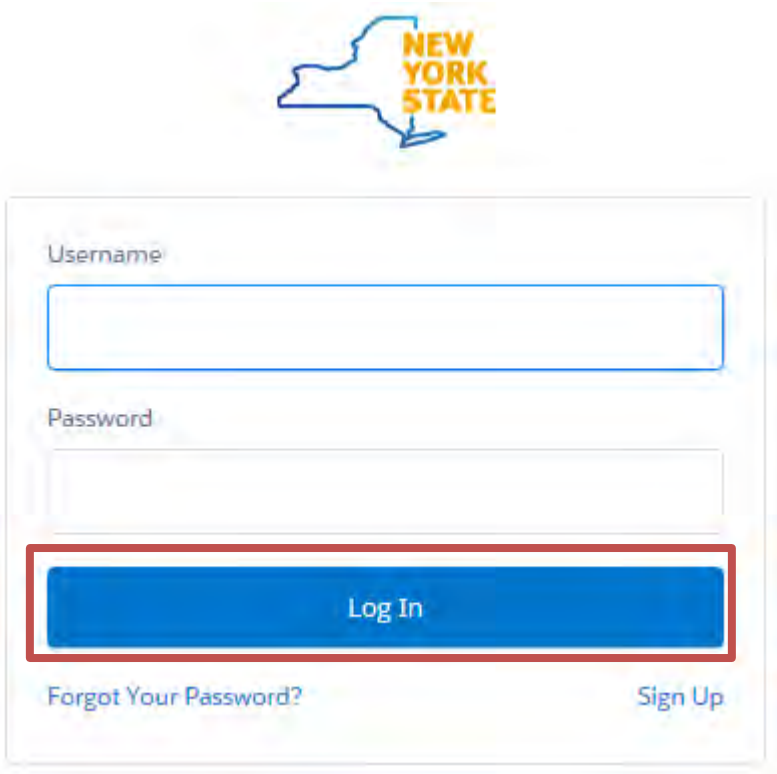
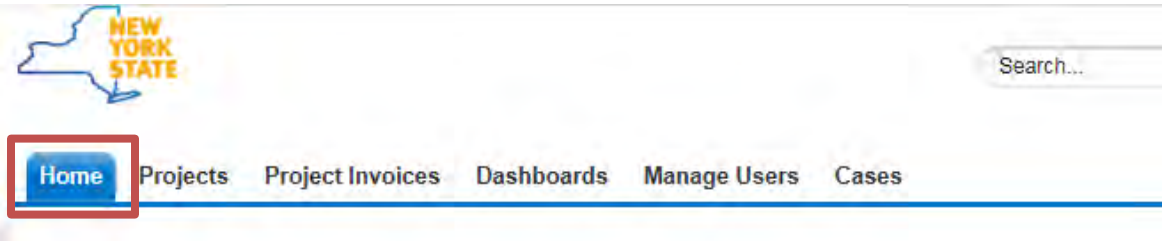
Section 2: Logging In

Participating contractors log in to the NYSERDA Portal from the portal login page: https://portal.nyserda.ny.gov/login

At the portal login page, contractors populate their user name and password, and click the Log In button.



Logging in takes contractors to their home page in the NYSERDA Portal.



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Section 3: Passwords

When a user profile is created in the NYSERDA Portal, the user receives an email with a link to create an initial password. Once this password is set up, the user has access to the portal. The email received is similar to the following example.

From: noreply@salesforce.com [mailto:noreply@salesforce.com] On Behalf Of NYSERDA Portal
Sent: Tuesday, January 09, 2018 1:54 PM
To: Houle, Matthew E (NYSERDA) <Matthew.Houle@nyserda.ny.gov>
Subject: Sandbox: Password Reset – NYSERDA Salesforce Portal
Importance: High

ATTENTION: This email came from an external source. Do not open attachments or click on links from unknown senders or unexpected emails.

Hi Matt,

Your Salesforce password has been reset for the NYSERDA Salesforce Portal for your username: matthew.houle@nyserda.ny.gov.nyserda

To create a new password, visit: https://uat-nyserda-portal.cs33.force.com/secur/forgotpassword.jsp?r=CAAAAWDhbG_rME8wMzUwMDAwMDA0QzlCAAAA0vSOQ1T8PoC0gMOtNFKR2TqHdrGareKpMcd7agI9LmA97ItWKipJO16PiUzyvcJT8j0xFg8O2Pc0uvtLc0FhHCE37axCdan9mUtPaYWEqOlj2OIiU9mYVu-pT1QooP3i3A%3D%3D&display=page&fpot=1a275545-b6d2-472e-94f6-e60d2c3826a3a70145b9-4402-4032-a51f-0aad5d0960ac

Please contact SalesforceSupport@nyserda.ny.gov if you have trouble logging in.

Thanks,
NYSERDA

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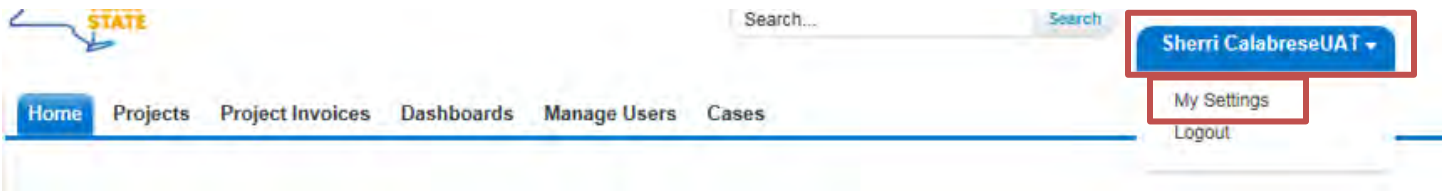
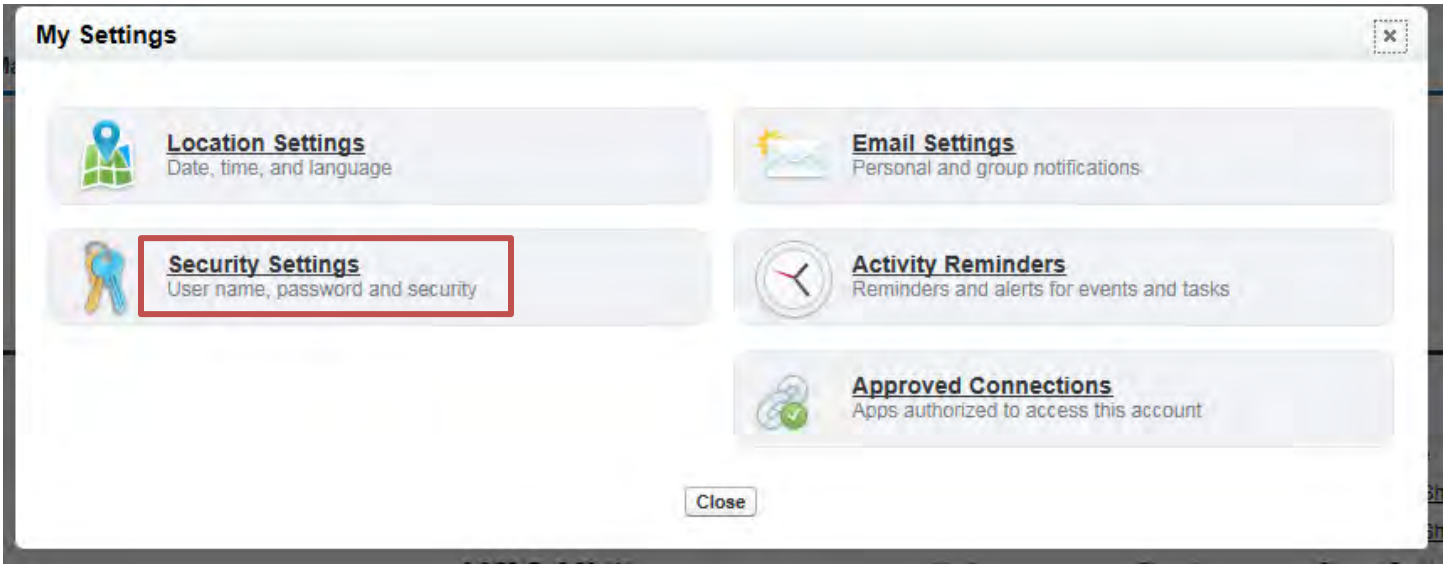
3.1 Updating a Password while Logged in

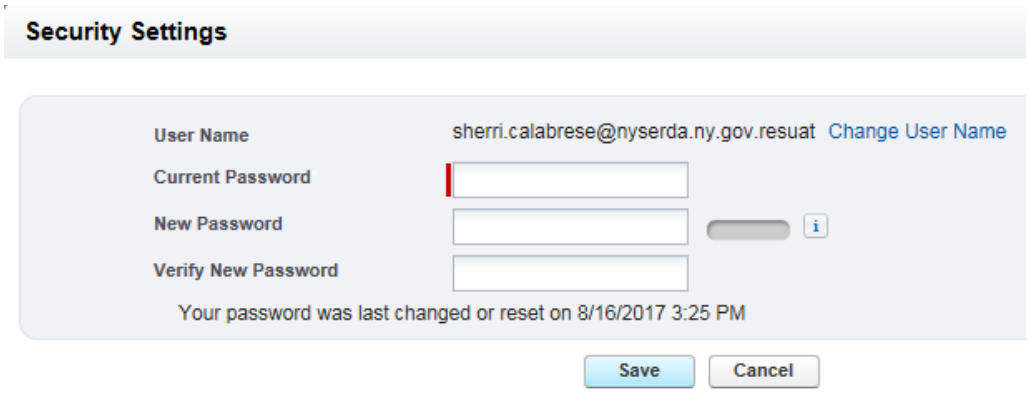
To update a password while logged in to the NYSERDA Portal, click on the user name in the upper right corner, and click on the My Settings option.



Clicking the My Settings option opens the My Settings page. Select the Security Settings link.



The Security Settings link opens the Security Settings page. Enter the new password information as instructed.



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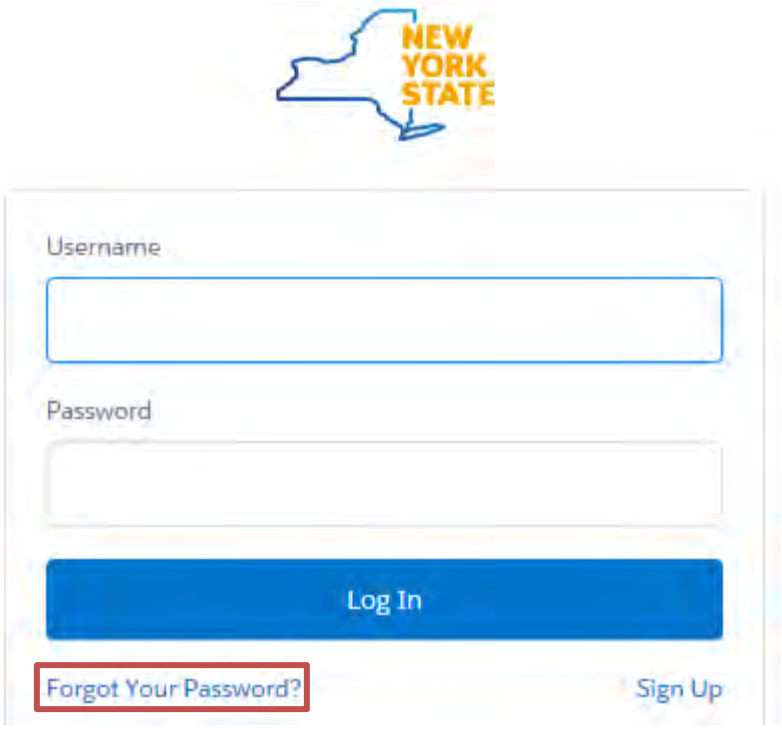
3.2 Forgotten Password

To change a password without first logging in to the system, open the login page, and click on the Forgot Your Password? link.



From the Forgot Your Password? link follow the page instructions to reset your password.

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Section 4: Managing Users

Each participating contractor is set up in the NYSERDA Portal with an account, and each account has one person designated as the administrator and one as the primary. The administrator has access to add or deactivate company employee login information, controlling who has access to the portal. The primary on the account is the default contact from the contractor's company who receives email communication. Participating contractors are encouraged to use a central inbox as their primary contact.

Information accessible to a participating contractor is dependent on permissions that are determined and provided by NYSERDA. Participating contractors have access only to components pertinent to their business in the NYSERDA Portal. They are not able to view information associated with other contractors.

Some participating contractors may operate in multiple NYSERDA program areas within NYSERDA Portal components. Any user with login credentials associated with a participating contractor can access information for all program areas related with that account. For example, if contractor A participates in NY-Sun and the NY Residential Existing Homes Programs, and the administrator sets up a login for employee B, employee B will also have access to the information in both program areas. Likewise, if the company deactivates a user from its account, the user, in this case employee B, is removed from both NY-Sun and the NY Residential Existing Homes Programs, making the employee unable to access any components associated with the company.

When a new contractor has signed the participation agreement for the NY Residential Existing Homes Programs and has been accepted into the program by NYSERDA, an onboarding process is conducted that includes setting up an account in the NYSERDA Portal with an administrator and a primary.

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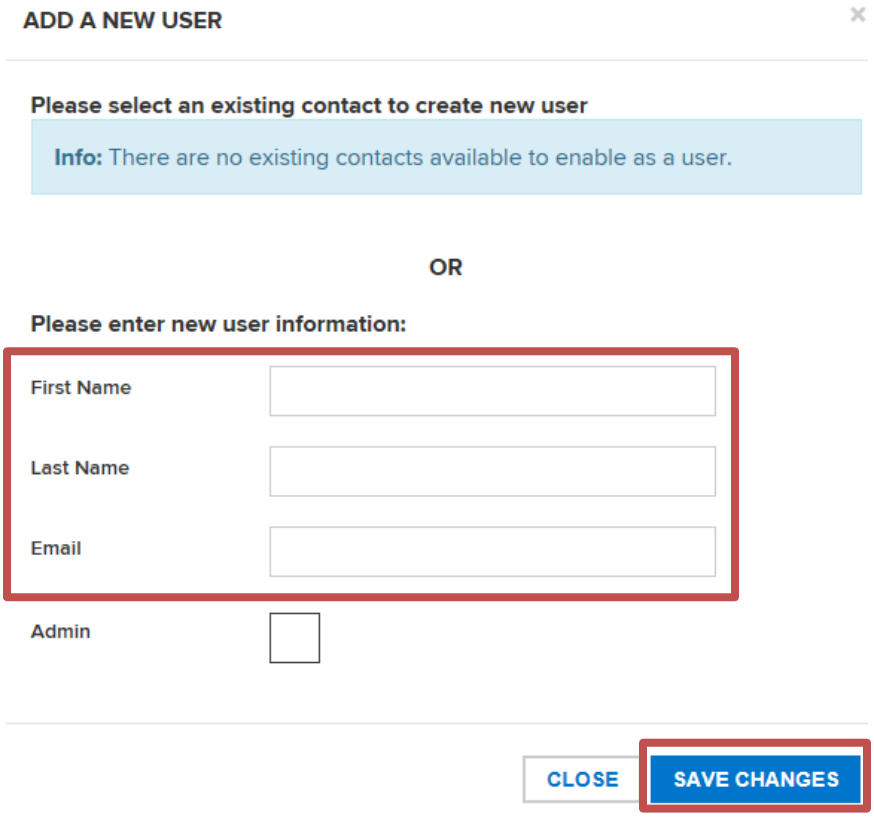
4.1 Adding Users to an Account

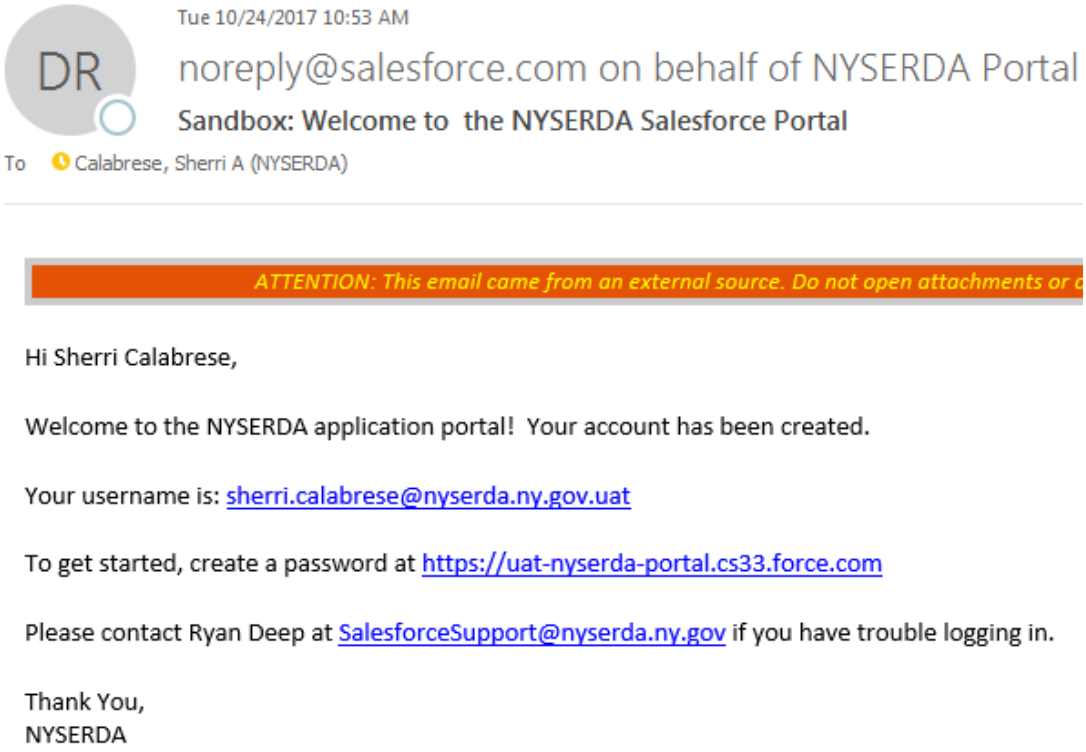
The administrator on a participating contractor's account adds new users to the account by navigating to the Manage Users tab of the NYSERDA Portal and clicking the Add a New User link.

Note: Only administrators have access to the Manager Users tab. If the user cannot access the tab, the user is not an administrator on the account.

From the Add a New User page, the administrator adds the new user's first and last names and email address. There is also the option of checking or unchecking the Admin box. If the Admin checkbox is checked, the new user is provided administrator rights on the account as a secondary administrator.



Clicking the Save Changes button adds the user to the account. The new user receives an email from the system asking the user to log in and create a password. The email received is similar to the following example.



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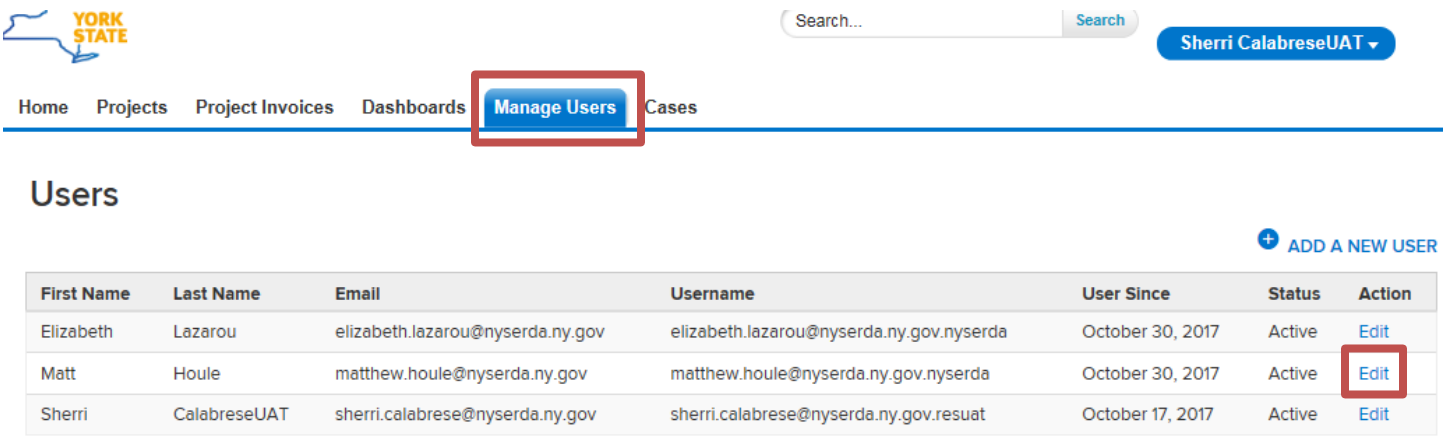
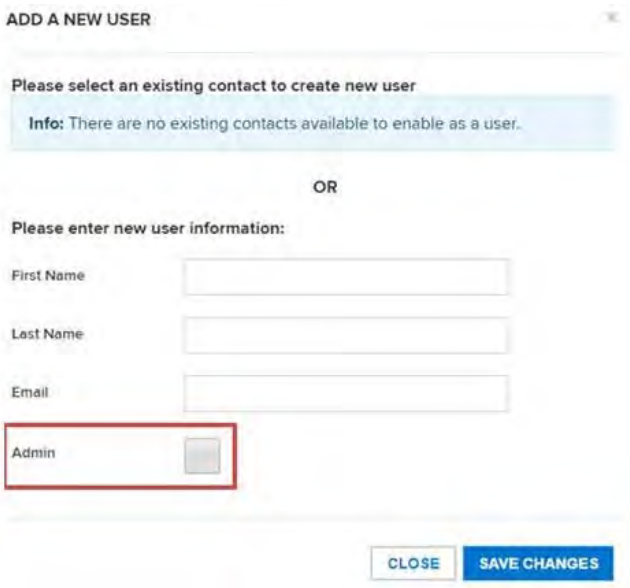
4.2 Deactivating Users from an Account

The administrator on a participating contractor's account deactivates existing users by navigating to the Manage Users section of the NYSERDA Portal and clicking the Edit link associated with the user's name.

Note: Only administrators have access to the Manager Users tab. If the user cannot access the tab, the user is not an administrator on the account.



From the Edit User page, the administrator unchecks the Active checkbox and clicks the Save Changes button. Unchecking the Active checkbox deactivates the user from the account.



To reactivate a user, navigate to the Manager Users section of the NYSERDA Portal, click on the Edit link, recheck the Active checkbox, and click the Save Changes button.

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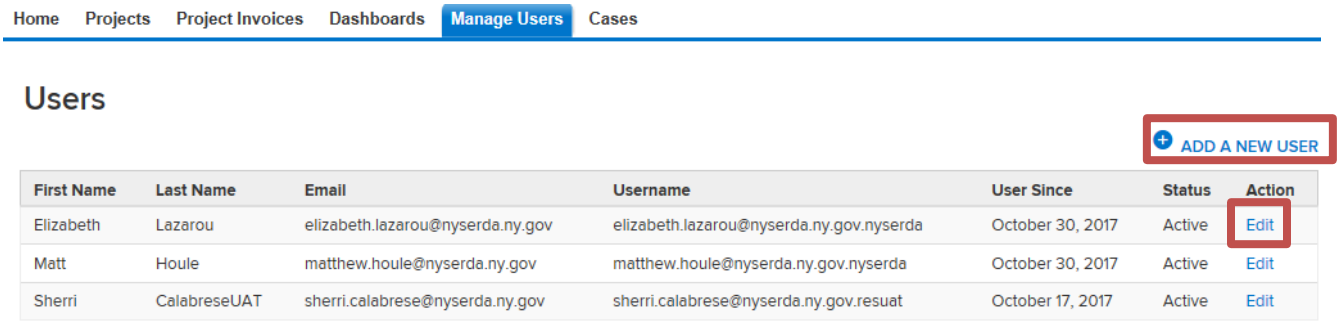
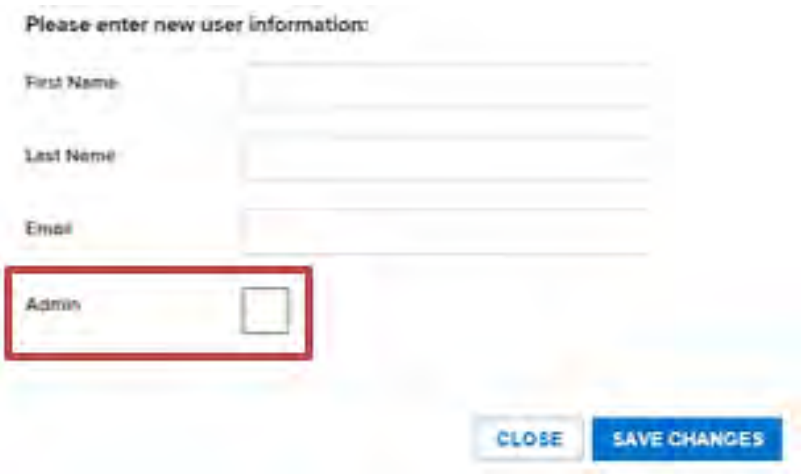
4.3 Changing the Administrator on an Account

The administrator on a participating contractor's account adds or deactivates users as well as assigns other employees administrative rights, which allow those users to also add or deactivate users on the account. The administrator has two options for adding a secondary administrator:

1. Create a new user with the Add a New User link (see Section 2.1: Adding Users to an Account).
2. Edit an existing user with the Edit link.



Clicking one of the links opens either the Edit User page or the Add a New User page. Both pages provide the option to check or uncheck the Admin box. If the Admin checkbox is checked, the user is provided administrator rights on the account. An unchecked Admin box means the user does not have administrator rights.



Note: Deactivation from administrative access must be done by a user other than the administrator interested in withdrawing. For example, employee A is the administrator on an account. If employee A needs to step down from the administrator role, he or she would need to set up a second user—employee B—with administrator rights. Employee B would then remove employee A's administrator status.

Note: In the event the administrator has left the company without setting up a second user, submit a case (See Section 6: Creating a Case). NYSERDA and/or the implementation team is prepared to coordinate the access change.

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4.4 Changing the Primary Contact on an Account

Changing the primary on the account is done by NYSERDA or the implementation team exclusively. To request a change to the primary on the account, submit a case (See Section 6: Creating a Case) with the contact details of the new primary.

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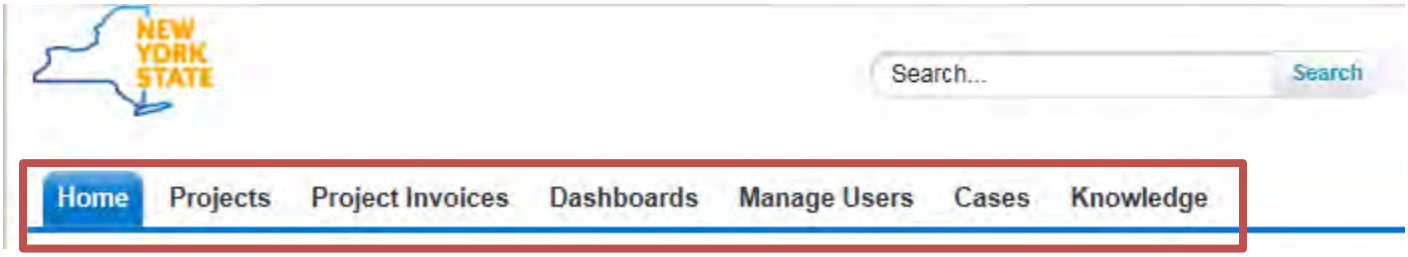
Section 5: System Navigation

The NYSERDA Portal has many components. The most applicable to the residential support cases are Home, Cases, Knowledge, and if you are an administrator on your account, Manager Users. Each component the user has access to appears as a tab across the top of the page.



Clicking a tab takes the user to that component's home page. For example, clicking Cases navigates to the Cases Home page.

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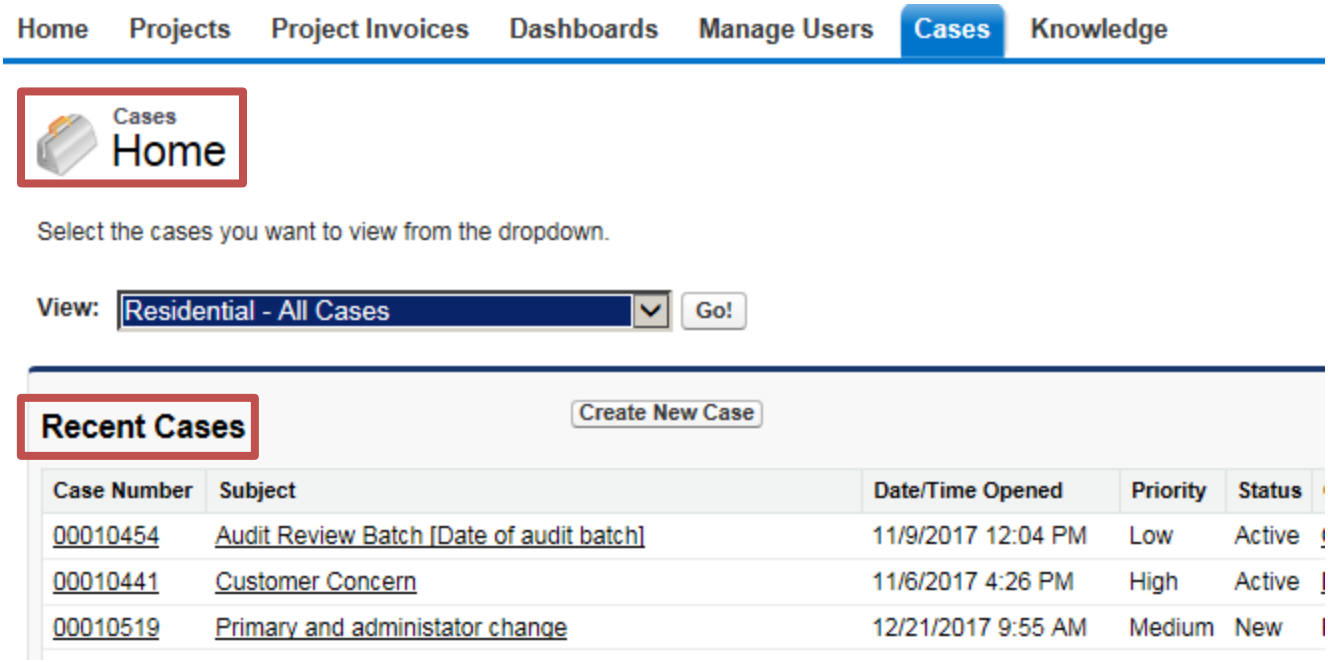
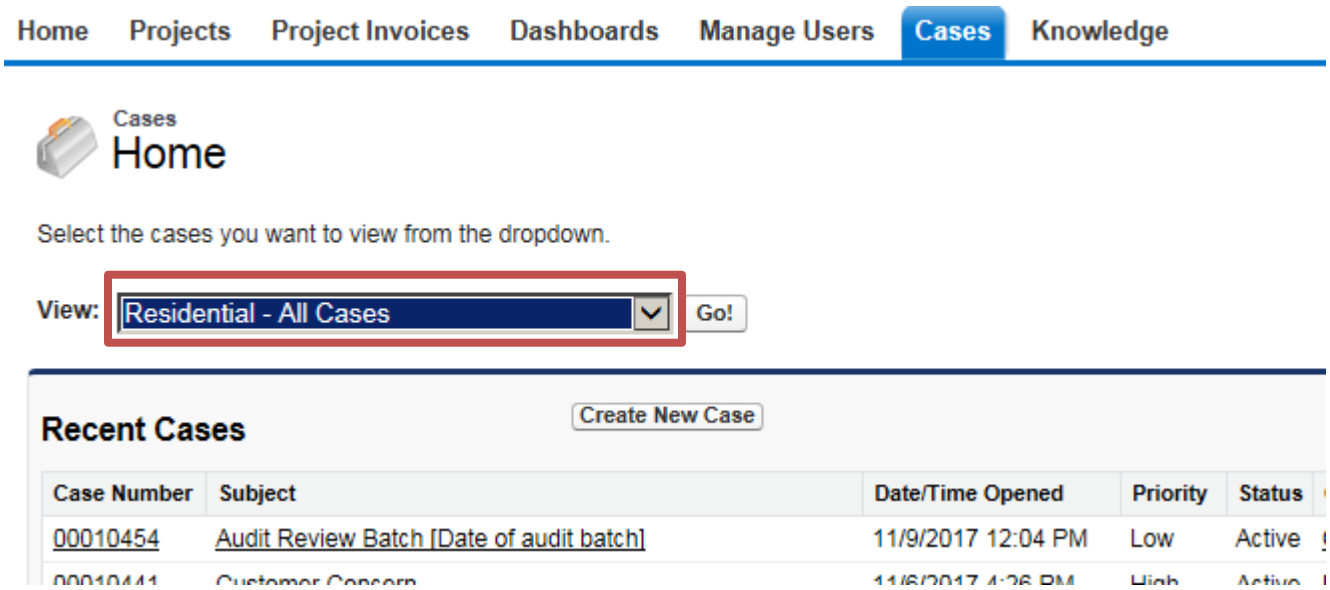
5.1 Viewing Cases with List Views

A list view is a customized list of records based on predefined criteria. Some list views have been developed for all users. The Cases Home page defaults to the Recent Cases list view. The Recent Cases list view shows a listing of cases recently viewed by the user for quick navigation to those cases.



To view other cases associated with the NY Residential Existing Homes Programs or the user, access the dropdown menu for the View field on the Cases Home page and select one of the views that start with "Residential" or "My."

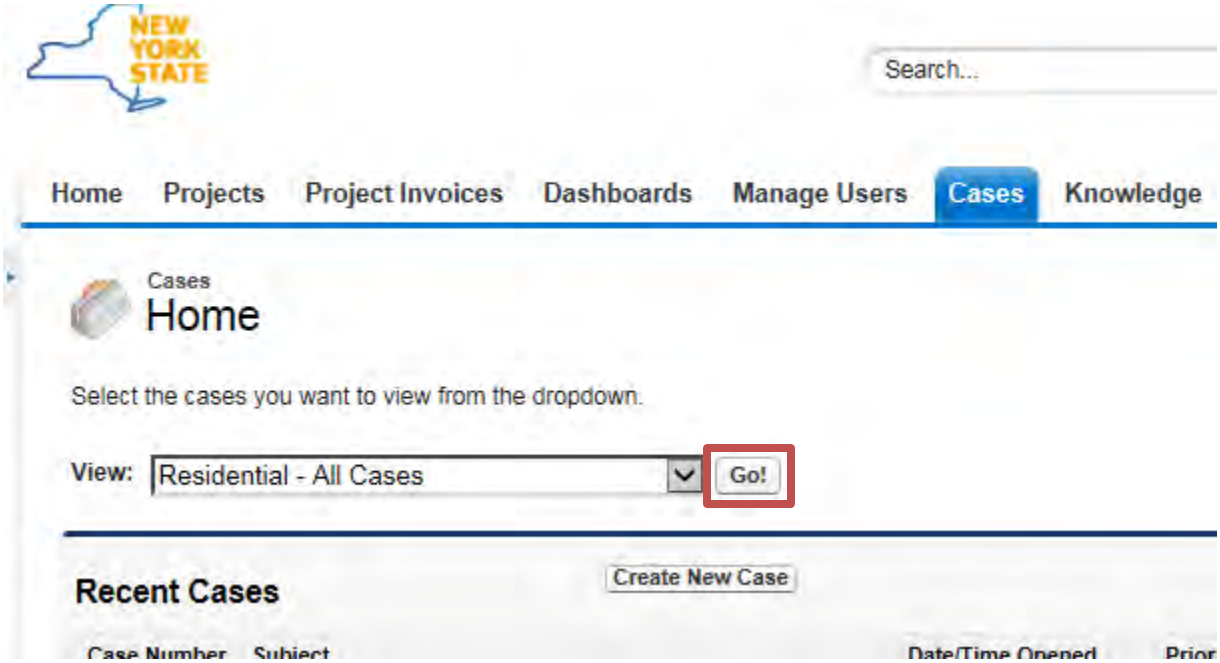
Note: Options available in the dropdown list may vary based on the user's access to program areas in the system.



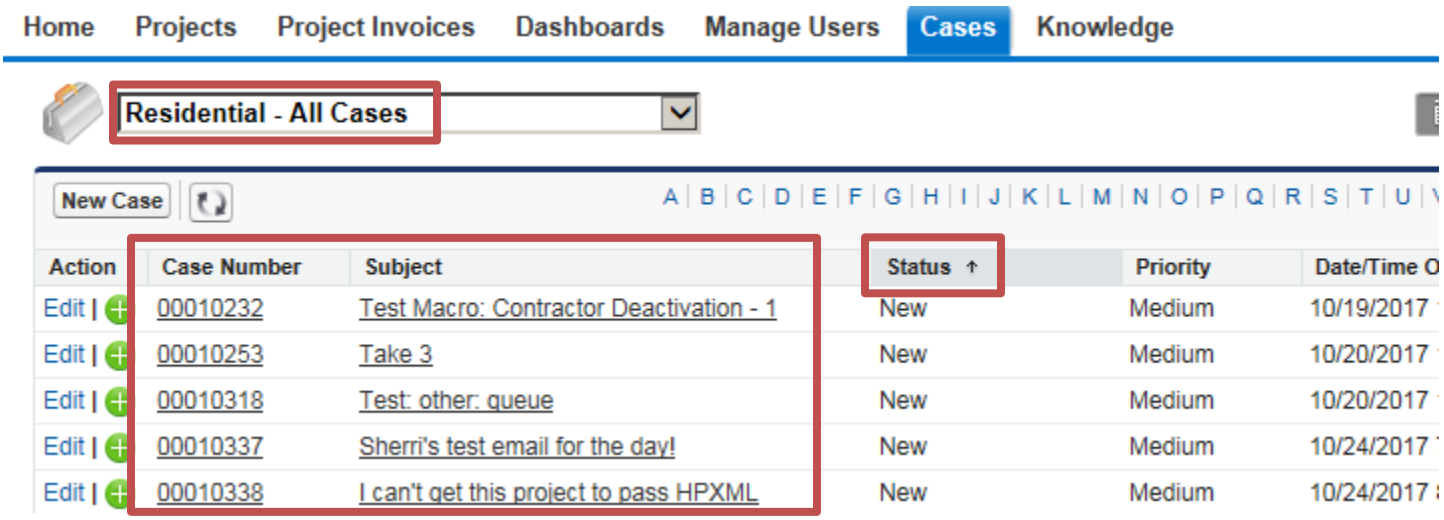
Key list views available include the following:

1. **My Created Cases:** Displays a listing of all cases the user created.
2. **Recently Viewed Cases:** Displays a listing of cases recently accessed by the user.
3. **Residential – All Cases:** Displays a listing of all cases associated with the NY Residential Existing Homes Programs.

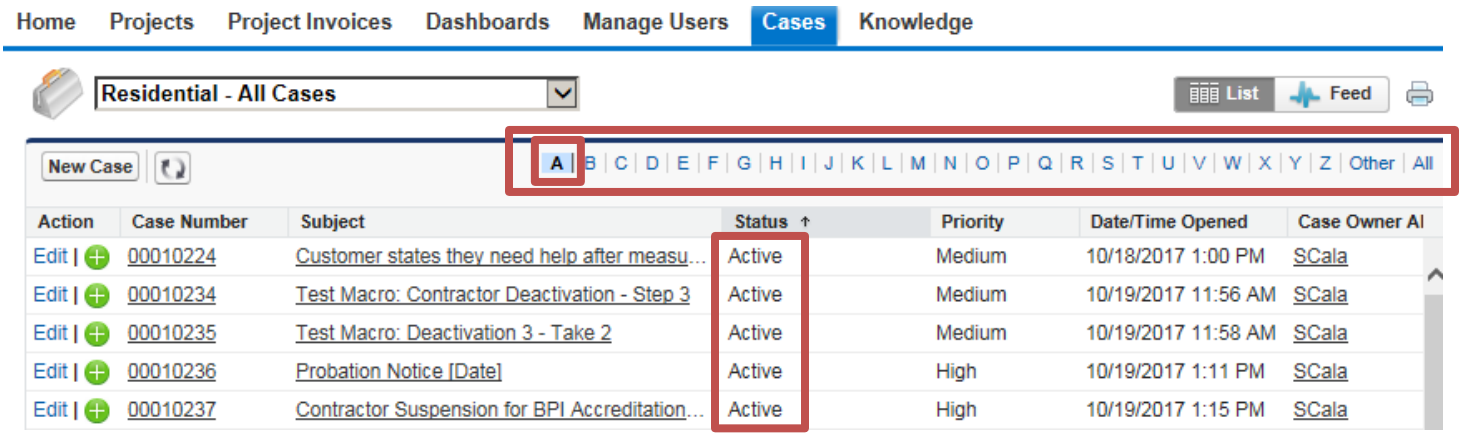
After selecting the List View, click the Go! button.



Clicking Go! populates the list view with all cases associated with the selection. Each column in the list view is sorted by clicking on the header. In this example, the cases have been sorted alphabetically (Z to A) by status.



To jump to a specific status, click on the letter with which the status begins. In this example, selecting A jumped the results to those statuses starting with the letter A.



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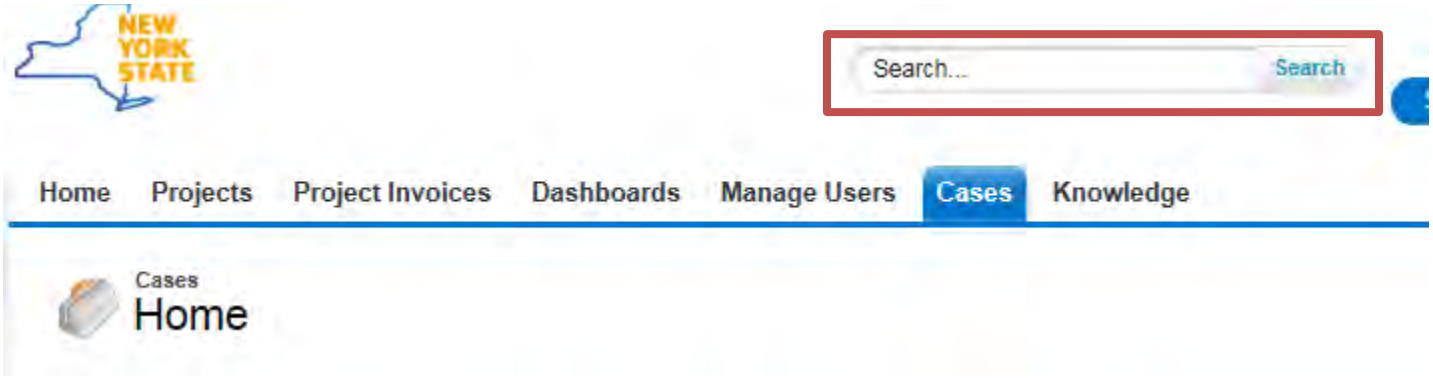
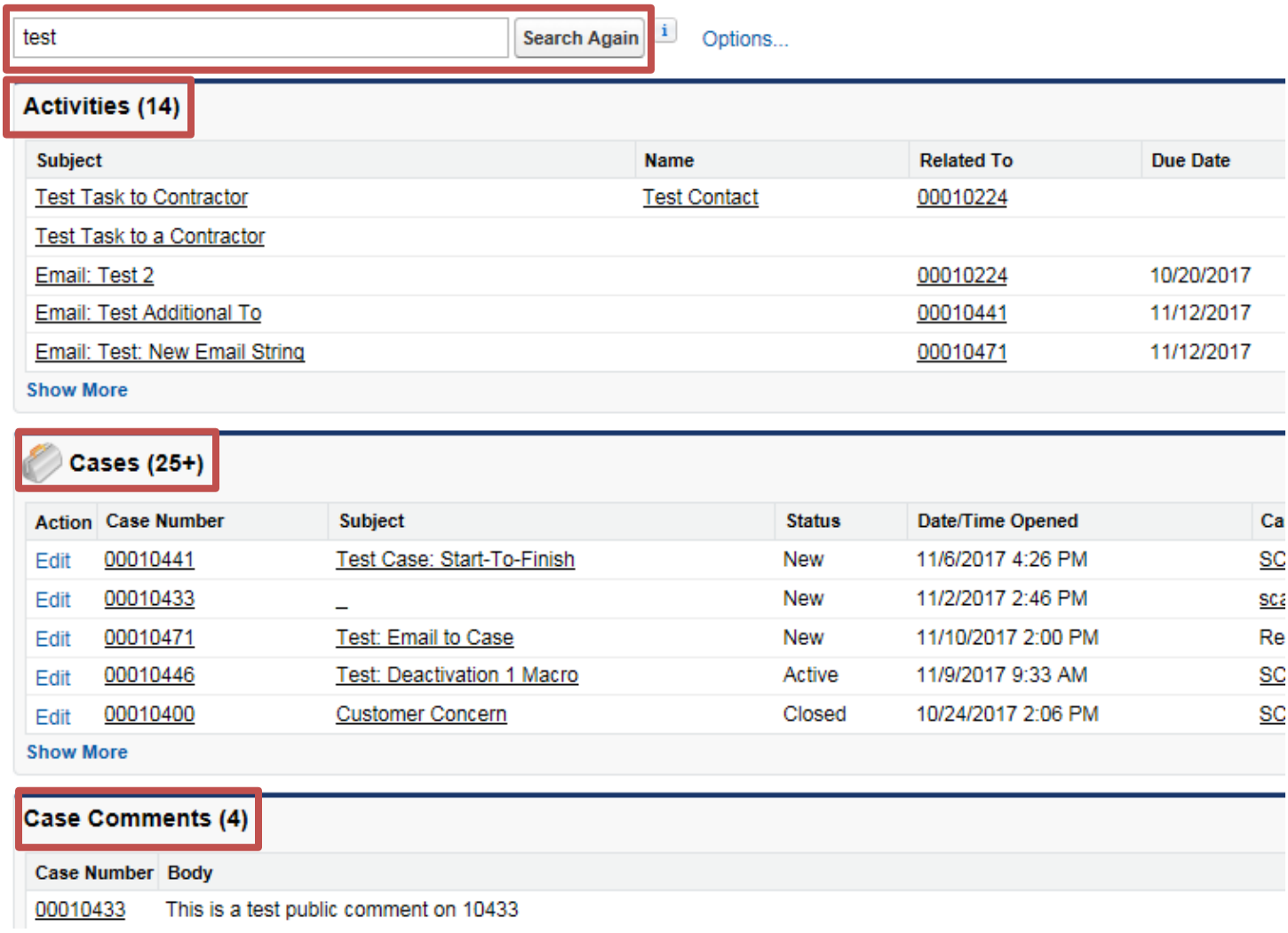
5.2 Using the Search Field

At the top of any page within the NYSERDA Portal is a search field that allows the user to apply keywords to find specific cases or other record types.



The search engine searches the entire system for all records associated with those keywords and returns results across all record types in the system accessible to the user. For example, a search for “test” found 14 activities, 25+ cases, and four case comments.



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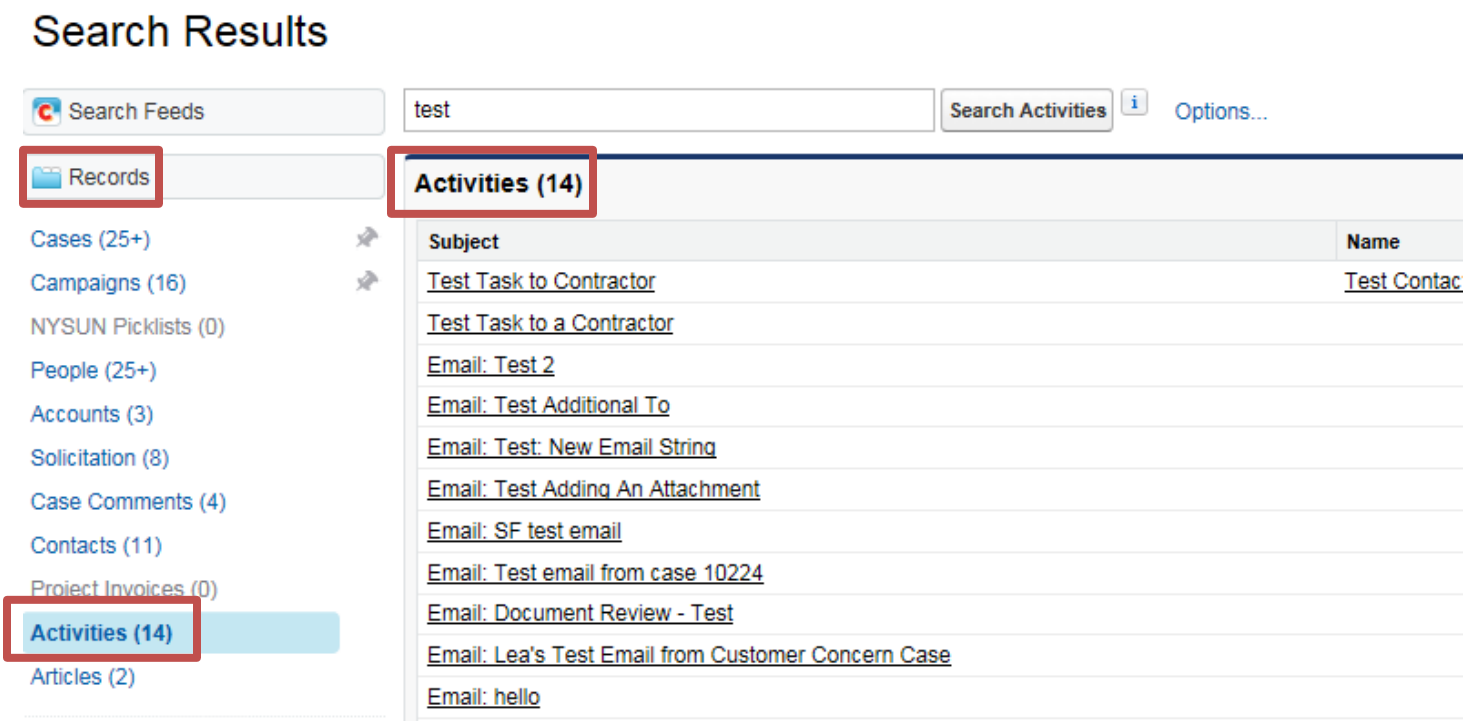
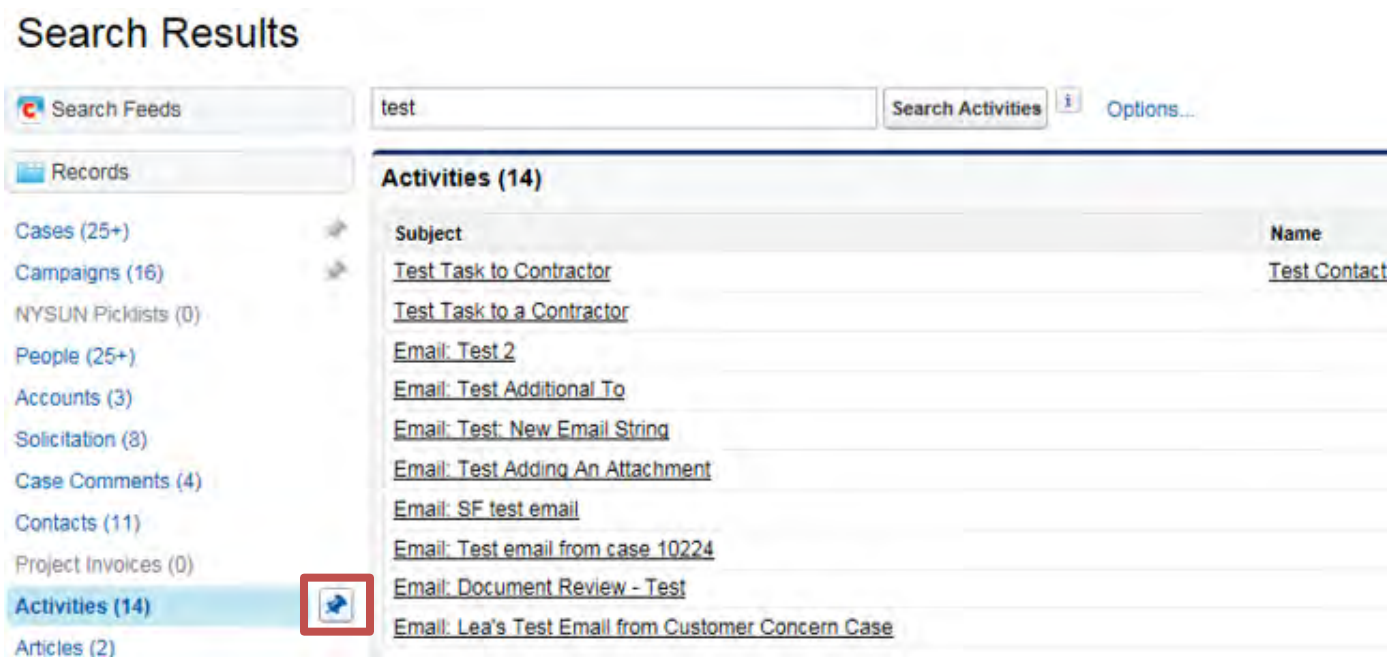
5.3 Organizing Search Results

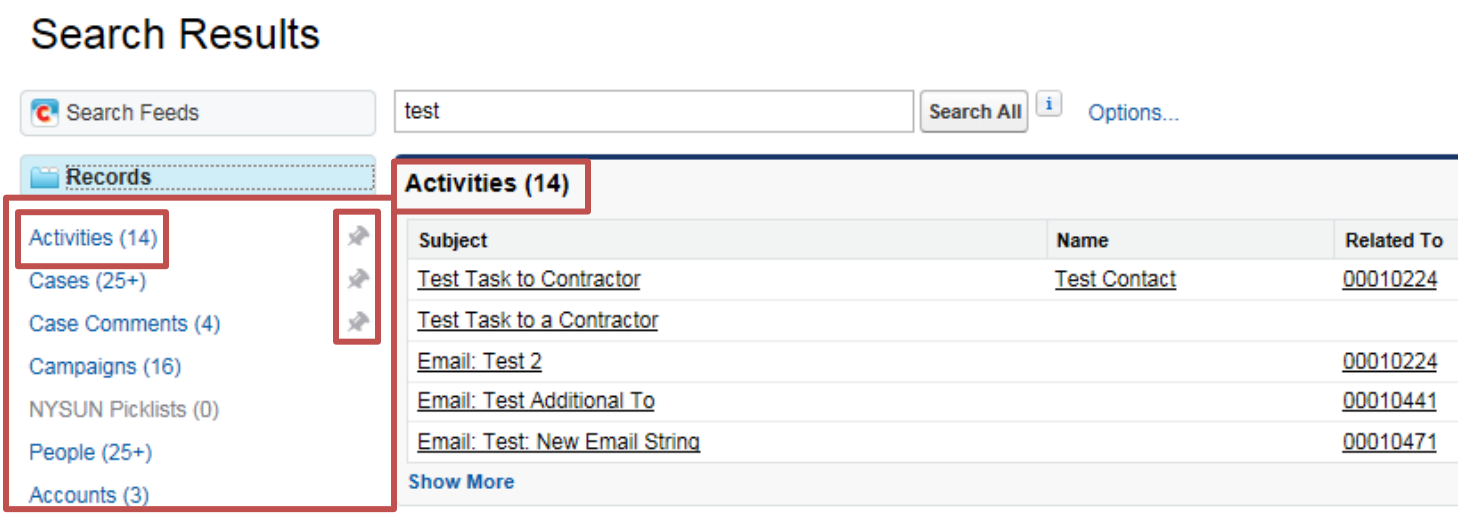
To the left of the search results is a menu of Records. Clicking one of the record types in the Records menu directs the user to the section with the results for that record type. In this example, clicking the Activities (14) record type navigates the user to the Activities results.



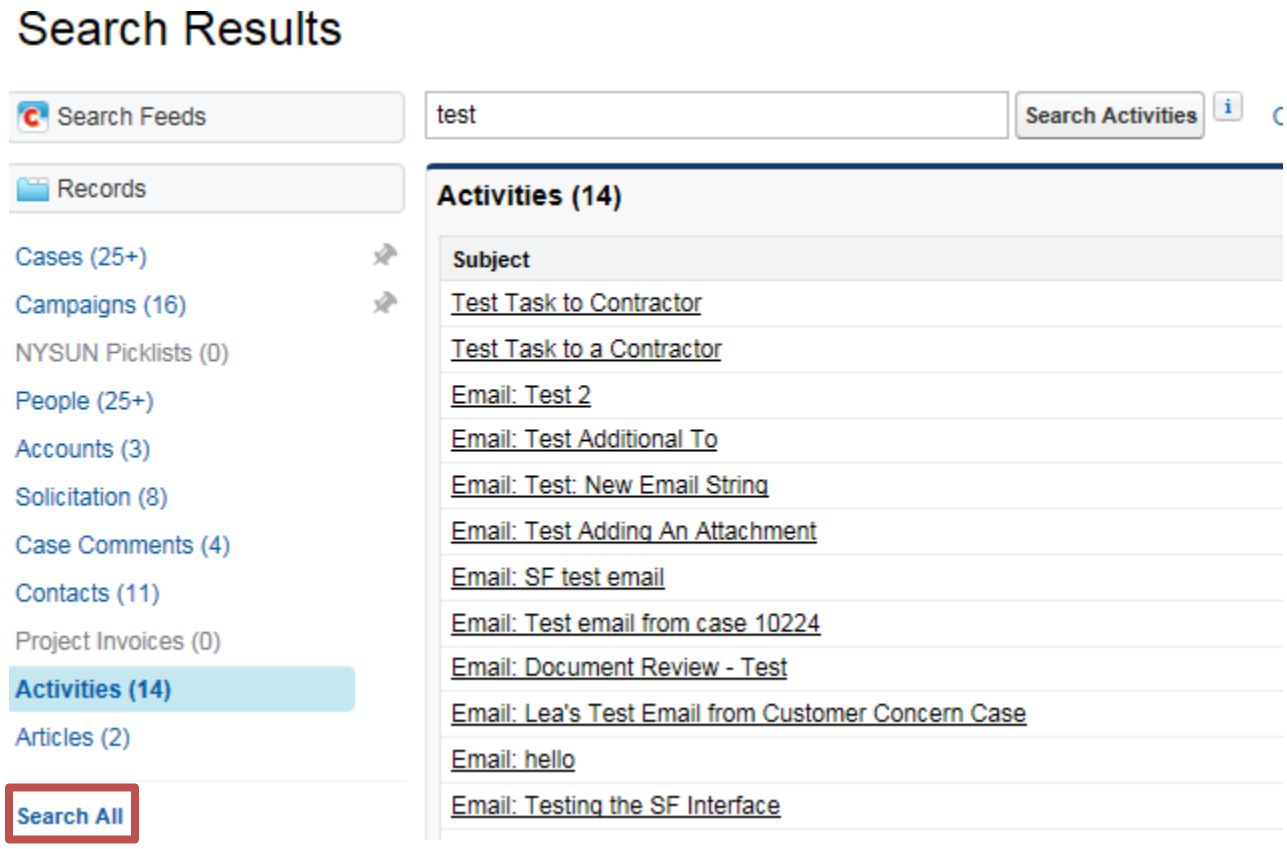
To pin the most commonly used record types to the top of the side menu for easier navigation, hover over one of the options in this menu to display a pushpin symbol, and then click the pushpin to pin the record type to the top.



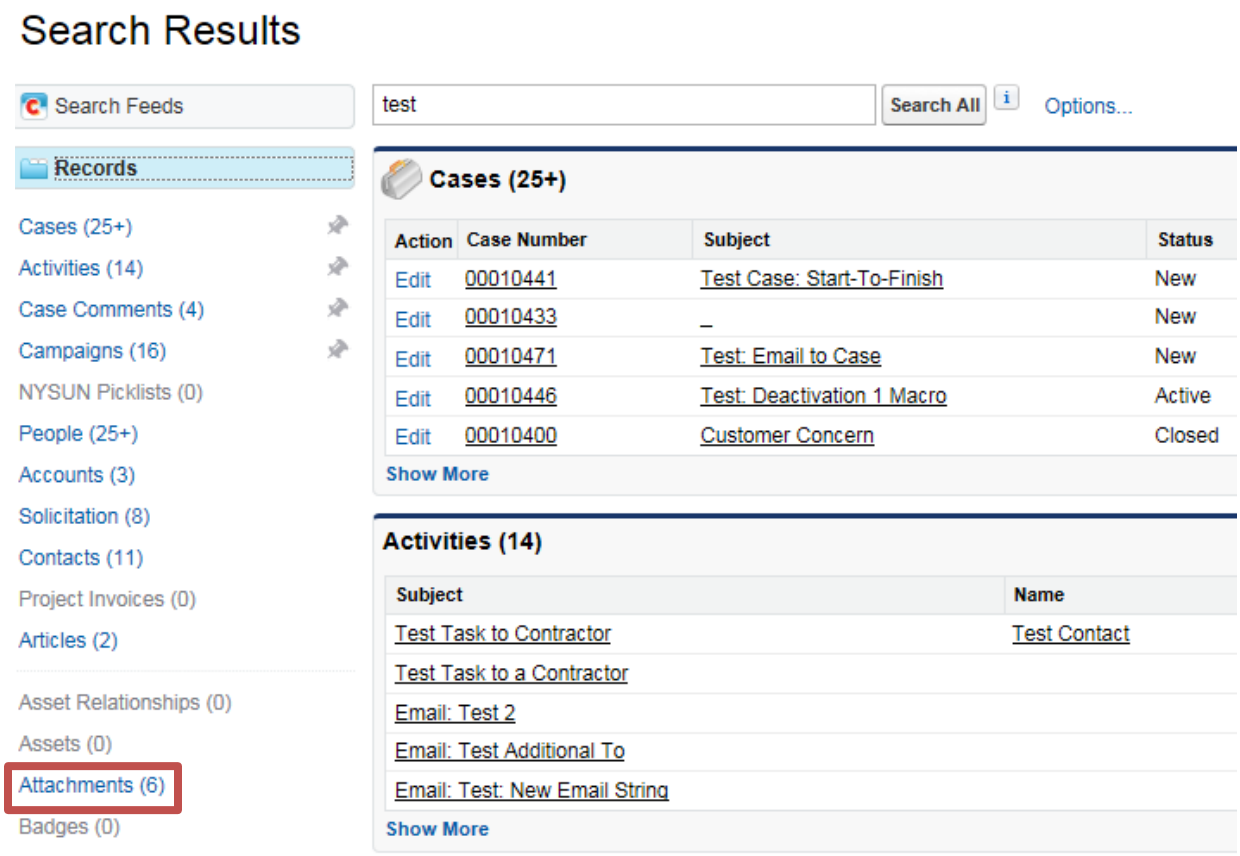
When a search is conducted, the results are displayed in the order of record type as presented in the side menu. In this example, Activities, Cases, and Case Comments were pinned to the top.



If the record type does not appear in the search results, click on the Search All link to search additional record types. In this example, the search results did not display attachments for the searched word "test."



Clicking the Search All link searches all record types in the system and returns the results. In this example, searching for "test" now returns six Attachments.



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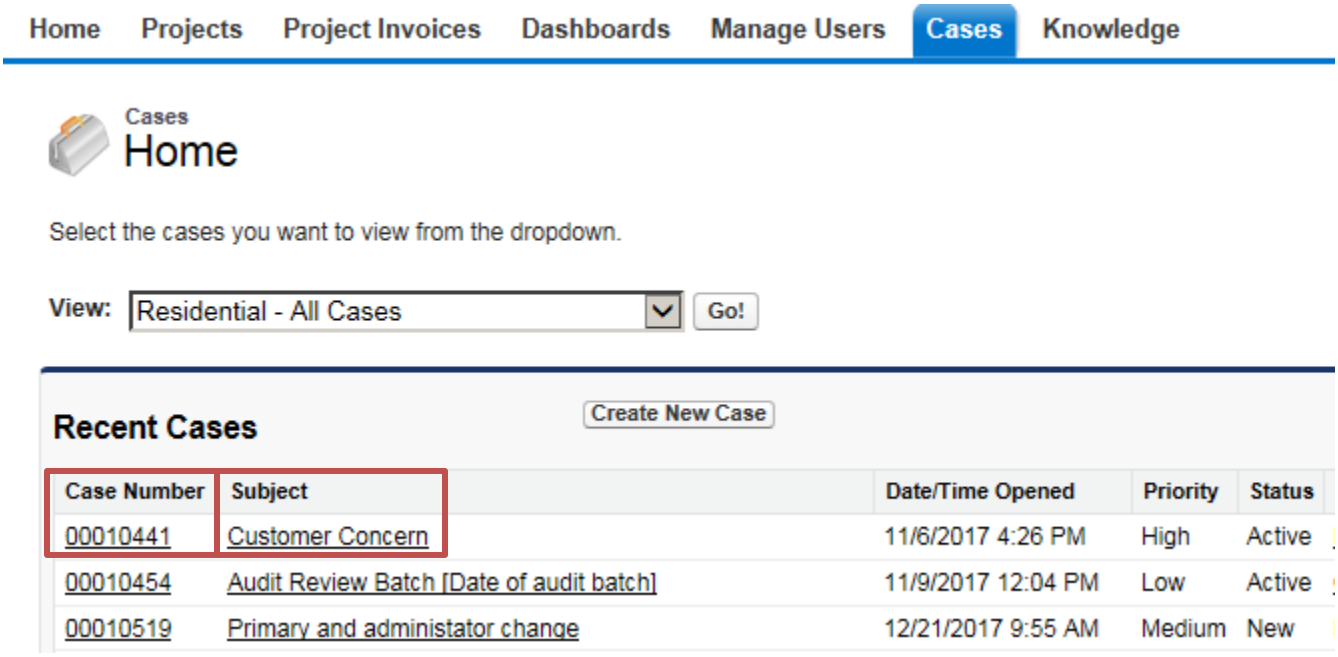
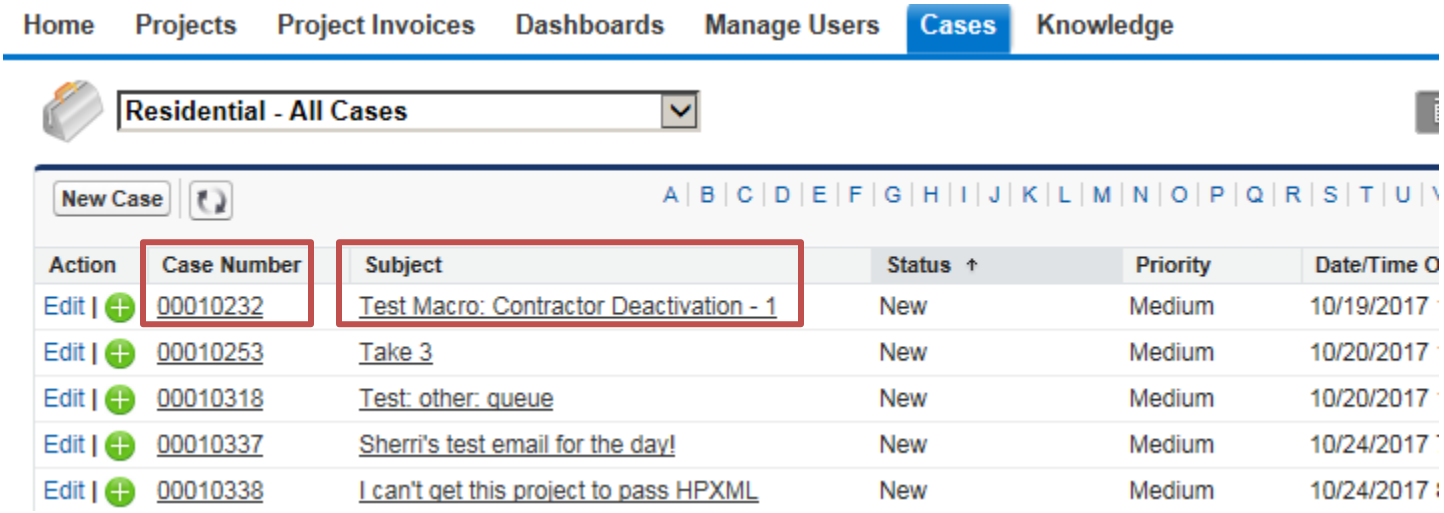
5.4 Viewing a Case

To view a case, click on the case number or subject link from (1) the Recent Cases view, (2) any of the list views, or (3) the search results:

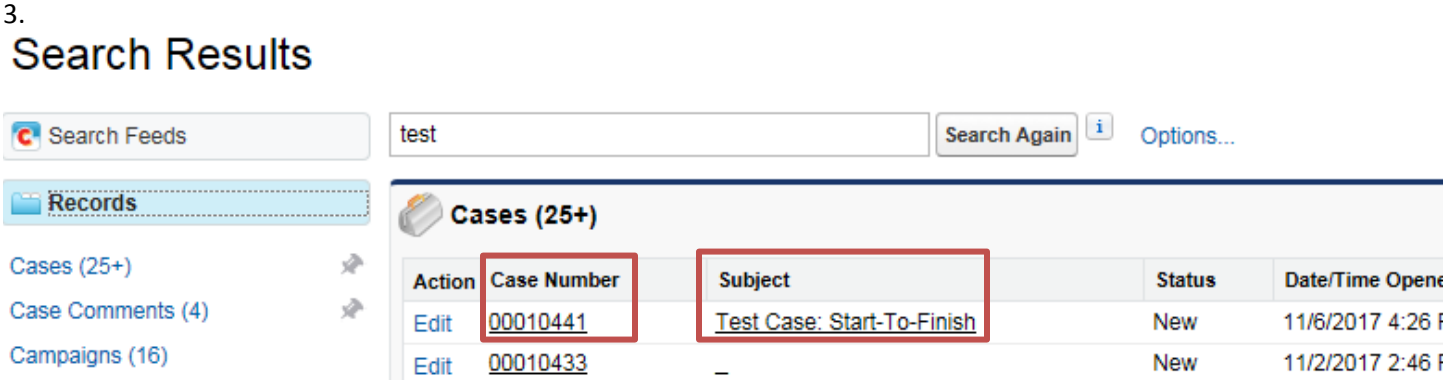
1.


Home
Projects
Project Invoices
Dashboards
Manage Users
Cases
Knowledge
Cases
Home
Select the cases you want to view from the dropdown.
View:
Residential - All Cases
Go!
Recent Cases
Create New Case
Case Number
Subject
Date/Time Opened
Priority
Status
00010441
Customer Concern
11/6/2017 4:26 PM
High
Active
00010454
Audit Review Batch [Date of audit batch]
11/9/2017 12:04 PM
Low
Active
00010519
Primary and administator change
12/21/2017 9:55 AM
Medium
New

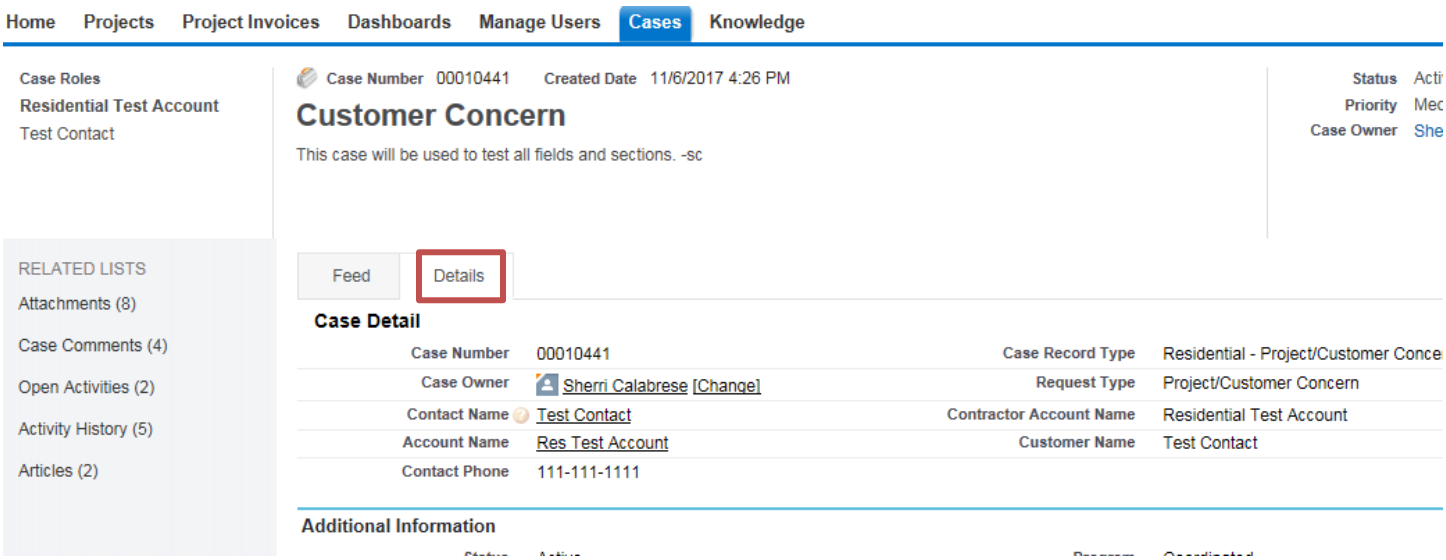
2.


Home
Projects
Project Invoices
Dashboards
Manage Users
Cases
Knowledge
Residential - All Cases
New Case
A B C D E F G H I J K L M N O P Q R S T U
Action
Case Number
Subject
Status
Priority
Date/Time O
Edit | 00010232 Test Macro: Contractor Deactivation - 1 New Medium 10/19/2017
Edit | 00010253 Take 3 New Medium 10/20/2017
Edit | 00010318 Test: other: queue New Medium 10/20/2017
Edit | 00010337 Sherri's test email for the day! New Medium 10/24/2017
Edit | 00010338 I can't get this project to pass HPXML New Medium 10/24/2017

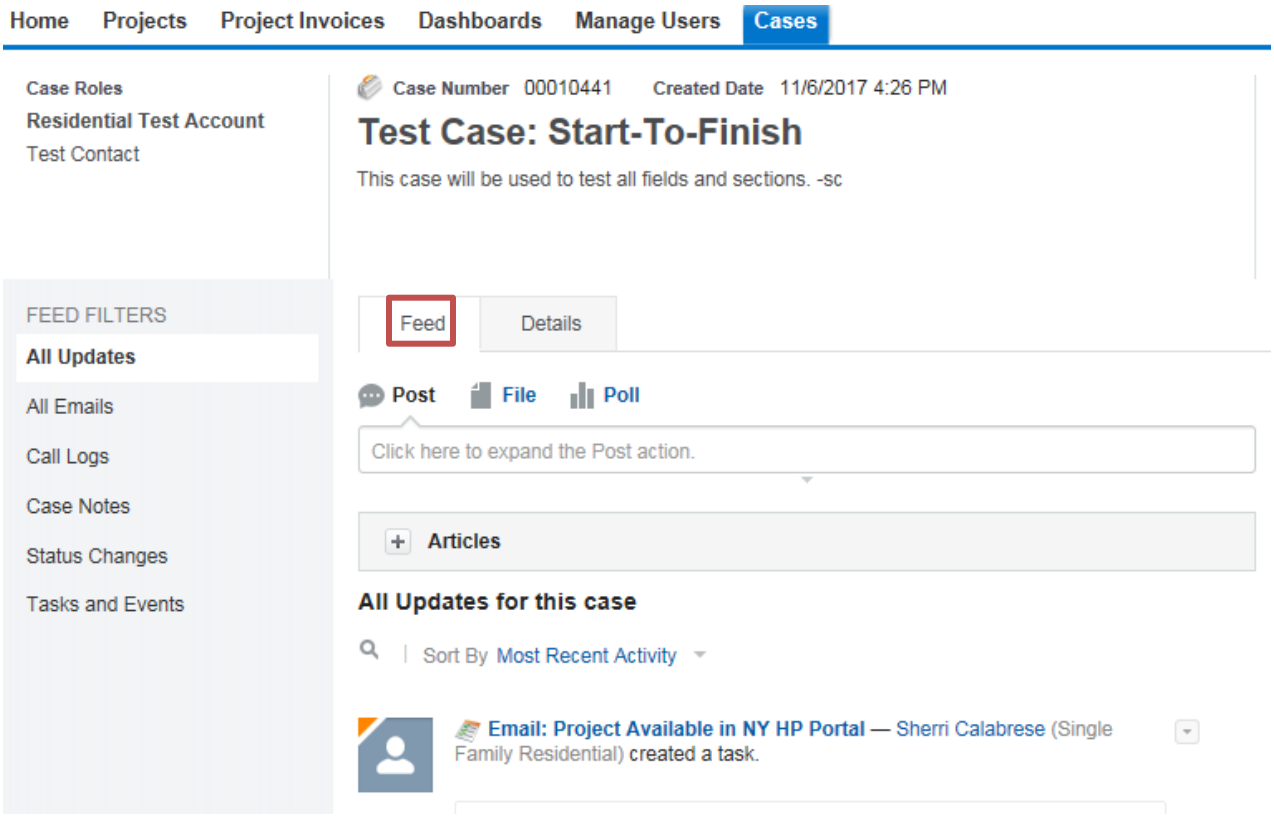
3.


Search Results
Search Feeds
test
Search Again
Options...
Records
Cases (25+)
Case Comments (4)
Campaigns (16)
Cases (25+)
Action
Case Number
Subject
Status
Date/Time Opene
Edit
00010441
Test Case: Start-To-Finish
New
11/6/2017 4:26
Edit
00010433
New
11/2/2017 2:46

When a case is selected, the view defaults to the details tab, which provides access to the available fields as well as the following sections: Attachments, Case Comments, Activities, and Articles (See Sections 13-16).



To view a chronological detail of events that have taken place with the case, click on the Feed tab.



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Section 6: Creating a Case

A case is the mechanism used to communicate, track, and resolve questions, issues, or concerns. It is the primary tool for participating contractors to request assistance from the program, ask questions, and resolve customer concerns.

There are three options for submitting a case:

1. Log in to the NYSERDA Portal and directly entering the required information.
2. Email support.residential@nyserda.ny.gov to contact the contractor support team.
3. Call the contractor support line at 1-800-284-9069.

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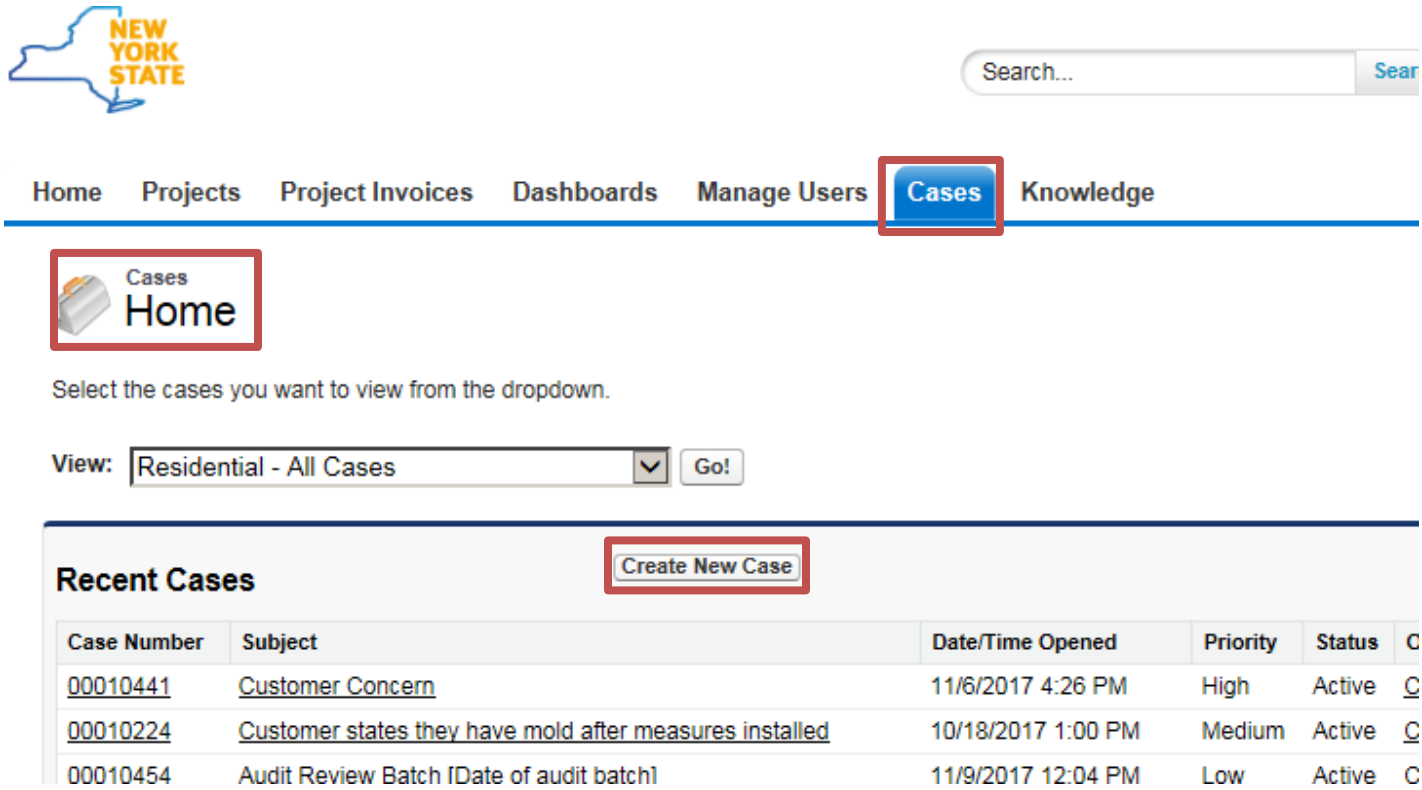
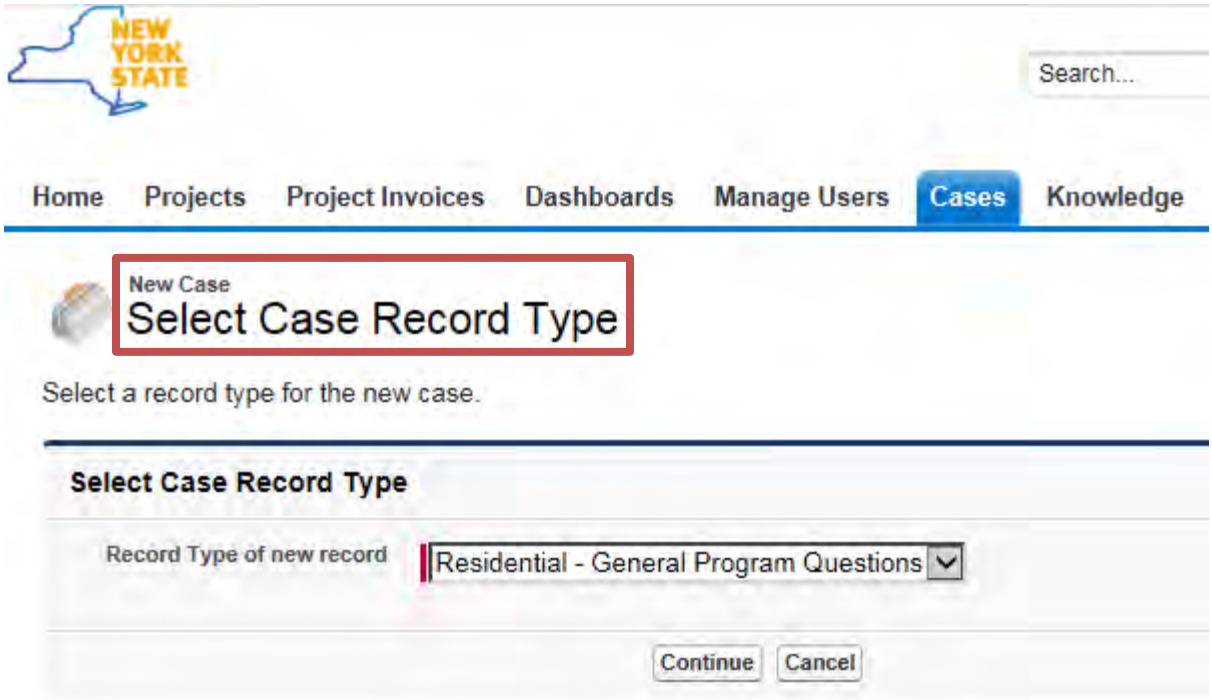
6.1 Create a Case via Logging In

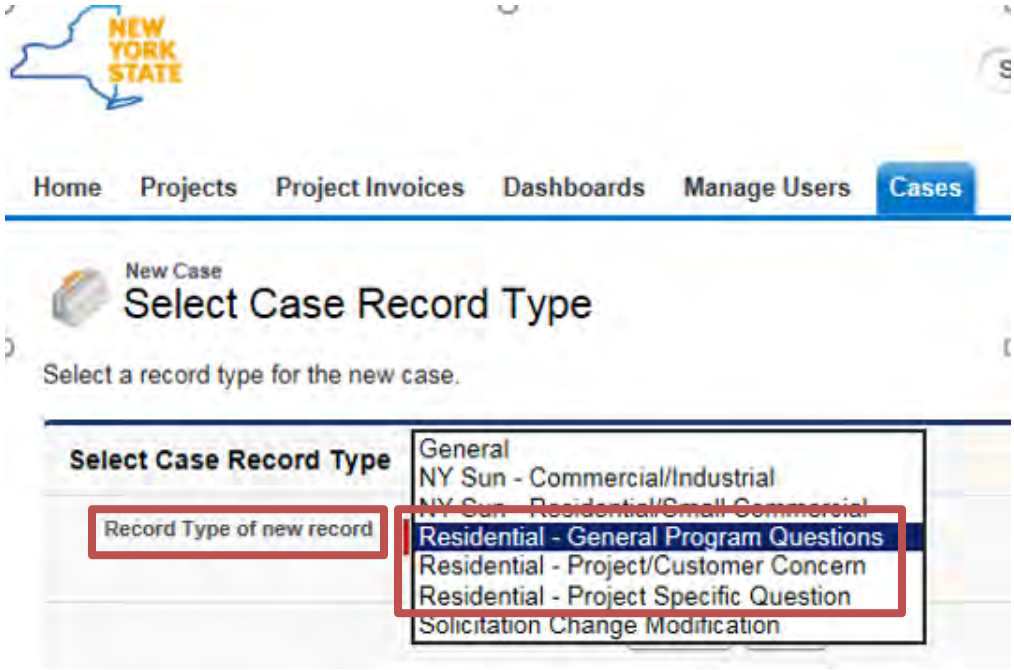
To create a new case from the Cases Home page, click the Create New Case button in the Recent Cases section.



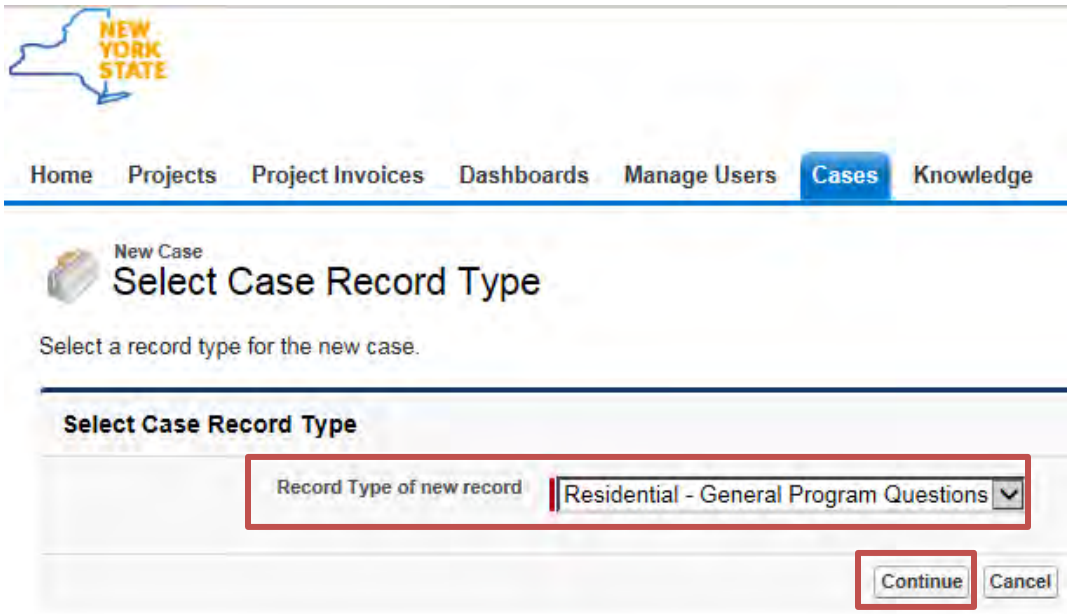
Clicking the Create New Case button from the Cases Home page opens the New Case/Select Case Record Type page.



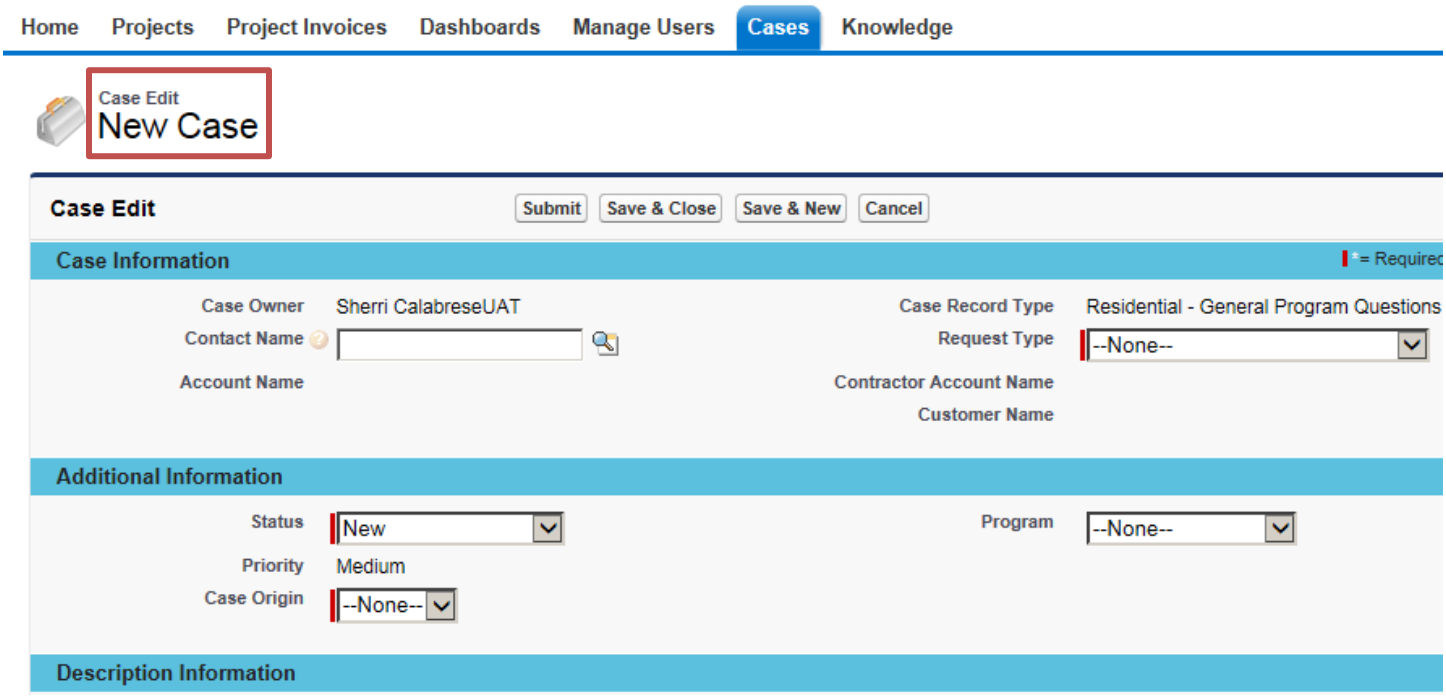
Click the Record Type in the new record dropdown box and select the appropriate Case Record Type (see Section 8: Case Classification for information regarding Case Record Types and their use).



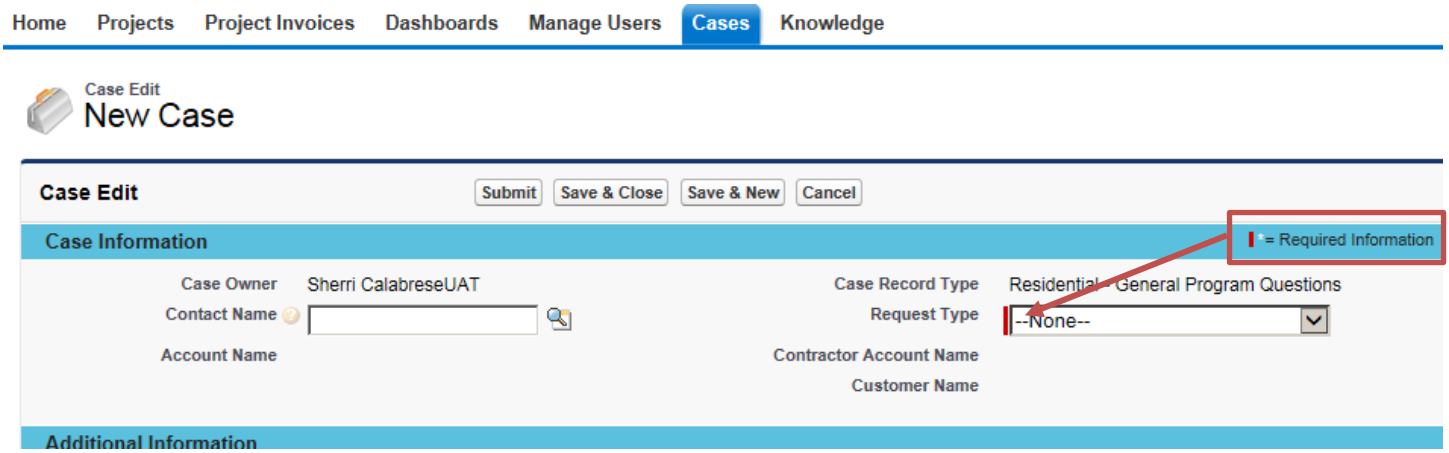
When the appropriate Case Record Type is populated in the dropdown box, click on the Continue button.



After clicking Continue, the Case Edit/New Case page opens. The Case Edit page is where information applicable to the case should be entered.



As indicated on the page, all system-required fields show a red, vertical bar next to the field.



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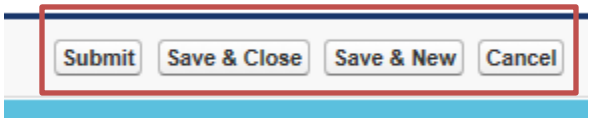
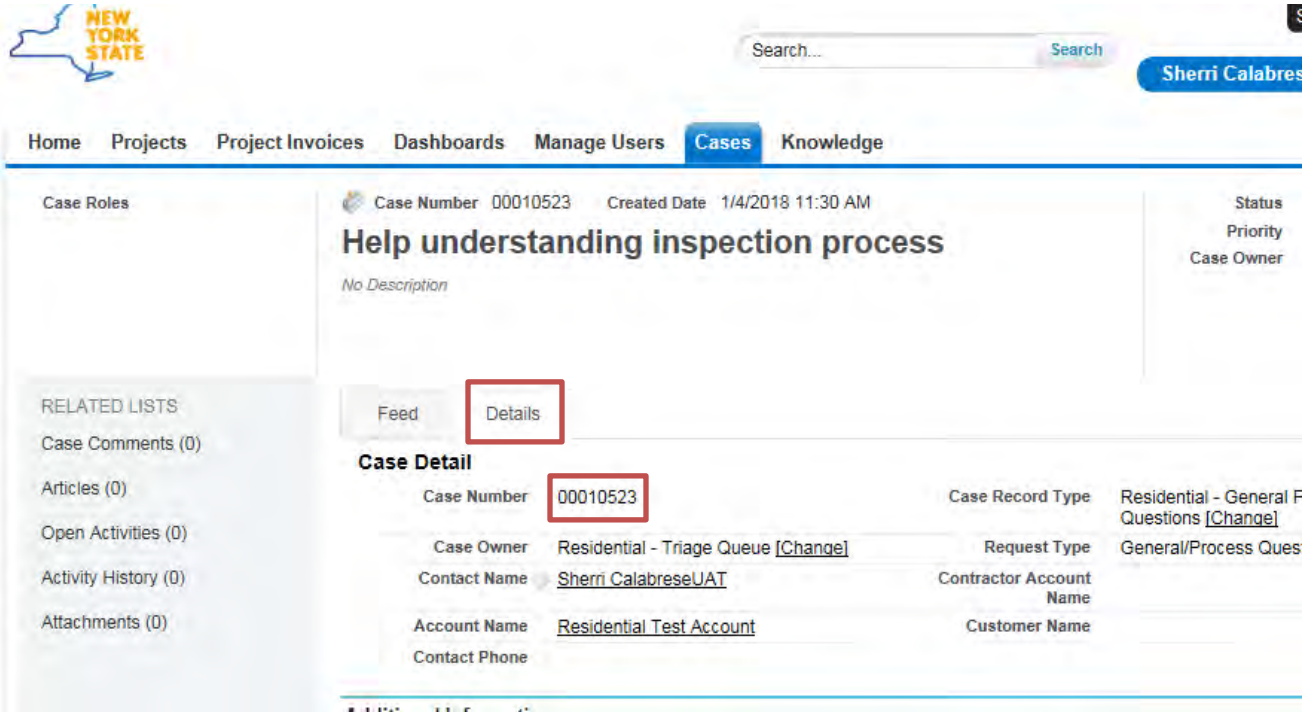
6.1.1 Save Options

After the information has been entered into all system-required fields, save the information by clicking one of the Save options at the top or bottom of the page.



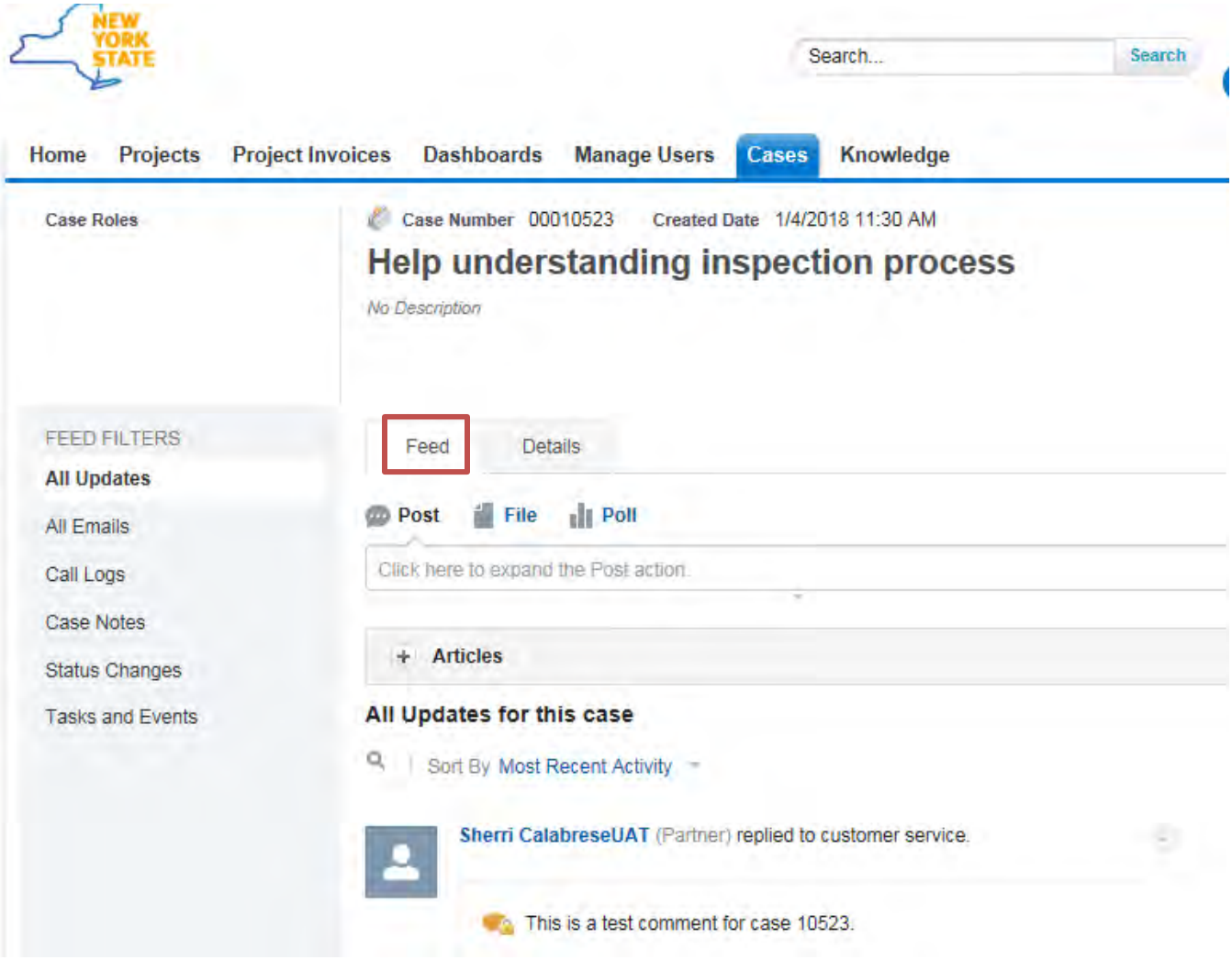
Save options:

1. **Submit**: Select the Submit button to save the information entered into the case and generate a unique case number. When the information is saved, the case defaults to the Details tab.



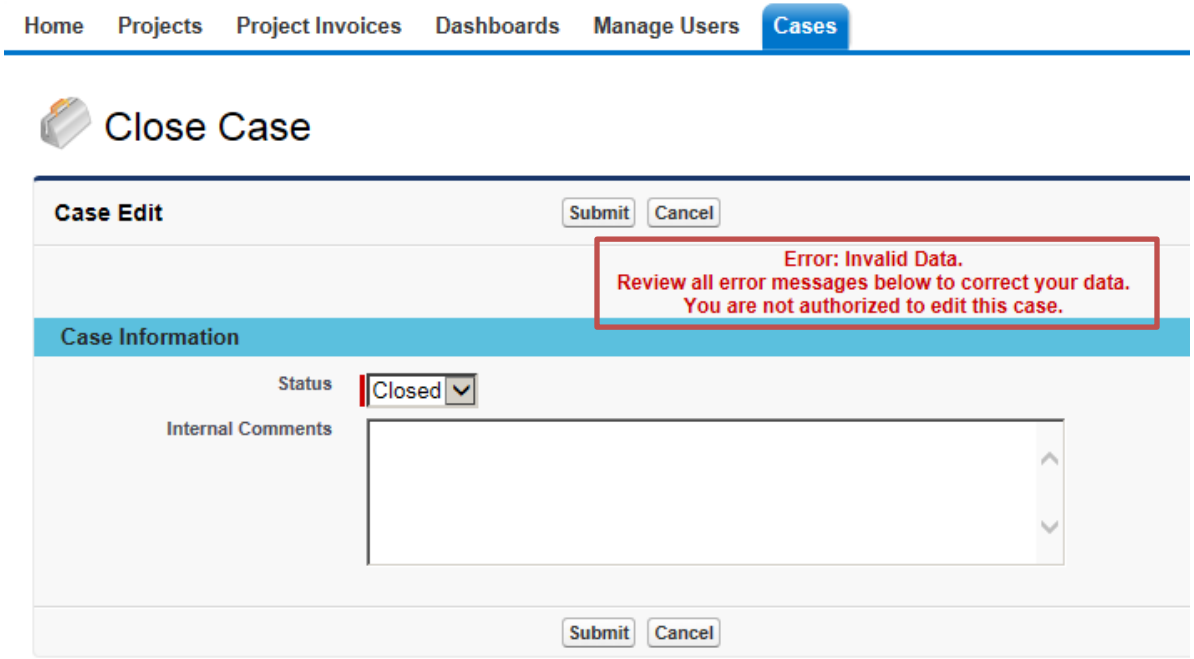
The Details tab of a case, displays all associated fields and sections for the case (See Sections 9-16).

To see a chronological detail of events that have taken place with the case, click on the Feed tab. In this situation, the case was just created and therefore has only two entries. The number of entries increases as actions are taken pertaining to the case.



2. **Save & Close**: *This is not the recommended method to save a case*. Select the Save & Close button to save the case, generate a unique case number, and open the Close Case page.

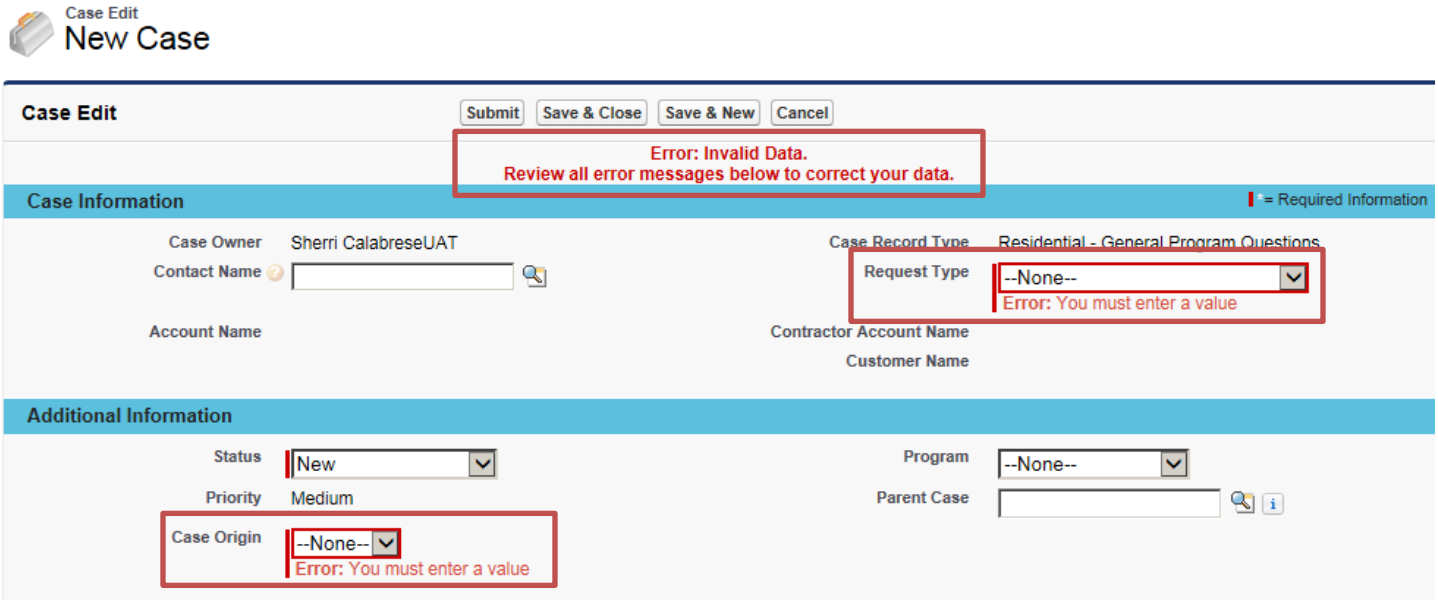
   Note: Participating contractors do not have permission to close cases. If a participating contractor clicks the Submit button from the Close Case page, an error message appears. Selecting the cancel button returns the user to the saved case.



3. **Save & New:** Select the Save & New button to save the information entered in to the case and generate a unique case number. The system exits the case and returns the user to the New Case/Select Case Record Type page to start a new case.

4. **Cancel:** Selecting the cancel button does not save the case and the user is returned to the Cases Home page.

Selecting one of the save options prior to entering information in to all required fields results in an error message(s):



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6.2 Submitting a Case via the Contractor Support Email

Any email sent to the contractor support email address, support.residential@nyserda.ny.gov, that is not already linked to a case, automatically produces a new case in the NYSERDA Portal. These cases are routed to the triage team, who monitor cases on business days. The triage team responds to inquiries when appropriate or routes cases to the appropriate team (e.g., finance, technical services, etc.).

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6.3 Confirmation Email

For all cases created by a contractor, the requester receives a reply email from the NYSERDA Portal indicating that the request for support has been received and a case was created. The email received is similar to the following example.

Thu 11/2/2017 4:02 PM

E

noreply@salesforce.com on behalf of Residential Services <no-reply@nyserda.ny.gov>

Sandbox: Residential Support Case #00010436

To Calabrese, Sherri A (NYSERDA)

ATTENTION: This email came from an external source. Do not open attachments or click on links from unknown senders or unexpected emails.

Thank you for submitting a request for assistance. Case #00010436 has been created in the NYSERDA Portal, and a member of our team will respond to you as soon as possible.

To expedite resolution of your case, please be sure you have provided the following information:

1. Summary of the issue, concern, or question
2. Name of the contractor/company involved with the project
3. Customer name and/or project ID number

Replying to this email will automatically attach the new information to the case.

Thank you.

ref:_00D35cCx._50035166ka:ref

Replying to this email automatically updates the case (see Section 7.1: Email to Case).

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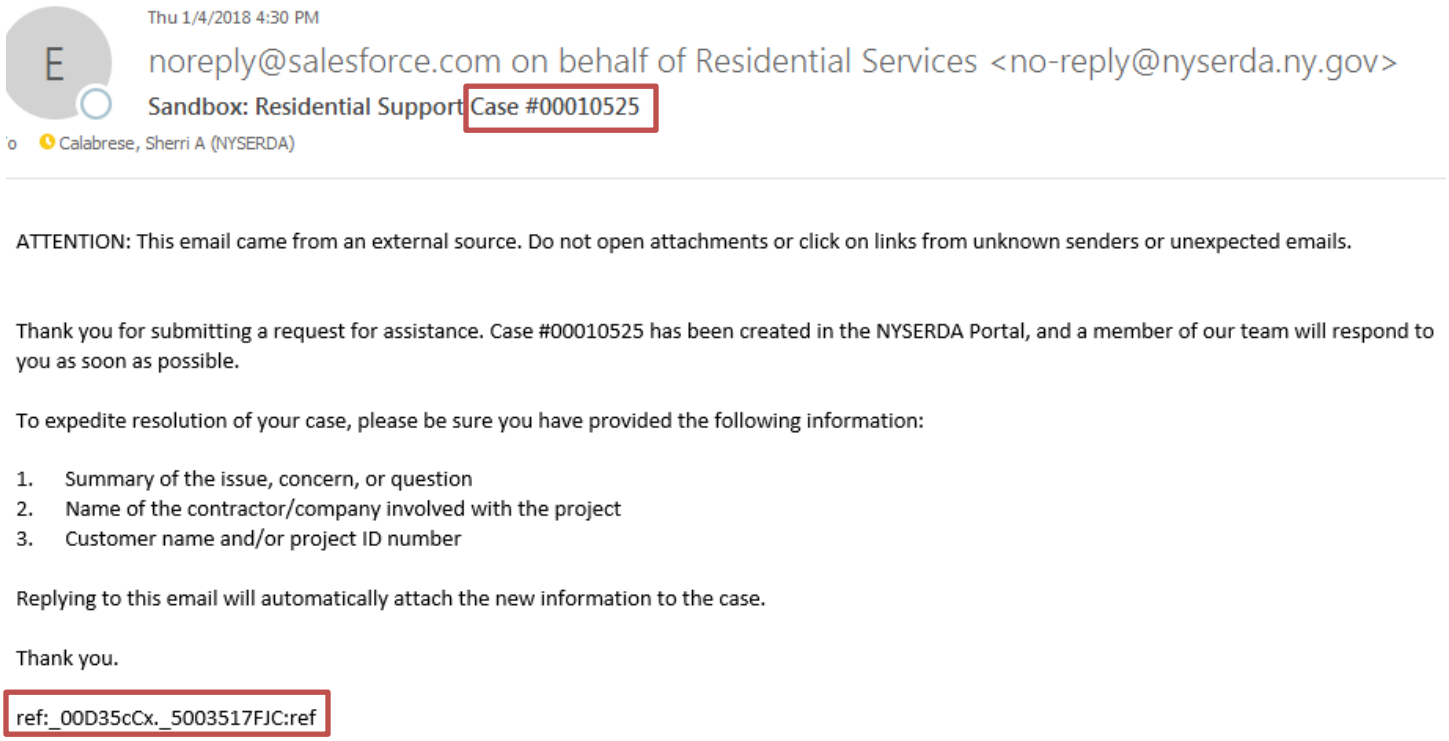
Section 7: Updating a Case

Once a case has been submitted, the participating contractor cannot edit associated fields. If information is incorrect or needs to be updated, details should be provided by email (see Section 7.1: Email to Case) or by adding a Case Comment (See Section 14: Case Comments).

7.1 Email to Case

Most emails received from the NYSERDA Portal for contractor support cases regarding the NY Residential Existing Homes Programs are linked to the case from which the communication was generated. When an email is sent, a reference (ref:) number is included in the body of the email. This number is the identification linking the email to the case, similar to the following example.



Thu 1/4/2018 4:30 PM

E

noreply@salesforce.com on behalf of Residential Services <no-reply@nyserda.ny.gov>

Sandbox: Residential Support Case #00010525

o Calabrese, Sherri A (NYSERDA)

ATTENTION: This email came from an external source. Do not open attachments or click on links from unknown senders or unexpected emails.

Thank you for submitting a request for assistance. Case #00010525 has been created in the NYSERDA Portal, and a member of our team will respond to you as soon as possible.

To expedite resolution of your case, please be sure you have provided the following information:

1. Summary of the issue, concern, or question
2. Name of the contractor/company involved with the project
3. Customer name and/or project ID number

Replying to this email will automatically attach the new information to the case.

Thank you.

ref:_00D35cCx._5003517FJC:ref

When a recipient of an email with a ref: number replies, the associated case automatically updates.

Note: If the ref: number is deleted from an email on reply or forward, the email does not link to the case—instead, a new case is created.

Note: Sending a new email to support.residential@nyserda.ny.gov automatically creates a new case in the NYSERDA Portal.

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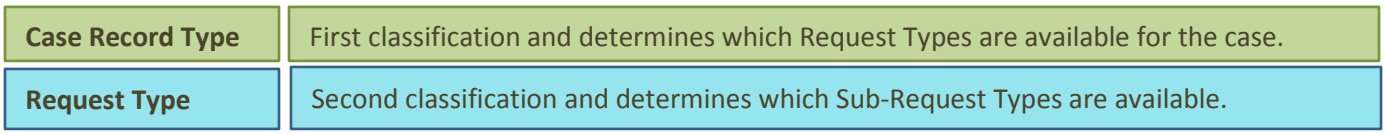
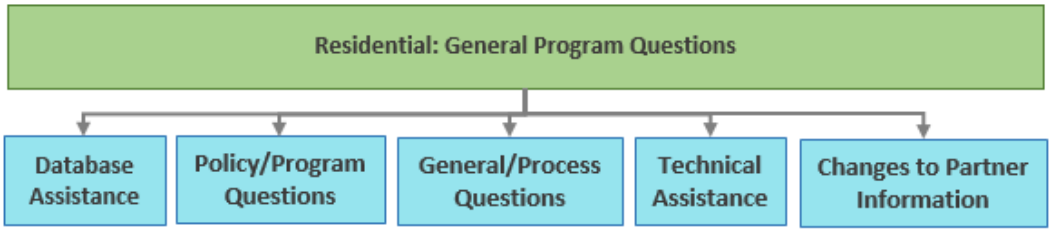
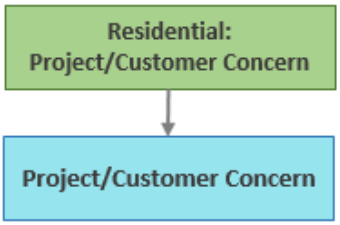
Section 8: Case Classification

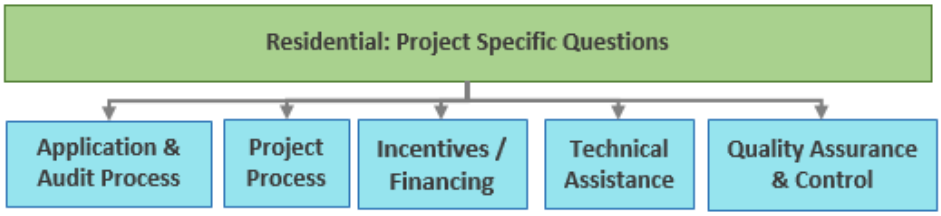
There are two primary ways in which a case is classified: Case Record Type and Request Type. Classifying a case appropriately quickly communicates the nature of the case to program teams, helps during triage to ensure the case is routed to the correct team, and assists in reporting. Classification starts when creating a new case and choosing the Case Record Type. The Case Record Type selected determines which Request Types are available.

To understand the hierarchy, the following charts have been provided for each Case Record Type. Each chart shows the Case Record Type in green and its corresponding, available Request Type(s) in blue.









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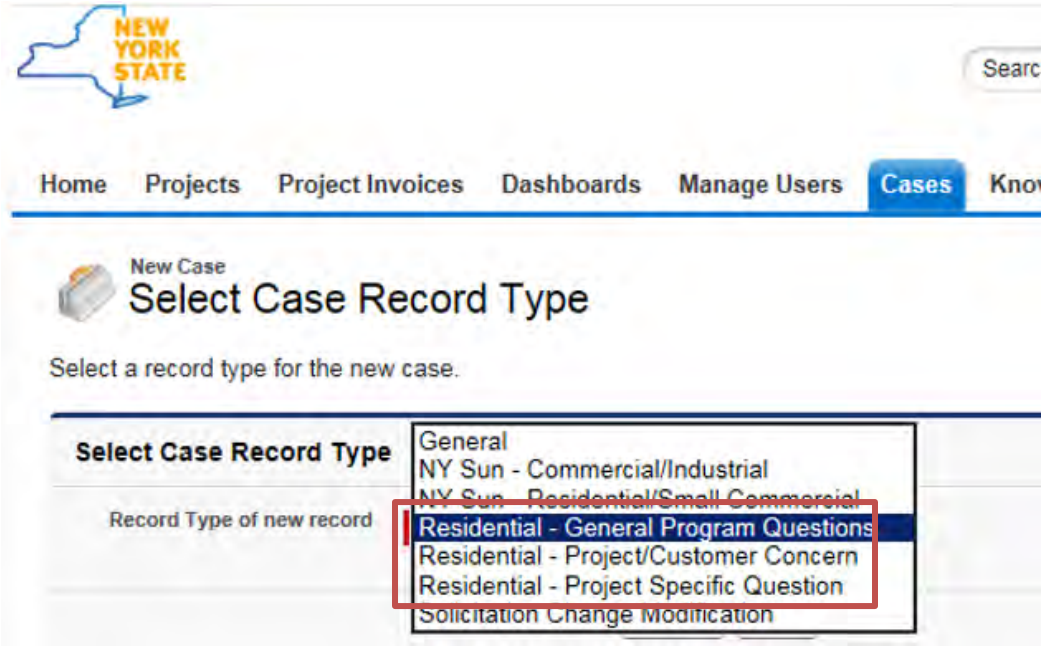
8.1 Case Record Types

The Case Record Type is the first classification of a case providing an overall description of the issue or question and determines which options are available in the Request Type field. To distinguish Case Record Types that are specific to the NY Residential Existing Homes Programs, the word “Residential” has been added to the beginning of the Case Record Type.



Case Record Types include:

1. **Residential – General Program Questions**: Program related questions that are not specific to an individual project.
2. **Residential – Project/Customer Concern**: Management of customer or project related concerns.
3. **Residential – Project Specific Question**: Questions related to a specific project.

Note: There are two other Case Record Types that could be assigned to contractors: Residential – Change of Status and Residential – HPwES Audit Review. Participating contractors cannot create cases with these Case Record Types but could be assigned as a contractor, when the case is created by program staff.

Change of Status cases are specific to when a contractor's participation status in the program changes (e.g., move from provisional to full).

HPwES Audit Review cases are specific to the audit review process conducted by the program to ensure audit submissions meet program requirements. When an audit does not meet program requirements, the case is issued to the contractor for corrections.

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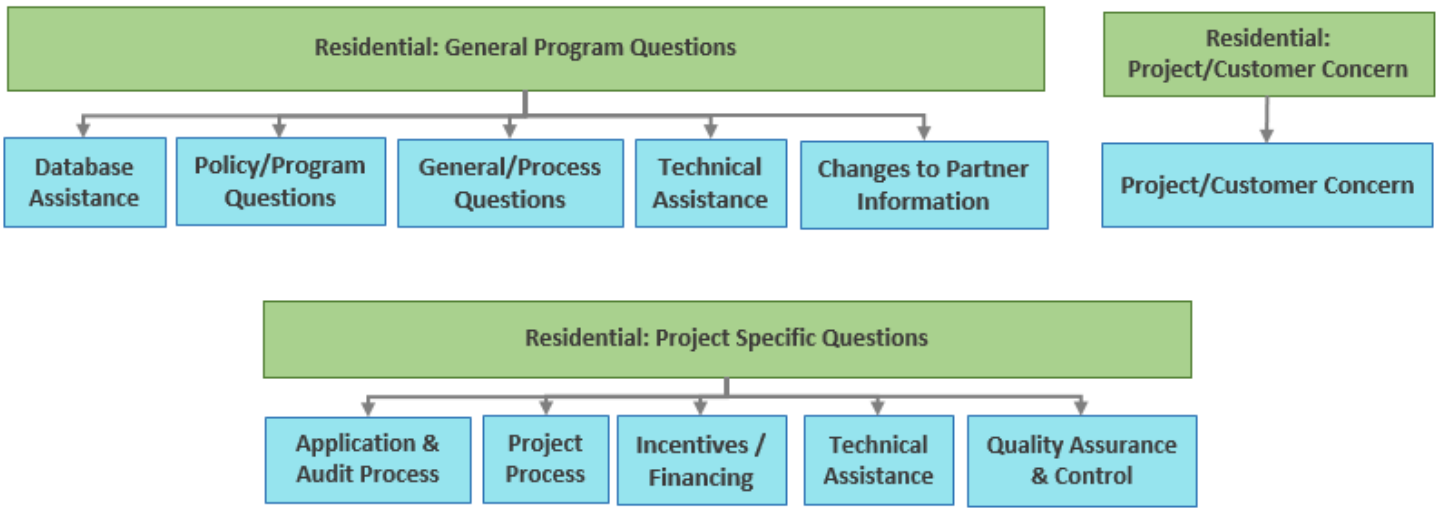
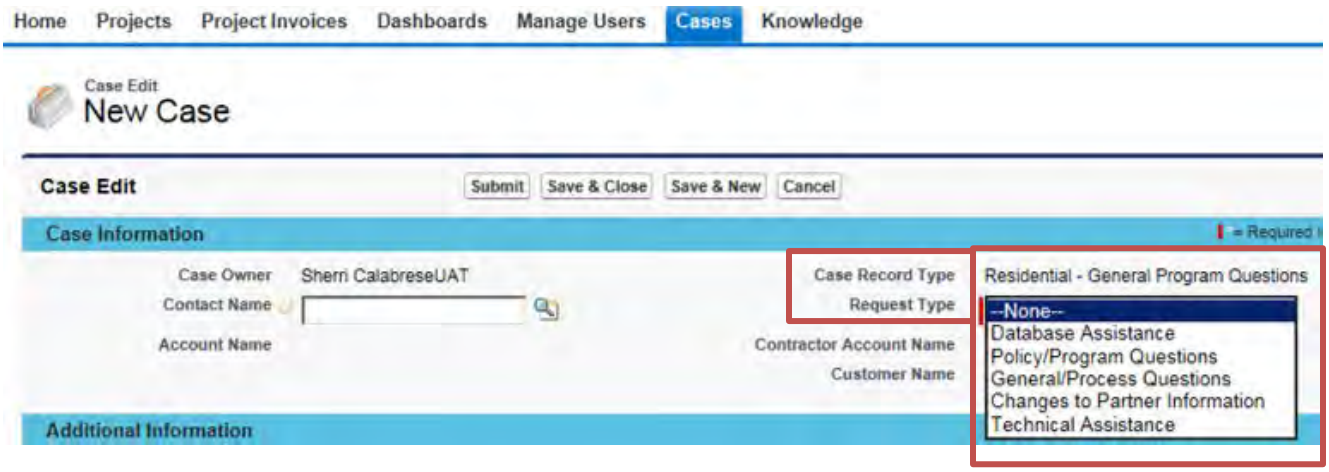
8.2 Request Types

The Request Type is the second classification of a case providing additional detail regarding the issue or question. Setting the appropriate Request Type assists with triage and reporting.

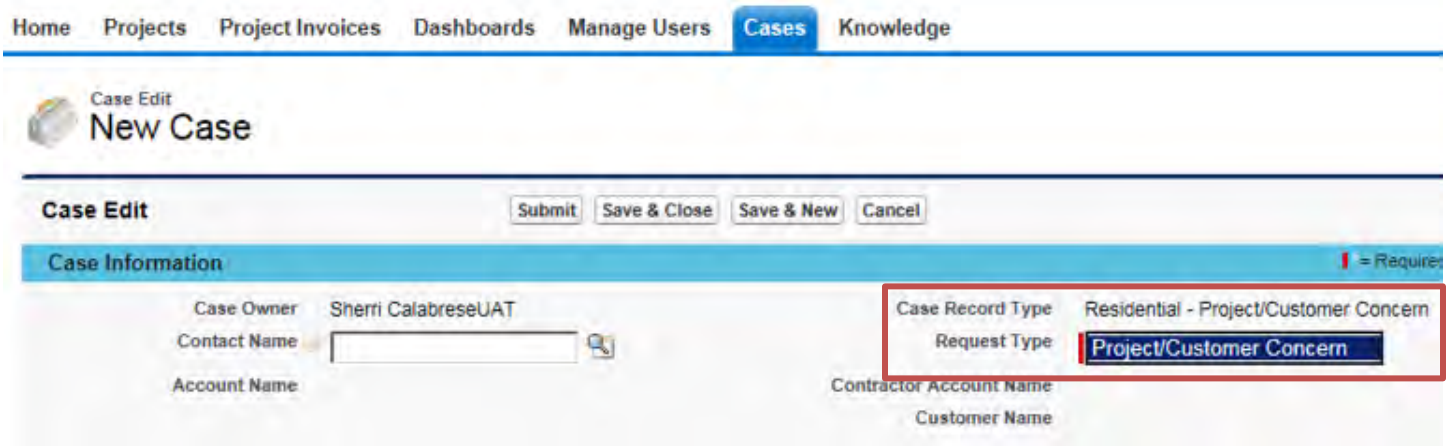
The Project/Customer Concern Case Record Type has only one Request Type whereas the other Case Record Types have several. Where there is only one Request Type, the field defaults to the available Request Type. Instances in which there are multiple Request Types, the Request Type requires manual selection.



1. When the Case Record Type is **Residential – General Program Questions**, Request Type includes:
    a. **Database Assistance:** Support requests related to the Program's various database and software products. Some examples may include the following:
        1. Requesting to add, remove, or update users from a program system
        2. HPXML validation concern/issue
        3. Database related questions – CRIS, NY HP Portal, QACSS, NYSERDA Portal
    b. Policy/Program Question: Questions relating to overall policies in the program. Some examples may include the following:
        1. Question about a program form
        2. Questions/concerns regarding program procedures
    c. General/Process Questions: Questions relating to overall processes within the program. Some examples may include the following:
        1. General auditing questions
        2. General work scope development questions
        3. General incentive questions
        4. General questions regarding the project closeout process, loan process, or loans after the work has been completed
    d. Technical Assistance: General questions regarding the technical requirements of the program. Some examples may include the following:
        1. General questions about envelope/shell, HVAC, modeling, electric reduction, domestic hot water, or air source heat pump policies
        2. Questions about BPI standards or the Materials and Installation Guide (MIG)
    e. Changes to Partner Information: Instances where partner's information needs to be update. Some examples may include the following:
        1. Updates to company related information (e.g., address, DBA, etc.)



2. When the Case Record Type is **Residential – Project/Customer Concern**, Request Type includes **Project/Customer Concern**: Customer or project related concerns.



3. When the Case Record Type is **Residential – Project Specific Question**, Request Type includes:
    a. **Application & Audit Process:** Application and audit related questions associated with a specific project. Some examples may include the following:
        1. Questions regarding an audit approval letter
        2. Request for an extension on an audit reservation number
        3. Issues with claiming an audit reservation number
        4. Questions regarding a customer's eligibility
        5. Corrections to customer information
        6. Request for increased incentive amount (>3500 square feet)
        7. Request to change EmPower audit type
        8. Questions regarding landlord approval
    b. **Project Process:** Project process related questions associated with a specific project. Some examples may include the following:
        1. Request to expedite a project due to a no-heat emergency
        2. Work scope approval extension request
        3. Reactivating a closed project

4. Project approval, completion, or on hold assistance
5. Project review for State Historic Preservation Office (SHPO)

c. **Incentives/Financing:** Incentive and financing questions related to a specific project. Some examples may include the following:
    1. Question about incentives for a low-income project or audit incentive
    2. Question regarding an assisted subsidy on a project
    3. Extension requests for subsidies or loans
    4. Contractor incentive questions
    5. Invoicing related items

d. **Technical Assistance:** Technical assistance required on a specific project. Some examples may include the following:
    1. Questions about envelope/shell, HVAC, modeling, electric reduction, domestic hot water, or air source heat pump policies relating to a specific project

e. **Quality Assurance & Control:** Inspection requests on specific projects and can be used for both in-process or post-completion inspections. Some examples may include the following:
    1. Questions relating to inspections or inspection requests

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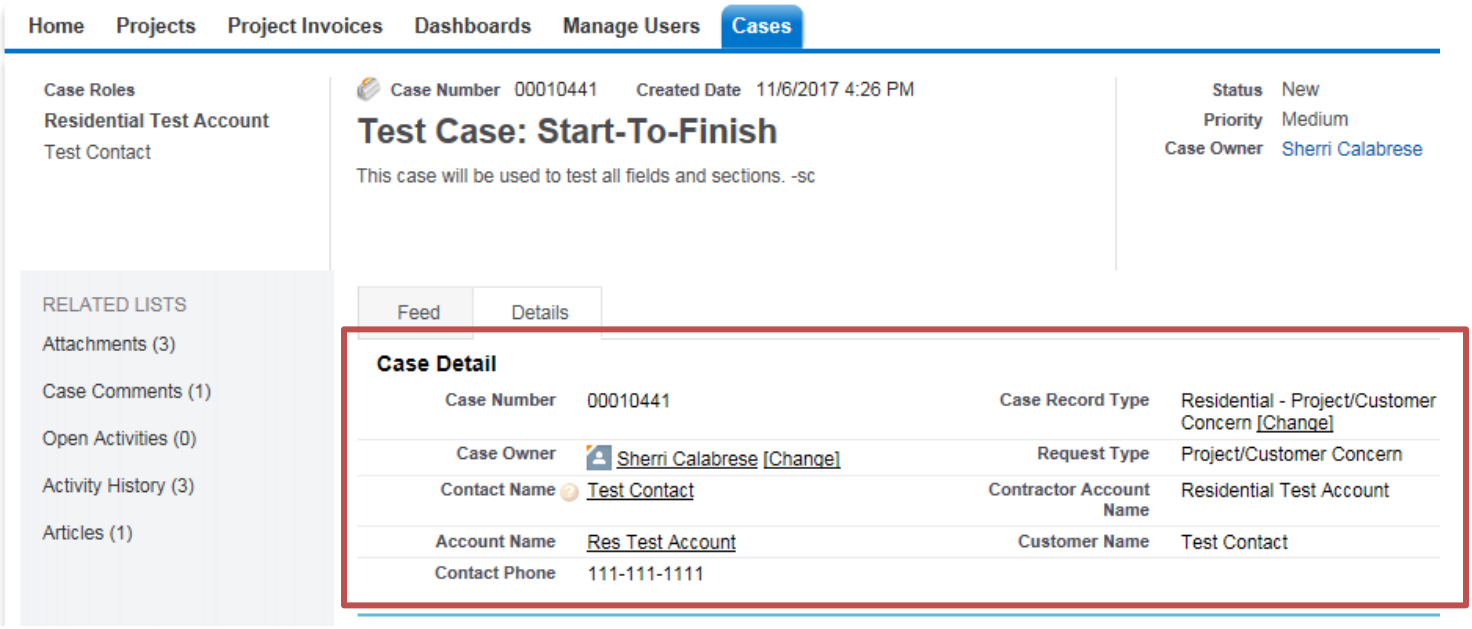
Section 9: Case Information Fields

The Case Information section displays the first set of fields available on the case. These fields are consistent across all Case Record Types. On the Details tab, the case information section of the case is placed on the top portion of the page.



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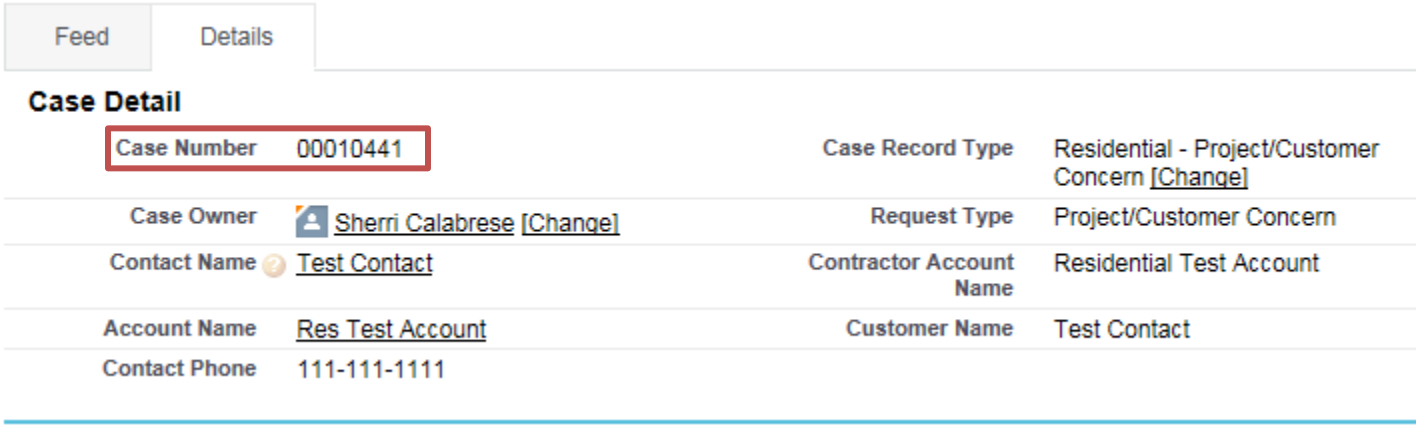
9.1 Case Number

The case number is a system-generated unique identifier that is assigned to all cases. All case numbers are assigned automatically when the case is first saved in the Case Edit/New Case page (see Section 6: Creating a Case).



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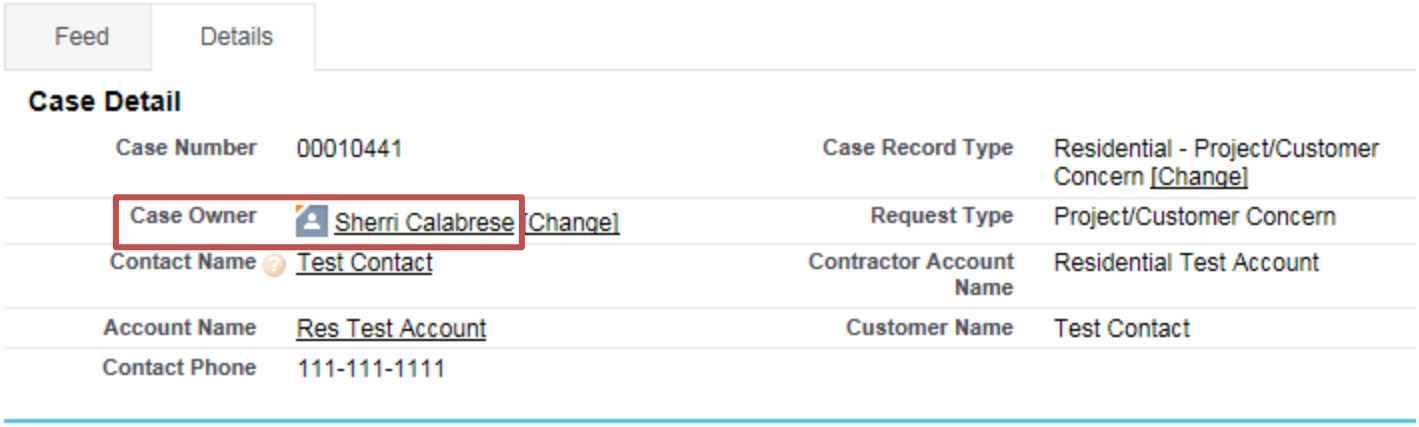
9.2 Case Owner

A case owner is the team or person responsible for overall monitoring and resolution management of a case.



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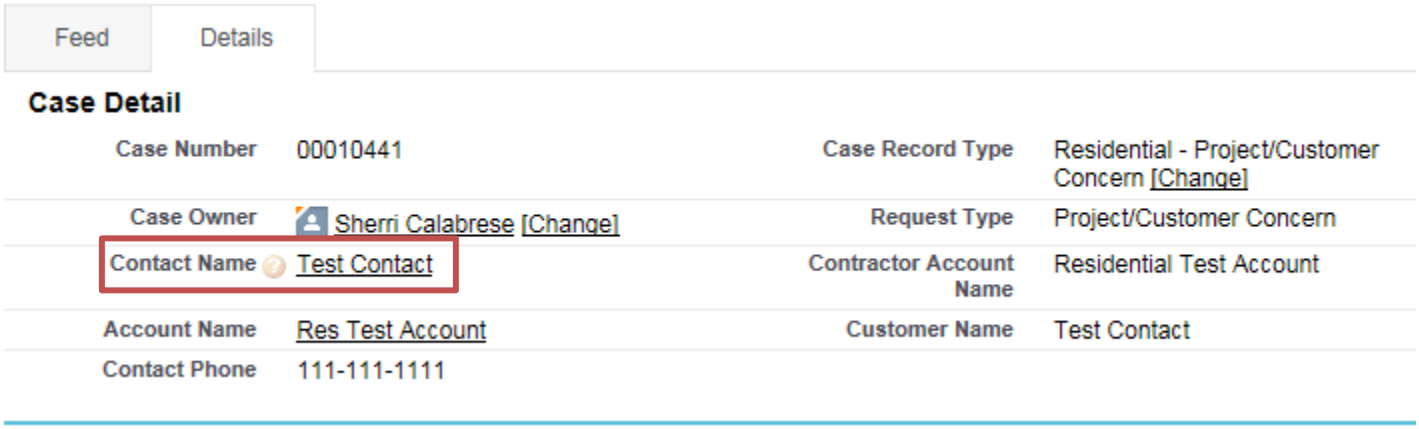
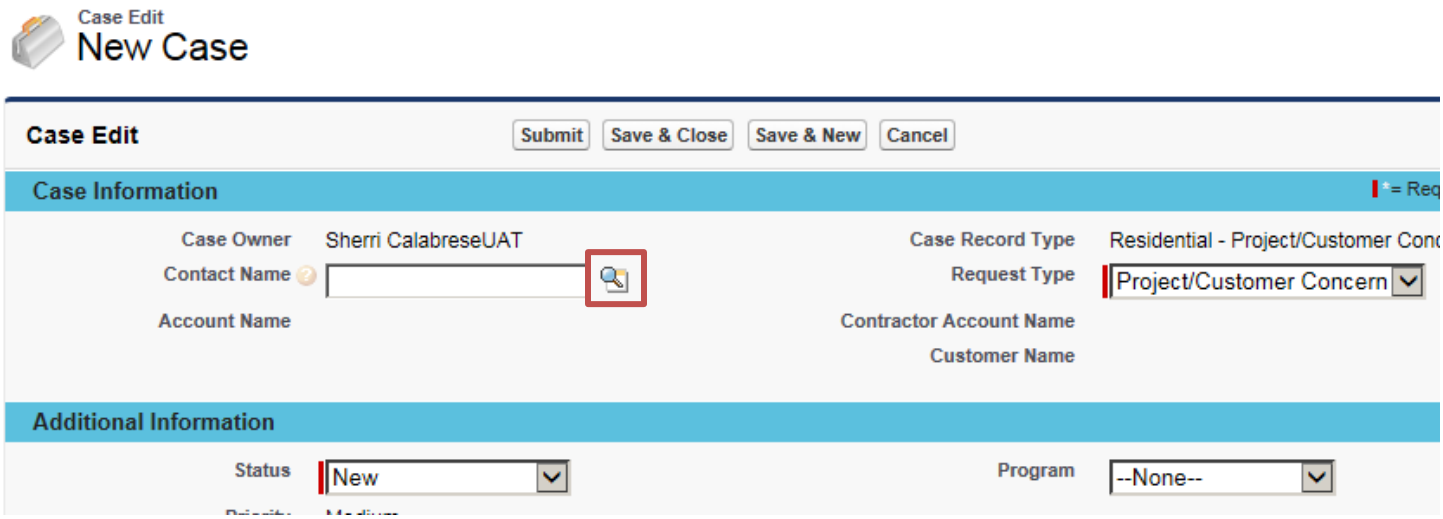
9.3 Contact Name

The contact name field in the Case Information section is used to add information regarding the person requesting assistance.

Note: If the Contact Name field is *not* populated when a case is submitted from the NYSERDA Portal, the Contact Name defaults to the user creating the case.

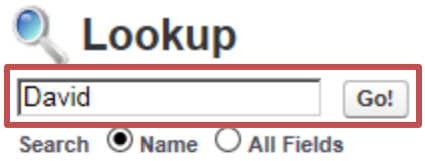


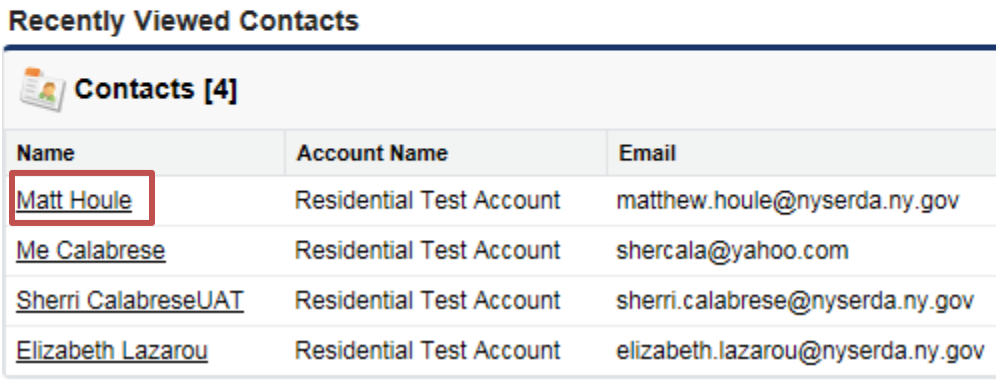
To change the Contact Name to a different user than the participating contractor, click on the magnifying glass next to the Contact Name field.



From the Lookup page, select one of the recently viewed contacts from the company or search for the user with the search box. To search for a contact, type the contact name (all or partial names) in the search box and click the Go! button. Clicking the Go! button, provides a list of results. Clicking the Name link for the contact adds that contact to the case.

Note: Only system users associated with the participating contractor can be populated in the Contact Name field.





Note: If the case is created by sending an email to support.residential@nyserda.ny.gov the sender is populated in the Contact Name field, either automatically or during triage.

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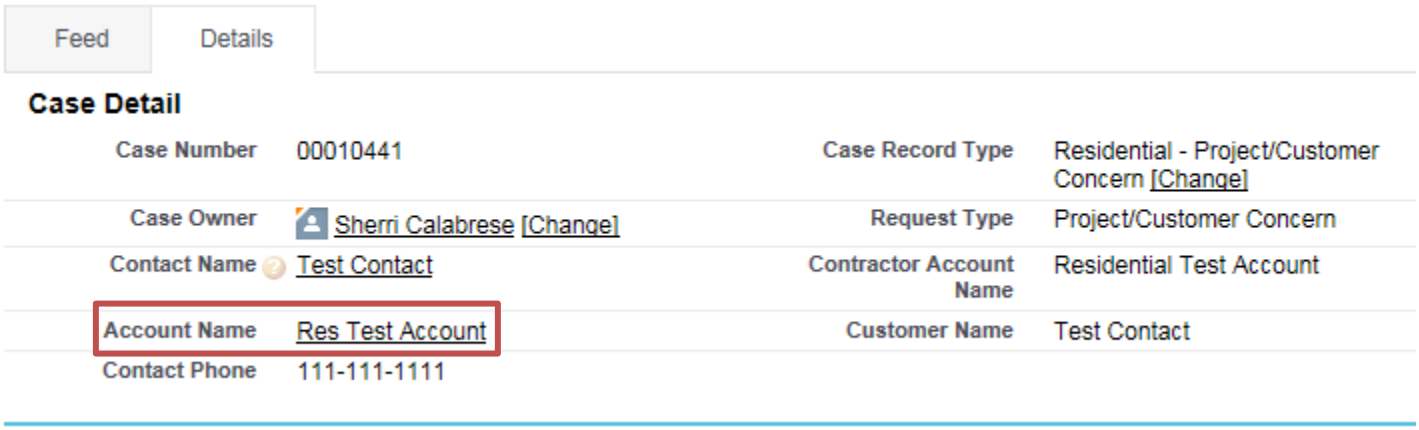
9.4 Account Name

If the requester has contact information in the system that includes the Account Name, the Account Name field displays the requester's company name as it is listed in the Contact record.



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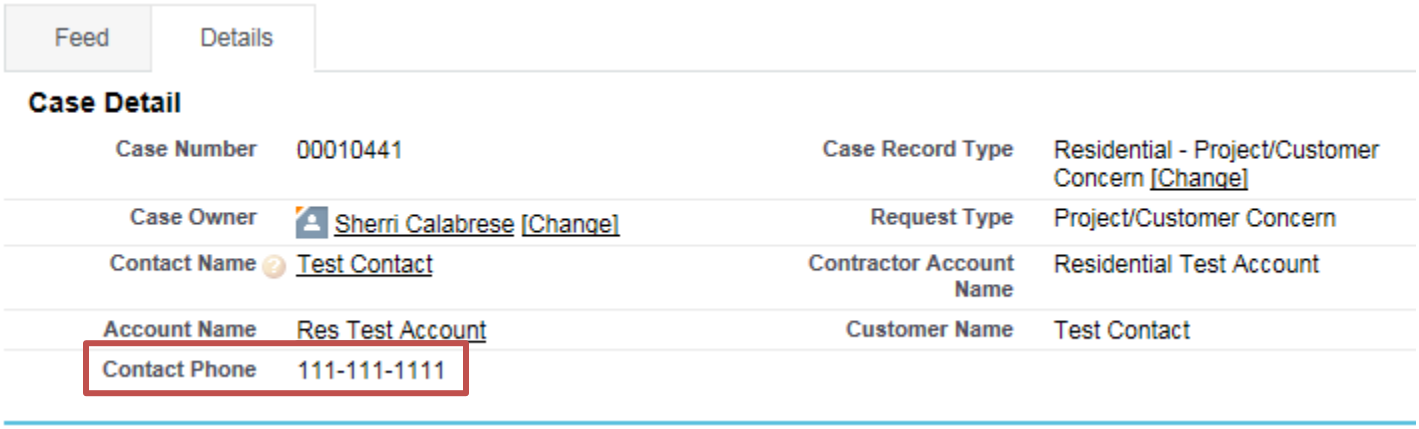
9.5 Contact Phone

If the requester has contact information in the system that includes a Contact Phone, the Contact Phone field displays the requester's contact phone number as it is listed in the Contact record.



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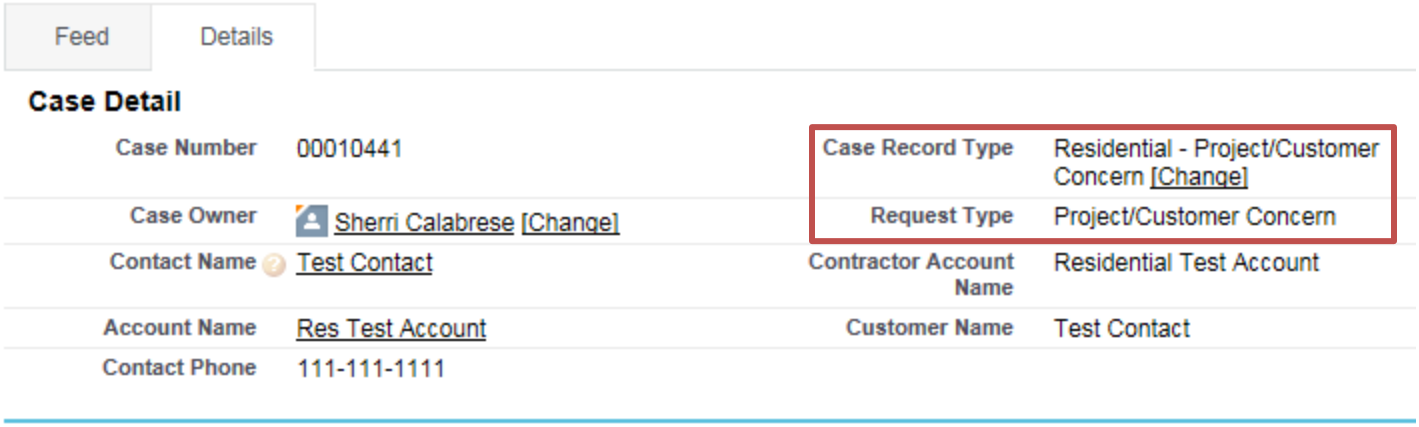
9.6 Case Record Type and Request Type

See Section 8: Case Classification for details regarding the population of these fields. Cases submitted through the support.residential@nyserda.ny.gov email default to Residential – General Program Questions and are updated as appropriate during triage.



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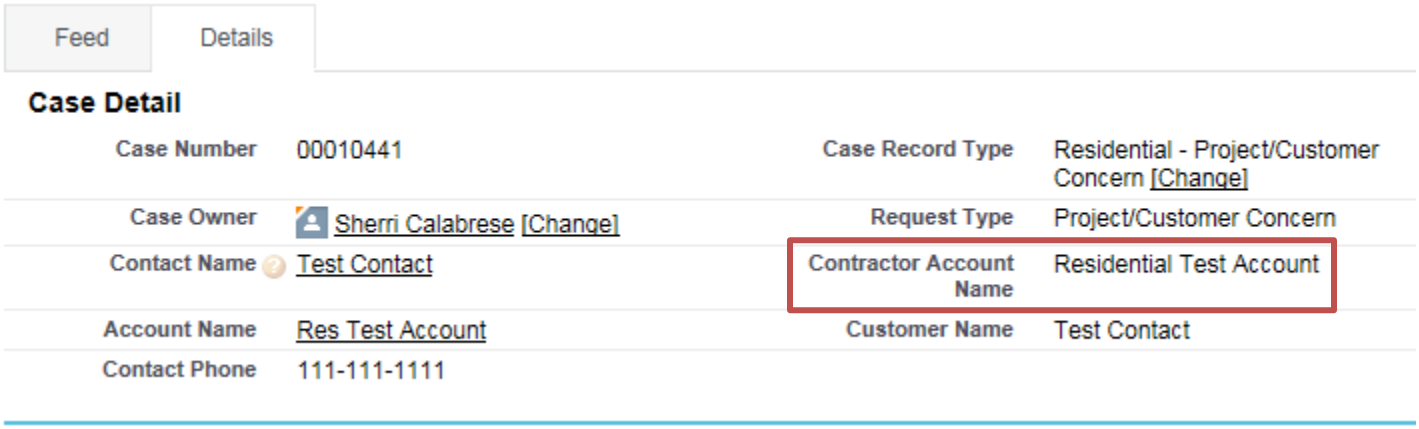
9.7 Contractor Account Name

The Contractor Account Name field is a locked field that is populated by the triage team.



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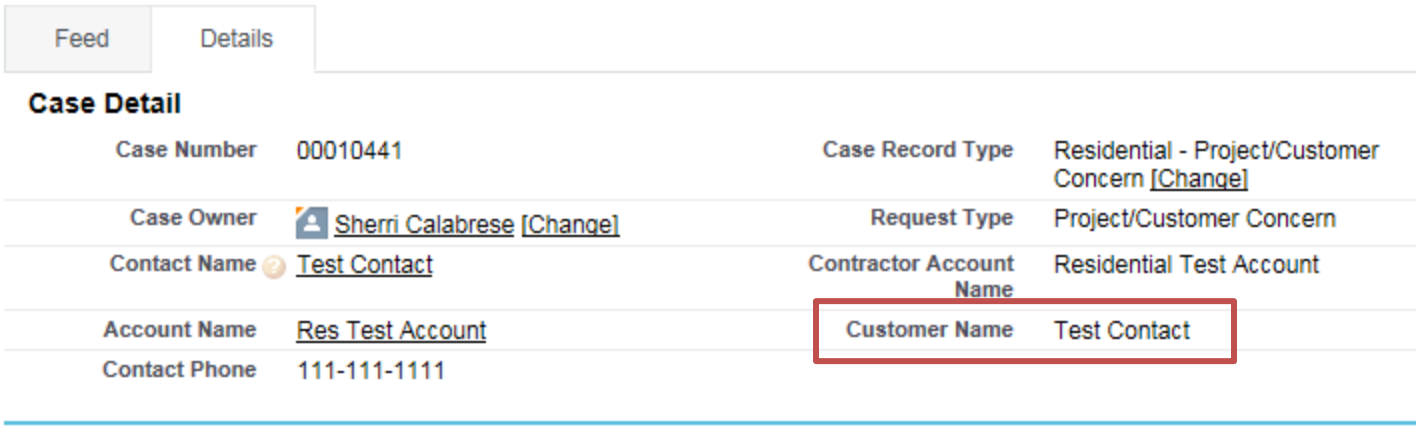
9.8 Customer Name

The Customer Name field is a locked field that is populated by the triage team.



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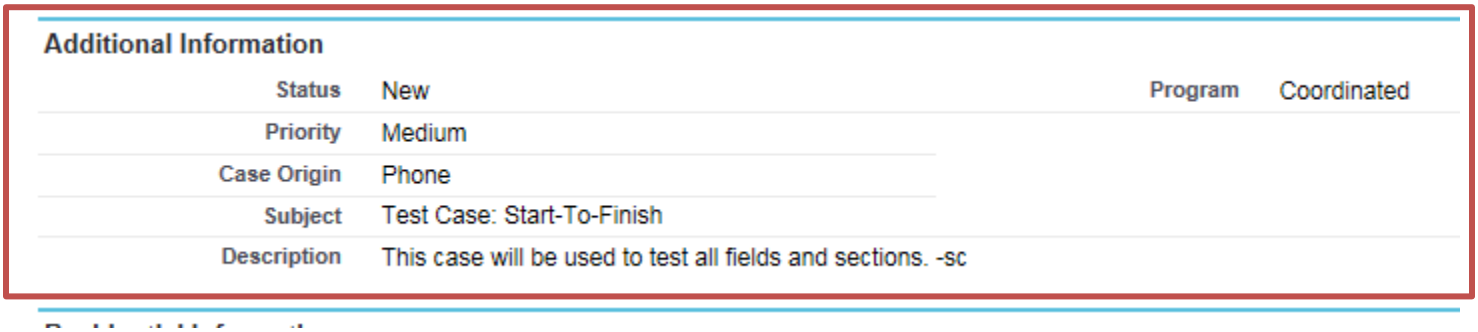
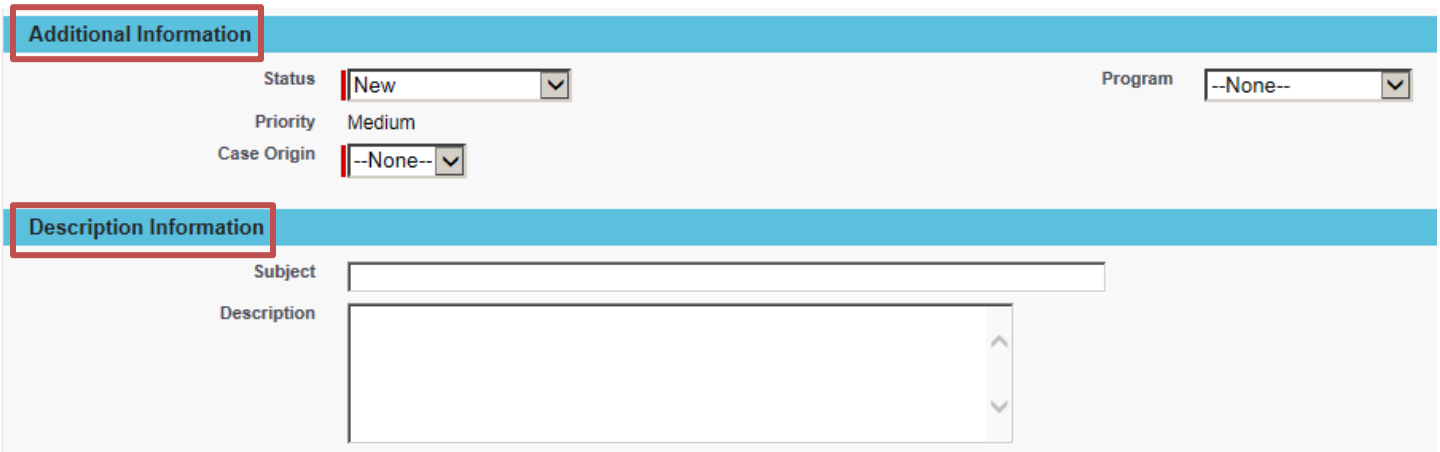
Section 10: Additional Information Case Section

The Additional Information section displays the second set of fields available on the case. These fields are consistent across all Case Record Types. On the Details tab, the Additional Information section includes fields from both the Additional Information and Description Information sections of the case.



On the Case Edit page, Additional Information and Description Information are broken into separate sections.



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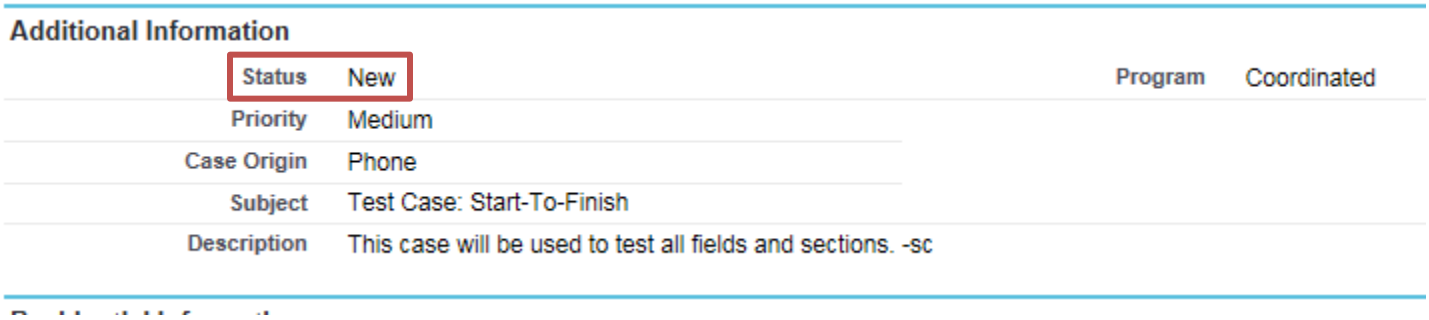
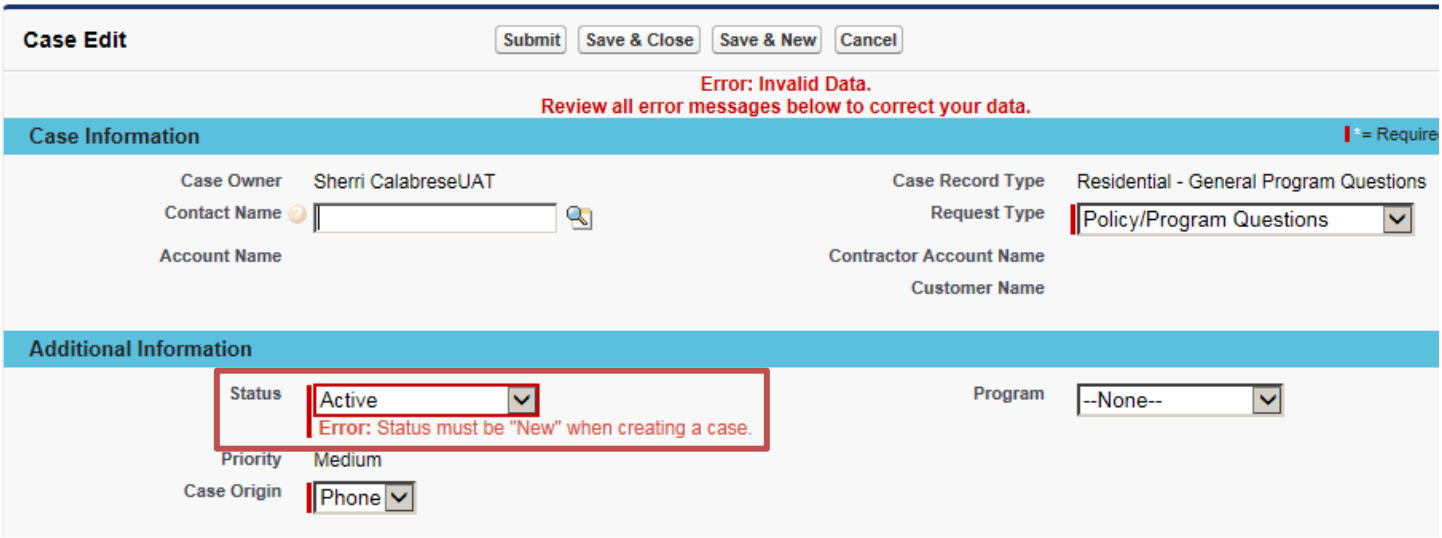
10.1 Status

The Status field refers to the status of the case. All cases default to “new” when they are created.



Note: When creating a case, changing the status to something other than “new” results in an error:



Statuses include the following:

1. **New:** When a case is newly created and no action has yet been taken.
2. **On Hold:** When a case is waiting for answers from other entities (e.g., a case that is waiting a final determination by NYSERDA before it can move forward).
3. **Active:** When a case is actively working toward resolution.
4. **Pending-Customer:** When a case is waiting for the customer to act (e.g., submit additional information, answer questions, etc.).
5. **Pending-Contractor:** When a case is waiting for the participating contractor to act (e.g., submit additional information, answer questions, etc.).
6. **Closed:** When a case has been closed or resolved.

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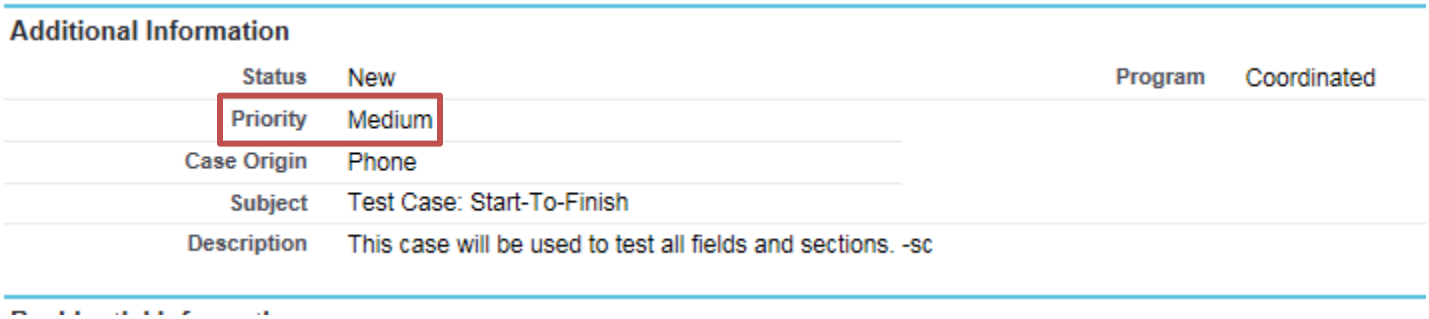
10.2 Priority

The priority level on a case indicates the immediacy of the request. All cases default to “medium” when they are created.



Priorities include the following:

1. **Urgent:** Cases that require immediate action.
2. **High:** Cases that may require more immediate action than routine inquiries but fall outside of the urgent definition.
3. **Medium:** Cases that do not need immediate follow up but require involvement by additional technical staff.
4. **Low:** Cases that do not need immediate follow up, or the case can be easily resolved.

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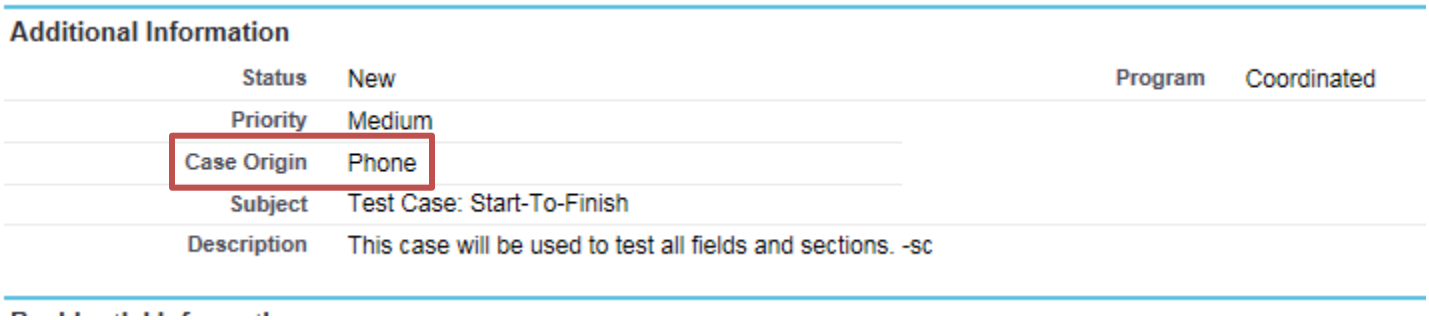
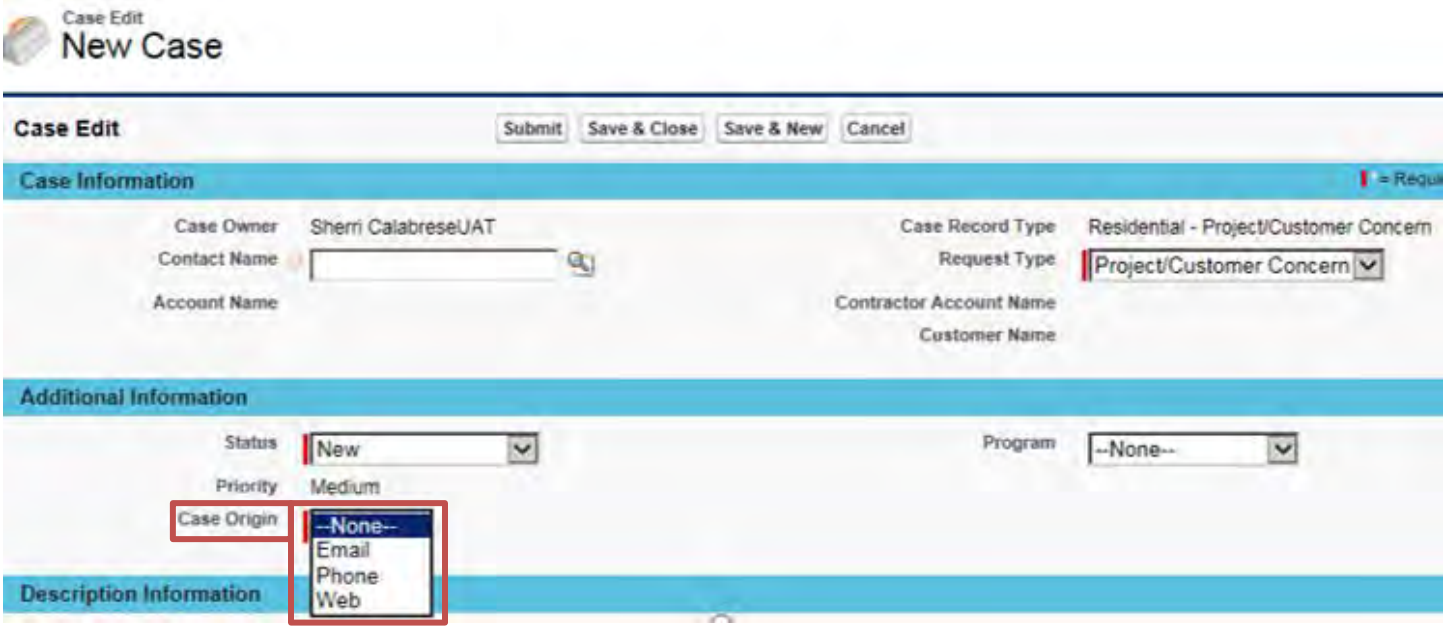
10.3 Case Origin

The Case Origin describes the mechanism used by the requester to submit a case. When a case is created by logging in to the NYSERDA Portal, the Web option should be selected.





Case Origin includes the following:

1. **Email:** Generated by an email submitted to the support.residential@nyserda.ny.gov address.
2. **Phone:** Generation based on a phone call.
3. **Web:** Generated by the participating contractor by logging in to the NYSERDA Portal.

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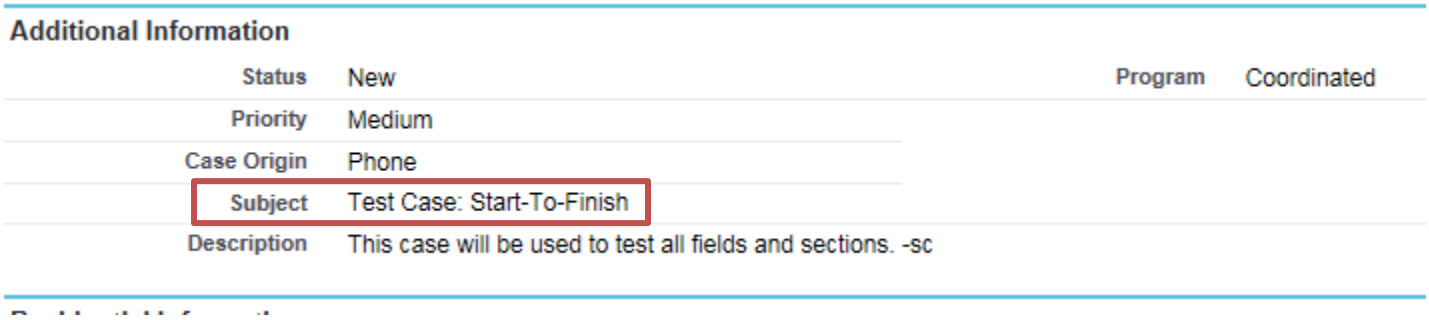
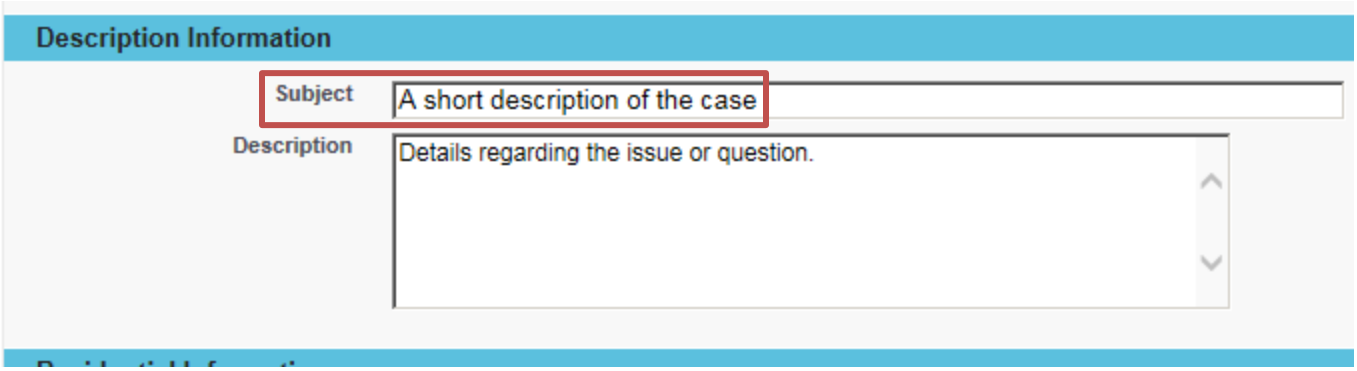
10.4 Subject

The Subject is a brief description of the support request.





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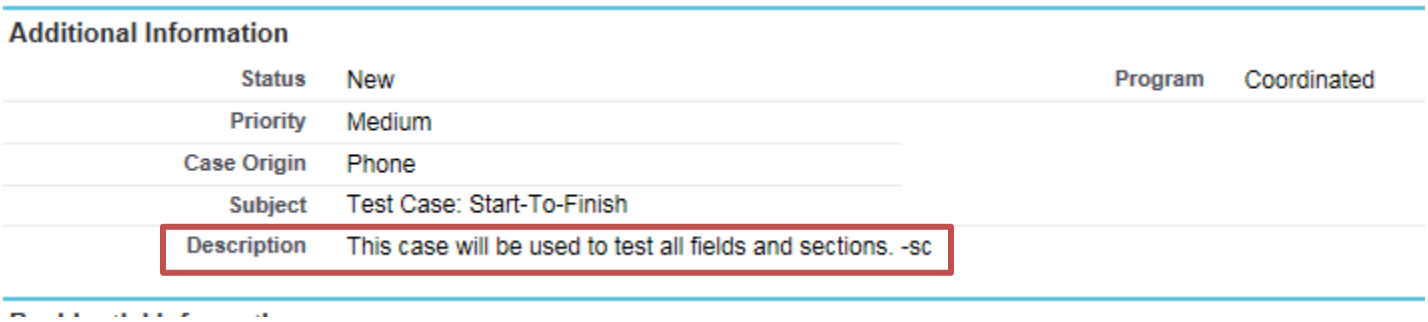
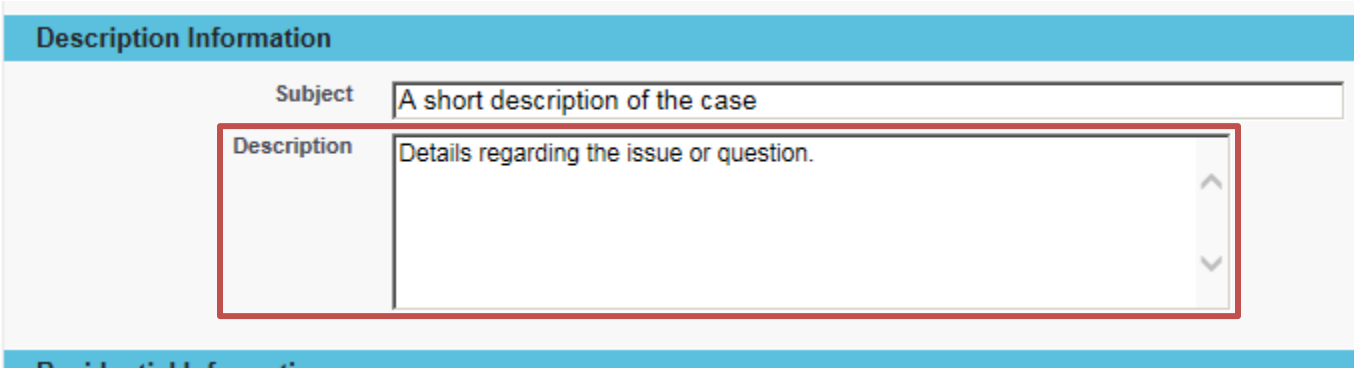
10.5 Description

The Description is a detailed explanation of the assistance needed or concern.





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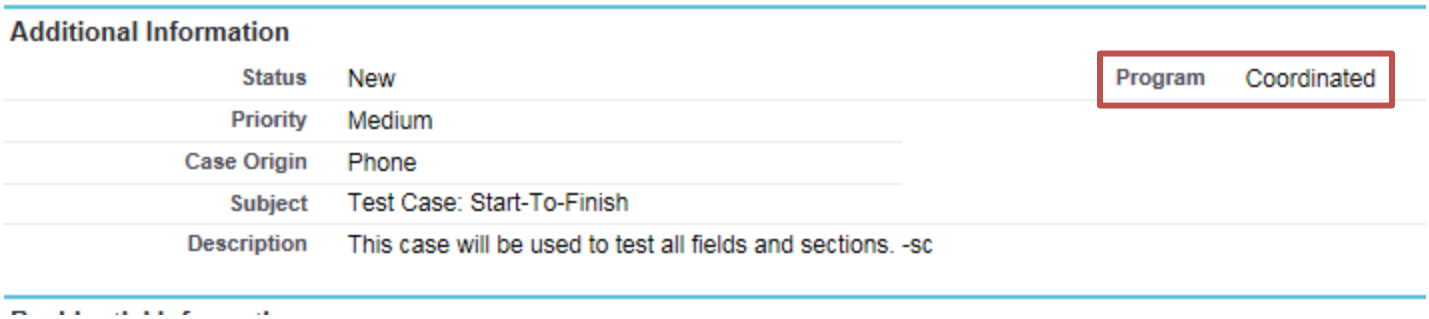
10.6 Program

The Program field identifies the programs related to the case.

Note: If the question/concern is not specific to a program, leave this field set to --None--.



Program Options:

1. **EmPower:** The case is related to the low-income component of the NY Residential Existing Homes Programs – EmPower New York.
2. **AHPwES/HPwES:** The case is related to the moderate-to-higher income components of the NY Residential Existing Homes Programs – Assisted Home Performance with ENERGY STAR and Home Performance with ENERGY STAR.
3. **Coordinated**: The case involves both EmPower and AHPwES programs.
4. **Market Rate:** The project is market rate but may have offered some services through NYSERDA (e.g., low-interest loan).
5. **PSEG:** The case is related to a Public Service Enterprise Group (PSEG) loan-only project.

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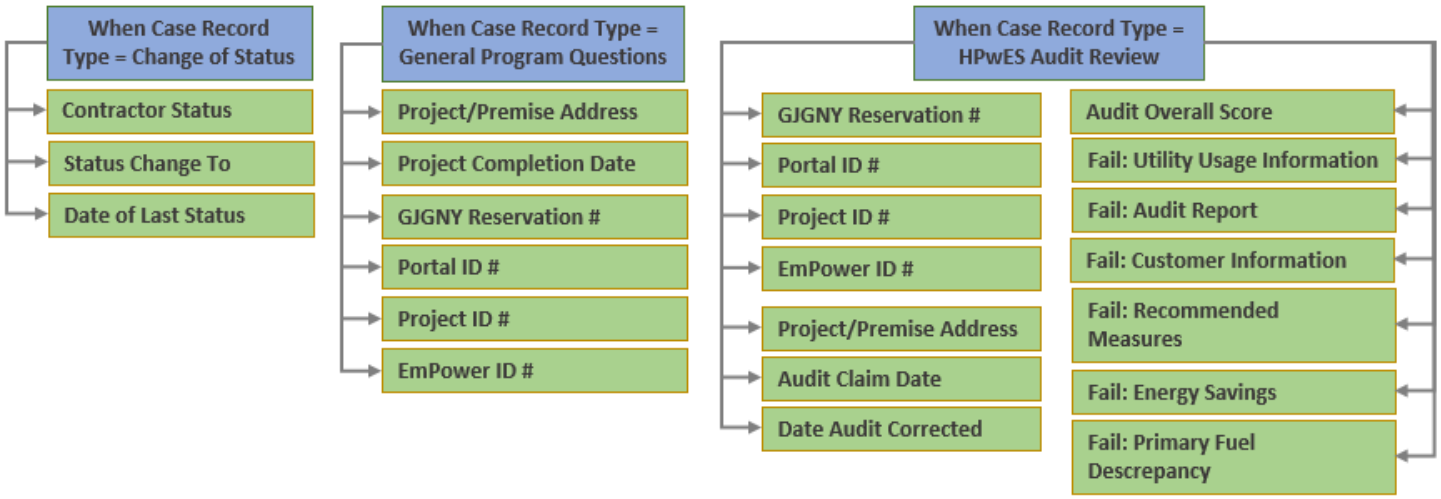
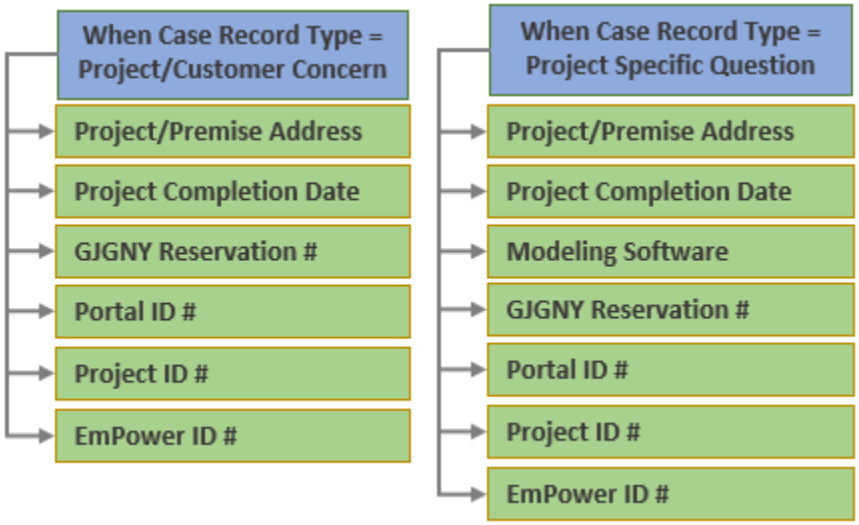
Section 11: Residential Information Case Section

Residential Information is the third section of the case and contains additional fields that are specific to the Case Record Type selected. To understand which fields are available with each Case Record Type, the following charts have been provided. Each chart shows the Case Record Type in blue and its corresponding, available fields in green.

Case Record Type	Case Record Type determines which fields are available in the Residential Information section of the case.
Field	Fields available on the case.





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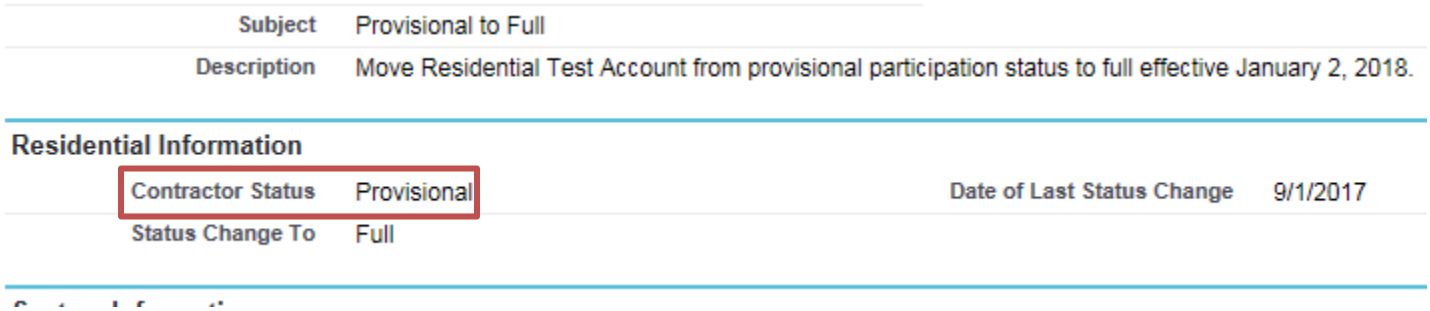
11.1 Fields

11.1.1 Contractor Status

The Contractor Status field indicates the current participation status of the contractor in the program (e.g., provisional, full, etc.).



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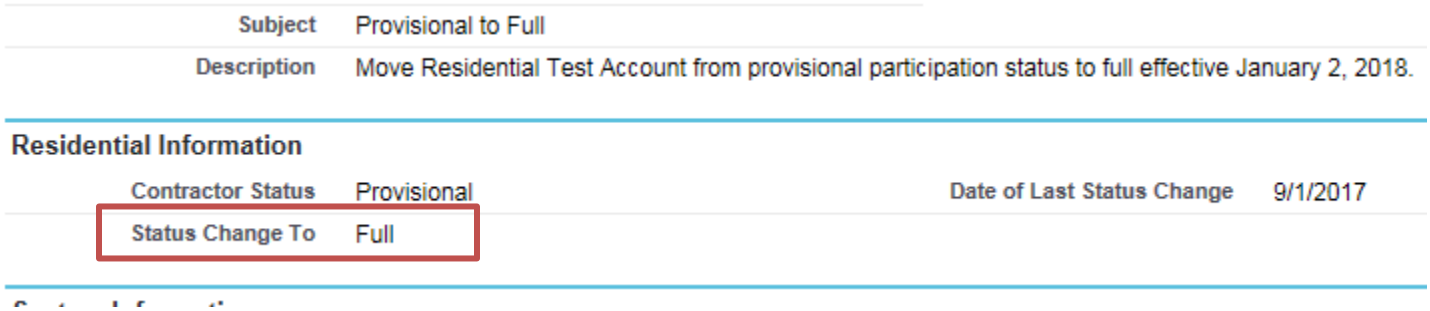
11.1.2 Status Change To Field

The Status Change To field indicates the participation status the contractor is changing to in the program (e.g., provisional, full, etc.).



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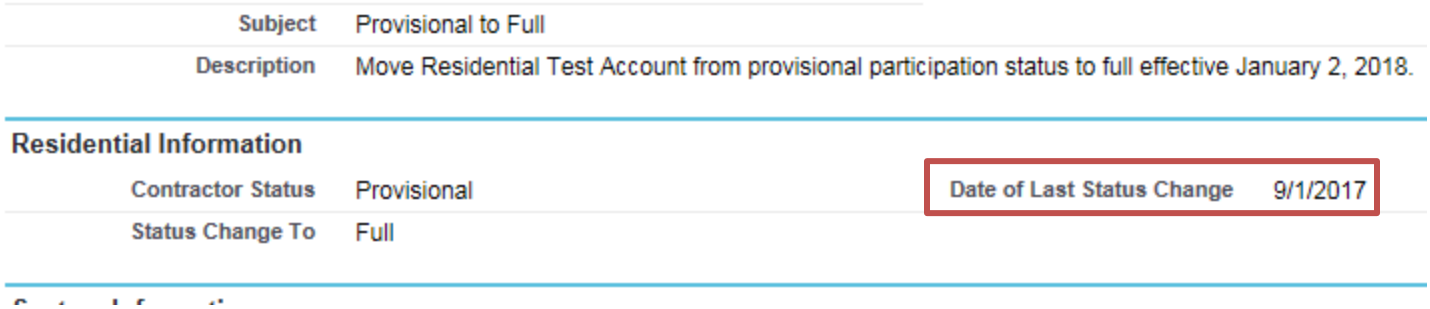
11.1.3 Date of Last Status Change

The Date of Last Status Change field indicates the date the participating contractor achieved the status indicated in the Contractor Status field (current participation status in the program).



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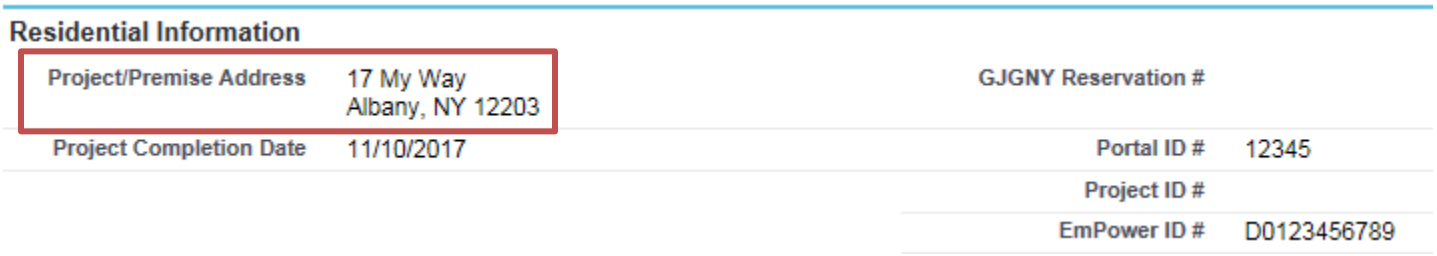
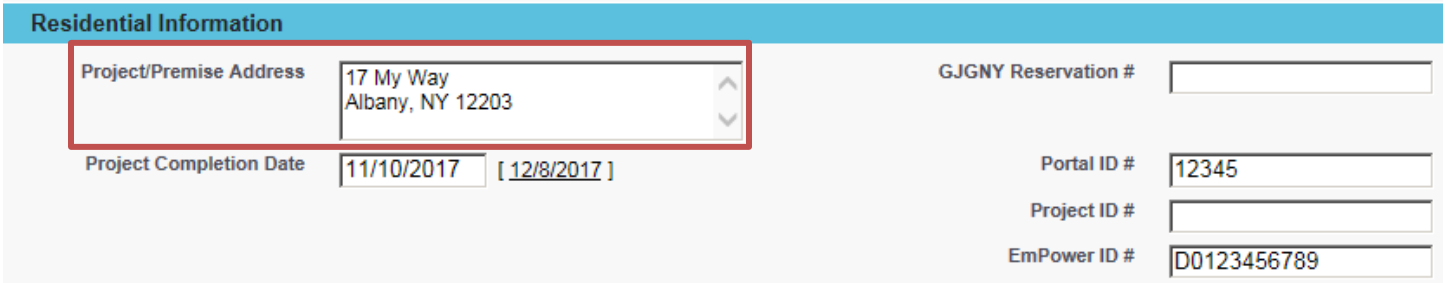
11.1.4 Project/Premise Address

The Project/Premise Address field is used to document the physical location of the project receiving service.





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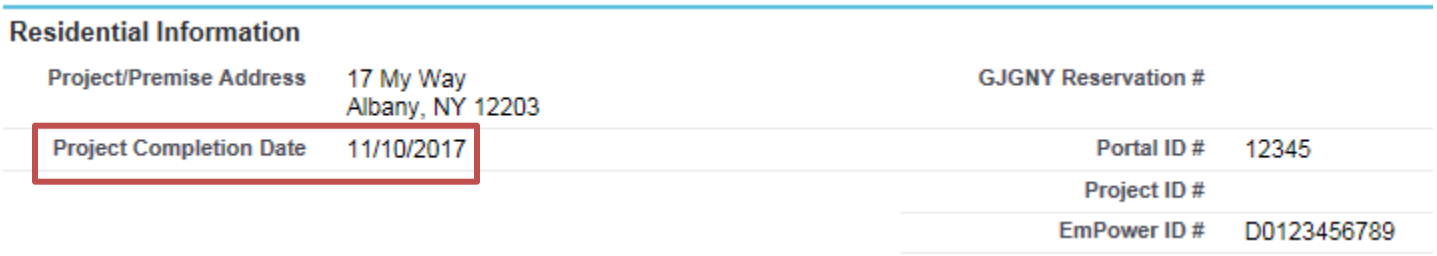
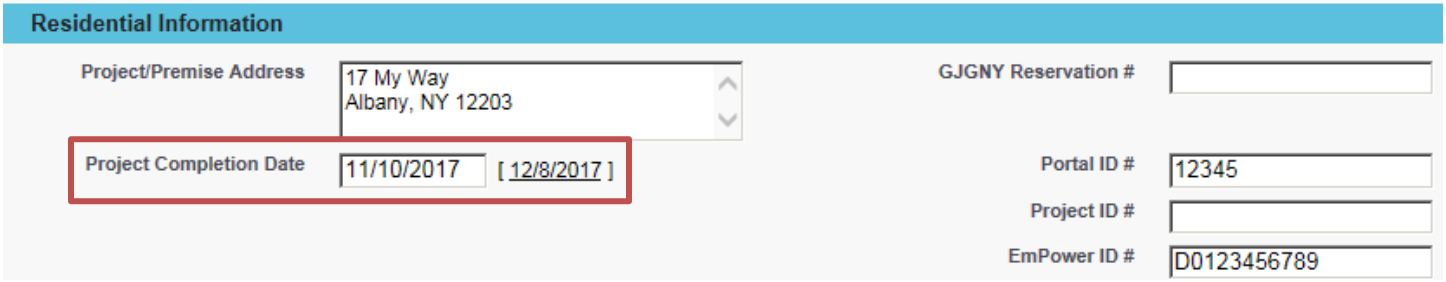
11.1.5 Project Completion Date

The Project Completion Date field documents the day the program received all completion paperwork and the project was closed in the NY HP Portal.





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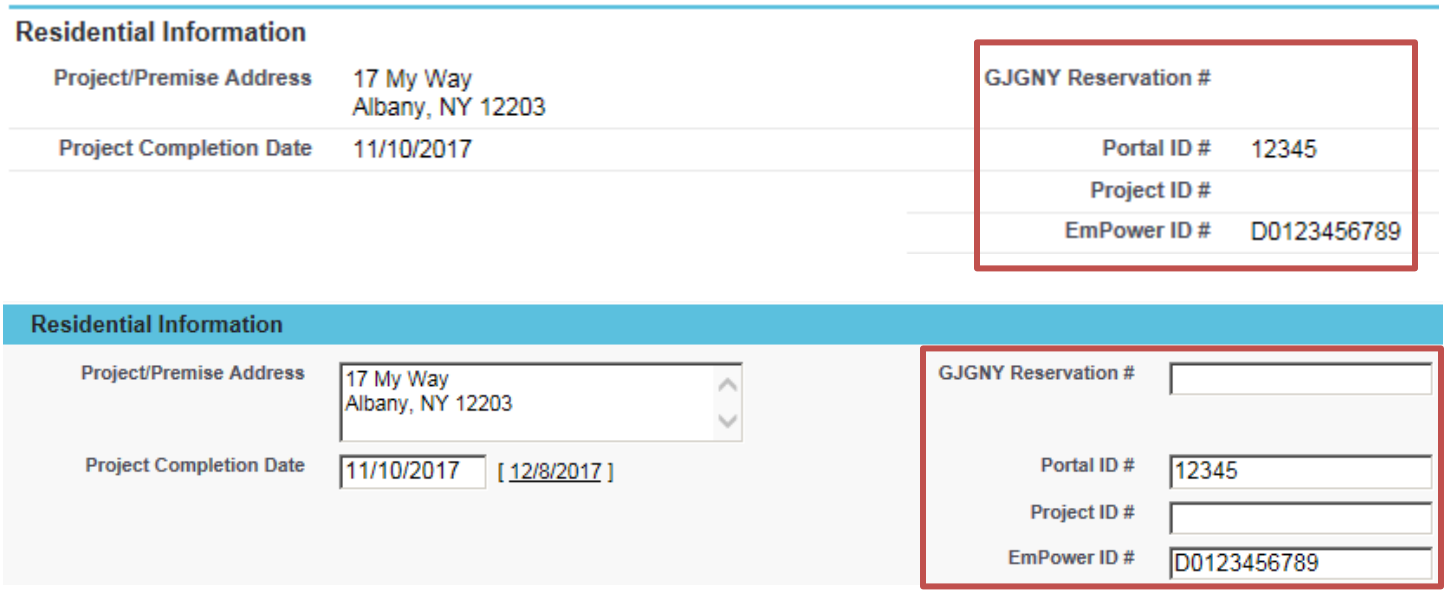
11.1.6 Project ID Number Fields

1. **GJGNY Reservation #:** The unique identifier assigned to a customer when signing up for a free or reduced rate energy audit.
2. **Portal ID #:** The unique identifier assigned to a project when the project is entered in the NY HP Portal.
3. **Project ID #:** The unique identifier assigned to a project when the project was entered into HUB. HUB has been retired so this applies only to older projects. All new projects have a portal ID from the NY HP Portal.
4. **EmPower ID #:** The unique identifier assigned to a project when the project was entered into the legacy EmPower database. The EmPower database is retired so this applies only to older projects. All new projects have a portal ID from the NY HP Portal.



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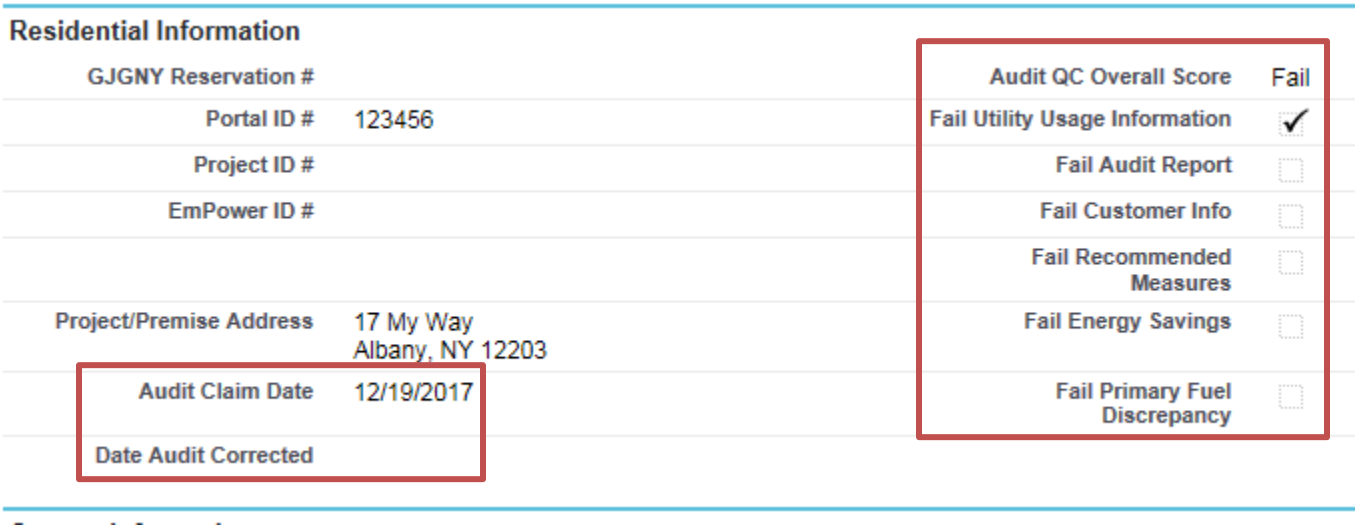
11.1.7 HPwES Audit Correction Fields

1. **Audit Claim Date:** The date the incentive was claimed by the participating contractor.

2. **Date Audit Corrected:** The date the participating contractor corrected the audit issue found during the quality review.
3. **Audit QC Overall Score:** The pass/fail score issued to the project that was evaluated against the program's quality criteria.
4. **Fail: Utility Usage Information:** Indicates that an audit did not pass review against the program's utility usage criteria. When this box is checked, the participating contractor must submit corrected audit documentation to receive the incentive.
5. **Fail: Audit Report:** Indicates that an audit did not pass review against the program's audit report criteria. When this box is checked, the participating contractor must submit corrected audit documentation to receive the incentive.
6. **Fail: Customer Information:** Indicates that an audit did not pass review against the program's customer information criteria. When this box is checked, the participating contractor must submit corrected audit documentation to receive the incentive.
7. **Fail: Recommended Measures:** Indicates that an audit did not pass review against the program's recommended measures criteria. When this box is checked, the participating contractor must submit corrected audit documentation to receive the incentive.
8. **Fail: Energy Savings:** Indicates that an audit did not pass review against the program's energy savings criteria. When this box is checked, the participating contractor must submit corrected audit documentation to receive the incentive.
9. **Fail: Primary Fuel Discrepancy:** Indicates that an audit did not pass review against the program's primary fuel criteria. When this box is checked, the participating contractor must submit corrected audit documentation to receive the incentive.



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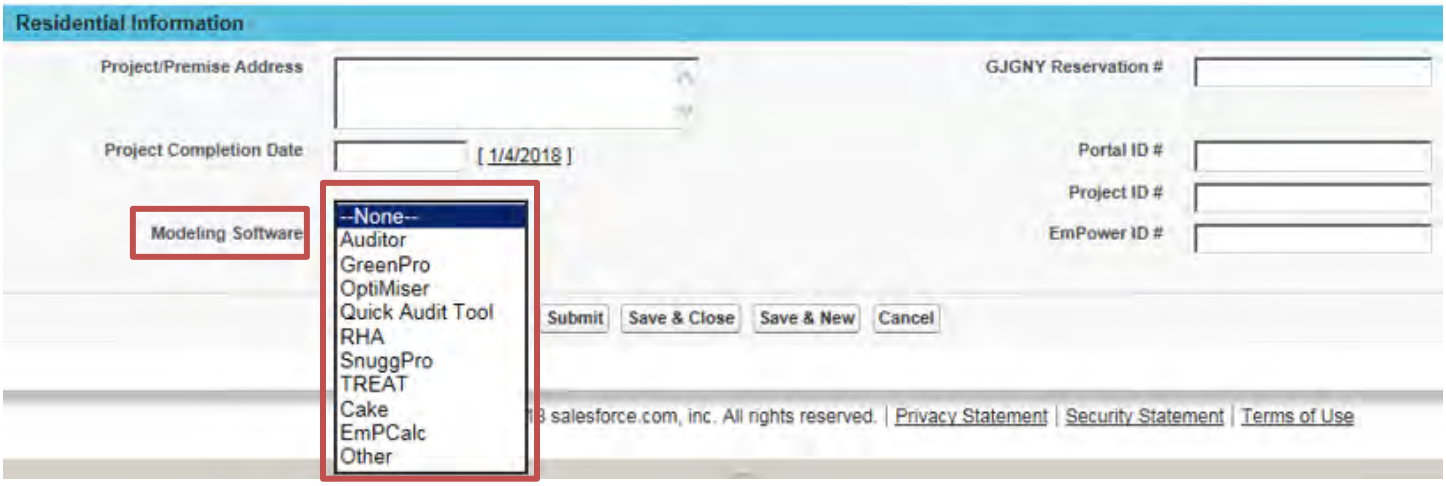
11.1.8 Other Project Specific Fields

1. **Modeling Software**: Documents the software used by the participating contractor to calculate energy savings and savings-to-investment ratios. Options available are Auditor, GreenPro, OptiMiser, Quick Audit Tool, RHA, SnuggPro, TREAT, Cake, EmPCalc, and Other.



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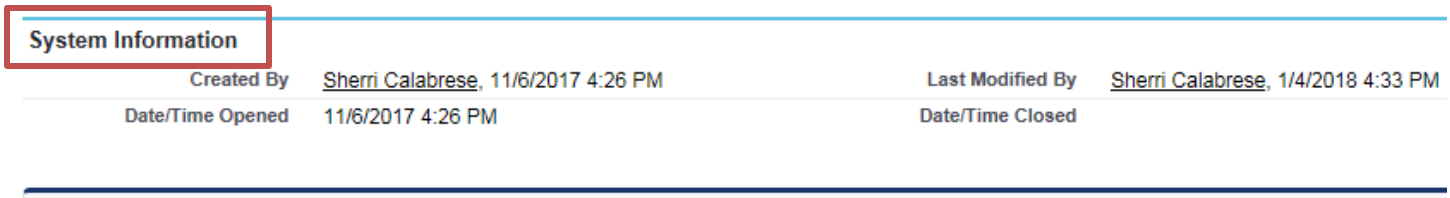
Section 12: System Information Case Section

The System Information section of the case contains basic system-related information regarding the case, including who created or modified the case and when.



1. **Created By:** Documents who created the case including a date and time stamp of when the case was created.
2. **Date/Time Opened:** Documents the date and time the case was created.
3. **Last Modified By:** Documents who last modified the case and includes a date and time stamp of when the edit occurred.
4. **Date/Time Closed:** Documents the date and time the case was closed or resolved.

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Section 13: Attachments

Attaching documents to cases can be accomplished in two ways: (1) in the Attachments section of a case on the Details tab and (2) from the Feed tab.

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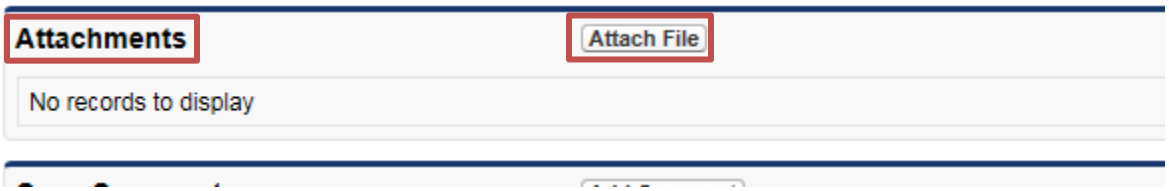
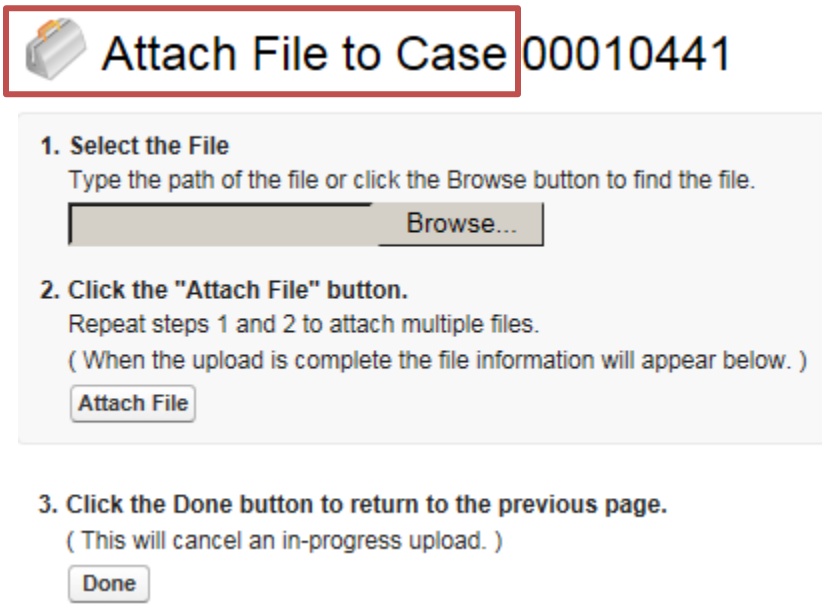
13.1 Attaching Documents in the Attachments Section

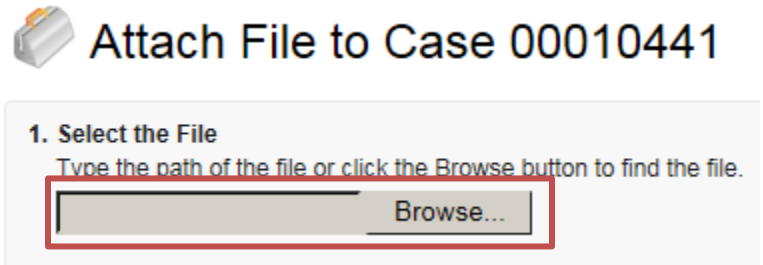
To attach documents to the case from the Attachments section, click the Attach File button in the Attachments section.

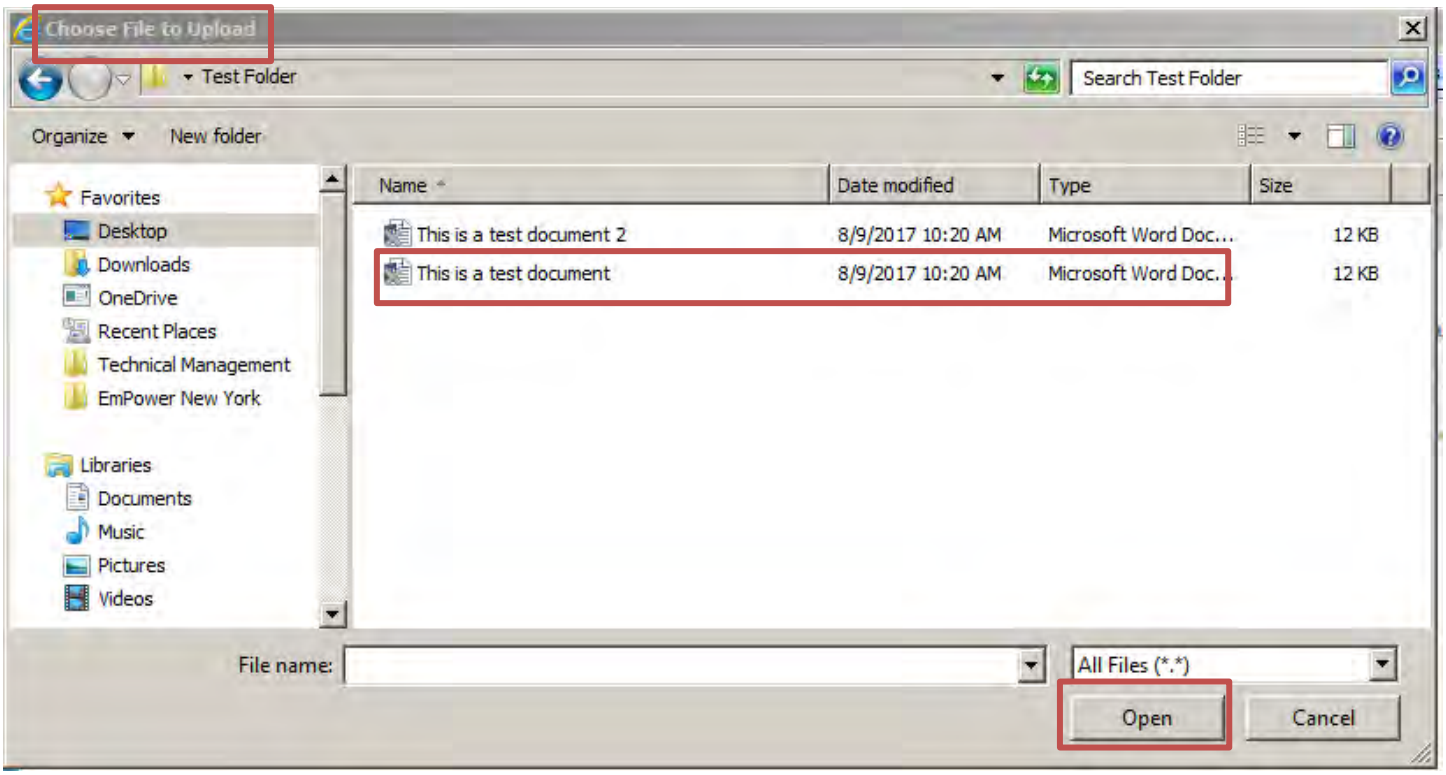


Clicking the Attach File button opens the Attach File to Case page. Attaching a file to the case is a three-step process: locate the file to be attached, attach the file, and return to the case.



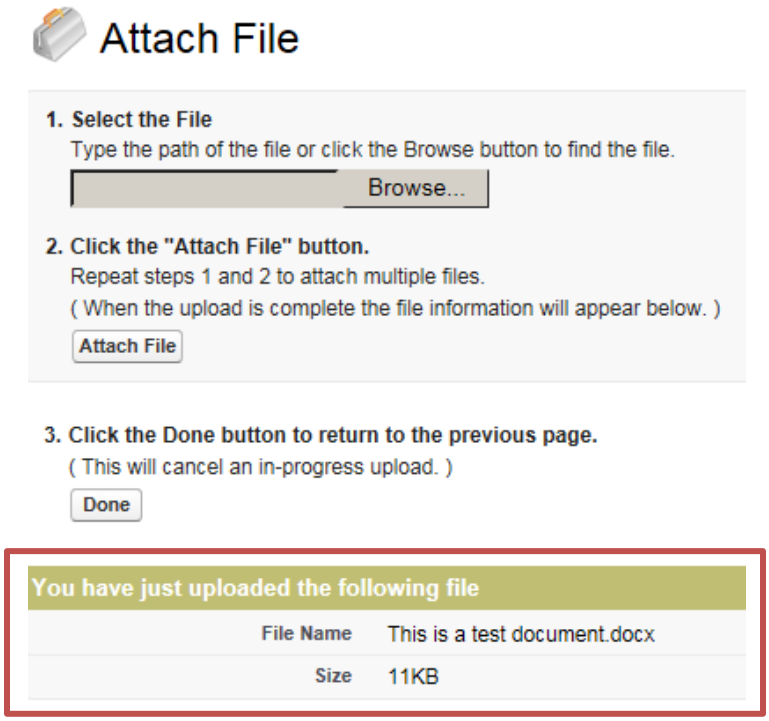
1. To locate the file to be attached to the case, click the Browse… button, which opens the file manager. Navigate to the file, select, and click the open button.



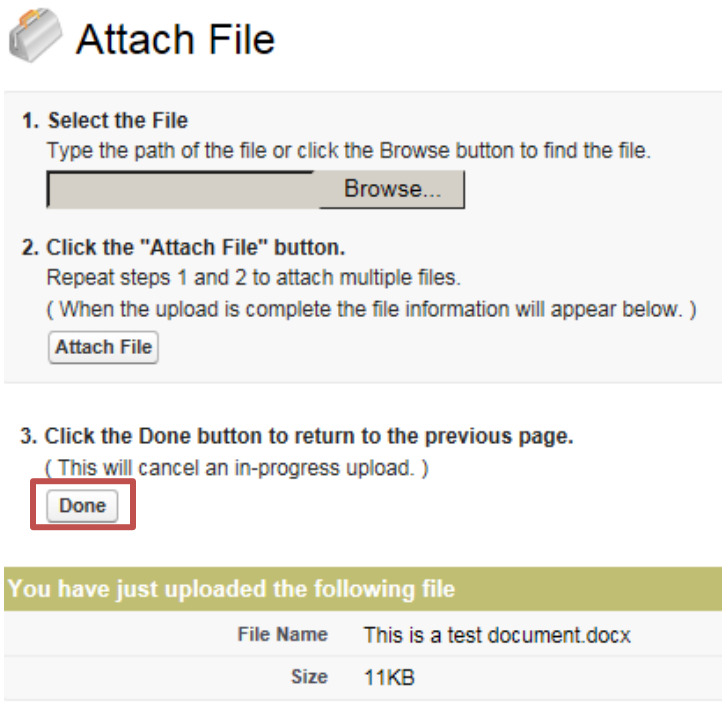


2. Next, click the Attach File button to attach the file selected during step 1.

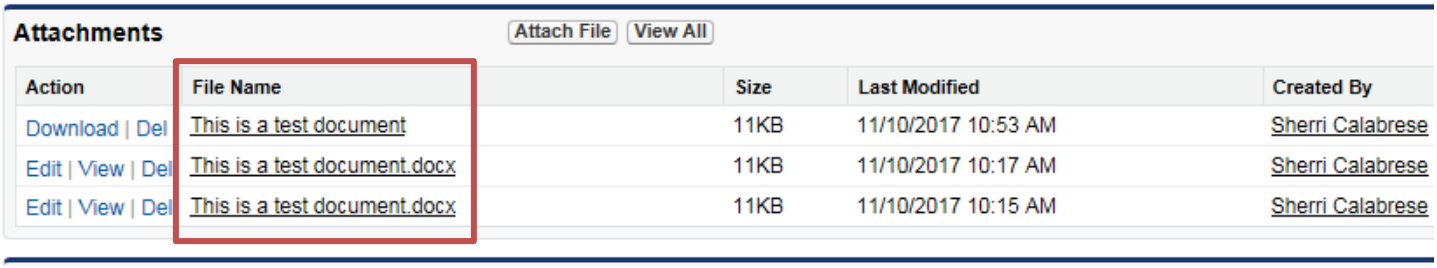
Clicking the Attach File button displays a message confirming the file has been uploaded.



3. After the file has been uploaded, either attach another document by going back to the Browse… button and following the first two steps or selecting the Done button to return to the case.



The uploaded document(s) now appear in the Attachments section.



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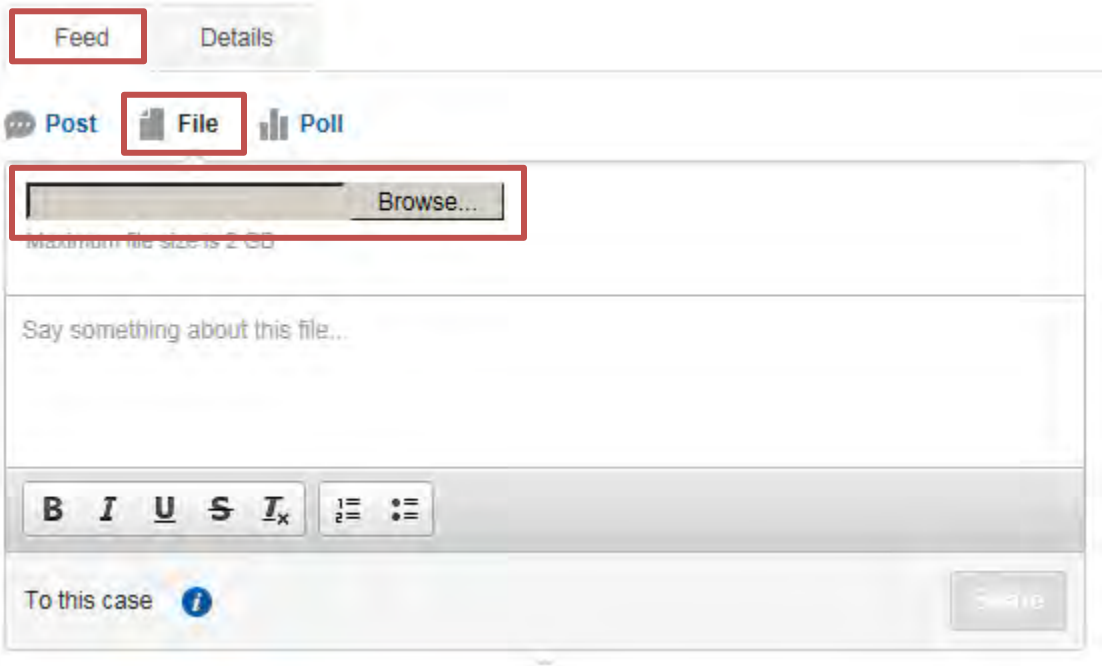
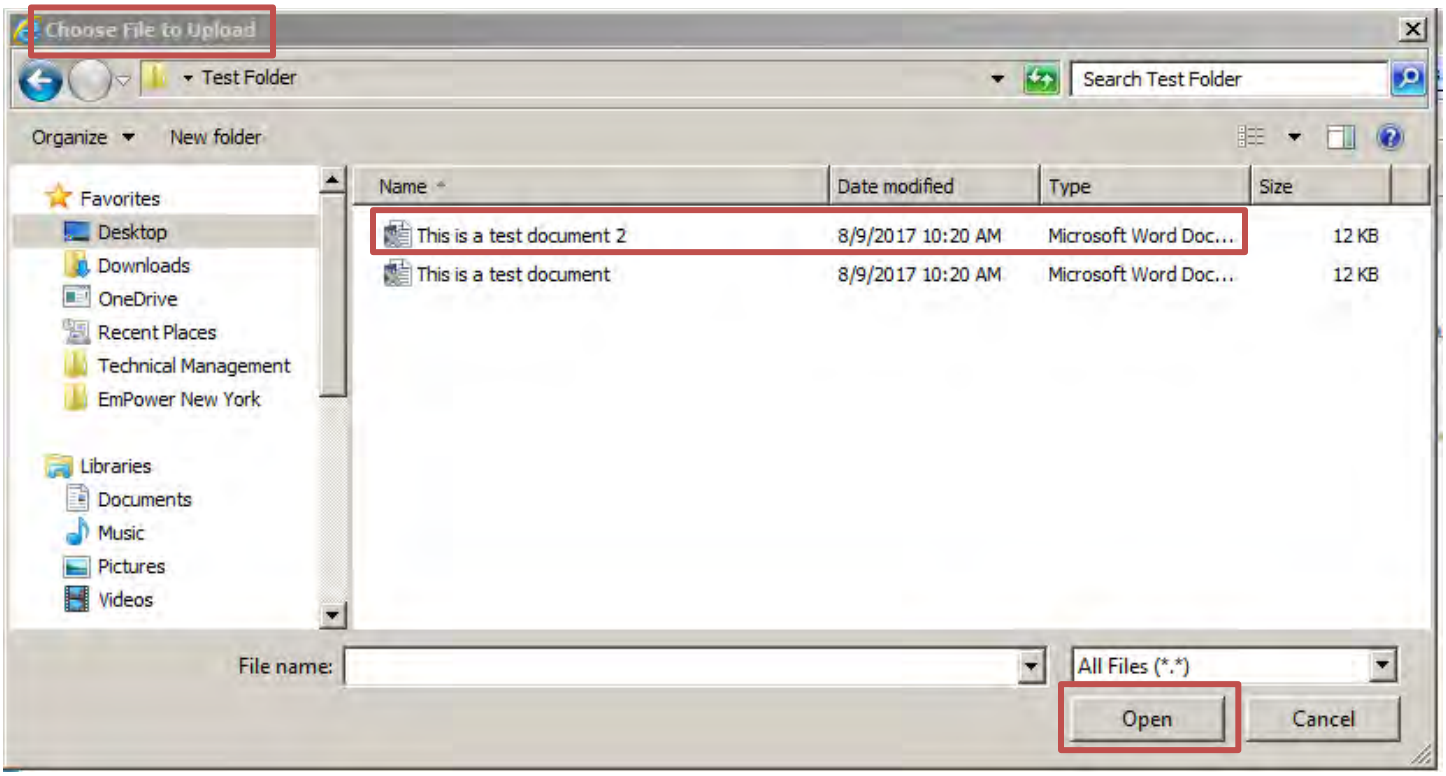
13.2 Attaching Documents in the Feed

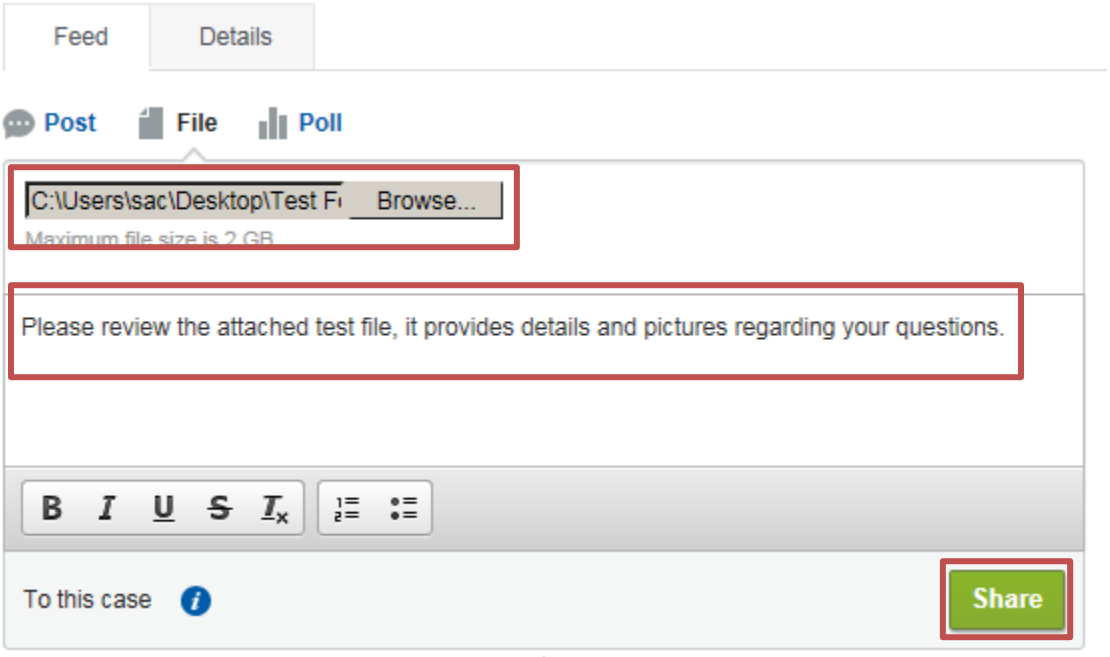
To attachment documents through the feed, click on the Feed tab of a case and then File. Selecting File expands the dialog box to include the Browse… button.



Selecting the Browse… button opens the file manager. Navigate to the file to be attached. Select and click the Open button.



Clicking the Open button adds the file to the feed post. Additional information can be shared with the case in the "Say something about this file..." dialog box. Click the Share button to post to the feed.



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13.3 Opening Attachments

Attachments can be opened either from the Feed or from the Attachments section of the case.

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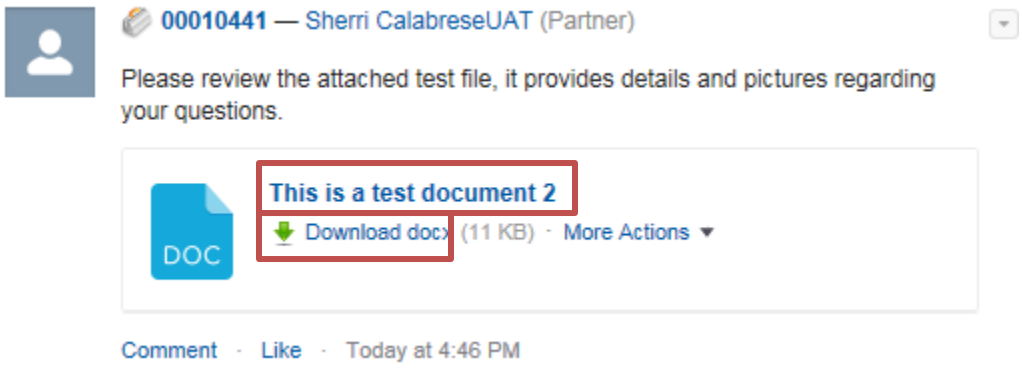
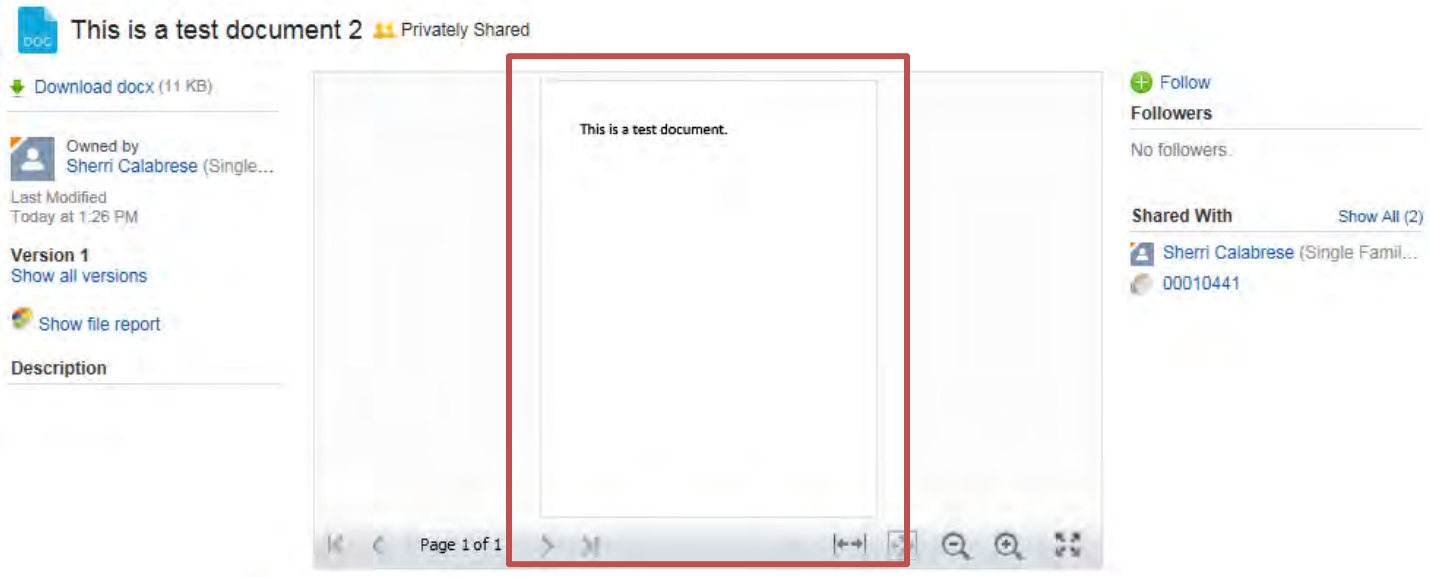
13.3.1 Opening an Attachment from the Feed

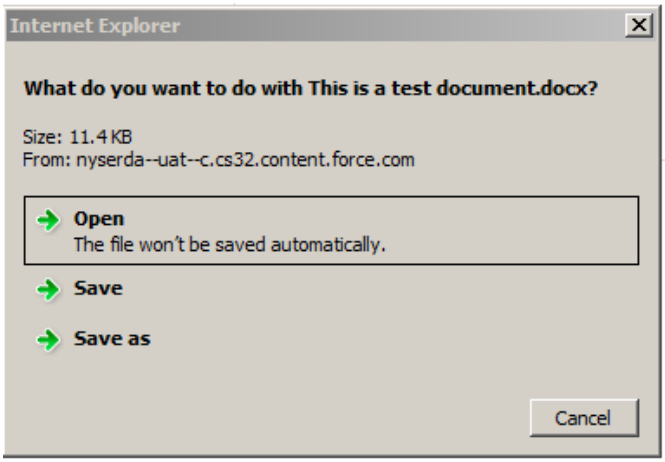
To open an attachment from the feed post, navigate to the appropriate post and either click the file title link or select the Download link.



Clicking the file title link opens the preview page where the user can view the document.



Clicking the Download link opens the options for downloading the file.



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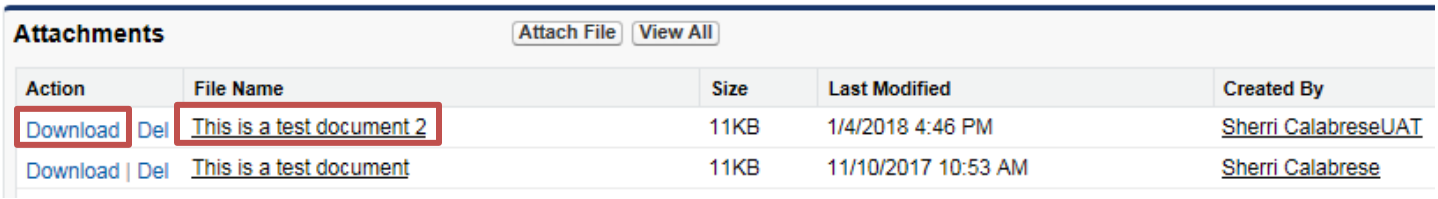
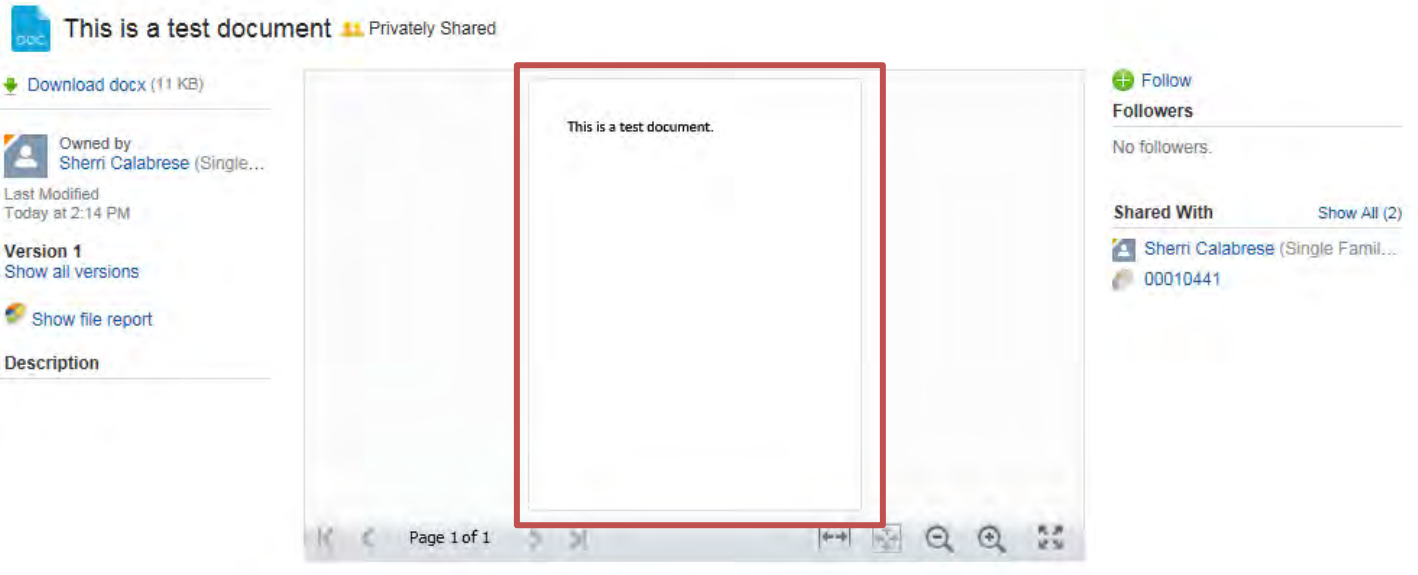
13.3.2 Opening an Attachment from the Attachments Section

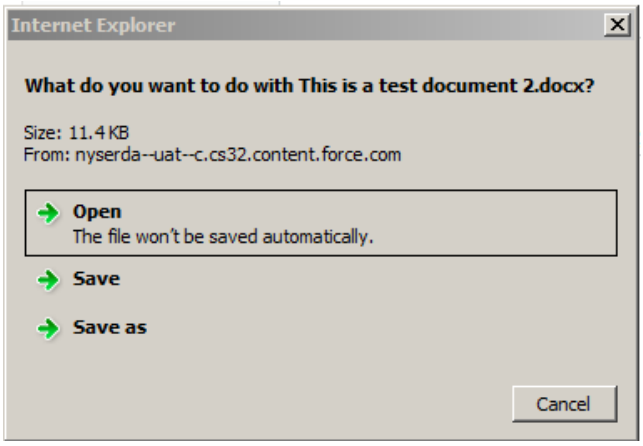
From the Details tab, navigate to the Attachments section. Either click on the File Name link or the Download link.



Clicking the file title link opens the preview page where the user can view the document.



Selecting the Download link opens the download options.



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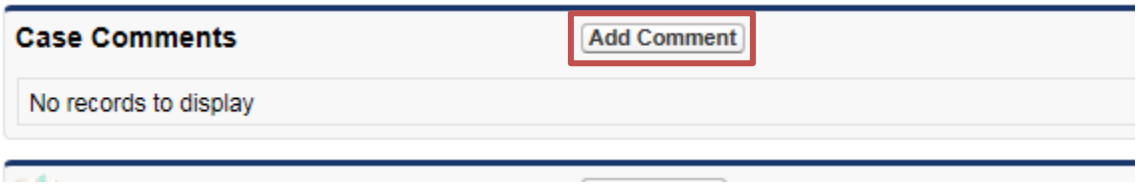
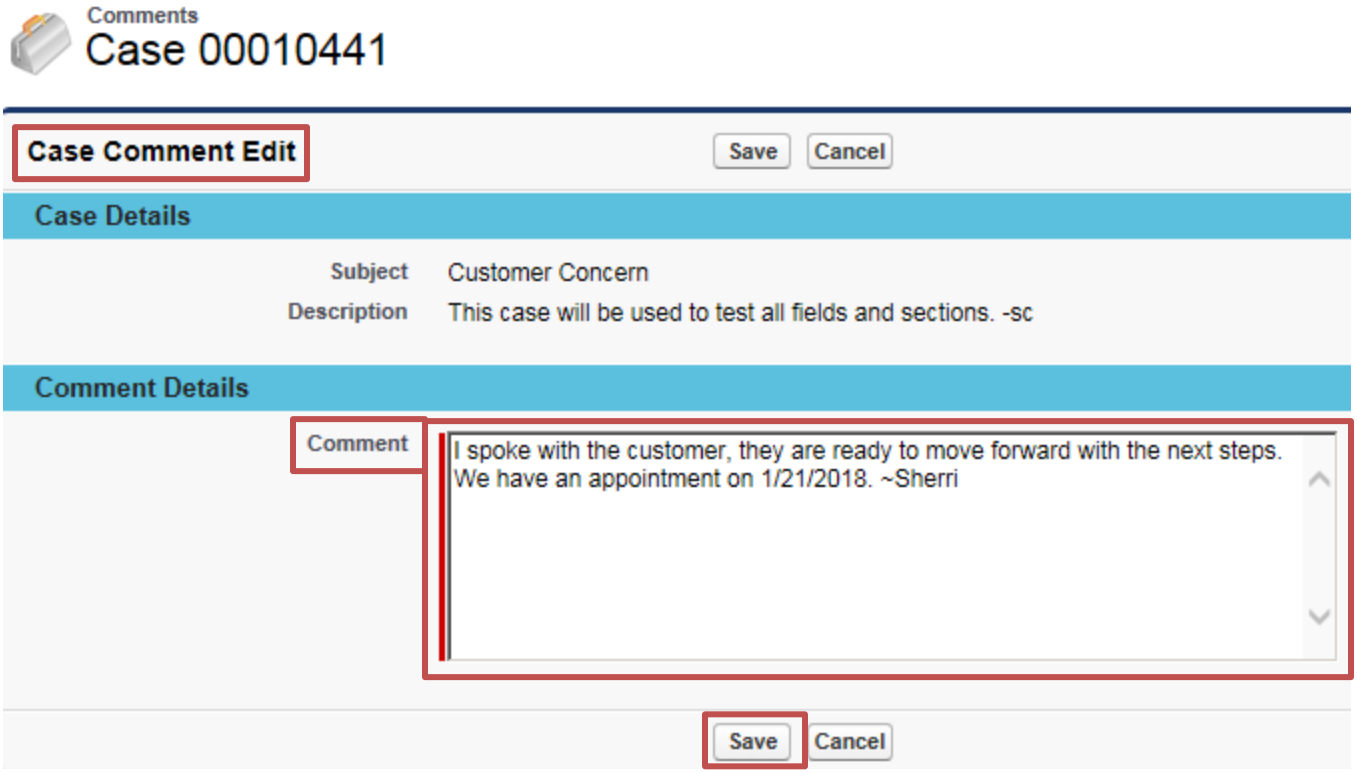
Section 14: Case Comments

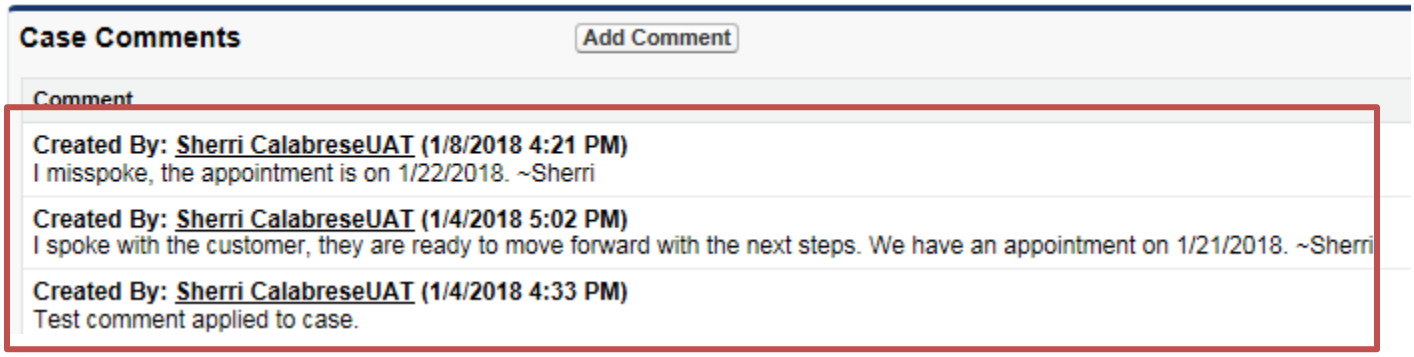
The Case Comments section of the case is an area for posting updates and/or notes related to the case. To post a case comment, navigate to the Case Comments section and click the Add Comment button.



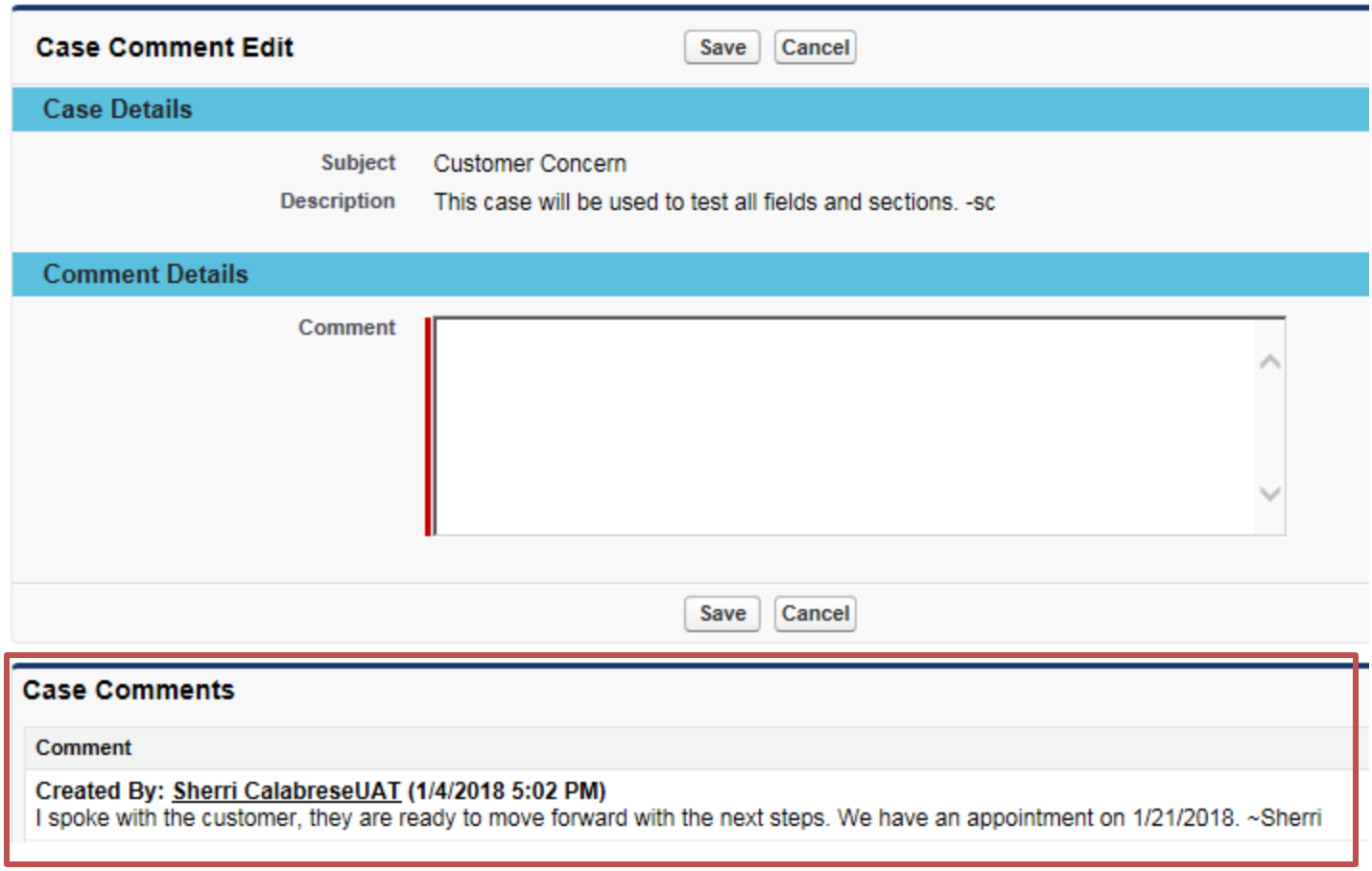
Clicking the Add Comment button opens the Case Comment Edit page. From the Case Comment Edit page, type information into the Comment box. Click Save.



Clicking the Save button posts the comment to the Case Comments section of the case.



Case Comment history appears at the bottom of the Case Comment Edit page for reference when drafting new comments.



Note: Case comments are not editable once they are posted. If a mistake is made, post a new comment with corrected information.

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Section 15: Activities

When there is activity accompanying the case, it is shown in either the Open Activities or the Activity History sections. The Open Activities section displays activities associated with the case that have not yet been completed or responded to and the Activity History section displays the case's activities that have been completed.

Note: If the Open Activities or Activity History sections do not appear on a case, the case does not have any related activities.

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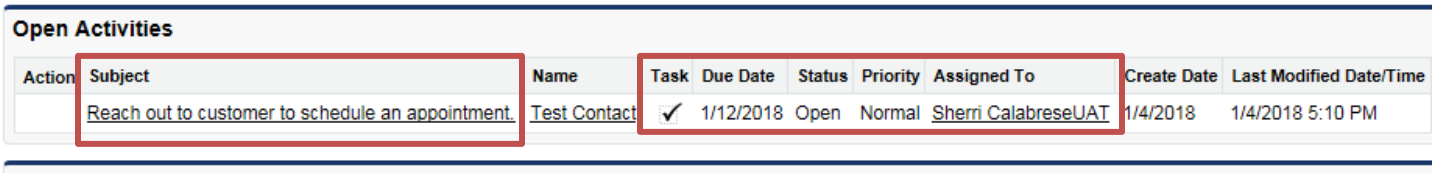
15.1 Tasks

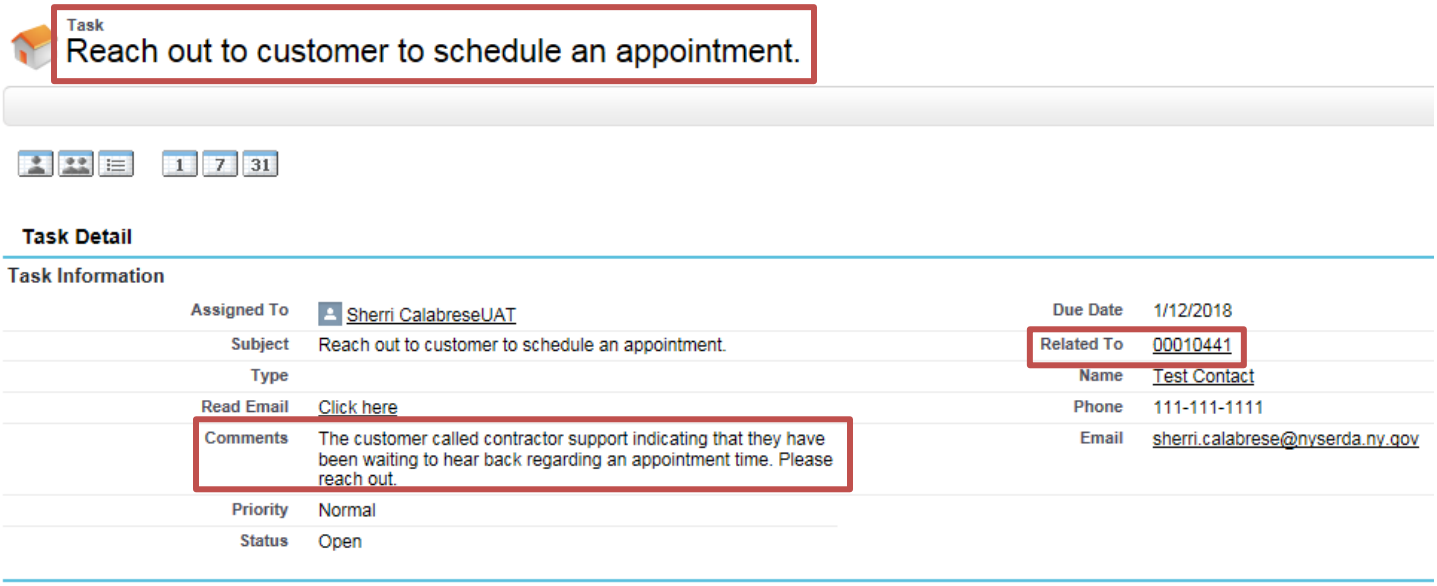
Open tasks on a case are in the Open Activities section. In this example, a task has been assigned to reach out to the customer with a due date of 1/12/18 and was assigned to Sherri CalabreseUAT. Tasks on a case are actions that should be taken. Tasks can be assigned to any user associated with the participating contractor. To see additional details regarding the task, click on the Subject link.



Open Activities

Action	Subject	Name	Task	Due Date	Status	Priority	Assigned To	Create Date	Last Modified Date/Time
	Reach out to customer to schedule an appointment.	Test Contact	✓	1/12/2018	Open	Normal	Sherri CalabreseUAT	1/4/2018	1/4/2018 5:10 PM

Clicking the Subject link opens the Task page to the details associated with the task. To navigate back to the case from the Task page, either click the back button or click on the Related To link.



Task

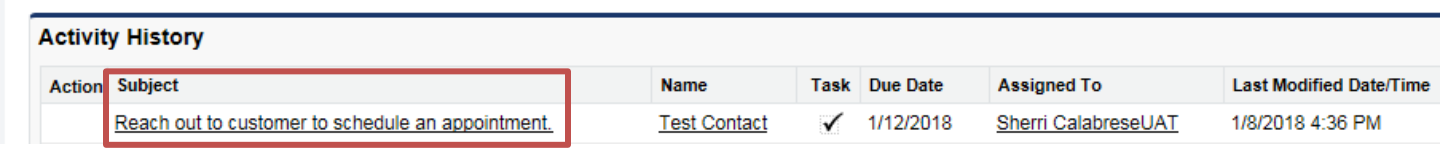
Reach out to customer to schedule an appointment.

Task Detail

Task Information

Assigned To	Sherri CalabreseUAT	Due Date	1/12/2018
Subject	Reach out to customer to schedule an appointment.	Related To	00010441
Type		Name	Test Contact
Read Email	Click here	Phone	111-111-1111
Comments	The customer called contractor support indicating that they have been waiting to hear back regarding an appointment time. Please reach out.	Email	sherri.calabrese@nyserda.ny.gov
Priority	Normal		
Status	Open		

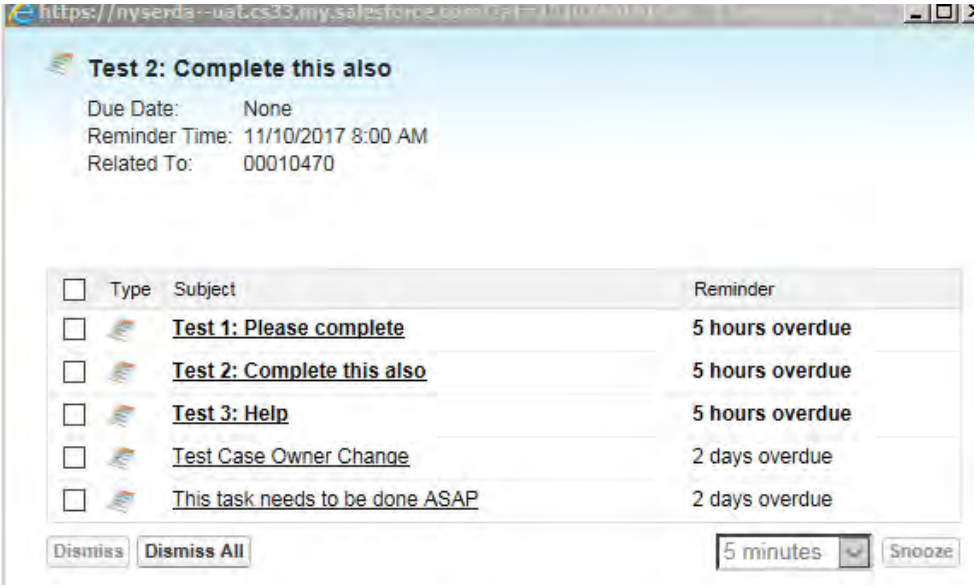
When the task is completed, the user posts an update to the Case Comments (See Section 14: Case Comments) or attaches required documents (See Section 13: Attachments) to the case. The Case Owner receives the update, marks the task as complete if there are no further actions needed, and the task moves to the Activity History section.



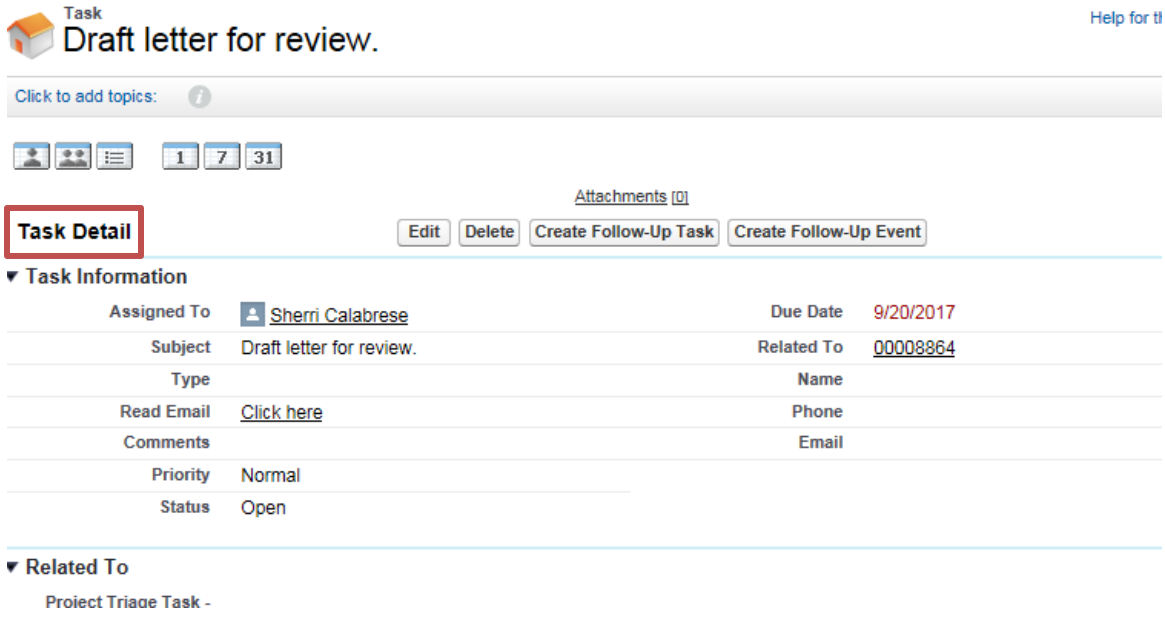
Activity History

Action	Subject	Name	Task	Due Date	Assigned To	Last Modified Date/Time
	Reach out to customer to schedule an appointment.	Test Contact	✓	1/12/2018	Sherri CalabreseUAT	1/8/2018 4:36 PM

When tasks are overdue, the assignee receives a notification in the NYSERDA portal (pop-ups must be enabled).



From the reminder box, select the Subject link to open the Task Detail page.



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Section 16: Knowledge

Knowledge articles are developed by the program over time to help address frequently asked questions. Participating contractors are encouraged to search the Knowledge section prior to submitting a case for answers to their questions. Articles can be accessed directly from the Knowledge tab or via a case in the Articles section.

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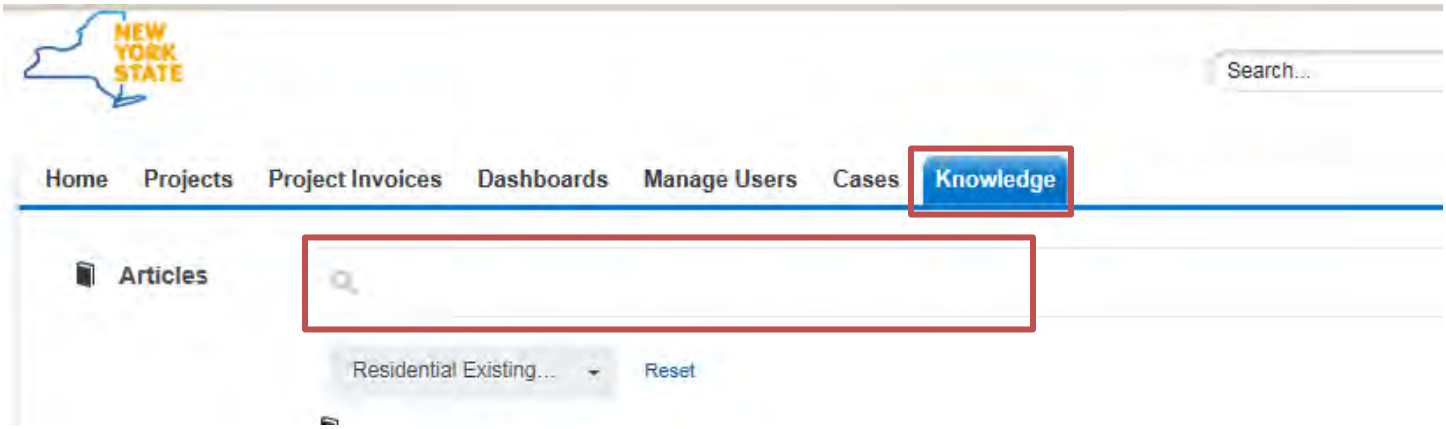
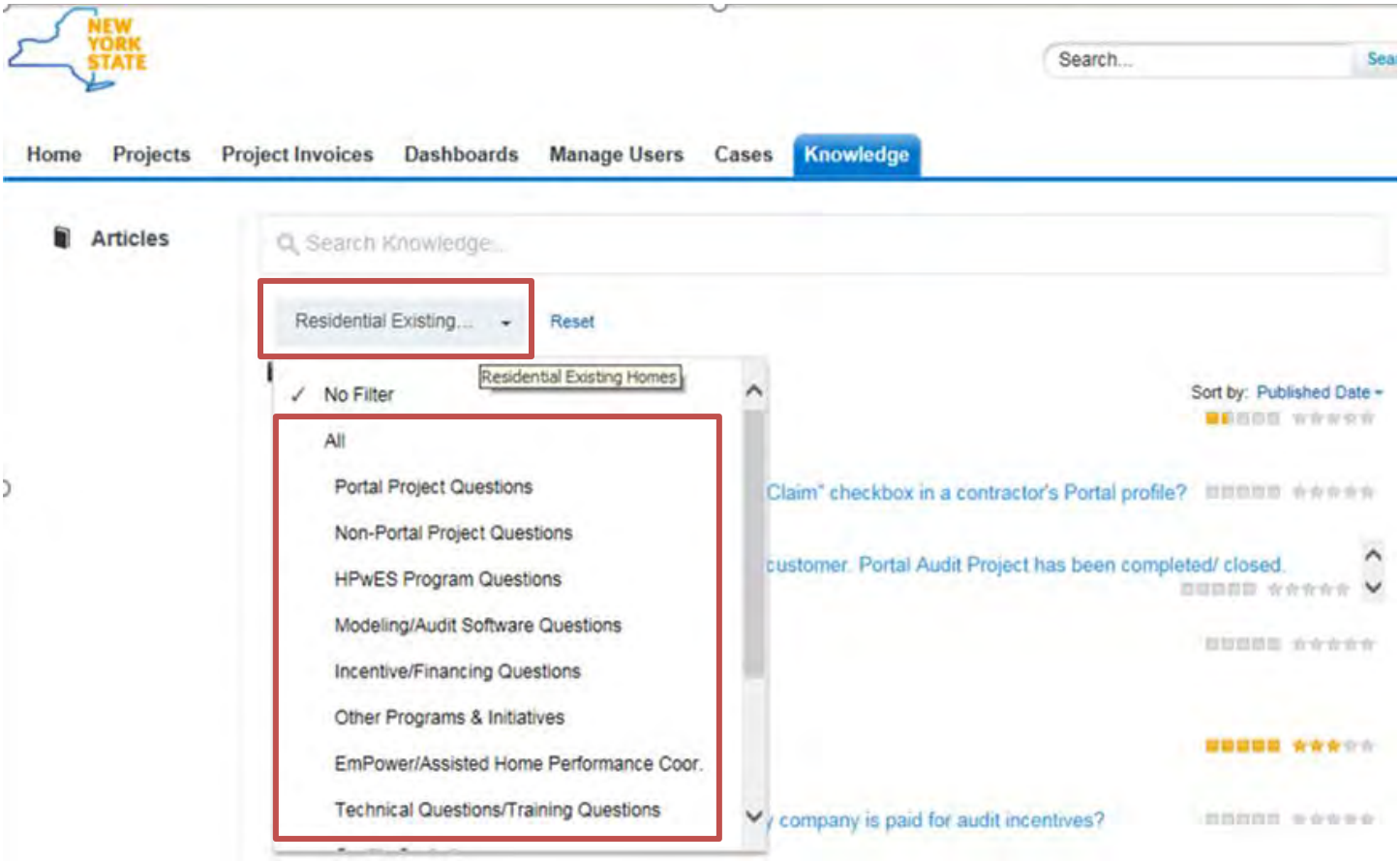
16.1 Searching Articles with the Knowledge Tab

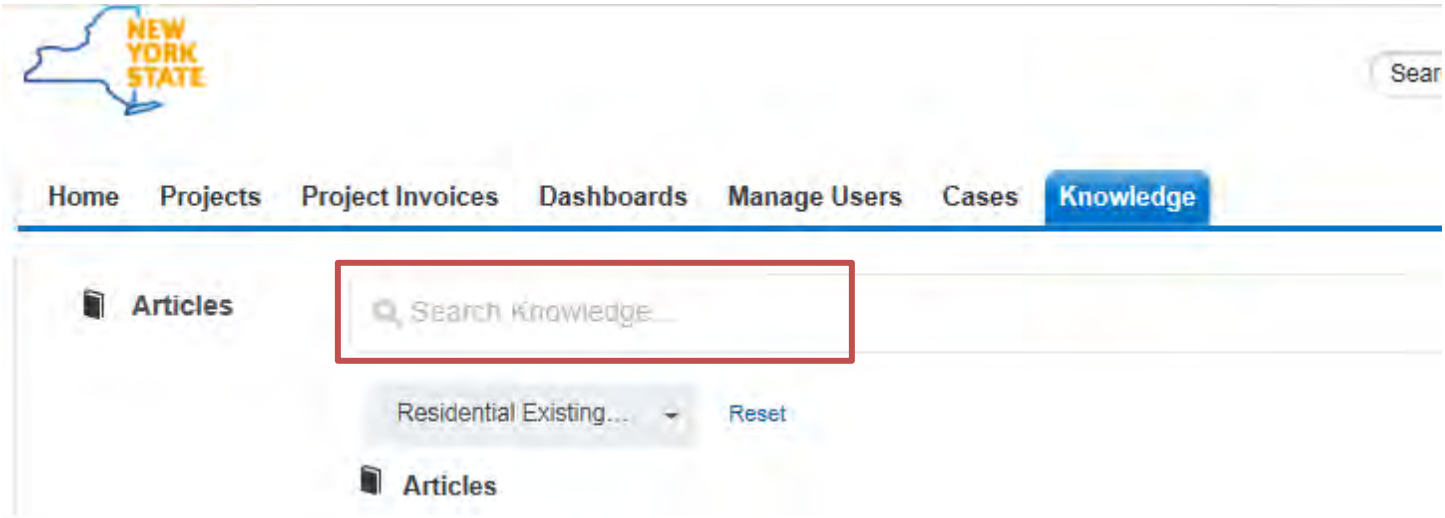
To access the Knowledge articles, click on the Knowledge tab.



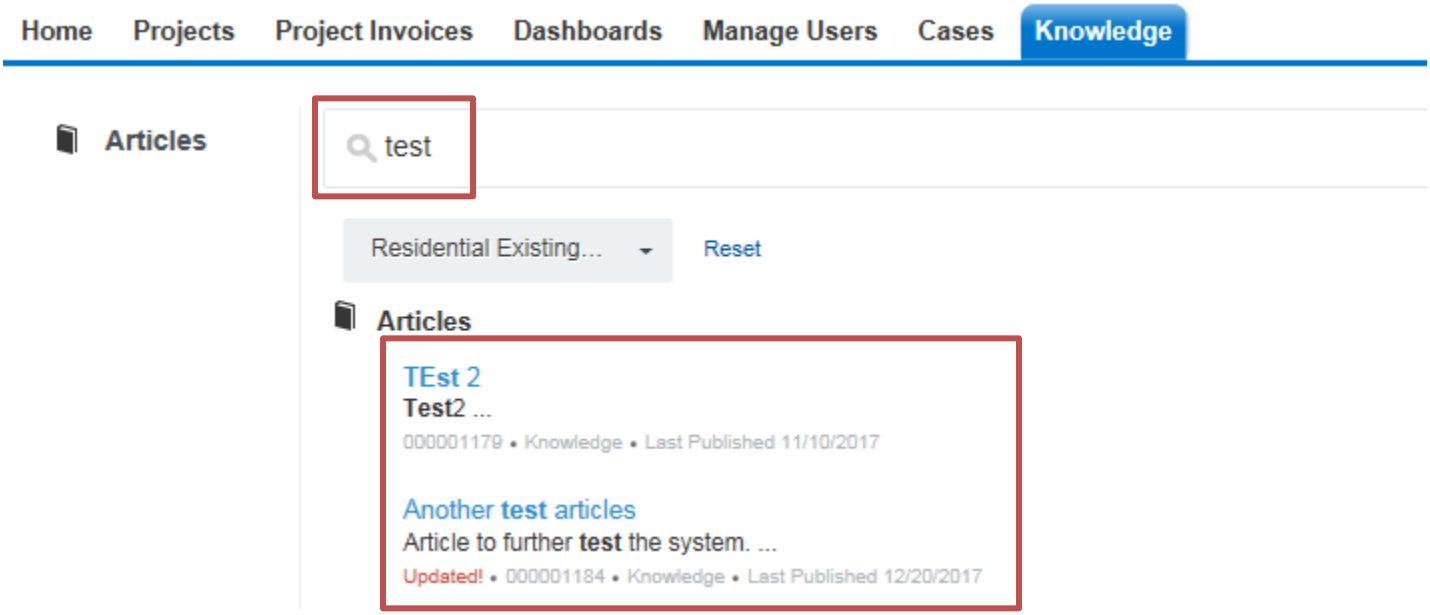
Click on the Residential Existing Homes dropdown box for a menu of topics.



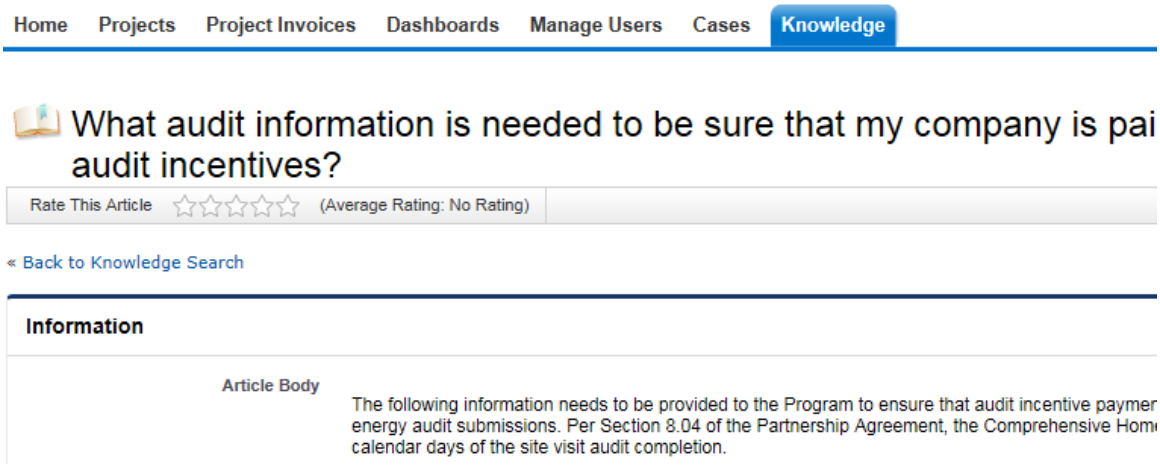
To search for an article, type keywords into the Search box.



In this example, the keyword “test” returned two articles.



Click on the title of the article link to open the document.



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16.2 Searching for and Attaching Articles to Cases

Articles can be searched for within a case, and then attached in the Articles section of the Details tab. To attach an article from the Articles section of the Details tab, click the Find Articles button.

Clicking the Find Articles button opens the Articles page. From the Articles page, type the keyword(s) into the Search box or select a topic from the Residential Existing Homes menu (See Section 16.1 Searching Articles with the Knowledge tab).

To attach the article, select the down arrow button next to the article and select the Attach to Case option. After attaching all applicable articles, click the Back to case link.

The article is now attached to the case.

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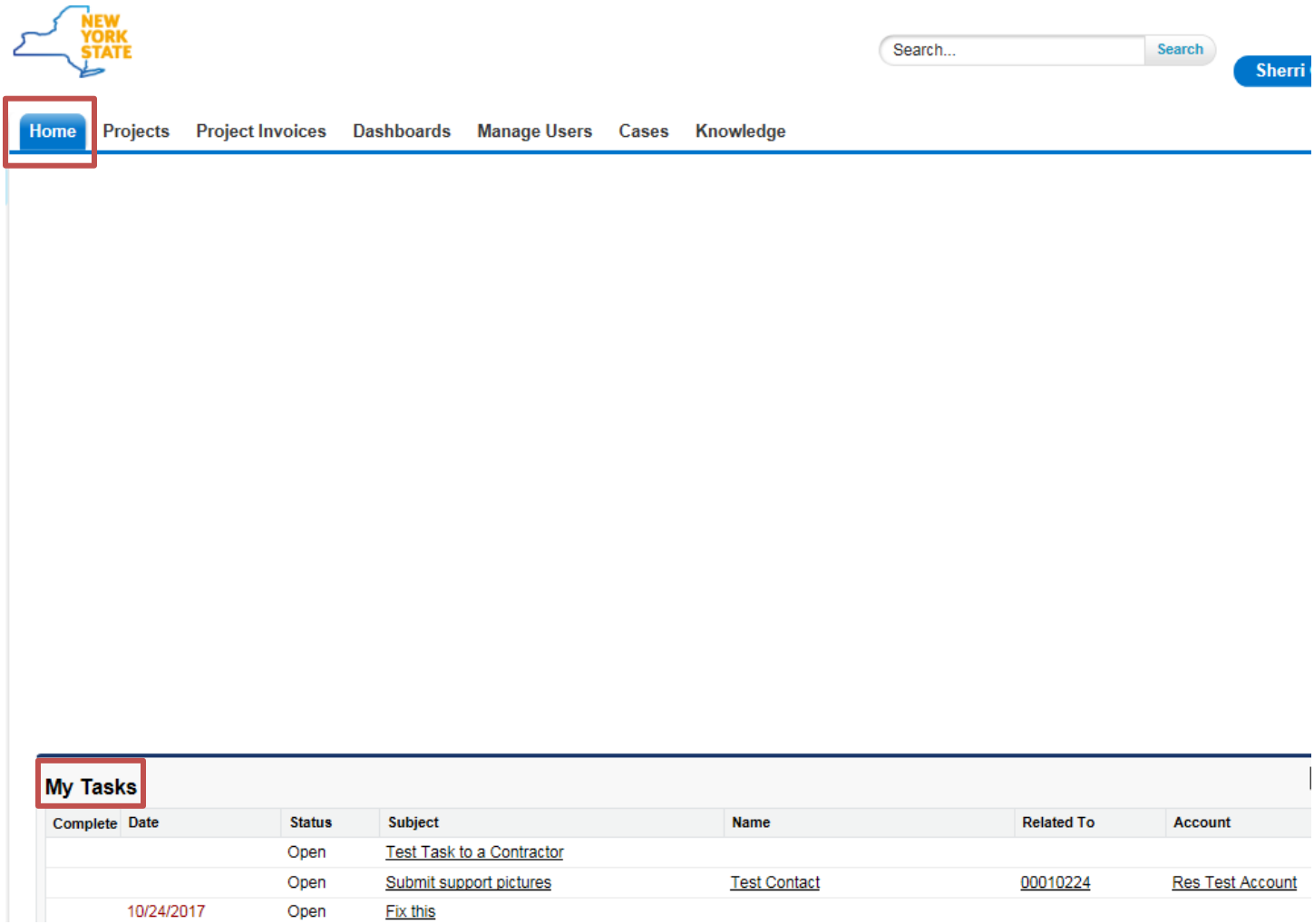
Section 17: Home Tab

The participating contractor's Home page is the first site the user is directed after logging in to the NYSERDA Portal. The My Tasks section is located on that page.



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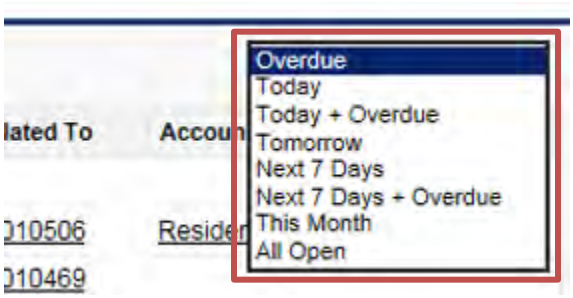
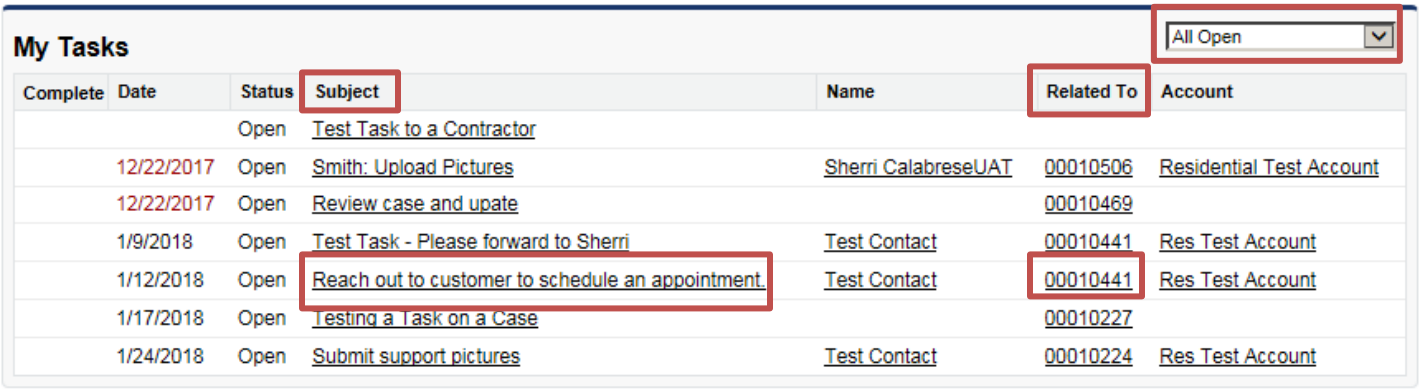
17.1 My Tasks

A full list of open tasks assigned to the user can be viewed from the Home page by scrolling down to the My Tasks section. My Tasks default to tasks that are Overdue.

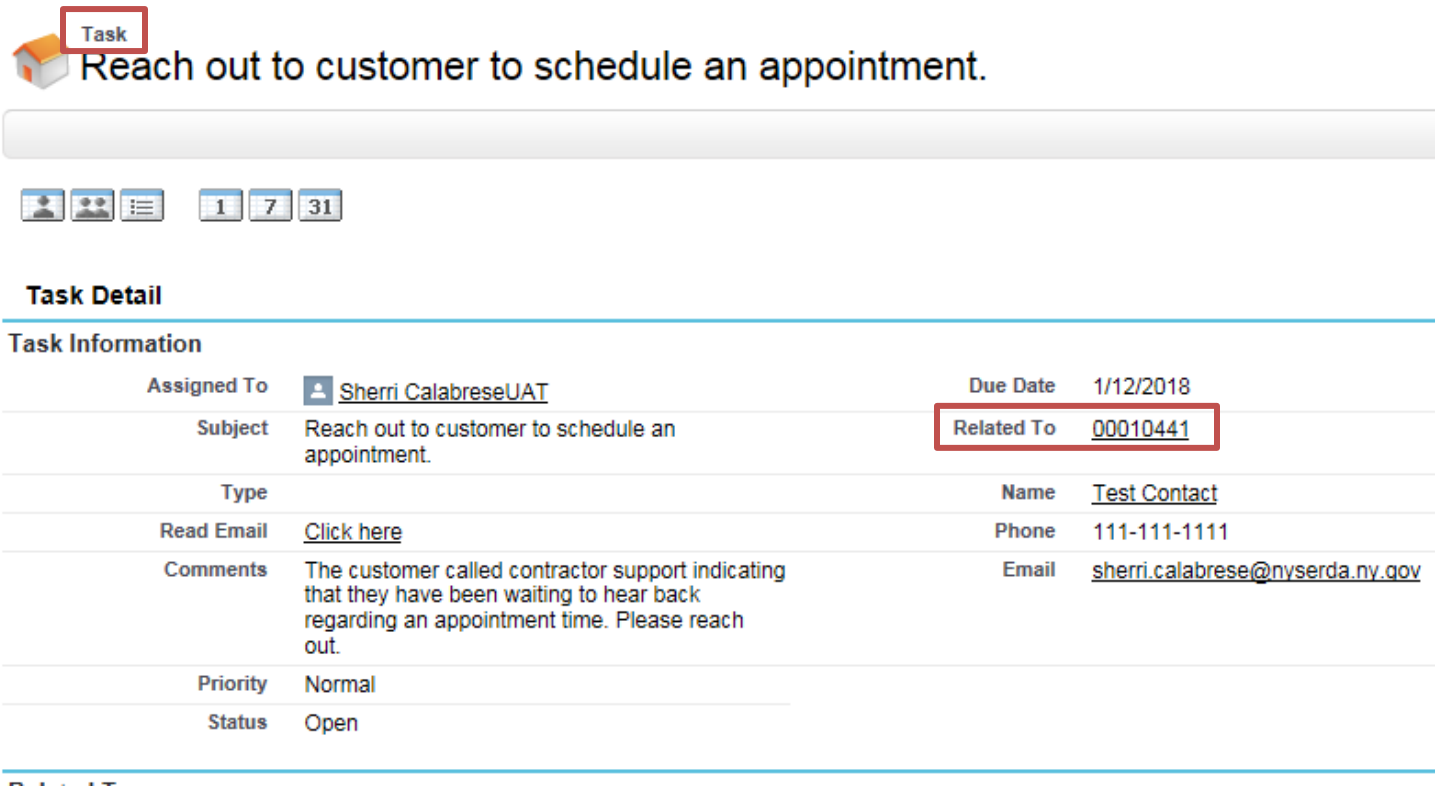
Overdue can be switched to Today, Today + Overdue, Tomorrow, Next 7 Days, Next 7 Days + Overdue, This Month and All Open. Tasks associated with the selected view are then displayed.



In this example, All Open was selected to show all open tasks assigned to the user. To view a task from the My Tasks section, click the Subject link or to navigate to the case the task is associated with, click on the Related To link.



Clicking the Subject link opens the Task page, which provides additional details for the task. To navigate to the case from the Task page, click on the case number in the Related To field.



To update or complete a task, post the required information to the Case by submitting a Case Comment (most common) or uploading an attachment. The Case Owner reviews the newly supplied information and marks the task complete or asks additional questions.

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NEW YORK STATE OF OPPORTUNITY. | NYSERDA

New York Residential Existing Homes Programs

Quality Assurance Contractor Scoring System: A User Guide for Participating Contractors

May 2019

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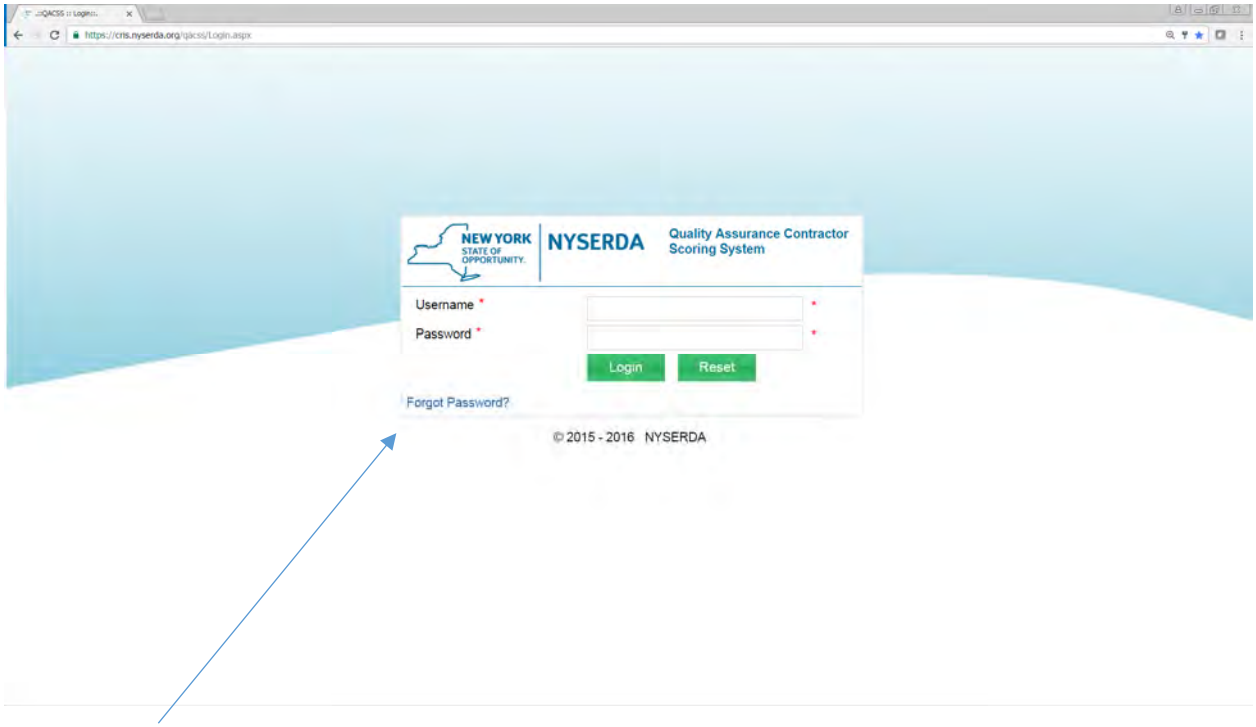
1. **Log-in Page/Forgot Password**
2. **Dashboard**
3. **RSVP**
4. **View/Respond to Inspection Reports**
5. **Reports**
6. **Glossary**
7. **FAQ**

Login Page/Forgot Password

Initially, you are sent an email from NYSERDA with your username and temporary password. The email includes the following link: https://cris.nyserda.org/qacss/Login.aspx. Click on the link to continue.

When logging in to the Quality Assurance Contractor Scoring System (QACSS) for the first time, the system prompts you to create a new password. If you forget your password, click on the Forgot Password? link and the password is forwarded to your login email account.



If you forget your password, click on this link and the system emails the password to your QACSS email.

Dashboard

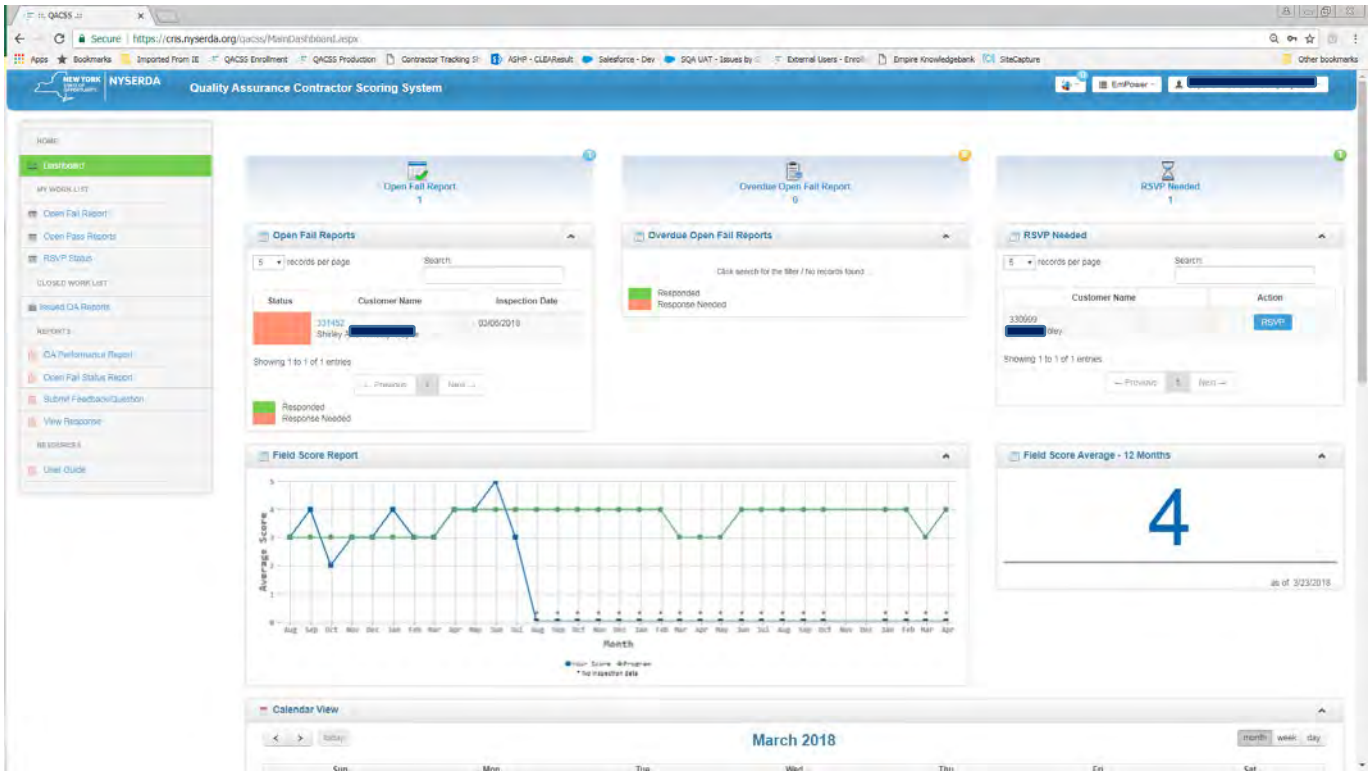
Once logged in, you are directed to the Dashboard page, which provides quick views to tasks that need attention.

The main section of the Dashboard page includes inspection reports requiring corrective action as well as a list of upcoming inspections that need an RSVP to attend.

The left menu includes links that navigate to all available pages in QACSS.

If you participate in both Home Performance with ENERGY STAR® and EmPower you can toggle between each program to view relevant QA information by clicking the drop-down box in the upper right-hand corner of your screen.

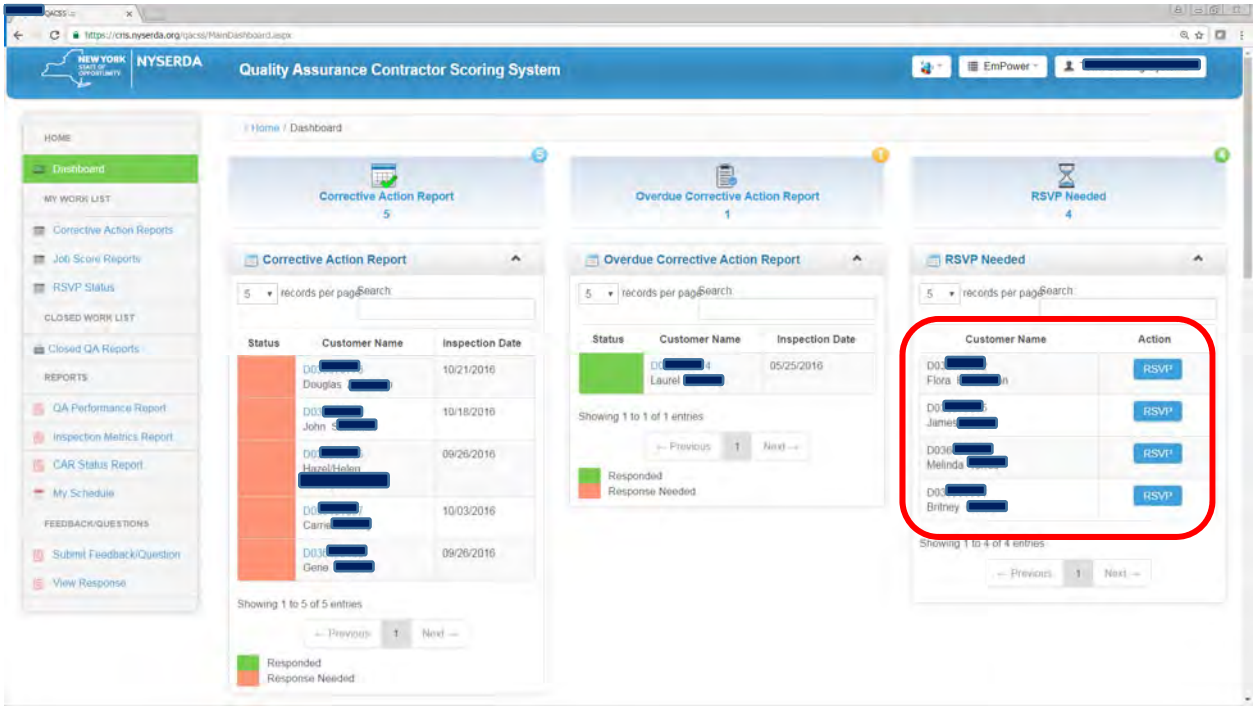
To the left of the program drop-down box in the upper right-hand side of the screen is a bell icon which displays quick notifications to new inspection reports, RSVPs required, and messages from program.



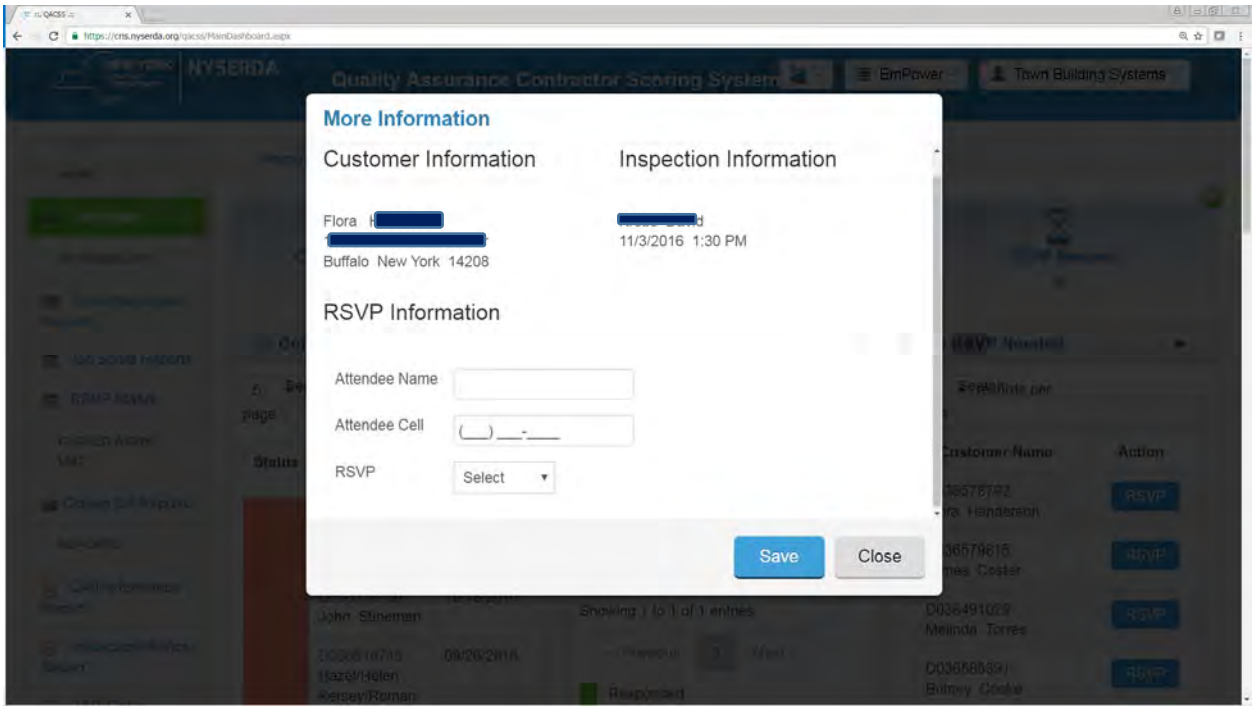
RSVP

At the time of scheduling, the customer is asked if the contractor can attend the inspection. In most cases, the customer agrees. Once the customer agrees, an email is dispatched requesting that the contractor log in to QACSS and RSVP.

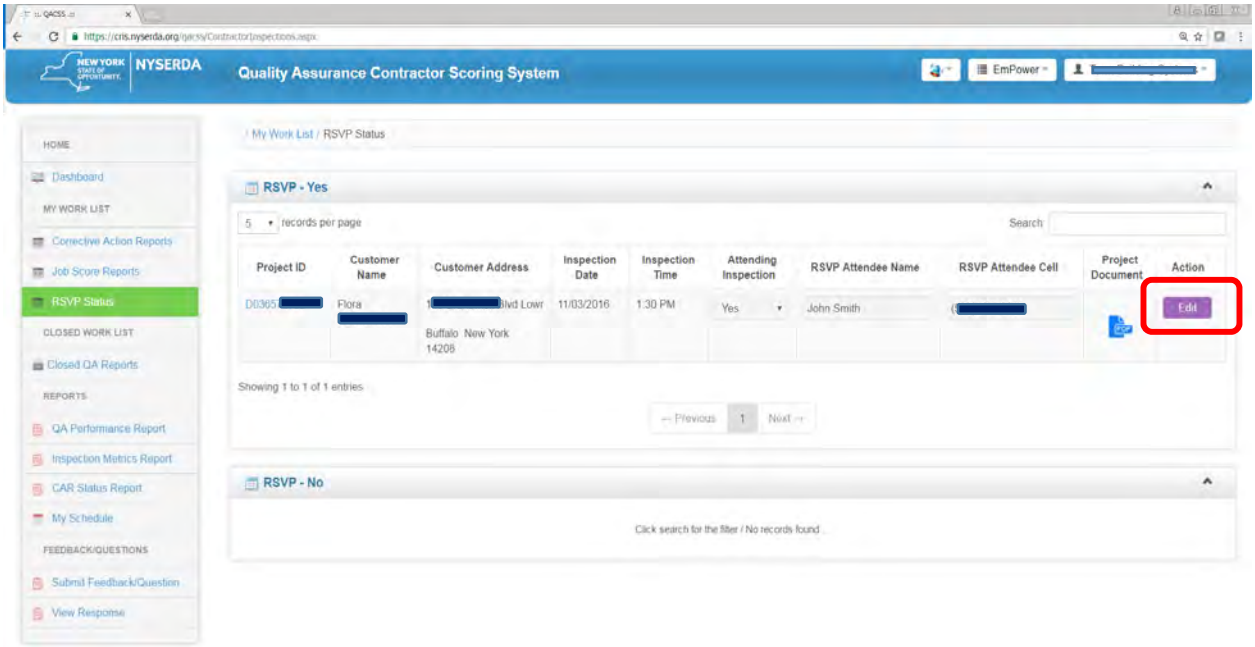
To RSVP, click on the blue button next to the customer name on the Dashboard screen. The RSVP Needed section lists scheduled inspections that require a response.



After clicking the RSVP button, the following pop-up appears requesting a contact name and number. The QA inspector uses this information if there are last minute changes to the inspection.



You may edit the RSVP status up until the time of the inspection. To change contact information or status for the inspection, click on the left menu link titled RSVP Status.



Inspection Reports (Pass)

Newly issued inspection reports that receive a score of three or higher may contain one or more deficiencies that need to be corrected, but the contractor is *not* required to submit a response to NYSERDA. The findings can be contested within 10 days of issuance.

To view the official report, click on the icon.

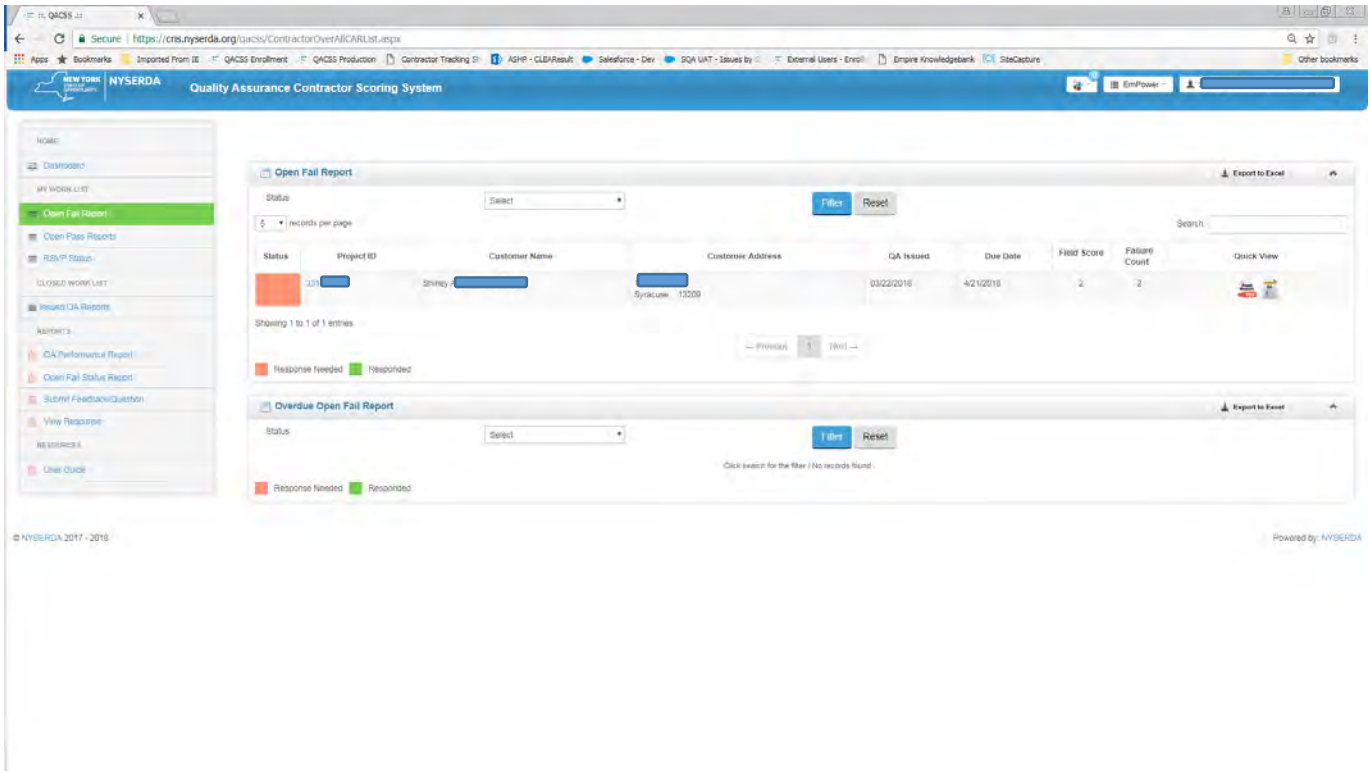
To contest the inspection results, click on the blue Project Number link shown in the screen shot.

Inspection Reports (Fail)

Inspection reports that receive a score of one or two contain one or more deficiencies that need to be corrected, and photo documentation needs to be uploaded. To view and respond to these reports, click on the left menu link titled, Open Fail Reports.

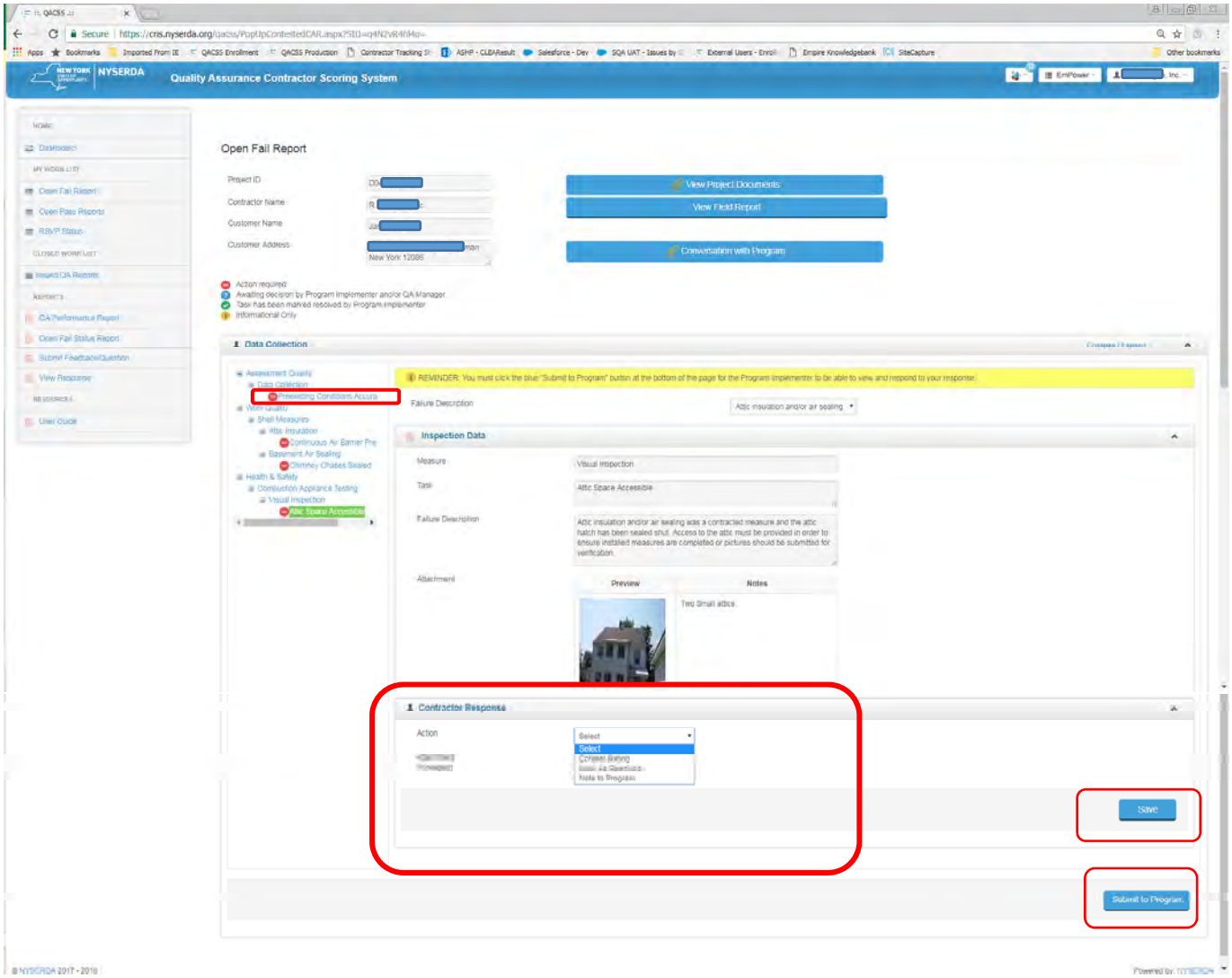
From this page you can view the official report by clicking the icon.

To respond to the inspection, click on the blue Project Number link shown here:

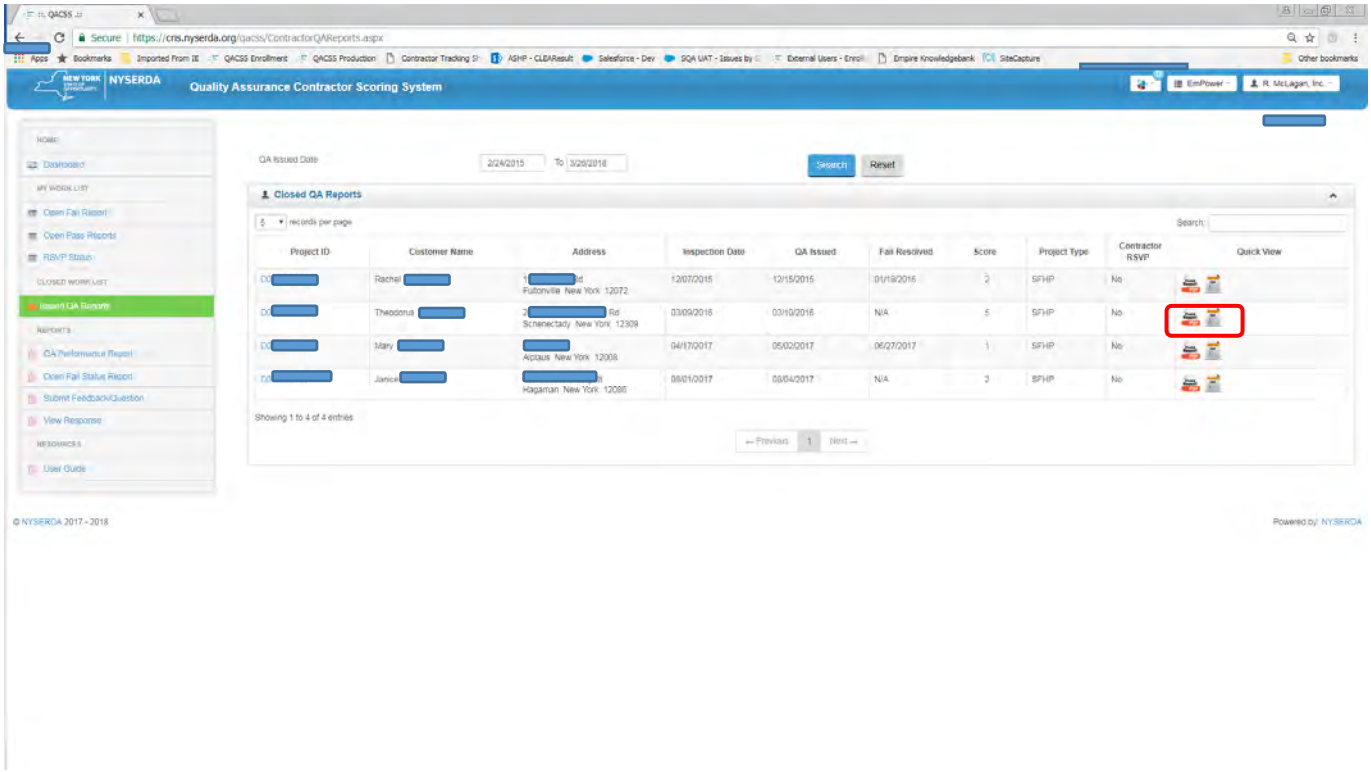


Click on the link with the ⛔ icon to respond. In the Contractor Response table, select Mark as Resolved or Contest Rating. In each case, photos and/or written documentation must be submitted. Be sure to click the blue save button and then the Submit to Program button. When a decision has been made on the item(s) contested, an email is sent requesting you to log in to QACSS to view the result(s).

1. Click on the hyperlink with an ⛔ icon.
2. Review the Inspection Data at top of the screen.
3. Choose Action: Mark as Resolved or Contest Rating.
4. Enter response in the Resolved Notes field under Contractor Response.
5. Upload photo(s) as attachments using the browse function Choose Files.
6. Click Save.
7. Repeat for all deficiencies requiring corrective action.
8. Return to top of the screen and click on Customer Signature Page.



QACSS stores all QA reports issued from July 15, 2015 going forward. To view final inspection reports, click on the left menu link Issued QA Reports. Under the Quick View column, view the final Inspection Report and the Corrective Action Response activity report (if applicable) by clicking on each icon:  .



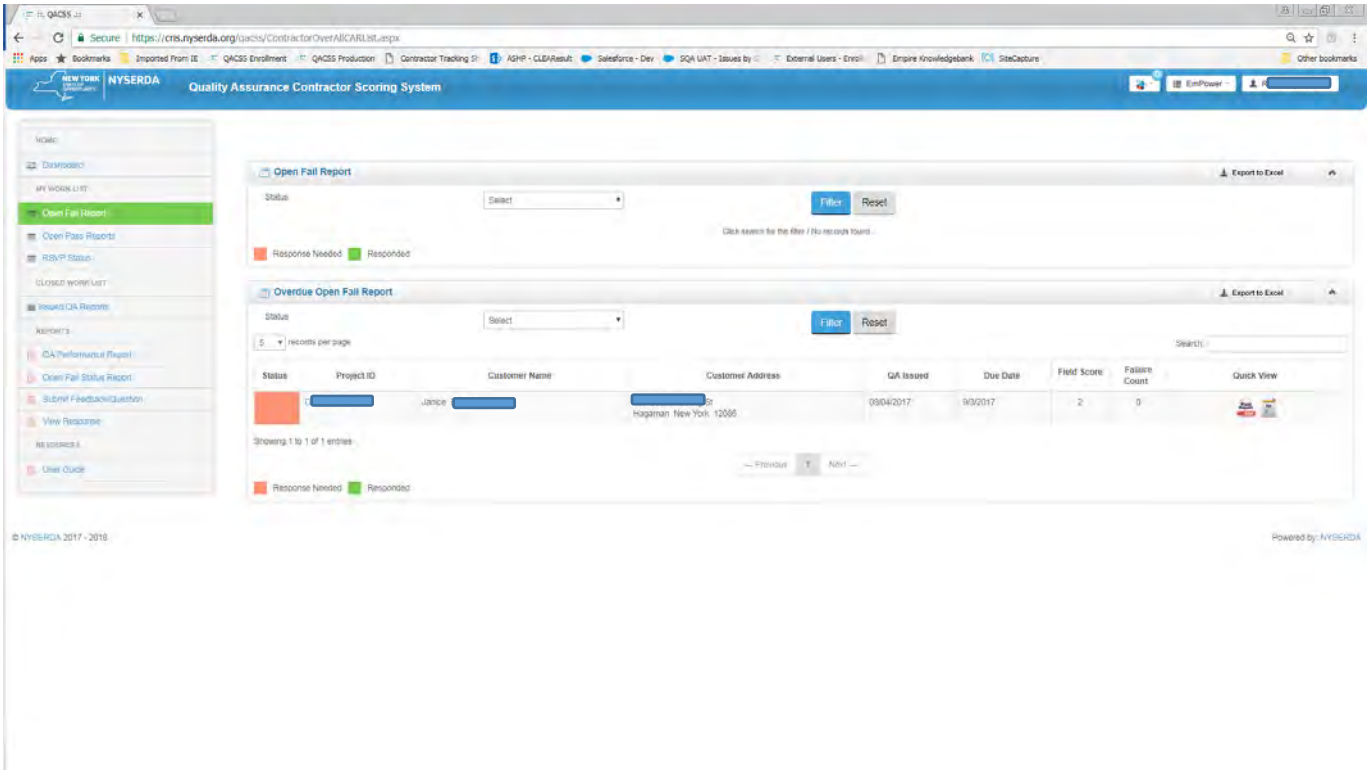
Fail Inspections (Corrective Action Reports)

A list of outstanding Failed Inspection Reports and their statuses can be found on your Dashboard page or by clicking Open Fail Reports in the left menu bar. To view and respond to a report, click on the blue Project Number hyperlink.

Inspection Reports that need responses are indicated by icons.

Inspection Reports that need a response from program representatives are indicated with a Icon.

Inspection Reports that have been marked as resolved by your program representative are removed from the Open Fail Report list. An email is sent notifying you the report has been resolved.



Reports

QA Performance Report: Displays summary-level data on the number of completions within a user-specified time period and displays the average inspection score and sub-component scores.

EmPower New York

Performance Summary Report
Project Type: All
September 2016

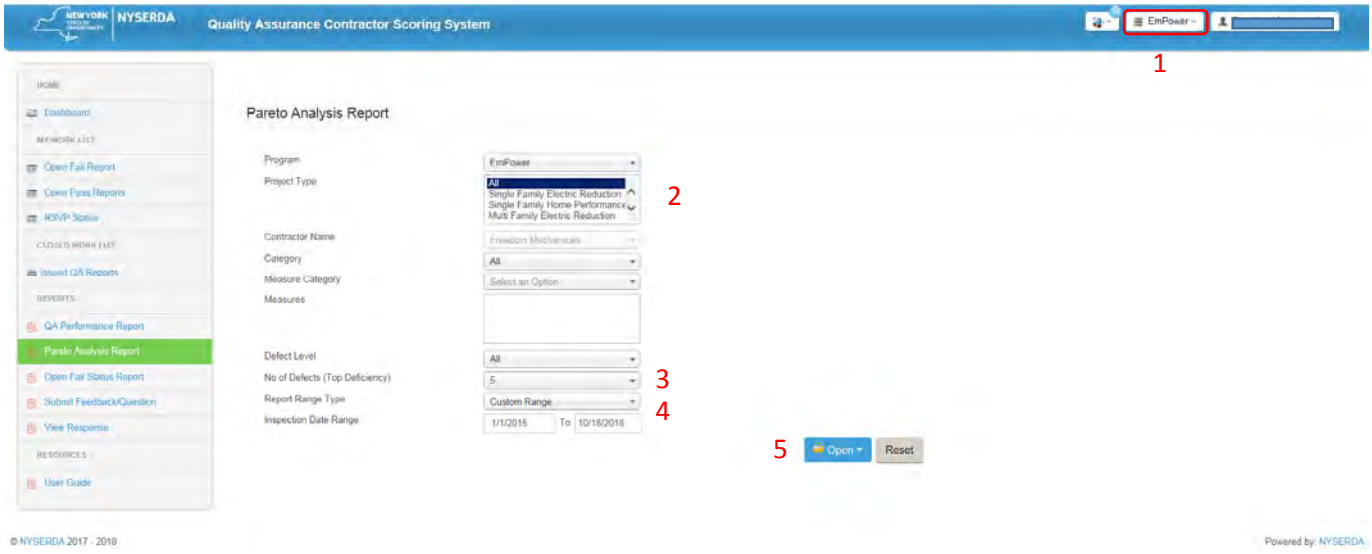
NEW YORK STATE OF OPPORTUNITY. | NYSERDA

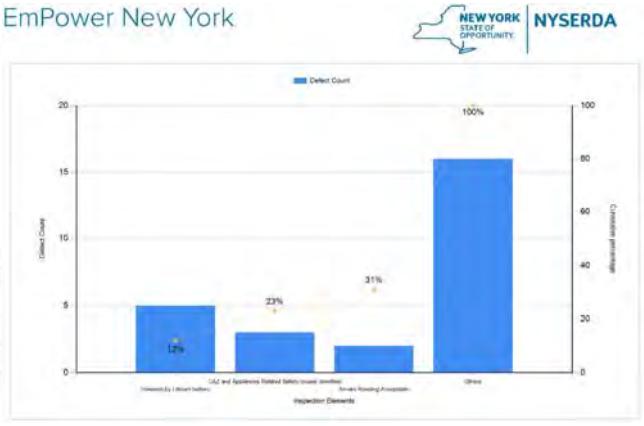
Contractor Information					Completions			Inspections			Inspection Rate	Average Scores Based on Rolling 12 Months					
Company Name	DBA	County	Status HP	Status ER	1 MO	3 MO	12 MO	1 MO	3 MO	12 MO	12 MO	JSR	Grade	AQ	WQ	HS	CS
[redacted]		Tioga	Full	Full	13	54	284	3	13	56	20	98	-	97	99	96	90

* Represents the avarage QA scores for the 12 months before QACSS went live on 07/01/2015.

Pareto Analysis Report: Displays the frequency of deficiencies within a user-specified time period and provides a bar graph of the deficiencies and frequency percentage. This data is useful to determine areas were installation changes/improvements could be beneficial.

1. Select Program from upper right dropdown.
2. Select the Project Type; default is all project types.
3. Select Number of Defects; 5, 10 or 15
4. Select Report Range Type; Month or Custom
    a. Month report range; select month from dropdown
    b. Custom report range; enter the report range
5. Open; select format from dropdown (PDF, Excel or Word)





Glossary

QACSS: The Quality Assurance Contractor Scoring System is a secured, web-based portal designed to facilitate quality assurance functions performed in the residential single-family programs. It is used by NYSERDA's third-party quality contractor to schedule, inspect, and report on completed field inspections and by participating contractors and program implementation staff to resolve issues documented by the quality contractor.

Dashboard: Main page or homepage where contractors navigate to other pages.

Fail Report (Corrective Action Report): Report issued to a contractor following a field inspection where one or more deficiencies were found that need to be resolved. A score of 1 or 2 is assigned.

Pass Report: Report issued to a contractor following a field inspection where a score of 3, 4, or 5 has been assigned. There may be one or more deficiencies that need to be corrected, but a response in QACSS is not required.

Frequently Asked Questions

I'm having trouble logging in to QACSS.

For HPwES contractors who do *not* participate in the EmPower Program

1. Locate the Contractor Welcome Email. If the email cannot be located, contact the HPwES program implementer at contractorsupport@clearesult.com or 1-800-284-9069 (option 2).
2. Go to the QACSS login page: https://cris.nyserda.org/qacss/login.aspx.
3. Click Forgot Password?.
4. Enter the username provided in the Contractor Welcome Email and click Submit.
5. The password is emailed to the same email address that was used to send the Contractor Welcome Email.
6. Once the password is received, go back to the QACSS login page (see URL above), and enter your username and password.

For HPwES contractors who also participate in the EmPower Program

Companies that participate in both HPwES *and* EmPower need to determine if they want a single login for both programs or two different logins. To make the determination follow these instructions:

1. Start by logging into QACSS for EmPower: https://cris.nyserda.org/qacss/login.aspx. Use your company's existing CRIS username and password (the one used to access NYSERDA's database for EmPower). If this doesn't work, contact the Empower program field representative for assistance.
2. Once you are able to log in to QACSS from EmPower, click on the EmPower icon in the upper right quadrant of the screen.
    - If a Home Performance drop-down option appears, your company has a single login for both programs. You can easily toggle between the two programs by using this drop-down.
    - If a Home Performance drop-down option does *not* appear, you have two different logins, one for EmPower and one for HPwES. In order to access HPwES, you need to logout of QACSS for EmPower. (To log out, click on your company's name in the upper right corner of the screen, then click Logout.) Once you're logged out, follow the instructions above for HPwES contractors who do *not* participate in the EmPower Program.

Who do I contact for help with QACSS?

Your program implementer can provide technical support for specific CARs and assist with general system questions.

- Email contractorsupport@clearesult.com or call 1-800-284-9069 (option2)

How do I change my contact email for QACSS notifications?

Contact your program implementer.

Can I add a user to QACSS?

Each company is assigned one QACSS login per program. This single login can be shared, but additional logins cannot be provided.

I can't find a specific customer in my Dashboard or I received an email notification but can't find the customer in QACSS.

1. Solution #1: Are you both an HPwES *and* EmPower contractor? If yes, first determine in which program your customer participated. Next, determine if you are logged in to QACSS under the correct program; the program name is listed in the upper right quadrant of the QACSS screen (second bubble from the right).
    - If you are logged in to the wrong program, log out and log back in to the correct program. Please note that if you have the same username for both programs, you can toggle between the two programs (without logging out) by clicking on the program name.
    - If you are already logged in to the correct program and still cannot find your customer, contact the program implementer for assistance.
2. Solution #2: Does the body of the email state "No further action is required"?
    - If so, no CAR was issued, and the inspection does not appear in your Dashboard view. To view the inspection results, click on Job Score Reports under the My Work List menu, then locate your customer and open the Job Score Report (JSR).

I can't download any QA documents, for example: Pass Report, Fail Report, Performance Report.

If you are unable to download documents from QACSS, it is likely you need to disable your pop-up blocker. After disabling the pop-up blocker, try to download the document again.

To allow pop-ups in Google Chrome, look for the pop-up blocker icon at the end of the address bar. The icon looks like this: . Right click on the icon and select "Always allow pop-ups on this site."

Marketing Resources and Policies

Logo Usage

The use of NYSERDA's and the Home Performance with ENERGY STAR Logos are a privilege reserved only for Participating Contractors. To report misuse of logos, either through incorrect usage or by a non-participating contractor, please send an email to hpwes@nyserda.ny.gov.

- NYSERDA Attribution - Participating Contractors who are active in the program may use NYSERDA's attribution logo in accordance with the "NYSERDA Logo Attribution Guidelines", located in in Section 12 of the Contractor Resource Manual.
- BPI GoldStar -All Participating Contractors are also BPI GoldStar Contractors. Details on the use of BPI's GoldStar Logo are available at: http://www.bpi.org/files/pdf/BPI_Brand_Protection_and_Logo_Use_Policies_and_Procedures.pdf
- All Participating Contractors are under NYSERDA's sponsorship of Home Performance with ENERGY STAR and may use the Home Performance logo. Details are available at: https://www.energystar.gov/about/energy-star-brand/energy-star-brand-book
    - Additional specifications: Use the ® at the first mention of ENERGY STAR in a document. Make sure the ® is superscripted, i.e., Home Performance with ENERGY STAR® and always type ENERGY STAR in all capital letters.

Terminology Specifications

When referencing your participation in the Home Performance with ENERGY STAR or EmPower New York Programs:

Correct Messaging:	**Incorrect Messaging:**
We offer (or deliver) Home Performance with ENERGY STAR or EmPower New York Participating Contractor in the Home Performance with ENERGY STAR® Program or EmPower New York Program	ENERGY STAR Contractor Home Performance with ENERGY STAR Contractor EmPower Contractor EmPower New York Contractor New York's Home Performance Contractor NYSERDA Contractor Department of Energy Contractor
BPI GoldStar Contractor	BPI Certified Contractor BPI Accredited Contractor
Discounts Incentives Grants Rebates	Free money Bounties

Marketing Resources

Website "Widgets": We've developed content you can use on your website, in the form of a widget to give visitors more information about the HPwES program. This will allow you to include approved content on your site, without having to engage a writer or web editor to create or change content. NYSERDA will update the widget as needed to reflect program changes, etc. so that you're assured of up-to-date information on your site. Detailed directions for how to include the widget in your website are provided on the Contractor Portal.

Logo Lockups

We are providing logo lockup files (for color and black & white), which give you a plug-and-play way to drop the logo(s) into your marketing materials, at the required minimum sizes and with the appropriate clear space. These lockups should remove any guesswork as to correct size and proportion when you are preparing materials. The lockups are provided on the Contractor Portal in vector format (.eps) so that you can proportionally increase them in size for formats larger than 8.5" x 11". They are also provided as .jpg files. You can download the individual logo lockup files or you can download the all-in-one logo sheet, which includes vector art that can be accessed through Adobe Illustrator. The all-in-one logo sheet on the following page provides a quick reference to the names of the individual files available on the portal. Color logos are preferred over black and white whenever possible.

Recommended Language and Messaging- Home Performance with ENERGY STAR

NYSERDA conducted in-depth research with homeowners across the state. Based on those insights, NYSERDA has developed HPwES program messaging that is more likely to motivate homeowners to take advantage of the program. This messaging can be used freely in your own outreach to build awareness and — most importantly — understanding of Home Performance benefits. We encourage you to use this messaging on your website, in advertising materials, or anywhere else you would like to include it. Repetition and consistency build the effectiveness of marketing messages; the more we can collectively educate our target audiences, the easier the final sale will be.

The following are recommended messaging and wordings to use in promotional and marketing materials.

Long Messaging

Option 1: Lower energy bills and a more comfortable home start with a home energy assessment. The energy assessment analyzes how each element of your home works together to provide a top-to-bottom look at where you're wasting energy — and what you can do to fix it. It's just one of the ways the Home Performance with ENERGY STAR® program makes it easy and affordable for homeowners to upgrade the energy efficiency of their homes and improve their quality of life.

Option 2: Take control of your energy bills with a home energy assessment through the Home Performance with ENERGY STAR® program. An energy assessment analyzes how all the elements of your home work together as a system to uncover where the biggest energy efficiency gains can be made. It makes it easy and affordable for the savvy homeowner to invest in a more energy-efficient home. Thousands of New York State residents have already lowered their energy bills — and so can you.

Medium-Length Messaging

Option 1: Lower energy bills and a more comfortable home start with a home energy assessment through the Home Performance with ENERGY STAR® program. The energy assessment analyzes how each element of your home works together to provide a top-to-bottom look at where you're wasting energy — and what you can do to fix it.

Option 2: Take control of your energy bills with a home energy assessment through the Home Performance with ENERGY STAR® program. It makes it easy and affordable for the savvy homeowner to invest in a more energy-efficient home.

Short Messaging
Option 1: Lower energy bills and a more comfortable home start with a home energy assessment through the Home Performance with ENERGY STAR® program.

Option 2: Take control of your energy bills with a home energy assessment through the Home Performance with ENERGY STAR® program.

Recommended Language and Messaging- EmPower New York
NYSERDA conducted research among lower-income New Yorkers to help understand the attitudes and behaviors related to household energy efficiency, perceptions of the EmPower New York program, and motivators and barriers to program participation. Based on those insights, NYSERDA developed messaging to speak directly to those most likely to engage with EmPower New York.

While marketing of EmPower New York should be limited, if you promote the program we encourage you to incorporate the messaging below into your outreach. Any advertisements via mass media (such as TV, radio, print, online) must first be approved by NYSERDA by contacting David.Friello@nyserda.ny.gov.

Long Messaging
Option 1:Make your home or apartment more energy efficient. Income-eligible New Yorkers can get no-cost upgrades that reduce energy bills. Upgrades may include air sealing, added insulation, and new energy-efficient light bulbs. Now you don't have to choose between utilities and other necessities.

Option 2: Want to stay warm and lower your energy bills? EmPower New York helps income-eligible New Yorkers improve the energy efficiency of their homes through no-cost energy upgrades. Upgrades may include air sealing, added insulation, and new energy-efficient light bulbs.

Medium-Length Messaging
Option 1: Lower energy bills mean extra money in your pocket, month after month. Take advantage of no-cost energy upgrades from EmPower New York, available to income-eligible New Yorkers.

Option 2: High Energy Bills making you uncomfortable? Lower your energy costs with no-cost energy upgrades. Everyone should be comfortable at home. That's why EmPower New York provides income-eligible New Yorkers with no-cost energy upgrades.

Short Messaging

Option 1: Raise your comfort level and lower your energy bill with no-cost energy available to income-eligible New Yorkers. EmPower New York- a better life begins at home.

Option 2: Energy efficiency is one of the easiest ways to save money.EmPower New York provides income-eligible New Yorkers with no-cost energy upgrades.

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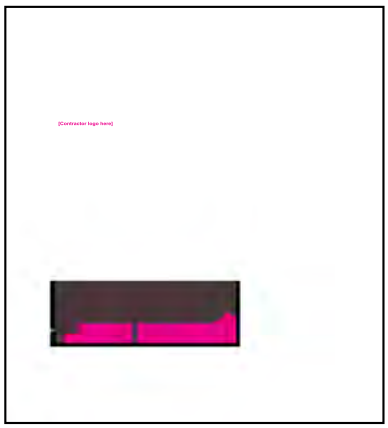
Marketing Materials for Participating Contractors

As a contractor in Home Performance with ENERGY STAR® (HPwES) and EmPower New York, you have exclusive access to a variety of marketing materials. These materials include promotional and educational tools that have been designed to help you grow your Home Performance contracting business, all at no cost to you.

High-quality printed versions of the HPwES resources can be requested by contacting Kara Faraone, kara.faraone@clearesult.com.

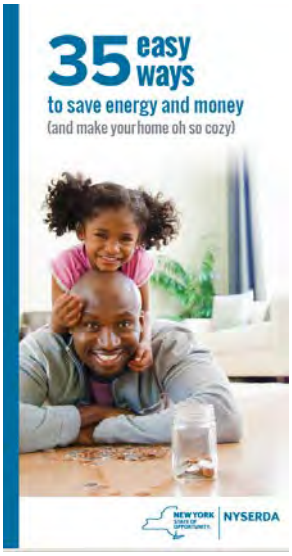
Marketing Materials	Description	How to use	
Home Performance and Assisted Home Performance with ENERGY STAR® Fact Sheet [PDF]	Quickly explains the benefits of the HPwES/ AHPwES program and how to get started.	Distribute at events and other opportunities to reach prospects. Available in Spanish.	
Case Studies/ Success Stories The Coopers [PDF] Tom Digrace [PDF] Alan Jones [PDF] The Mallows [PDF] Anna Napoleon [PDF] Tom Giessler [PDF] The Goodmans [PDF] The Lapes [PDF] The Scotts [PDF] Ashton Applewhite PDF]	Highlights real homeowners that have gone through the HPwES, AHPwES and EmPower programs with positive results.	Use as a leave behind with homeowners after they've had an assessment to encourage them to make the upgrades.	

Residential Loan Options	Outlines the loan options available through NYSERDA to help homeowners pay for energy improvements.	Use as a leave behind with homeowners after they've had an assessment to encourage them to make the upgrades.	
Thank You Letter [DOC] Instructional document [DOC]	Mail to homeowners after you've performed the assessment to thank them and to encourage next steps. The instructional document provides direction on how to use the Thank You Letter in conjunction with other readily available materials.	Simply copy the text in the Word document and drop into your own letterhead for distribution.	
After Assessment Email Template [HTML]	Contractor customizable email blast template that can be sent out to customers that have recently had a home assessment to encourage them to continue and have the upgrades made.	We recommend sending 3-4 weeks after the assessment is complete. The template designed for contractor customization.	

Reengagement Email Template [HTML]	Contractor customizable email blast template that taps into your existing customer database to increase the number of energy upgrades completed. Send to customers who have had a home assessment and have made some but not all of the upgrades to motivate them to complete the remaining upgrades.	We recommend sending 6 months to a year after initial wave of upgrades was made. The template is designed for contractor customization.	
Recruitment Email Template [HTML]	Contractor customizable email blast template that taps into existing customer database to increase energy assessments.	Send to customers who have completed other work with your company to encourage them to have a comprehensive home assessment. The template is designed for contractor customization.	

High-quality printed versions of the EmPower New York resources can be requested by contacting Michele Evanson, Michele.Evanson@Honeywell.com.

EmPower Fact Sheet [PDF]	Quickly explains the benefits of the EmPower and how to get started.	Distribute at events and other opportunities to reach prospects.	

EmPower Frequently Asked Questions [PDF]	Explains frequently asked questions of the EmPower program.	Distribute to potential EmPower customers.	
Energy Efficiency Tips Brochure [PDF]	Provides no and low cost energy efficiency tips to homeowners.	Provide current and prospective customers ways they can save energy and money.	
Case Studies/ Success Stories Susan Konstanty [PDF]	Highlights real homeowners that have gone through the EmPower New York program with positive results.	Use as a leave behind with homeowners after they've had an assessment to encourage them to make the upgrades.	

Attribution Logo Policy

The Combined Residential Application determines program eligibility for incentives based on household income. Households identified as Tier 1, are considered low-income households and are eligible to receive incentives through EmPower New York. Tier 3 households are considered moderate income households and are eligible to receive incentives through Assisted Home Performance with ENERGY STAR®.

Participating Contractors providing services to Tier 1 and Tier 3 households are authorized to use the NYSERDA Participating Contractor Attribution Logo (Attribution Logo) subject to the restrictions in these guidelines. The guidelines serve to maintain the integrity of the NYSERDA brand, while providing Participating Contractors the opportunity to leverage their relationship with NYSERDA to engage customers.

Participating Contractors are participants in the NYSERDA NY Residential Existing Homes Programs, not NYSERDA employees, contractors, partners, or representatives. Participating Contractors and their employees must therefore identify themselves as representatives of the Participating Contractor's company, not as representatives of NYSERDA or as NYSERDA employees. Participating Contractors may use the Attribution Logo only under the following terms:

- Only approved Participating Contractors who have a current, executed Participation Agreement with NYSERDA are authorized to use the Attribution Logo.
- Participating Contractors **can only** identify themselves with the NYSERDA Participating Contractor Attribution Logo on marketing and promotional materials related to NYSERDA's NY Residential Existing Homes Programs, such as agendas, newsletters, and event-related materials;

- As with any logo, the NYSERDA logo may not be manipulated, stretched, or skewed in any manner, and the proportions must be maintained at all times. The EPS version is a 4-color build vector file. If printing is done by a commercial printer and a spot-color logo file is required, please contact NYSERDA's Marketing Department to request that version. The Pantone color of the logo is PMS 307.
- If an alternate version of the logo is required, please include specific information about the layout space in your request, and we will provide the appropriate version. There are two alternate versions of the NYSERDA logo: white-reversed and one-color black. NYSERDA does not allow other agencies to create alternate versions of our logo.
- NYSERDA requires that the logo be a minimum of 2.25" in width in order to ensure readability. If space requirements do not allow the logo to be 2.25", please contact Diane Welch at (518) 862-1090, extension 3276 to discuss options.
- The Attribution Logo may be used on the Participating Contractor's website **only** on pages that speak to the NY Residential Existing Homes Programs but **cannot** be used in the Participating Contractor's overarching website shell.

- Participating Contractors **cannot** use the Attribution Logo on business cards, self-identifying items (e.g., shirts, pins) or for TV.

Logo Placement

NYSERDA requires a clear space around the logo at all times. The clear space is equal to the height of the first letter of the State name (N), in the size the logo is used. This clear space can be white space, background color, or paper color. Text, images, or other logos must not come closer to NYSERDA's logo.

Review and Approval

NYSERDA will review and approve any material containing the NYSERDA logo prior to publication including print, Web, or other media. Approval may be obtained through submission of a low-resolution PDF to NYSERDA's Marketing Department. If this option is not convenient, please contact Diane Welch at (518) 862-1090, extension 3276 to arrange alternate means of review.

Contact

To Contact NYSERDA Marketing, please call or email Diane Welch at (518) 862-1090, ext. 3276 or diane.welch@nyserda.ny.gov, or Cory Nicosia at (518) 862-1090, ext. 3622 or email cory.nicosia@nyserda.ny.gov.

Sample Contract and Work Scope

After the Home Performance Contractor and the homeowner agree upon the work scope to be performed, the Contractor must present the homeowner with a written contract that clearly itemizes all work to be performed and the corresponding price for each measure. A sample contract template has been provided for ***reference purposes only***. This template is not a Home Performance with ENERGY STAR form. Participating Contractors are free to use their own standard contract; however, any contract must be signed by both the Home Performance Contractor and the homeowner. The signed contract must be submitted to the Program.

It is important to emphasize to any prospective customer that Home Performance Contractors participating in the New York State Energy Research and Development Authority's (NYSERDA) Home Performance with ENERGY STAR Program are ***independent*** home improvement contractors. Participating Contractors are required to be Building Performance Institute (BPI) GoldStar Contractors. BPI is a national resource for building science technology that sets standards for assessing and improving the energy performance of homes.

NYSERDA, through its Quality Assurance Implementer inspects a sample of completed Home Performance with ENERGY STAR projects to ensure quality, consistency and compliance (including adherence to BPI health and safety standards). Contractors who participate in Home Performance with ENERGY STAR warrant their own work. BPI is available for customer dispute resolution assistance. Neither NYSERDA, the Program Implementation Contractor, nor the Quality Assurance Implementer warrants the products and/or services of the participating Home Performance Contractors.

Sample Contract/Work scope

HOME IMPROVEMENT COMPANY

ADDRESS

CONTRACT

Homeowner's
Name_____Date_____
Address_____
Job Location_____
City, State, Zip Code _____
Home Phone #_____Cell Phone #_____
Home Performance Contractor's Representative Name
_____
Approximate Project Start Date_____
Approximate Project Completion Date_____
Does the project need to be completed by a certain date? Yes___ No___

DESCRIPTION OF LABOR/MATERIALS & PRICES (subtotals preferred)

Insulation (specify surface type, approximate sq ft, material, depth, and scope of work)

Insulate 800 sq ft of attic floor

$COST

Blow cellulose, 12" loose fill on top of existing 3" fiberglass (R-50)
Baffle as needed to keep insulation out of soffit vents and deter windwash
Includes building foam board retaining wall around attic hatch
Includes weather stripping and attaching 2" foam board to attic hatch
Installation of 3 roof vents

Insulate 200 sq ft of floor behind the knee wall

$COST

Drill holes into attic floor to access uninsulated floor cavities
Blow 6" dense packed cellulose (R-19) into all accessible cavities of the attic floor
Use wooden plugs to patch drilled holes

Insulate 1000 sq ft of exterior sidewalls

$COST

Install 3.5” dense packed cellulose (R-12)
Includes remove & reinstall siding, drilling, filling, and clean up

Crawlspace – spray approx 100 sq ft of crawlspace walls with 3” closed cell spray foam
$COST

General attic air sealing
$COST
Seal visible air leaks with spray foam or other appropriate material
Seal plumbing and electrical penetrations
Seal other significant leaks as determined by blower door testing

Windows (specify quantity, type, and where being installed)
$COST
Install 2 double hung, triple pane, Low-E Argon windows in MBR
Install 1 ENERGY STAR rated double pane picture window in dining room
Install 4 hopper windows in basement
Install 1 double pane patio door in kitchen, U-.32

Doors (specify quantity, type, and where being installed)
$COST
Remove existing front door and install 1 new ENERGY STAR rated entry door
Install 1 new storm door in front entry
$COST

HVAC (include make, model, system specifications, and scope of work)
Install (Make) natural gas furnace (Model#) 90,000 Btus, 95% AFUE, with ECM motor
$COST
Furnish and install new supply and return air ductwork
$COST
Provide and install 1 programmable thermostat
$COST
Provide and install new chimney liner
$COST
Install (Make) natural gas (Model#) 40 gallon hot water heater with energy factor of 0.67
$COST
Install (Make) (Model#) 2.0 ton 14.5 SEER air conditioner
$COST

Health & Safety (must specify each measure being performed by contractor)

Vent existing bath fan
$COST
Provide and install new CO detector
$COST

Lighting (specify type and quantity)
$COST
Provide and install 8 20-watt CFLs

Appliances (include make and model number)
ENERGY STAR clothes washer (Make) (Model#)
$COST
ENERGY STAR refrigerator (Make) (Model#)
$COST

SCHEDULE OF PAYMENTS (Contractor to show amount of each payment and specifically identify the state of completion of the works or services to be performed including any materials to be supplied before each such progress payment is due.)

_____
_____
_____
_____

Sub Total _____

Tax _____

Total Price _____

NOTICE OF CANCELLATION
The homeowner may cancel this contract at any time prior to midnight of the third business day after the date of this transaction. See the attached notice of cancellation form for an explanation of this right.

ACCEPTANCE OF CONTRACT
The condition specifications and prices stated on both sides herein are satisfactory and are hereby accepted. The Contractor is authorized to do the work as specified. Payment will be made as outlined above. A copy of this agreement will be furnished to the homeowner upon signing.

_____
Homeowner's SIGNATURE Date

_____
Contractor's SIGNATURE Date

(Continued)

ADDITIONAL TERMS, PROVISIONS AND CONDITIONS

1. Any contractor, subcontractor, or materialman who provides home improvement goods or services pursuant to your home improvement and who is not paid may have a valid legal claim against your property, known as a *Mechanic's Lien*. Any Mechanic's Lien filed against your property may be discharged. Payment of the agreed upon price to the Home Performance Contractor prior to filing of a Mechanic's Lien may invalidate such lien. The homeowner may contact an attorney to determine his/her rights to discharge a Mechanic's Lien.

2. The homeowner may require the recipient or Contractor to deposit the initial advance in an escrow account. In lieu of such deposit, the Contractor may post a bond or contract of indemnity with the homeowner guaranteeing the return of such advance.

3. The Contractor will clean up and remove from the homeowner's property all project-related debris and unwanted materials when the work is completed.

4. The Contractor will carry Workman's Compensation and Contractor's Liability Insurance.

5. The Contractor agrees to procure all required permits in accordance with all applicable local laws. The Contractor is responsible for knowledge of and compliance with all applicable laws, ordinances, rules, and regulations.

6. Any additional home performance work not specified in the original contract must be agreed upon in advance, in writing, signed by both parties. The revised contract must be provided to the homeowner prior to commencing the additional agreed upon work. Prior to work commencing the revised work scope must be approved by the Program. The terms of the original contract shall be incorporated into any additional agreements.

7. In the event that any defects in workmanship or equipment is discovered within one (1) year after payment authorization, the Contractor will remedy, repair, correct, or cause to be remedied, repaired, corrects, or replaced at the Home Performance Contractor's expense. The Contractor shall disclose all terms, conditions and the period of time covered thereby of any guarantee or warranty it offers to the homeowner. The following guarantee/warranty is applicable:

_____

_____

_____

(Continued)

NOTICE OF CANCELLATION

_____
(Enter date of transaction)

The homeowner may cancel this transaction without any penalty or obligation, within three business days from the above date.

If the homeowner cancels, any property traded in, any payments made by the homeowner under the contract or sale, and any negotiable instrument executed by the homeowner will be returned within 10 business days following receipt by the Contractor of the homeowner's cancellation notice, and any security interest arising out of the transaction will be cancelled.

If the homeowner cancels, they must make available to the Contractor at the homeowner's residence, in substantially as good condition as when received, any goods delivered under this contract or sale; or the homeowner may, if they wish, comply with the instruction of the Contractor regarding the return shipment of the goods at the Contractor's expense and risk.

If the homeowner does make the goods available to the Contractor and the Contractor does not pick them up within 20 days of the date of the homeowner's notice of cancellation, the homeowner may retain or dispose of the goods without any further obligation. If the homeowner fails to make the goods available to the Contractor, or if the homeowner agrees to return the goods to the Contractor and fail to do so, then the homeowner remains liable for performance of all the obligations under the contract.

To cancel this transaction, mail or deliver a signed and dates copy of this cancellation notice, or any other written notice, or send a fax to: (Name of Home Performance Contractor :_____)

At (address of Home Performance Contractor's place of business:
_____)

Not later than midnight of _____.

I HEREBY CANCEL THIS TRANSACTION.

_____ _____
(Date) (Homeowner's signature)

Alternatives to Duct Pressurization Testing for Determining Duct System Efficiency

Duct pressurization tests are the most common tests performed on duct systems. They are similar to pressure testing of building envelopes in that the test measures airflows at specified pressure differences. To perform a pressurization test all the registers in a system must be covered and a measured amount of air is blown into the ducts using a duct pressurization device, essentially a small blower door. The measurement of the duct pressure, or the amount of "pressurization", indicate how leaky the ducts are. Historically, duct pressurization testing has been the only testing method recognized by the Program, and is considered the most accurate and preferred testing method.

However, duct pressurization testing can be time-intensive, and impractical in some cases. As a result of the difficulties in testing, duct sealing and duct insulation improvements are not always quantified or reported to the program, which has resulted in a lost opportunity for the program to report energy savings. The Program is striving to maximize savings, especially the kWh savings that can be achieved through quantifying duct sealing and insulation benefits related to cooling systems.

To address the difficulties in performing duct pressurization testing, the following methods for quantifying duct leakage and duct improvement will be recognized in the Program:

1. A method complying with the ASTM standard for measuring duct leakage (ASTM E1554-94 (1994)), which includes:
    a. duct pressurization; and
    b. blower door subtraction
2. *Delta Q* method as developed by Lawrence Berkeley National Laboratory described in document (**LBNL 47308**)
3. Use of the ***Distribution Efficiency Look-up Table*** as published on Page 7 of the Building Performance Institute (BPI) Technical Standards for the Heating Professional (Revision: 11/20/07 mda).

Information related to the ASTM standard methods and the *Delta Q* method may be found online and by consulting the user manuals of the various duct diagnostic equipment.

Of all the methods, the Distribution Efficiency Look-up Table method is considered to be least complex, and requires no specialized testing equipment. Furthermore, once determined by using the look-up table, the distribution efficiency can be input directly into the program modeling software, readily quantifying the benefit of duct sealing or insulation improvements and the related savings. Program contractors are encouraged to use the Look-up table method whenever duct system improvements are being performed, and other testing methods are considered impractical.

For more information on any of the duct system testing methods, please contact your Account Manager.

Example:

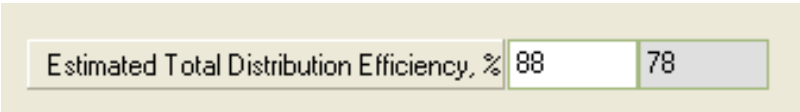
Using the Distribution Efficiency Look-up Table in the BPI Heating Professional standards, a house with 50% or more of the ducts inside the building envelope, some observable leaks, and the ducts are uninsulated would have an estimated distribution efficiency of 78%.

Distribution Efficiency	90% or more inside envelope	50% or more inside envelope	less than 50% inside envelope	Connections sealed w/mastic	No observable leaks	Some observable leaks	Significant leaks	Catastrophic leaks	Ducts outside envelope R-8 or greater	Ducts outside envelope R-4 - R-7	Ducts outside envelope < R-4
90%		XXX		XXX					XXX		
89%		XXX		XXX						XXX	
88%		XXX		XXX							XXX
84%		XXX			XXX				XXX		
83%		XXX			XXX					XXX	
82%		XXX			XXX						XXX
80%		XXX				XXX			XXX		
79%		XXX				XXX				XXX	
78%		XXX				XXX					XXX

Once the connections are sealed with mastic, the new distribution efficiency would be 88%.

Distribution Efficiency	90% or more inside envelope	50% or more inside envelope	less than 50% inside envelope	Connections sealed w/mastic	No observable leaks	Some observable leaks	Significant leaks	Catastrophic leaks	Ducts outside envelope R-8 or greater	Ducts outside envelope R-4 - R-7	Ducts outside envelope < R-4
90%		XXX		XXX					XXX		
89%		XXX		XXX						XXX	
88%		XXX		XXX							XXX
84%		XXX			XXX				XXX		
83%		XXX			XXX					XXX	
82%		XXX			XXX						XXX

In TREAT, the duct sealing improvement could then be modeled as 78% existing estimated total distribution efficiency, being increased to 88% proposed estimated total distribution efficiency. The duct test leakage would be left at the default (50 CFM25) since the duct leakage to outside was not actually tested.



Tips and Solutions to Solve Water Heater Venting Issues

In situations where a water heater is found to have draft spillage into the combustion zone or fails Combustion Appliance Zone (CAZ) testing, Building Performance Institute (BPI) standards require that the situation be remedied. While the replacement of the water heater with a power-vented unit is sometimes an appropriate solution, other measures must be considered and implemented as appropriate.

1. Inspect and clear the flue pipe of any blockage: Typically this can be accomplished by unscrewing and disconnecting the flue pipe from the appliance and chimney. Use of a telescoping mirror is an easy and effective method to inspect the condition of the chimney for any blockage. A second inspection from the top of the pipe may determine whether the pipe is crushed or rotted, or identify blockages such as bird nests. Removal of such blockages is often an easy repair.

2. Vent reconfiguration: If the issue has not been resolved after inspecting and clearing the flue pipe of any blockage, the contractor should examine the flue pitch and orientation of the appliance. If the pitch is incorrect, or if the flue configuration consists of more than two elbows, long runs or other elements that may cause air resistance, improvements to the flue should be considered.

At junctions where the heating system vent merges with the water heater vent, problems may be caused by pressure differences in the exhaust gasses. If the water heater vents into the chimney below the heating system, or if the water heater vents into the heating system flue at a 90-degree angle, back drafting may sometimes be the result. Adjustments to the flue arrangement or installation of a 45-degree angle junction may solve the problem.

3. Power vented heating systems: If the home has a power vented heating system with an open air intake to the basement, this may cause a decrease in CAZ pressure and the draft of the water heater may fail as a result. Extending the air intake to the outside may solve this problem. In situations where the power vented heating system shares a vent with the water heater, the power vented heating system may cause a positive pressure in the water heater vent. Adjustments may be made to the vent to ensure the water heater vent is under negative pressure when the heating system is operating.

4. Relocating the unit: Sometimes the water heater is located too far from the chimney; relocating the unit closer to the exhaust point may improve the pitch and shorten the run before exhaust.

5. Installation of a weighted damper into the CAZ: This approach creates an additional path for air to enter and may improve CAZ depressurization. This opening serves as the “path of least resistance” for fresh air to flow into the CAZ, typically correcting a draft issue. (In some situations, however, it may not address a spillage issue.)

6. Install a chimney liner: If a chimney is not lined, lining may enhance the draft. The installation of a chimney liner is a code requirement in most areas when a water heater is orphaned. The lining must be appropriately sized. The chimney must be inspected for stability: a crumbling or deteriorated chimney is not a good candidate for chimney lining.

In evaluating the options above, age of the water heater and relative cost of measures must be taken into consideration. Keep in mind that local building codes must be followed. In some instances, specific codes related to mobile homes may also apply. Please be sure to consult with your Regional Rep/Account Manager when proposing these strategies.

Disposal of Mercury-Containing Thermostats

Since 2005, New York State has prohibited the disposal of mercury-containing thermostats in the trash. On December 18, 2013, the Mercury Thermostat Collection Act of 2013 (Act) was enacted which will provide for the mandatory and sound management of out-of-service mercury-containing thermostats by providing homeowners and contractors with more convenient opportunities for the safe drop off and recycling of mercury thermostats, thereby diverting them from being disposed of in landfills and municipal waste combustion facilities.

The Act requires thermostat manufacturers to establish and maintain a program for the collection, transportation, recycling, and proper management of out-of-service mercury thermostats at no cost to contractors or other persons participating in the program. Manufacturers are required to:

- By July 1, 2014, compile a list of thermostat wholesalers in the state, offer them collection containers and make collection containers available to all qualified contractors, thermostat wholesalers, retailers, and local governments that request containers.

- Beginning July 1, 2014, conduct education and outreach efforts, including establishment of a website that provides for the identification of collection sites and the development of materials for distribution by wholesalers, retailers, contractors and local governments.

The Act also requires state agencies such as NYSERDA, which administer programs that promote energy efficiency through upgrade, replacement, and/or removal of heating, ventilation, and air conditioning (HVAC) systems, to inform contractors of their statutory obligation to deliver removed or replaced mercury-containing thermostats to a mercury thermostat collection site as well as the prohibition of disposing of mercury-containing thermostats in a solid waste management facility.

Prior to the July 1, 2014, effective date, contractors can locate authorized mercury-containing thermometer collections sites through http://www.thermostat-recycle.org/statelaws/new_york, by contacting local HVAC wholesalers, or their local solid waste authority. Fees may apply for the recycling of mercury-containing thermostats prior to July 1, 2014. For additional information on the Act, updated recycling location information, frequently asked questions and the proper procedures for the cleanup of small mercury spills, please visit the New York State Department of Environmental conservation website at http://www.dec.ny.gov/chemical/92655.html.

Guidance on Oil and Petroleum Spills

In the event you come across an oil or petroleum spill, the NYS Department of Environmental Conservation recommends that anyone with knowledge of a spill, contacts the NYS Spill Hotline at 1-800-457-7362 except meeting all criteria noted below:

- The quantity is known to be less than 5 gallons; and
- The spill is contained and under the control of the spiller; and
- The spill has not and will not reach the State's water or any land; and
- The spill is cleaned up within 2 hours of discovery.

A spill is considered to have not impacted land if it occurs on a paved surface such as asphalt or concrete.

For more information about oil spills and reporting please visit the DEC's website at http://www.dec.ny.gov/chemical/8692.html.

Combustion Efficiency Test Labels

It is highly recommended to provide combustion efficiency test results to the homeowner at the post inspection. These results are best displayed on a highly visible surface of the tested system. The combustion efficiency labels attached are an optional tool for displaying these results. These labels are designed to print on printer label paper, such as:

- Avery shipping label, 6 per sheet – 3 1/3*4
- World Label WL-150 | Shipping Label
- Jam® Paper 3 1/3" x 4" Mailing Address Label, White, 6 Labels per Page
- or other comparable products.

NOTE: When printing, make sure to print only page 2 of this document to avoid wasting sticker paper.

CONTRACTOR:		Date
Stack Temp	C02/02	Smoke
CO	Draft, Breech	Over Fire
Auditor:		SSE
Address/Ph		
Signature		
Filter Size:		
Notes		

CONTRACTOR:		Date
Stack Temp	C02/02	Smoke
CO	Draft, Breech	Over Fire
Auditor:		SSE
Address/Ph		
Signature		
Filter Size:		
Notes		

CONTRACTOR:		Date
Stack Temp	C02/02	Smoke
CO	Draft, Breech	Over Fire
Auditor:		SSE
Address/Ph		
Signature		
Filter Size:		
Notes:		

CONTRACTOR:		Date
Stack Temp	C02/02	Smoke
CO	Draft, Breech	Over Fire
Auditor:		SSE
Address/Ph		
Signature		
Filter Size:		
Notes		

CONTRACTOR:		Date
Stack Temp	C02/02	Smoke
CO	Draft, Breech	Over Fire
Auditor:		SSE
Address/Ph		
Signature		
Filter Size:		
Notes:		

CONTRACTOR:		Date
Stack Temp	C02/02	Smoke
CO	Draft, Breech	Over Fire
Auditor:		SSE
Address/Ph		
Signature		
Filter Size:		
Notes		

Estimated Water Waste from a Dripping Faucet/DHWT

Drips in 30 seconds	Estimated Yearly Waste (gallons)	Estimated kWh Yearly Loss	Estimated therm Yearly Loss
1	105.5	18	0.6
2	211.0	36	1.2
3	316.5	54	1.8
4	421.9	72	2.5
5	527.4	90	3.1
6	632.9	108	3.7
7	738.4	126	4.3
8	843.9	144	4.9
9	949.4	162	5.5
10	1,054.9	180	6.1
11	1,160.3	198	6.7
12	1,265.8	215	7.4
13	1,371.3	233	8.0
14	1,476.8	251	8.6
15	1,582.3	269	9.2
16	1,687.8	287	9.8
17	1,793.3	305	10.4
18	1,898.7	323	11.0
19	2,004.2	341	11.6
20	2,109.7	359	12.3
21	2,215.2	377	12.9
22	2,320.7	395	13.5
23	2,426.2	413	14.1
24	2,531.7	431	14.7
25	2,637.2	449	15.3
26	2,742.6	467	15.9
27	2,848.1	485	16.5
28	2,953.6	503	17.2
29	3,059.1	521	17.8
30	3,164.6	539	18.4

Gallons wasted and energy loss is rounded. For Informational Purposes Only.

Information Source: Water Audits and Leak Detection © 2009 American Water Works Association. Energy loss calculation assumes 70 degree difference in hot water temperature at 120 degrees and annual average outdoor temperature of 50 degrees. Calculation derived from TecMarket Works Manual: New York Standard Approach for Estimating Energy Savings from Energy Efficiency Programs June 16, 2009.

WORKSHEET

THERMOSTAT SAVINGS

Q: How does lowering your thermostat save you money?

A: For every degree a thermostat is set back for 8 hours, you save approximately 1% of your heating bill.

It actually costs less to warm up a cool house than it does to keep the house at a constant higher temperature.

Calculate how much you can save below:

	8-Hour Period	Current Temperature		New Temperature		Degrees Reduced
Step 1	Mornings and Evenings	°F	–	°F	=	
	Day-time Hours (Work and School)	°F	–	°F	=	
	Night-time Hours (Sleeping)	°F	–	°F	=	
Step 2	Total Percentage Savings: Add the degrees reduced (step 1) and divide by 100 (ex: if degrees reduced equals 5, use 0.05)					
Step 3	Estimated Heating Costs: Refer to your utility or fuel bill(s) and estimate cost to heat home for one season					$
Step 4	Savings: Multiply your Total Percent Savings (step 2) by your Estimated Heating Costs (step 3) to see how much you may save by adjusting your thermostat					$

ENERGY SAVINGS ACTIONS



To reduce my monthly energy costs, I will take the following actions:

Actions	Results
1	
2	
3	
4	
5	
6	
7	

Name: _____

Every small action can lead to BIG energy savings and money in your pocket.

NEW YORK STATE OF OPPORTUNITY. | NYSERDA

Gas Leak Safety Procedure for Contractors

1. When conducting audits or work and a gas leak is found, the Contractor should determine immediately if the natural gas or propane odor is “strong” or “weak”.

2. If the odor is strong, advise everyone in the home to exit the premises immediately and the Inspector should exit also. Do not strike a match, use telephones, switch on or off electrical appliances, lights, or even a flashlight in the area where you smell gas. These items can produce sparks that might ignite the gas and cause an explosion.

3. If the odor is weak, open windows to air out the area and mark the location of the gas leak. Report the information to the household.

4. In all cases of natural gas, advise the household to call the appropriate number below to report the gas emergency (from a phone outside of the home). If propane, the household should call their propane supplier.

NATURAL GAS UTILITY	24-HOUR EMERGENCY PHONE NUMBER
Consolidated Edison Company of NY, Inc.	1-800-752-6633
Keyspan Energy Delivery (National Grid)	1-718-643-4050
National Fuel Gas Company	1-800-444-3130
New York State Electric & Gas Corporation	1-800-572-1121
Central Hudson Gas & Electric	1-800-942-8274
National Grid	1-800-892-2345
Orange and Rockland Utilities, Inc.	1-800-533-5325
Rochester Gas & Electric Corporation	1-800-743-1702
St. Lawrence Gas Company, Inc.	1-800-673-3301

Internal Quality Management:

Contractor Best Practices

Internal Quality Management (IQM) is the system of Quality Assurance activities undertaken by a contractor to ensure that work is performed in a manner that is safe and efficient, fulfills the conditions of the contract, meets program requirements, and maintains profitability.

Balancing these needs can be a challenge. To assist, here are a number of suggestions for effective IQM. These ideas come from Participating Contractors in NYSERDA's Home Performance with ENERGY STAR and EmPower New York programs, during the 2017 NY Residential Existing Homes Contractor Regional Meetings. There are also a few added suggestions from Program staff. While some of the suggestions may seem very basic and obvious to business owners and managers, having practices and policies in one place is a good way to ensure everyone on your team is on the same page about how your business operates and what your expectations are of your crews.

Not all of these strategies work for all contractors; choose the ones that help you succeed. Then create an Internal Quality Management plan that suits your needs.

Thanks to all who contributed their ideas and expertise!

Setting yourself up for success

- Ensure quality suppliers
    - Install materials and equipment with a proven track record, from suppliers with a demonstrated capability to respond to the needs of the customer, should a problem occur.
    - Review product literature carefully, and share relevant information with the customer.
    - Check product reviews.
    - Verify that technicians capable of servicing the equipment are available in the area to respond to the customer's needs in a timely manner.

- Make sure that your equipment is well maintained. Set up a regular schedule for calibration of all test equipment and make sure staff understand why it is important to stick to it.
- Review Program requirements and develop a standardized plan for collecting, reviewing and submitting required documentation.

Hiring

- Make a list of the core competencies of your business - the skills and certifications that you need to succeed and determine how they apply to each position in your organization.
- Job hunter Websites can be useful in finding prospective applicants.
- Some useful ways to evaluate skills before you hire:
    - Aptitude testing
        - Math problems similar to the math used in your work
        - Handing the job applicant a tape measure and a note pad and having them calculate the square footage of your building
    - Test a prospect's abilities by having them perform common tasks, such as caulking, or weather-stripping and insulating an attic hatch.
    - Collaborate with a training organization, and use one of the training pressure houses or another training facility to have the prospect perform skill testing, such as blower door diagnostics or identification of common ventilation issues.
    - On an application, include questions that might normally be taken for granted when someone applies for a job with your company, such as:
        - Do you own a hammer and a pry bar? (Or other tools that indicate some experience)
        - Are you comfortable working on ladders?
        - Are you comfortable working in confined spaces?
- In addition to calling listed references, look at online at ratings and customer feedback from places of prior employment. This is particularly useful if the candidate was previously self-employed.
- Consider multiple points of contact before hiring. One contractor does the following:
    - A preliminary screening phone interview
    - A follow-up informal lunch meeting, to get a sense of the interpersonal style of the applicant
    - A final meeting
- Establish a probation period for new hires. Some options for components:
    - An initial review after 30 days, to check in on work quality and offer corrections
    - An initial start at a lower salary, to be increased after a successful review
    - A final determination after 90-days
    - New hire shadows more experienced staff
    - New hire is asked what they learned each week
    - New hire completes a "self-review"
    - New hire proposes a work scope to be critiqued by more experienced staff

- Implement a mentor program until staff member is fully trained. Ensure mentors are open to questions, regardless of how fundamental they may be, and understand how being mentors also benefits them.
- If it is your policy, letting staff know that you typically promote from within the company can be a strong motivator for existing or potential new staff.

Training

- Do not assume that a worker with years of experience and training is at the top of his game. Contractors have been known to say, "I did this work a certain way for years, and I thought I was doing the best work possible for my customers. Once I learned about building science, I realized I had been doing it wrong all this time, and I immediately changed my practices." One contractor even stated, "I even went back to previous customers to make some changes." In other words, while technicians may have received good training in the past, the performance of cutting-edge energy efficiency work requires a constant search for new and innovative approaches, and updating of skills.
- Crew members may not always understand the importance of the task that they are completing--especially in a hot attic on a summer day! Motivate staff by explaining:
    - The rationale for doing things in a specific way from a technical perspective
    - How their work will impact the home and those living there
    - The "big picture" of saving energy, fighting global warming, reduction carbon
- Hold weekly/bi-weekly/monthly meetings to provide training – include all staff (sales, installers, office and auditor) to make sure everyone is on the same page.
- Training options to consider:
    - Manufacturers
    - Building Performance Institute (BPI)
    - Trainings available through the Program
    - NYS Weatherization Director's Association (NYSWDA)
    - The Association of Energy Affordability (AEA)
    - Green Jobs Training Center
    - Community College building science programs
    - BOCES
    - Northeast Energy Efficiency Partnerships (NEEP)
    - Building Performance Contractors Association (BPCA)
    - Efficiency First of New York
    - Home Performance Coalition
    - On-line videos—often short and sometimes viewable in the field

- Create guidelines, with pictures and diagrams, that can be read from a tablet.
- Cross train staff so that they are knowledgeable in many areas. This can not only help ensure efficiency for your business, but also motivate crew members, and give them a break from routine.
- Support workers who improve skills through training by providing rewards, such as bonuses, recognition, pay raises, gift certificates, etc.
- Make sure that staff are familiar with standards and guidelines; give short quizzes of challenging areas.
- Train your staff in appropriate customer interactions. Some topics to consider:
    - Appropriate language, dress and decorum
    - Sensitivity to cultural differences
    - Active listening
- Make sure that your staff is trained not to make promises that will not be fulfilled.
- Some workers do excellent work but hate paperwork. If possible, consider aligning skills and preferences with worker capabilities.

Auditing/Selling

- Ensure that the proposal offers an answer to the concern that caused the customer to reach out to you. Look for their real need; it may not be exactly what they think they want. You may have a measure available that suits their needs better than the one they asked for, and you will need to explain why that is a better solution. If so, be sure to explain why it is a better solution in language that is clear to the customer.
- Ensure that savings estimates are realistic.
- Be sure to offer the customer a full range of options, but be sensitive when their need or desire is more selective. Suggest creating options for the customer, with a good explanation of the expected results each option.
- Be well versed in the impacts of your work on comfort, savings, property value, safety, and the environment.
- Prepare a thorough work order.
- Take pictures during the audit to print out for crew members and show what they will be working on. Create a map of where the pictures fit into the drawing of the jobsite.
- Review the Selling Efficiency Series offered through NYSERDA and developed by industry expert Mike Gorman.

Preparing for a Job

- Assess the likelihood and impact of risks to project objectives, both to the customer and to your business.
- Determine the necessary safety precautions
    - Identify possible jobsite hazards
    - Identify appropriate personal protective equipment (PPE), such as respirators or fall protection
- Familiarize yourself with all safety requirements and manufacturer's requirements related to equipment/materials to be installed and ensure that requirements are met.
- Ensure that work conforms to all appropriate guidelines, and obtain all permits required by law.
- Inform the customer BEFORE THE CONTRACT IS SIGNED of any long-term maintenance required on the equipment you install. Include the estimated cost. Provide the customer with a print-out of maintenance requirements.
- Clearly explain the use of any sub-contractor to the homeowner prior to signing a contract. Provide subcontractor name and contact information. Emphasize your role in ensuring the quality of the subcontractor's work.
- Consider a single point of contact with customer, such as the crew chief. This will reduce the risk of multiple staff members providing the customer with different information.
- Double check all calculations and ensure building specifications are correct.
- Create a visual timeline that you can use to plan tasks, and dates for completion of each step in the project, such as:
    - A spreadsheet
    - A blackboard for tracking each project
    - Software designed for project tracking
- Develop a checklist that can be used to monitor completion of specific tasks during and at the end of the project. Include sign-offs and photo requirements.

Work Process

- Keep work area as clean as possible during the project, and clean up after completion.
- Keep all employees in the loop on progress in the project, and notify them of any changes.
- Be on time at the start of every work day, and after breaks.
- Do your best to stay within the original budget.
- Customer Communication
    - Gauge customer satisfaction throughout the project, and inform the crew of your findings throughout
    - Give progress reports to customers and keep them involved in the process

  - Any changes to the contract should be identified in a field change order and signed by the homeowner
- Keep track of repeat mistakes or quality issues:
  - If a staff makes the same mistake more than once or twice discuss the issue. Explore why it is happening, and be clear on what they need to do to avoid making the mistake again.
  - If more frequent, reassign, or use repeated failures as training opportunities.
- Record the results to all diagnostic tests performed, including date-stamped photos of blower door readings.
- Keep a record of the calculations used to arrive at a price proposal. Be sure they are available to crew members, and adjusted as needed if changes in the workscope occur.
- Have senior staff drop by the job site whenever practical.
- Skype or facetime to the job site when you can't be there in person.
- Use sign off sheets: have crew members initial the tasks that they complete each day and have a senior staff member review it every day.
- Track what is done each day on a tablet or document.
- Have crews take lots of pictures. Give crews cameras rather than having them rely on their cell phones—this can be more reliable when it comes to storing/downloading photos.
- Look into photo storage systems, with a photo file for each project. One contactor reported a system that, once set up, saved uploaded photos to date- and location-stamped files automatically.
- Seek out an app that allows for storing video files, maps, diagrams, and photos.
- Use scheduling software to track changes in scope/contract, with date stamps for changes.
- Develop an internal communication system that ensures that the right information is getting to the right people. For example, create a general company email account that all appropriate staff have access to. Then, assign a single staff member to monitor staff responses, to ensure that all appropriate follow-up takes place. Or create a company-wide secure on-line discussion board that allows multiple workers on a project to see discussions related to the project.

Project Completion

- At the end of the project, perform a quality control inspection to evaluate the work and ensure that all components listed in the work order were actually installed.
  - If possible, have the inspection done by someone other than the crew members (who are sometimes very tired at the end of a project) such as a designated inspector, energy auditor or senior staff member.
  - Ensure that test out staff is able to make small repairs if needed. This will reduce sending the install crew back.

- To ensure a complete review, consider the use of a checklist, or a copy of the draft invoice in verifying that all work is done prior to billing. A sample checklist is provided below.
- Consider any missed opportunities for improvement.
- Repair any work-related damage you or your staff may have caused.
- Ensure all critical data regarding the project, such as contact data, project documents, photos, signoffs and critical communications is stored in an easily accessible database. Keeping a record can be invaluable in reducing future misunderstandings.
- Create a "lessons learned" log to be used as a guide for future projects or business policies.
- Host post completion staff meetings to highlight good work and learn from mistakes.
- Perform an internal audit - assign a person to look for discrepancies between how the company functions in comparison to your IQM plan. Is it being executed, or just a paper document? Make sure it is real. Stick to the strategies that help your work process, and discard the ones that get in the way.

Installed Measure Verification

Company name	**Customer Name**

Customer Address

Workscope Measure	Check if included	Units Proposed		Type/Detail	Check if installed	Crew member verifying	Date	Final Inspector verifying	Date	Notes/Corrections
Attic Insulation 1			Sq. Ft.							
Attic Insulation 2			Sq. Ft.							
Attic Insulation 3			Sq. Ft.							
Proper vents										
Other vents										
Attic air sealing										
Attic Hatch Ins & Seal										
Wall insulation			Sq. Ft.							
Rim Joist			L. Ft.							
Other insulation			Sq. Ft.							
			Sq. Ft.							
Basement air sealing										
Heating System										
DHW										
Duct sealing										
Weather stripping										
Smoke detectors										
CO detectors										
Filter slot covers										
LEDs										
Pipe wrap										
Shower heads										
Aerators										

CAZ testing completed? _____Y _____N If no, why not?_____

Cleanup completed? _____Y _____N If no, why not?_____

Post-Blower Door # _____

Project notes:

Project approved for completion/invoice processing: _____ _____

Project lead signature Date

Green Jobs Green New York Loan Fund – Residential Financing Implementation Manual

This manual is intended to provide Participating Contractors with information on the Green Jobs Green New York (GJGNY) Loan Fund and the process for offering a GJGNY Loan to customers. This manual does not cover the following programs: NYSun, Air Source Heat Pump, Ground Source Heat Pump or Renewable Heat NY.

1. Definitions

Certificate of Completion:
The GJGNY Loan Fund Residential Financing Certificate of Completion is executed by a Customer attesting that all work has been completed pursuant to the contract.

Participation Agreement:
The GJGNY Loan Fund Residential Financing Contractor Participation Agreement establishes the terms and conditions under which Participating Contractors may offer a GJGNY Loan to qualified customers in New York State.

Participating Contractor:
Participating Contractors are independent contractors approved to offer GJGNY financing or who participate in the Residential Existing Homes Program or is a participating contractor with PSEG-Long Island.

Participating Auditor:
Participating Auditors are companies or organizations that meet the participation criteria as detailed in the Residential Energy Audit Program Participation Agreement, the Program Manual and any Program announcements and have been approved by NYSERDA to offer Residential Energy Audits. All participating contractors in the Residential Existing Homes Program are qualified as Participating Auditors

Proforma:
Proforma is a tool which lists eligible energy efficiency measures, equipment and accessories. The Proforma determines if the selected measures meet GJGNY Loan cost effectiveness requirements. The Proforma is located [link].

Residential Energy Audit:
An energy audit conducted by a Participating Auditor in accordance with the policies and procedures detailed in this Residential Energy Audit Participation Agreement, the Residential Energy Audit Program Manual and any Residential Energy Audit Program announcements.

2. Overview of Loan Products

2.1. Background of Green-Jobs Green NY Financing

The New York State Energy Research and Development Authority ("NYSERDA") administers the Green Jobs Green New York (GJGNY) Loan Fund for Residential Financing (the "GJGNY Loan Fund") which was authorized by Title 9-A of Article 8 of the Public Authorities Law of the State of New York, as amended (known as the Green Jobs-Green New York Act) to finance energy audits and energy efficiency retrofits or improvements, including solar energy and other renewable installations, for the owners of residential 1-4 family buildings ("GJGNY Loan").

To pursue financing through the GJGNY Loan Fund, a customer must have a Residential Energy Audit or an energy assessment that identifies energy services to be undertaken. The Residential Energy Audit must be performed through the Residential Energy Audit Program or the energy assessment must be performed under the Residential Existing Homes Program.

The total cost of the project may include the removal of equipment or systems, the purchase and installation of new systems or equipment and any required ancillary equipment and related services, including necessary health and safety improvements.

GJGNY offers two types of unsecured loans for one- to four-family residential energy improvements. The Smart Energy Loan requires the consumer to make monthly loan payments directly to NYSERDA's loan servicer, Concord Servicing Corporation (Concord). The On-Bill Recovery (OBR) Loan allows consumers to repay through an installment charge on a bill from one of the involved electric or gas utilities (Central Hudson, Con Edison, Long Island Power Authority, National Grid - Upstate, New York State Electric and Gas Corporation, Rochester Gas and Electric Corporation, or Orange and Rockland Utilities). The utilities then remit repayments to Concord, who coordinates data communications with each utility.

2.2. Loan Information

2.2.1 Loan Amount

Loan amounts range from $1,500 to $25,000. For loans over $13,000, the simple payback must be less than 15 years, calculated by dividing the loan amount by the first year estimated energy cost savings. This calculation is done through the Proforma tool (see section 4.2 for more details.)

Homeowners can have multiple loans as long as the aggregate outstanding loan amount doesn't exceed $25,000. However, homeowners may only have one outstanding OBR Loan at any given time.

2.2.1 Loan Term

Loans terms are 5, 10, or 15 years. The loan term may not exceed the expected useful life of the home energy improvements.

2.2.1 Loan Origination Fees

A $150 loan origination fee applies to all loans. This can be included in the total loan amount, provided the total loan amount does not exceed $25,000.

2.3. Smart Energy Loan

The Smart Energy Loan is a traditional loan that is repaid monthly via check or automatic payment. The applicant (or co-applicant) must own the home, or lease or manage the residential building and be an authorized representative of the owner.

2.3.1 Interest Rates

Current interest rates are 3.99% or 7.49%. A 0.5% interest rate discount is applied to these rates if the customer selects automatic payments prior to loan closing. Interest rates are subject to change.

Qualified customers are eligible for lower interest rates provided that the total documented household income of the occupants of the building is less than or equal to 120% of the area median income.

Customers seeking the lower interest rate must fill out an income screening application along with the credit application.

2.3.1 Repayment Terms

Payments are made directly to NYSERDA's loan servicer, Concord, via monthly statement billing or automatic bank withdrawal (ACH).

If the home is sold or transferred, the borrower is responsible for the outstanding balance of the loan and the loan cannot be assigned to the new owner.

Non-payment of the loan obligation may result in a lawsuit against the borrower, wherein the State of New York will seek the entry of a judgement with interest, costs and collection fees as provided by the State Finance Law.

2.3.1 Loan Servicing Fees

- Late payment fee is the lesser of 5% or $5
- $20 fee for returned payments
- Collection fee of 22% of the total amount due (principal, accrued interest and late fees) if not received within 275 days of due date, as authorized by State Finance Law

2.3.1 Cost effectiveness requirements

The project is considered to be cost effective if at least 85% of the total loan amount is comprised of pre-qualified eligible measures OR the estimated energy cost savings over the anticipated life of all eligible energy efficiency improvements amounts to at least 80% of the total principal and interest (see section 1.6.2).

2.3.1 Documentation

Following loan approval, Energy Finance Solutions (EFS), the loan originator, will send the applicant(s) a Loan Agreement, Disclosure and Security Agreement (Note), Smart Energy Notice to Borrower, and a Notice of Right to Cancel, all of which must be signed and returned to EFS. When the loan proceeds are disbursed, the loan is transferred to Concord for servicing.

2.4. On-Bill Recovery Loan

With the OBR Loan, loan payments are built into the customer's energy utility bill. The applicant (or co-applicant) must own the home, be named on the utility account of a participating utility: Central Hudson, Con Edison, PSEG-Long Island, National Grid (upstate customers only), New York State Electric and Gas Corporation, Orange & Rockland Utilities, or Rochester Gas and Electric and not be on any type of deferred payment plan with the utility. A Declaration must be filed with the County Clerk in the county in which the installation property is located. A title company under contract with NYSERDA will search public records to verify ownership of the property.

2.4.1 Interest Rates

Current interest rates are 6.99% or 3.49%. Interest rates are subject to change.

Qualified customers are eligible for lower interest rates provided that the total documented household income of the occupants of the building is less than or equal to 120% of the area median income.

Customers seeking the lower interest rate must fill out an income screening application along with the credit application.

2.4.1 Repayment Terms

Payments are added to the borrower's utility bill as a NYSERDA Loan Installment charge. If utility service is terminated or suspended, the borrower will be billed directly by Concord.

2.4.1 Documentation

Following loan approval, EFS will send the applicant(s) a loan agreement (Note), Notice of Right to Cancel, and a Declaration. The documents must be signed, and the Declaration must be notarized and returned to EFS. When the loan proceeds are disbursed, the loan is transferred to Concord.

2.4.4 Loan Transfer

The OBR loan is transferrable upon the sale of the home and requires that the seller provide written notice to prospective buyers in accordance with the terms of the Note. If the loan is not transferred to the new homeowner then it must be paid-off at the time of property transfer. If the loan is transferred to the new homeowner, the utility and Concord will work together to have the monthly loan assessment placed on the utility bill. The seller is responsible for amounts billed by the utility up to the date of transfer.

2.4.5 Non-Payment

Non-payment of utility charges or the OBR loan obligation may result in termination of utility service; non-payment of the loan obligation may result in collection efforts including the entry of a judgment with interest, costs and collection fees as provided by the State Finance Law.

2.4.6 Fees

- If Concord directly bills the borrower(s) the following may apply:
    - Late payment fee is the lesser of 5% or $5
    - $20 fee for returned payments

- Returned payment fee may be charged by the utility as authorized by the Public Service Commission
- Past due balance on utility account may be subject to a collection fee by the utility as authorized by the Public Service Commission
- If utility service is terminated, borrower may be subject to a reconnection fee from the utility

2.4.7 Cost effectiveness requirements

The monthly payment may not exceed 1/12th of the estimated average annual energy cost savings from the improvements over the loan term. In other words, the monthly payments may not exceed the estimated average monthly energy cost savings.

2.4.8 Details

Only one On-Bill Recovery Loan per utility meter account is allowed at any one time.

The utility account must be in the name of the borrower.

All individuals or legal entity representatives named on the property deed must sign and have notarized an On-Bill Recovery Program Declaration, which will be filed by NYSERDA with the County Clerk in the county in which the installation property is located. This provides notice to any subsequent purchaser of the property. The Declaration is *not* a lien on the property but is recorded to provide notice to others of the loan obligation.

2.5. Customer Eligibility

2.5.1 Loan Approval Criteria

The following table summarizes loan approval criteria, but it is not a comprehensive list of loan underwriting guidelines. These standards are subject to change at NYSERDA's discretion.

Credit Score	**540-599**	**600-679**	**680-779**	**780+**
Debt-to-Income (DTI)*	Up to 70%	Up to 75%	Up to 80%	No limit
Mortgage Payment History	Mortgage has been paid on-time for the past 12 months. No mortgage payments more than 60 days late during the past 12 months.			
Bankruptcy, Foreclosure, Repossession History	None in the past 24 months			
Outstanding Collections, Judgments, Liens and Charge-offs	May not exceed $2,500			

** Debt-to-Income (DTI) is a measure of your existing debt payment obligations (mortgage, auto loan, student loan, credit card payments, etc.) to your income.*

2.6. Project eligibility

2.6.1 Audit Requirements

Projects seeking financing must be based on recommendations contained in an energy audit performed under the Residential Energy Audit Program or in an energy assessment performed under the Existing Homes Program. Reference the Residential Energy Audit program manual for energy audit requirements.

2.6.2 Eligible measures

The energy efficiency measures that can be included in a loan are included in the Proforma tool.

Improvements may include ancillary measures not to exceed 15% of the total cost of eligible improvements up to a maximum of $2,000.

2.6.3 Coordination with utility rebates

The GJGNY Loan may be used in coordination with the rebates provided by utilities. The customer may take a loan out for the full cost of work.

2.6.4 AHPwES and EmPower Programs

NYSERDA incentives are available to customers who have a household income of less than or equal to 80% of the Area Median Income (AMI). If, during the GJGNY loan application process, EFS determines that a customer will be eligible for the AHPwES or EmPower programs the customer will be notified. The customer will have to opt out of these programs in order to proceed without incentives.

3. Implementation Partners Roles & Responsibilities and Contacts

3.1. New York State Energy Research and Development Authority

NYSERDA offers objective information and analysis, innovative programs, technical expertise, and support to help New Yorkers increase energy efficiency, save money, use renewable energy, and reduce reliance on fossil fuels.

NYSERDA administers the Green Jobs – Green NY Program. General questions regarding the Green Jobs – Green NY Residential Financing Program can be directed to:

Heather J. Clark, Senior Project Manager
518-862-1090 ext. 3253
Heather.Clark@nyserda.ny.gov

3.2. Energy Finance Solutions

The residential loans are originated statewide through EFS, a not-for-profit energy efficiency lending organization competitively selected by NYSERDA to provide residential financing services. EFS reviews applications and originates on NYSERDA's behalf loans pursuant to underwriting criteria established by NYSERDA. EFS closes on the loan, disburses proceeds to the Participating Contractor from a cash advance pool provided by NYSERDA to EFS, and then submits the loan to NYSERDA's loan servicer.

Questions related to applications and loan underwriting can be directed to:

Energy Finance Solutions
1-800-361-5663
efs@energyfinancesolutions.com

3.3. Concord Servicing Corporation

Concord is a loan servicing organization competitively selected by NYSERDA as its loan servicer for GJGNY loans. Concord is responsible for borrower billing, collections and inquiries on the loan portfolio and monitors the origination processes to ensure conformance to underwriting standards.

Consumer questions related to loan payments can be directed to:

Concord Services Corporation
1-866-856-4403
cs@concordservicing.com

3.4. Contractors

To offer GJGNY financing, the contractor must sign a Participation Agreement with NYSERDA and an agreement with EFS. If the contractor is an approved Participating Contractor in Residential Existing Homes Program or is a Participating Contractor with PSEG Long Island, then a separate GJGNY Financing Participation Agreement is not required, but an agreement must be signed with EFS. The EFS participation agreement can be found on EFS' website at http://energyfinancesolutions.com.

3.5. Verification Technicians

Verification that the energy efficiency measures contracted for and financed by a GJGNY Loan have been installed and completed will be performed by Honeywell, an independent third-party. See Section 8 for further information.

4. Loan Application Process

4.1. How to apply

Customers may apply online (preferred) or submit a paper application.

The online application is located at:
https://app.energyfinancesolutions.com/consumerportal/Default.aspx

Paper applications may be found on NYSERDA's website. Paper applications can only be submitted via mail or fax. *Applications and related documentation submitted vie email will not be accepted.*

https://www.nyserda.ny.gov/All%20Programs/Programs/Residential-Financing-Options

4.2. Loan origination system info

EFS' on-line loan origination system (LOS) is a fast, effective and secure method of applying for GJGNY financing. The LOS requires the customer to create an account using an email address. Once the account is created, the customer can complete the on-line application and directly upload any required documentation (i.e. income documentation). Participating Contractors are able to monitor

their customers' loan application status and can also upload documentation for the customer. Customers and Participating Contractors are notified by email of status changes or direct comments from EFS staff, and of any required documentation. Customers applying online also have the ability to message EFS directly, print copies of any letters or documents, and electronically sign documents.

4.3. Steps in the process / Checklist / Expectations of timeline

Step 1: Apply for the loan

Upon receipt of a loan application, EFS will obtain the applicant(s) credit report. Depending on the credit score, pre-approval notification will occur either in a matter of seconds or within 24 hours.

- If notification is not received in seconds, it means the credit report will be manually reviewed for late payments, bankruptcies, foreclosures, judgements, repossessions, collections, liens and charge-offs.

Interest rates are determined based on household income. Households with income less than or equal to 120% of the area median income are eligible for the lower interest rate.

Step 2: Receive Loan Status Notification

Applicants submitting a completed application package will be notified by EFS of their loan status either via email notification or by mail. The Participating Contractor, if known, will be notified of the loan status (note: if a customer is denied a loan the Participating Contractor will not be notified).

Once the application is complete and the applicant(s) has been determined to be credit qualified, the application status will be set to "pre-approved" pending the submission of income documentation, if required, and information regarding the energy efficiency project.

Should the applicant(s) apply on-line, they have the option of uploading income documentation at time of application.

Step 3: Submit supporting documentation

The Participating Contractor must submit a copy of a signed contract and any executed change orders detailing the energy efficiency work being financed and a copy of the Proforma, demonstrating loan eligibility.

Note: This step may be completed concurrently with Step 1 or 2 for a single submission to EFS containing all required loan documentation.

Step 4: Return the Signed Loan Documents

Once all required documentation has been received and reviewed, and it is determined the applicant(s) has been approved for GJGNY financing, EFS will send loan documents to the applicant(s). If the applicant(s) applied online, the loan documents will be

available through the online Loan Origination System for electronic signature (note: for OBR loans the Declaration cannot be electronically signed and must be notarized).

Step 5: Complete the Energy Efficiency Work

After the approved energy improvements are installed, the customer and Participating Contractor will sign and return a Certificate of Completion to certify the project is complete. The Certificate of Completion can be found at [link].

Upon receipt of the Certificate of Completion by EFS, loan proceeds are paid directly to the Participating Contractor.

The Certificate of Completion must be submitted to EFS within 30 calendar days following project completion. If a Certificate of Completion is received after the 30-day deadline, the project may be denied financing, and the Participating Contractor will assume all financial liabilities for the project.

5. Loan Approval Process

5.1. Steps in the process

Between the receipt of a loan application through loan approval, EFS' average time to process is approximately 3.5 hours. However, the actual amount of time to process an application is dependent upon the amount of time taken for the applicant(s) to submit required documentation.

5.1.1 Loan Pre-Approvals

Loans are pre-approved when a customer has been determined to be credit qualified. Typically, pre-approval occurs either immediately after on-line application submittal or within 24 hours of on-line application submittal depending upon the credit score of the applicant.

5.1.2 Loan Approvals

Once all required documentation has been received and reviewed by EFS, and it has been determined that the applicant qualifies for a GJGNY Loan, the loan is placed in "approved" status. The applicant(s) then have 360 days to close the loan (see section 5.1). If the loan doesn't close within this timeframe and the applicant(s) later decide to access GJGNY financing, they will be required to re-apply for a loan.

5.2. Required Documentation in Addition to Loan Application

5.2.1. Signed contract and change orders

A copy of the contract and any change orders (if applicable) between the customer and the Participating Contractor must be submitted.

5.2.2 Proforma

The Participating Contractor must fully complete the Proforma and ensure the project is determined to be loan eligible prior to submission, as indicated on the Proforma.

5.2.3 Certificate of Completion

A copy of a Certificate of Completion, signed by both the Customer and the Participating Contractor, must be completed at the end of the project attesting that work has been completed.

6. Loan Closing and Repayment Process

6.1 Participating Contractor Payment/Loan Closing

Generally, within 24 hours following the receipt of the documentation identified in section 4.2, EFS will pay the Participating Contractor the amount of the loan. Once payment has been made the loan is considered closed.

6.2 Loan Set-Up/Loan Servicing

Concord is responsible for servicing the loan and is responsible for tracking payments, delinquencies and customer contacts (inquiries, pay-off requests, etc.). Concord will also contact borrowers concerning late payments, and after 90 days of non-payment will refer the account to a collection agency.

6.2.1 Smart Energy Loans

Borrowers have the option of being directly billed or pay with automatic withdrawal. If direct billed, Concord will invoice borrowers monthly. Borrowers electing to pay via automatic withdrawal are able to monitor their loan balance and change their ACH payments through an on-line portal called MyAccountInfo, found at https://www.myaccountinfo.com/Portal/Account/LogOn.

6.2.2 OBR Loans

Concord will instruct the borrower's utility provider to attach the monthly loan payment to the electric meter. It may take as long as three billing cycles before the loan payment is seen on the utility bill. The utility will collect the payment and remit to Concord on a monthly basis. Concord will continue to coordinate with the utility for the life of the loan.

7. Customer Disputes

All customers disputes are handled directly between the customer and the Participating Contractor. NYSERDA and its Implementation Partners are not responsible for settling customer and Participating Contractor disputes. If a Participating Contractor becomes involved in a dispute with a customer, the Participating Contractor shall work to settle the dispute amicably using the Participating Contractor's customer dispute resolution policy.

8. Verification Process

The goal of the verification process is to confirm that GJGNY Loan funded energy efficiency measures have been installed and completed.

8.1 Verification Rate by Status

8.1.1 Provisional Status

New Participating Contractors are designated as 'Provisional' status and shall have the first three (3) GJGNY Loan funded projects verified to confirm that the energy efficiency measures have been installed and completed. Quality Assurance inspections for any other NYSERDA program shall not be used to fulfill this requirement.

8.1.2 Full Status

Full Participating Contractors shall have up to three (3%) percent or at least once a quarter of all GJGNY Loan funded projects verified to confirm that the energy efficiency measures have been installed and completed. Quality Assurance inspections for any other NYSERDA program shall not be used to fulfill this requirement.

8.1.3 Probationary Status

Up to 100% of projects completed while on Probationary status may be subject to verifications, at the sole discretion of NYSERDA. Verification findings will be used by NYSERDA as one of many factors in determining a Participating Contractor's future participation status.

8.1.4 Suspended Status

Up to 100% of projects completed while on Probationary status may be subject to verifications, at the sole discretion of NYSERDA. Verification findings will be used by NYSERDA as one of many factors in determining a Participating Contractor's future participation status.

8.2 Scheduling Field Verifications

8.2.1 Setting up the Customer Call List

Honeywell is responsible for scheduling verifications of completed projects within the assigned region(s). Honeywell shall strive to conduct verifications within thirty (30) days of project completion and to meet the specified average verification rates as stipulated in Section 8.1. Honeywell shall not regularly schedule verifications later than ninety (90) days from project completion unless in response to special circumstances.

8.2.2 Obtain Project Data Prior to Conducting Verifications

Once sites are selected and verifications are scheduled, the Verification Technician shall obtain the complete list of energy efficiency measures financed by the GJGNY Loan from EFS.

8.2.3 Contractor Invitation to Verification

Customers contacted by Honeywell to schedule a verification will have the option of allowing the Participating Contractor to be present at the time of inspection. Customers are encouraged to allow the Participating Contractor to attend so that any questions can be answered, and minor fixes may be made on site. If the customer agrees, the Participating Contractor shall be notified of the upcoming inspection via email (inspections@nyserda.ny.gov) and shall RSVP via email. Verifications shall be scheduled at least two weeks in advance and no less than five (5) business days.

Customers have the right to request that the Participating Contractor not attend the verification. In these situations, the Participating Contractor will not be notified of the scheduled verification but will receive the result of the inspection within five (5) business days after verification.

8.2.3 Evaluation of Quality Assurance Verification

- Pass – all the energy efficiency measures contracted for and financed by a GJGNY Loan have been installed.

- Fail – some or none of the energy efficiency measures contracted for and financed by a GJGNY Loan have not been installed.

8.2.4 Handling Non-Conformance and Corrective Action

- All non-conformances are expected to be addressed and corrected. Acknowledgement and plans for preventing future problems may be requested by NYSERDA.

- When corrective action is required by NYSERDA, it will be indicated as such on the Verification Report issued via email from NYSERDA to the Participating Contractor. Failed Verification Reports must be remediated within 30 days or disputed within 15 days of the issue date. This report will be made available to the system owner upon submission of a request directly to NYSERDA.

- Acceptable corrective action is to install or complete work for the energy efficiency measures that were contracted for and financed by a GJGNY Loan.

- Sufficient evidence of the corrective action must be provided to NYSERDA within 30 calendar days of receipt of the Verification Report. NYSERDA may at its option conduct a verification of the corrective action.

- If corrective action is not completed within 30 calendar days of receipt of the Verification Report, the Participating Contractor will be required to remit to Concord the amount equal to the cost of the uninstalled or incomplete energy efficiency measure that was contracted for and financed by a GJGNY Loan. Concord will use the remittance to reduce the amount of GJGNY Loan principal due by the customer.

- NYSERDA retains the right to provide a copy of the Verification Report or specific information from the verification directly to the customer, all authorities having local jurisdiction or other stakeholder based upon compliance concerns. In an emergency NYSERDA or its representatives may shut down the system. NYSERDA will notify the participant whenever it takes such action as soon as is practicable.

- NYSERDA may, at NYSERDA's discretion, communicate by voice and/or written format with any customer with respect to any matter relevant to a proposed or installed project. Such communications may be in reply to an inquiry from a customer or at NYSERDA's initiation.

9. GJGNY Loan Fund Advance Payment

As part of NYSERDA's role as administrator of the GJGNY Loan Fund, NYSERDA will provide eligible Participating Contractors with an advance payment ("Advance") when an energy efficiency project is financed, in whole or in part, with a GJGNY Loan in accordance with the conditions below.

9.1 Eligible Contractors

Contractor must be an approved contractor participating in an eligible NYSERDA or utility program ("Program") and must be in good standing in each Program it participates in. Good Standing is defined as never having been suspended from a Program and not having been on probation in any eligible Program in the twelve (12) months prior to the execution of this agreement. Any exceptions to this requirement are at NYSERDA's sole discretion.

Contractor must execute a GJGNY Loan Fund Advance Payment Participation Agreement

Participating Contractors must abide by all New York State laws, rules and regulations including but not limited to those governing the establishment and maintenance of an escrow account. NYSERDA reserves the right to request proof of escrow account at any time.

9.1 GJGNY Loan Advances

- Advances shall only be made on projects that are financed, in whole or in part, with a reduced interest rate GJGNY Loan borrowed by a qualified customer (see Section 2).
- Advances shall be fifty percent (50%) of the GJGNY Loan amount.
- Advances shall be disbursed to the Participating Contractor by EFS after the five (5) business day Right to Cancel period has ended.
- The balance of the GJGNY Loan shall be disbursed to the Participating Contractor upon submittal of the final construction completion certificate.
- Participating Contractors shall have one hundred eighty (180) days from disbursement of the Advance to complete the project.
- Participating Contractors may submit a written request to NYSERDA for an extension of the one hundred eighty (180) day construction completion requirement. The written request must be received by NYSERDA no later than one hundred sixty (160) days from disbursement of the Advance. NYSERDA reserves the right to grant or deny exceptions on a case-by-case basis.
- If a project is not completed within the one hundred eighty (180) days from initial disbursement of the Advance, NYSERDA will issue the Participating Contractor a demand letter. The Participating Contractor must either complete construction or return the Advance to NYSERDA within thirty (30) days of issuance of the demand letter.

- If Advances are not returned to NYSERDA within the thirty (30) days of issuance of the demand letter, NYSERDA reserves the right to:

    a. Use any future incentive payments due to the Participating Contractor from any NYSERDA program that the Contractor participates in to offset the balance of the Advance due;

    b. Suspend the Participating Contractor from participation in the Advance Payment Program;

    c. Suspend the Participating Contractor from the NYSERDA programs it participates in;

    d. Impose interest on the Advance from the date the funds were released at a rate equal to the rate on the customer's loan note;

    e. Disbar the Participating Contractor from all NYSERDA programs and/or other NYS contracts; and,

    f. Refer Participating Contractor to the NYS Attorney General for collection proceedings.

- The maximum balance of outstanding Advances shall not exceed one hundred thousand ($100,000) dollars. NYSERDA reserves the right to grant exceptions on a case-by-case basis.

10. NYSERDA Logo Attribution Guidelines

Participating Contractors are authorized to use the NYSERDA Participating Contractor Attribution Logo (Attribution Logo) subject to the restrictions in these Guidelines. The Guidelines serve to maintain the integrity of the NYSERDA brand, while providing Participating Contractors the opportunity to leverage their relationship with NYSERDA to engage customers.

Participating Contractors are not NYSERDA employees, Participating Contractors, partners, or representatives. Participating Contractors and their employees must therefore identify themselves as representatives of the Participating Contractor's company, not as representatives of NYSERDA or as NYSERDA employees. Participating Contractors may use the Attribution Logo only under the following terms:

- Only approved Participating Contractors who have a current, executed Participation Agreement with NYSERDA are authorized to use the Attribution Logo.
- Participating Contractors **can only** identify themselves with the NYSERDA Participating Contractor Attribution Logo on marketing and promotional materials related to GJGNY Loan Fund, such as agendas, newsletters, and event-related materials;

- The Attribution logo may not be manipulated, stretched, or skewed in any manner.
- The Attribution logo may be used on the Participating Contractor's website **only** on pages that speak to the GJGNY Loan Fund but **cannot** be used in the Participating Contractor's overarching website shell.
- Participating Contractors **cannot** use the Attribution logo on business cards, self-identifying items (e.g., shirts, pins) or for TV.

How to Request the Participating Contractor Logo

For initial creation of the Participating Contractor logo treatment

For initial creation of the Participating Contractor Attribution logo, fill out the online logo request. You must submit a high-resolution vector eps of your logo. www.nyserda.ny.gov/About/Resources/Logo-Requests.aspx

For uses thereafter

NYSERDA must review and approve any material containing the NYSERDA logo prior to publication or distribution, including print, web, or other media. To obtain approval, submit a low resolution PDF to NYSERDA's Marketing Department. Normal turnaround time is 3-5 days.
www.nyserda.ny.gov/About/Resources/Logo-Requests.aspx

NYSERDA Marketing contact is Diane Welch at (518) 862-1090, ext. 3276.

Residential Energy Audit Program Manual

Version 1.1 | December 18, 2019

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Definitions

Area Median Income (AMI):
The statistical midpoint of household earnings for each county in New York State, or State median income, whichever is higher.

Assisted Home Performance with ENERGY STAR:
NYSERDA sponsored residential energy efficiency program that offers incentives for customers with incomes between 60% and 80% of AMI. Learn more at nyserda.ny.gov/assisted-home-performance

EmPower New York:
NYSERDA sponsored residential energy efficiency program that offers incentives for customers with incomes below 60% AMI. Learn more at nyserda.ny.gov/empower

New York Home Performance Portal (NY HP Portal):
Web-based program management software used by NYSERDA, implementation contractors and Participating Auditors to input audit information and upload documents.

Participating Auditor:
Participating Auditors who have met the participation criteria as detailed in this Program Manual, the Residential Energy Audit Participation Agreement and any Program announcements and have been approved by NYSERDA to offer Residential Energy Audits. Participating Contractors in NYSERDA's Residential Existing Homes Program meet the requirements of a Participating Auditor, with submitted proof of auditing credentials.

Participation Agreement:
The agreement between NYSERDA and Participating Auditors that stipulates the requirements and guidelines for participation in the Residential Energy Audit Program.

Public Service Electric and Gas Long Island (PSEGLI):
Electric utility provider for customers located in Long Island New York.

Residential Audit Workflow:
The section within the NY HP Portal where Participating Auditors will enter audit information and upload required documents specific to the Residential Energy Audit Program.

Residential Energy Audit:
An energy audit conducted by a Participating Auditor in accordance with the policies and procedures detailed in this Program Manual, the Residential Energy Audit Participation Agreement and any Program announcements. The Residential Energy Audit is one type of energy audit that meets the Green Jobs - Green NY (GJGNY) audit criteria. Other NYSERDA Programs, such as the Residential Existing Homes Program, also offer energy audits that meet the GJGNY criteria, but have different requirements and procedures.

Residential Energy Audit Program Tool (Audit Tool):
An Excel-based tool used for data collection and production of an energy audit summary report that meets the criteria of a Residential Energy Audit.

1 Program Summary

1.1 Introduction

The New York State Energy Research and Development Authority ("NYSERDA") administers the Residential Energy Audit Program (herein referred to as "the Program") under the authority of Title 9-A of the Public Authorities Law of the State of New York, as amended known as the Green Jobs-Green New York Act of 2009.

The objective of the Program is to provide homeowners with trusted information about their homes' performance and to provide them with an audit report that will guide them in making informed energy efficiency, comfort, health and safety and clean energy investments in their homes. The Program offers free residential energy audits to eligible owners of one to four-unit residential buildings who have income levels above 80% of Area Median Income and where the audits are performed using a network of participating, certified, participating residential energy auditing contractors – herein referred to as "Participating Auditors". NYSERDA provides free residential energy audits for eligible owners of one to four unit residential buildings who have income levels below 80% of Area Median Income through its Residential Existing Homes Program.

The policies and procedures described in this manual are applicable only to the Residential Energy Audit Program. Customers and Participating Auditors looking to participate in other NYSERDA incentive programs such as Assisted Home Performance with ENERGY STAR or EmPower will need to follow the processes and policies specific to those programs. Customers located on Long Island and Participating Auditors seeking to serve these customers will apply through the PSGELI program offering.

1.2 Administration and Implementation Services

Contacts

Primary Contact Method:

- Toll Free: 1-877-NYSMART
- Email: homeaudits@nyserda.ny.gov

NYSERDA

- Bill Keating – Project Manager
- Phone: 518-862-1090 ext. 3089
- Email: bill.keating@nyserda.ny.gov

Implementation Contractor (CLEAResult)

- Rebecca Lloyd, Associate Program Manager
- Phone: 518-207-4514
- Email: Rebecca.Lloyd@clearesult.com

Roles and Responsibilities

NYSERDA

- Program administration
- Establish audit standards

- Program design and policy development
- Participating Auditor management
- Issue payments to Participating Auditors

Implementation (CLEAResult)

- Program inquiries
- Program process inquiries
- Payment invoicing to NYSERDA
- Audit submittal reviews and quality assurance

2 Customer Participation

2.1 Customer Eligibility

All owners of one- to four-unit residential buildings in New York State* who have income levels above 80% of Area Median Income using a Participating Auditor are eligible to receive a no cost Residential Energy Audit through this Program. Please see Appendix A for the NY Residential Income Limits.

** PSEG Long Island electric customers are not eligible for NYSERDA's Residential Energy Audit Program and may apply for an energy assessment directly through their utility.*

2.2 Eligible Building Types:

Residential buildings consisting of one to four dwelling units are eligible for the Program where the building configuration meets the following criteria:

- A single exterior building entrance serves no more than 4 dwelling-units
- A building has no more than 4 dwelling units between firewall separations
- Any heating system serving the building does not exceed an output of 300,000 BTU

In two- to four- unit buildings, each unit is eligible for reimbursement for the cost of an audit.

2.3 Customer Participation

Customers will work directly with their chosen Participating Auditor to schedule and complete their audit. The Program does not require customers to fill out an audit application. The Participating Auditor will provide the customer with the results of the energy audit and then the Participating Auditor will provide the required audit information and documentation directly to the Program using the Residential Audit Workflow in the NY HP Portal. Customers will be required to sign a Customer Attestation Form after the completion of the audit. The Participating Auditor will include this documentation as part of their audit submittal.

NYSERDA's website provides information about the Residential Energy Audit Program and a list of Participating Auditors, available at nyserda.ny.gov/homeaudits. Customers can also access a list of Participating Auditors and information about the Program by calling 1-877-NYSMART.

3 Participating Auditor Participation

3.1 Participating Auditor Eligibility

Required Certifications

All Participating Auditor staff who conduct Residential Energy Audits must personally hold at least one of the below certifications.

- Association of Energy Engineers (AEE) Certified Energy Auditor
- American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) - Building Energy Assessment Professional
- Building Performance Institute (BPI) Building Analyst
- Building Performance Institute (BPI) Energy Auditor
- Building Performance Institute (BPI) Multifamily Building Analyst
- Investor Confidence Project (ICP) Quality Assurance (QA) Assessor
- Leadership in Energy and Environmental Design (LEED) Rater
- Residential Energy Services Network (RESNET) Home Energy Rater (HERS) Rater

The Participating Auditor shall provide NYSERDA written documentation that identifies each individual in the Participating Auditor's Participating Auditor business and their certifications by completing the Residential Energy Audit Program Participation Agreement Signature Form. As an ongoing requirement, the Participating Auditor shall immediately contact NYSERDA via e-mail at homeaudits@nyserda.ny.gov to inform of any change to the list of certified staff that would affect a staff member's eligibility to work in the program.

3.2 How to Apply

Participating Auditor Application and Evaluation

To apply for participation in the Residential Energy Audit Program the applicant must submit the following documentation:

- Completed Participation Agreement Application Signature Form. The applicant must read and submit a completed Agreement Application Signature Form to NYSERDA indicating agreement with its terms. The Agreement Application Signature Form must be submitted by an individual with the full power and authority to enter into an Agreement on behalf of the company.
- Employee roster of certified individuals who will be conducting Residential Energy Audits. See the Participation Agreement Application Signature Form.

- Proof of certification credentials including credential certificate or invoice.
- Detailed description of at least three audits or energy efficiency projects completed in the last six-months including customer address and phone number.
- Certificate of Insurance (Refer to Sections 2.06 and 2.07 of the Participation Agreement for full details):
    - Commercial general liability insurance with minimum limits of $1,000,000
    - Workers' Compensation coverage as required by New York State.
    - Professional liability insurance (errors and omissions) with minimum limit of $1,000,000 if applicable[1]
    - Insurance policies shall list NYSERDA and the State of New York as additional insured
- DBA form (if applicable)

It is NYSERDA's sole discretion to request additional information as necessary for determining the eligibility of an applicant. For applicants who have participated in or who are currently participating in other NYSERDA programs, the past performance of the applicant and/or certified individuals in other NYSERDA programs will be considered. Refer to Section 3.02 of the Participation Agreement for a list of the evaluation criteria.

EmPower or Assisted HP Participants

If you are a Participating Contractor in good standing with NYSERDA's EmPower or Assisted HP Programs, and you have not explicitly opted out of participating in the Residential Energy Audit Program then you will be automatically enrolled in the Residential Energy Audit program and you do not need to apply separately.

3.3 Participation Benefits

Ability to Offer Free Energy Audits

By becoming a Participating Auditor, you will be able to offer state-supported energy audits to your customers and prospects. Customers may not be charged for these services but NYSERDA will provide funding of $150 to Participating Auditors for each complete audit submitted to NYSERDA.

Marketing and Promotional Opportunities

NYSERDA invests in marketing and outreach throughout New York to promote energy audits, energy efficiency upgrades, and clean heating and cooling solutions. This helps generate customer awareness on the value of energy efficiency and directs leads to Participating Auditors listed on NYESERDA's website.

Use of NYSERDA Marketing Materials

Participating Auditors gain access to the use of approved NYSERDA marketing materials to help educate their customers on how to improve the performance of their homes.

Offset Customer Acquisition and Sales Cost

[1] Consult with your insurance company to determine if you need this coverage based on your business model.

Receive prompt payment of audit reimbursements to help offset your customer acquisition and sales costs.

Value Added Services
Add value for your customers by offering a snapshot of their home with a path to increased comfort and lower operating costs.

4 Required Documentation

4.1 Residential Energy Audit Program Tool

Participating Auditors will be required to complete and submit a copy of the **Residential Energy Audit Program Tool (Audit Tool)** to the Program. Participating Auditors will also provide a copy of the energy audit summary report generated by the tool to their customers. A review of the customer's energy bills is required, and savings estimates must be compared to the customer's energy consumption and cost history from their energy bills to validate that projected savings estimates generated by the tool are realistic before they are presented to the customer.

Participating Auditors shall provide this summary report to a customer in a printed or PDF format; not in the Excel based format.

4.2 Customer Attestation Form

For each audit submitted for reimbursement, the Participating Auditor must ensure the Customer Attestation Form is completed and signed by the customer. The Customer Attestation Form includes a Customer Attestation and Utility Data Release section where a customer will attest to the fact that they had an energy audit completed in their home and consent to release energy usage information as well as other information. It is important that the customer's utility information is filled out completely and accurately.

4.3 Electronic Signature Policy:

Signatures are a declaration that a customer or Participating Auditor understands and accepts the statements above the signature. As such:

- It is inappropriate to transfer one signature to another document.
  Altering documents by changing dates of signature or pricing is not allowable. It is unlawful to alter a document after a customer has signed it.

- Changing pricing or signature dates after the signature was obtained will be cause for disciplinary actions from NYSERDA.

Authentic signatures are critical. Currently the only acceptable processes for obtaining signatures are as follows:

- The customer's physical signature on a paper document (a "wet signature").
- An electronic signature created by the customer directly on the specific document, after the document has been completed. Staff must ensure that no information or data points above the signature are modified after the signature has been executed.
- If a customer is incapable of providing a signature according to the above, please document the reason on the form.

Cutting and pasting a signature from another document or forging a signature can result in disciplinary action from NYSERDA.

5 Residential Energy Audit Process

5.1 Residential Energy Audit Process Overview:

Step 1: Audit customer contacts Participating Auditor to schedule audit

Step 2: Participating Auditor performs audit

Step 3: Participating Auditor completes NYSERDA Audit Tool

Step 4: Participating Auditor provides a copy of the audit summary report and Customer Attestation Form to customer, preferably within 24-hours of completing the audit but no later than 7 calendar days following the audit.

Step 5: Customer signs Customer Attestation Form

Step 6: Participating Auditor enters customer information in NY HP Portal and uploads Excel copy of Audit Tool and the signed Customer Attestation Form within 30 days of audit completion

Step 7: Participating Auditor receives reimbursement of $150

Customers will typically contact a Participating Auditor after hearing about the Residential Energy Audit Program through public awareness campaigns, marketing efforts, word or mouth or some other avenue. There is no customer application or approval process. Customers work directly with the Participating Auditor of their choice and schedule the audit.

The Participating Auditor will then conduct the audit in compliance with the requirements detailed in this Program Manual, (including the Residential Energy Audit Technical Requirements found in Appendix B) the Participation Agreement and any Program announcements, complete the NYSERDA Audit Tool, provide the customer with the recommendations report, and have the customer sign the Customer Attestation Form.

5.2 Audit Submission

Participating Auditors will provide the required audit information and documentation to NYSERDA using the Residential Audit Workflow in the NY HP Portal after the audit site visit has been completed and the audit report was delivered to the customer. Participating Auditors will log into NY HP Portal access the Residential Energy Audit Workflow, enter the customer's information into the system and upload the following documents:

- NYSERDA Audit Tool in Excel format
- Signed Customer Attestation Form

For two- to four- unit buildings, the Participating Auditor must separately submit documentation and will receive the $150 payment for each unit that received an audit in a building.

5.3 Audit Submission Deadlines:

A completed audit recommendations report, generated by NYSERDA's Audit Tool, must be submitted to the customer no more than 7 calendar days after the completion of the energy audit. It is best practice to review the audit report with the customer in person at the conclusion of the home energy audit visit and to provide a copy of the report to the customer on paper or as an electronic pdf within 24 hours of the audit. Participating Auditors who wish to use another energy modeling tool may do so, but it is not required by NYSERDA nor will it result in additional compensation from NYSERDA.

The Audit Tool, in its Excel format, and the signed Customer Attestation Form must be uploaded to the Residential Audit Workflow in the NY HP Portal no more than 30 calendar days after completion of the energy audit. Participating Auditors are encouraged to submit audits for reimbursement as soon as feasible after the audit is completed in order to receive timely payment.

For step by step instructions on accessing and uploading documents to the Residential Audit Workflow in the NY HP Portal please refer to the Residential Audit Workflow User Guide.

5.4 Audit Reimbursement

Audits successfully entered into the NY HP Portal and passing Quality Control review will be eligible to receive a reimbursement in the amount of $150 per completed audit. NYSERDA will process invoices on a weekly basis. NYSERDA reserves the right to deny reimbursements for audits that are determined not to have met Program requirements and deadlines.

For 2-4-unit buildings that meet the building type eligibility criteria detailed in Section 2.2, Participating Auditors may submit an audit for each of the units individually and be reimbursed for each individual unit at a rate of $150 each.

Participating Auditors may not submit an audit to multiple programs for reimbursement; only one audit incentive is allowed per completed audit.

Add-on Audit Services

Participating Auditors may offer enhanced inspection, diagnostic, and assessment services that go above and beyond NYSERDA's minimum requirements to customers for an additional fee at their own discretion. Participating Auditors may not charge customers for completing services that are within NYSERDA's prescribed minimum requirements.

6 Participation Status, Quality Assurance, and Compliance

6.1 Participation Status Change

The Participating Auditor shall be designated as one of four participation status types including **Full, Probation, Suspended or Terminated**. NYSERDA reserves the right to modify the definition, limitations, and requirements of the participation status designations at any time. NYSERDA retains sole discretion for determining the Participating Auditor's status designation. In all cases, NYSERDA's written decision is final. Please refer to the Residential Energy Audit Participation Agreement for more information about the Participation Statuses.

Status Review Process:

The status review process for administering probationary, suspended, or terminated status is as follows:

- NYSERDA will provide written notice of Participating Auditor violations which may result in a change in status. The participating Auditor will be allowed a grace period of no less than 10 business days to respond to the notice. The notice will outline a description of the violation(s) with supporting documentation and the specifics for potential disciplinary action.
- During this period, the Participating Auditor will have an opportunity to respond to the notice, appeal, or accept the terms of the notice.
- If the Participating Auditor fails to respond to NYSERDA prior to the end of the notice period, the stated disciplinary action will go into effect without further notice.
- NYSERDA will promptly review any request for an appeal before the end of the notice period.
- NYSERDA will confirm, reverse, or place its action on hold based upon a review of all information received within 10 business days of receipt.
- Intended and final action letters will be sent via email and U.S. mail. The notice period commences on the date of the email from NYSERDA. NYSERDA reserves the right to shorten these notice periods or take immediate action in the event of an emergency, as determined by NYSERDA.

6.2 Quality Assurance and Quality Control

Each submitted audit will be reviewed for completeness and to ensure all required forms are submitted. A deeper review of submitted Residential Energy Audits will be completed on a sampled basis to ensure program rules are followed and customers are receiving quality energy audits.

The Program will review at least one audit per Participating Auditor per invoicing period and will provide feedback to the Participating Auditors. If patterns of poor-quality audits are found a higher rate of review will be instituted and the Participating Auditor will be notified via e-mail and US mail by NYSERDA's Implementation Contractor of the on-going deficiencies and asked to rectify the identified quality deficiencies. Any issues found in a submitted audit will be sent backward in the NY HP Portal Residential Audit Workflow (refer to Residential Audit Workflow User Guide) by NYSERDA's Implementation contractor with directions to address the audit submittal deficiencies. Note: **Emails are not sent when audits are returned for submission errors. It is the Participating Auditor's sole responsibility to check the NY HP Portal on a regular basis to address any returned audit. Audit submissions must be corrected within 14 calendar days of the audit submission being rejected in order to be eligible for reimbursement.**

Field Quality Control (QC) will be completed on an as-needed basis based on the outcome of administrative reviews. The Participating Auditor shall not inhibit or discourage customers from participating in the QC process and shall make a good faith effort to facilitate this process.

Upon findings of persistent errors or a pattern of poor-quality audits the Participating Auditor may be subject to a change in Participation Status as detailed in Section 6.1.

7 Financing

7.1 Access to Financing for Residential Energy Audit Customers

The Green Jobs-Green New York Act of 2009 GJGNY requires that customers who receive a GJGNY loan must first receive an energy audit. Residential financing is available to all eligible customers. Customers not participating in an incentive-based program (such as Assisted Home Performance with ENERGY STAR) will be able to work directly with NYSERDA's loan servicer, Energy Finance Solutions, (EFS) to access the GJGNY loan, if they are working with a participating loan contractor. For more information on the process for accessing Financing for your customers please refer to the Financing Program Manual listed on NYSERDA's website.

Appendix A: NY Residential Income Limits

NY Residential Existing Homes Programs
Income Limits Effective December 2019

Household Size	1	2	3	4	5	6	7	8	9	10
80% State Median Income	$39,904	$52,192	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
80% Area Median Income										
Albany County	$50,350	$57,550	$64,750	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Allegany County	$39,904	$52,192	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Bronx County	$59,750	$68,300	$76,850	$85,350	$92,200	$101,312	$105,850	$115,813	$127,600	$139,387
Broome County	$39,904	$52,192	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Cattaraugus County	$39,904	$52,192	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Cayuga County	$39,904	$52,192	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Chautauqua County	$39,904	$52,192	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Chemung County	$41,450	$52,192	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Chenango County	$39,904	$52,192	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Clinton County	$39,904	$52,192	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Columbia County	$44,200	$52,192	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Cortland County	$39,904	$52,192	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Delaware County	$39,904	$52,192	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Dutchess County	$52,850	$60,400	$67,950	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Erie County	$43,050	$52,192	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Essex County	$39,904	$52,192	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Franklin County	$39,904	$52,192	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Fulton County	$39,904	$52,192	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Genesee County	$39,904	$52,192	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Greene County	$39,904	$52,192	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Hamilton County	$39,904	$52,192	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Herkimer County	$39,904	$52,192	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Jefferson County	$39,904	$52,192	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Kings County	$59,750	$68,300	$76,850	$85,350	$92,200	$101,312	$105,850	$115,813	$127,600	$139,387
Lewis County	$39,904	$52,192	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Livingston County	$42,400	$52,192	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Madison County	$44,550	$52,192	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Monroe County	$42,400	$52,192	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Montgomery County	$39,904	$52,192	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Nassau County	$62,300	$71,200	$80,100	$88,950	$96,100	$103,200	$110,300	$117,450	$127,600	$139,387
New York County	$59,750	$68,300	$76,850	$85,350	$92,200	$101,312	$105,850	$115,813	$127,600	$139,387
Niagara County	$43,050	$52,192	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Oneida County	$39,904	$52,192	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Onondaga County	$44,550	$52,192	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Ontario County	$42,400	$52,192	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Orange County	$52,850	$60,400	$67,950	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Orleans County	$42,400	$52,192	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Oswego County	$44,550	$52,192	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Otsego County	$39,904	$52,192	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Putnam County	$59,750	$68,300	$76,850	$85,350	$92,200	$101,312	$105,850	$115,813	$127,600	$139,387
Queens County	$59,750	$68,300	$76,850	$85,350	$92,200	$101,312	$105,850	$115,813	$127,600	$139,387
Rensselaer County	$50,350	$57,550	$64,750	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Richmond County	$59,750	$68,300	$76,850	$85,350	$92,200	$101,312	$105,850	$115,813	$127,600	$139,387
Rockland County	$59,750	$68,300	$76,850	$85,350	$92,200	$101,312	$105,850	$115,813	$127,600	$139,387
Saratoga County	$50,350	$57,550	$64,750	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Schenectady County	$50,350	$57,550	$64,750	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Schoharie County	$50,350	$57,550	$64,750	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Schuyler County	$39,904	$52,192	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Seneca County	$39,904	$52,192	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
St. Lawrence County	$39,904	$52,192	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Steuben County	$39,904	$52,192	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Suffolk County	$62,300	$71,200	$80,100	$88,950	$96,100	$103,200	$110,300	$117,450	$127,600	$139,387
Sullivan County	$41,900	$52,192	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Tioga County	$39,904	$52,192	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Tompkins County	$47,000	$53,700	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Ulster County	$46,700	$53,350	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Warren County	$39,904	$52,192	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Washington County	$39,904	$52,192	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Wayne County	$42,400	$52,192	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Westchester County	$59,750	$68,300	$76,850	$85,350	$92,200	$101,312	$105,850	$115,813	$127,600	$139,387
Wyoming County	$39,904	$52,192	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387
Yates County	$39,904	$52,192	$64,480	$76,752	$89,040	$101,312	$104,027	$115,813	$127,600	$139,387

Appendix B: Residential Energy Audit Technical Requirements

STANDARDS FOR 1-4 UNIT RESIDENTIAL ENERGY AUDITS

OVERVIEW:
Per the Green Jobs – Green NY Act of 2009, an energy audit is defined as "a formal evaluation of a building's energy consumption for the purpose of identifying methods to improve energy efficiency and conserve energy, including associated health and safety issues conducted pursuant to standards established by NYSERDA".

This document details the standards for a Green Jobs – Green NY (GJGNY) 1 to 4-unit whole home residential energy audit for existing homes, herein referred to as a Residential Energy Audit. Any program offering a Residential Energy Audit must follow this standard as a minimum requirement but may wish to include additional elements that support programmatic goals.

This standard aligns with ANSI/BPI-1100 Home Energy Auditing Standard and ANSI/BPI 1200 Standard Practice for Basic Analysis of Buildings but does not require diagnostic testing at the time of the Residential Energy Audit. **Diagnostic testing during the audit is a best practice and may be offered to the customer as part of the sales process or for an additional charge if the contractor chooses to do so. Diagnostic tests should be conducted prior to or in conjunction with the installation of relevant measures (e.g. blower door tests when air sealing is installed).**

A Residential Energy Audit shall include a visual inspection of the whole building, analysis of the building's overall energy performance, identification of related health and safety hazards, development of a list of recommended improvements, and an assessment of the energy savings anticipated from improving the energy performance of the building. This should also include a review of monthly electric and heating fuel consumption data from the customer's energy bills when it is available (preferably 12 months of historical usage data) that relate to the whole building. When monthly billing data is unavailable, the contractor shall review the customer's reported annual energy costs and compare that to the predicted energy savings for recommended measures to ensure predicted energy savings are reasonable.

Residential Energy Audit Program Tool (Audit Tool):
Participating Auditors will be required to submit a completed Residential Energy Audit Program Tool to the Program. This tool produces a summary report with the following information:

- Residential Auditor Company name
- Name of Auditor
- Date of Audit
- Customer name
- Building address
- Documentation of existing conditions, including health & safety concerns
- List of recommended upgrades
- Estimated annual savings, represented as a percentage of total energy consumption

Participating Auditors may use other energy modeling tools (in addition to the NYSERDA Audit Tool) to support their sales process, but it is not required by NYSERDA nor will it result in additional compensation from NYSERDA. The accuracy of the inputs will be the sole responsibility of the auditor.

BILLING REVIEW

The audit must include an evaluation of the customers whole building energy consumption through a review of monthly electric and heating fuel consumption data from the customer's energy bills (preferably 12 months of historical usage data) when available. When a complete 12-months of billing data is unavailable, the Participating Auditor shall make reasonable efforts to estimate the customer's energy usage based on the customer's knowledge of what they pay their energy providers or other means available.

AIR SEALING:

Visual inspection, evaluation and documentation of the following elements as they relate to the energy performance of the home:

- Weather-stripping at exterior doors and attic access hatch
- Duct boots
- Mechanical, electrical, and plumbing chases
- Recessed lights and other electrical fixture penetrations through ceilings and walls
- Bath fan ceiling penetrations
- Plumbing penetrations
- Drywall-to-top-plate connections
- Wood-to-wood seams
- Drop soffits
- Knee wall door
- Overhangs, Floor bay connections under knee walls, and other interstitial framing details
- Top of balloon-framed walls
- Rim joists

Document leakage areas to be addressed and estimate of leakage reduction that may be achieved in the home based on sealing those leaks. Although the use of a blower door to determine air leakage is considered a best practice it is not required at the time that the Residential Energy Audit is conducted.

INSULATION:

Visual inspection, evaluation and documentation of, but not limited to, the following elements on the thermal boundary, including:

- Attics
- Knee Walls and knee wall floors
- Exterior walls
- Rim joists
- Overhangs
- Crawlspace
- Basement

Document type, and effective R-value, of insulation as well noting any degradation per BPI Technical Standard for Building Analyst Professional or installation issues with existing insulation.

Document all insulation under consideration for replacement, including type, effective R-value, depth and square footage.

WINDOWS-SKYLIGHTS AND DOORS:
Visual inspection, evaluation and documentation of, but not limited to, the following elements:

- Frame material (wood, metal, vinyl, fiberglass; presence of thermal break)
- Glass type (number of panes, low-e coatings, gas fill)
- Evaluate window condition and operation
- Determine whether the door is insulated.
- Determine whether the door is wood, metal, or fiberglass
- Evaluate door condition and operation

HEATING-COOLING AND DOMESTIC HOT WATER SYSTEMS
For each heating appliance, Central AC system, heat pump and domestic water heater locate and record the following system information from the nameplate when available and as applicable to the individual appliance:

- Size in BTUh
- Efficiency rating
- BTUh input and
- BTUh output
- Refrigerant type

Heating Systems
Heating system efficiency can be assessed by referencing the name plate data. When name plate data is not available a default efficiency may be assumed in accordance with BPI 2400.

Participating Auditors should conduct a visual inspection, evaluation and documentation of the heating system appropriate for the system type (furnace, boiler, heat pump) and distribution type including:

- Location and condition of the heating appliance
- Condition of return and supply duct connections
- R-value of duct insulation
- Inspect for restrictions to duct system airflow
- Inspect for gaps, leaks and disconnected duct work
- System filter and filter slot cover
- For condensing units check the condition of condensate drain connections, drain line and the condition of the condensate pump
- Inspect for evidence of leakage, corrosion and deposits at the appliance and local piping
- Verify presence of an automatic feeder valve for water systems
- Inspect for soot, debris, or signs of spillage around flue collar, barometric draft control, or draft hood
- Note condition of the expansion tank

Central Air Conditioning / Heat Pump:

Visual inspection, evaluation and documentation of, but not limited to, the following elements:

- Location and condition of the indoor and outdoor equipment
- Examine the outdoor coil cabinet
- Evaluate the clearance on all sides of the outdoor coil cabinet
- Examine the condition of the outdoor coils
- Examine condition of the insulation on the refrigerant piping at the outdoor coil
- Examine the indoor coil air handler cabinet
- Check the system filter condition and filter slot cover
- Check the condition of condensate drain pan connections, drain line and the condition of the condensate pump if one exists

Ductless mini split:

Visual inspection, evaluation and documentation of, but not limited to, the following elements:

- Examine the outdoor coil cabinet
- Examine the indoor head(s)
- Examine the refrigerant piping (lineset) insulation
- Check the filter and the accessible surface of the coil for dirt build up, obstructions or damage

Provide estimated measure cost and energy savings associated with ductless mini-split improvements.

Solid Fuel Burning Appliance:

Visual inspection, evaluation and documentation of, but not limited to, the following elements:

- Recommend a certified hearth professional to conduct an inspection of appliance.
- Determine if the appliance is the primary heating source.
- Determine when the chimney and vent connector were last cleaned and inspected.
- If they have not been cleaned and inspected within the past year, recommend servicing by a certified hearth professional.
- Visually inspect and note the type and condition of flooring material where the appliance is installed. Recommend service or replacement by a qualified professional shall be if any of the following indicators are noted:

    - Appliances installed on carpets, wood floors or other combustibles.
    - Inadequate clearance to combustible materials. Consult the appliance documentation for required clearances. If no documentation is available, refer to NFPA 211.
    - Signs of structural failure, such as cracks or broken welds, of any components.

Domestic Hot Water Systems:

Visual inspection, evaluation and documentation of, but not limited to, the following elements:

- Note the location, type, and general condition of the domestic water heater
- Inspect for soot, debris, or signs of spillage around flue collar, barometric draft control, or draft hood
- Verify the presence and condition of tank insulation wrap, if present verify proper installation and recommend modification or removal if the tank wrap presents a safety risk or voids the manufacturer's warranty of the water heater
- Verify the presence and condition of overflow pan
- Document temperature control setting
- Verify pipe insulation type and location
- Verify the presence of the TPR valve and note its rating
- Verify the presence of TPR piping
- Inspect for leaks at the storage tank

THERMOSTATS AND CONTROLS:

Visual inspection, evaluation and documentation of, but not limited to, the following elements:

- Document the type, number and location of thermostats and or other mechanical system controls

APPLIANCES:

Visual inspection, evaluation and documentation of refrigerator, freezer, dishwasher, clothes washer, clothes dryer and other major appliance and pumps to include the following elements:

- Date of manufacture or approximate age
- Condition
- Dryer fuel source and venting
- Number and types of pumps (sump, septic, well pumps)
- Pool and/or spa size (gallons), type, and usage (hours per day and months per year)
- Pool and/or spa pump rated horsepower

LIGHTING AND PLUG LOADS:

Visual inspection, evaluation and documentation of, but not limited to, the following elements:

- Evaluate existing lighting and make recommendations for lighting efficiency upgrades, including LED light bulbs, and hardwire LED fixtures, where appropriate
- Recommend, and educate homeowner about, smart power strips for plug load clusters such as an entertainment center or home office

WATER CONSERVATION

The energy audit shall include an assessment of potential water conservation measures. The energy audit shall include the following:

- Determine if the water supply is from a private well and identify the approximate age of the well pump
- Evaluation of water usage and presence of low flow devices for toilets, shower heads, faucets, and clothes washers.

- Advice to the homeowner/occupant about the value of water efficiency and conservation strategies and user-controlled changes that may reduce water consumption

HEALTH AND SAFETY:

General:

- Visual inspection for existence of knob and tube wiring
- Identification of observable electrical hazards
- Check for presence of carbon monoxide and smoke detectors
- Identification of areas containing known or suspected hazardous materials, including but not limited to, lead, asbestos, or mold

Combustion Appliance and Fuel Distribution System Inspection:

- Identification of building-related conditions that may require immediate health and safety remediation
- Fire combustion appliances including ovens, range tops and unvented heaters and monitor ambient air for carbon monoxide (CO)
- Monitor ambient air for combustible gas
- Inspection of oil-fired appliance fuel supply system (tank, supply line, burner) for leaks
- Inspection of combustion venting systems for damage, leaks, disconnections, inadequate slope and other safety hazards.

Direct testing at the appliance for carbon monoxide, combustible gas leaks, and spillage of flue gases is not required at the time of the audit but can be conducted at the discretion of the auditor. When testing is conducted the testing equipment must comply with the specifications detailed in BPI 1200 sections 7.1.1.1 through 7.1.4.2.2.

The auditor shall not proceed with work when CO concentrations in the work environment exceed 35 ppm or if any measured concentrations of combustible fuel gas exceed 10% of the LEL.

When either of these conditions occur, the auditor shall inform the homeowner/occupants of the unsafe condition and advise evacuation of the home. The auditor shall leave the home and the appropriate emergency services and fuel gas providers shall be notified from outside the home. The auditor shall contact the appropriate emergency services only if the homeowner/occupant is unable to do so.

Indoor Air Quality and Ventilation:

- Identification of sources of indoor air pollutants
- Identification of air leakage pathways from garage to living space and its attic area
- Evaluation of terminations of all exhaust fans and clothes dryer vents
- Evaluation of existing ventilation systems in the dwelling
- Determination of the ventilation needs

Moisture Control:

The energy audit shall include a visual/sensory inspection of each home for moisture issues.

- Inspection for evidence of exterior water intrusion, such as roof leaks, foundation leaks, fenestration assembly leaks and ground-water intrusion
- Inspection for evidence of damage caused by interior water sources, such as plumbing leaks or condensation on piping, ductwork or interior surfaces
- Inspection for effects of water damage on buildings, such as structural damage, mold, mildew, efflorescence, and stains
- Identification of existing vapor retarders, flashing, gutters or other moisture-control strategies

Unvented Heaters:

Unvented heaters present a health and safety risk for homeowners due to the potential dangers of CO, moisture, oxygen depletion and NO2.

The Residential Audit Program strongly recommends that in every instance where an unvented space heater is found to be operating in a customer's home that the Participating Auditor educate the customer about the dangers of unvented space heaters and explore all reasonable options for removing the unvented heating and installing a heating system replacement.

MINOR REPAIRS:

Visual inspection, evaluation and documentation of minor repairs that are necessary to ensure maximum efficiency from the provision of qualified energy efficiency services. For example, repairing roof leaks prior to the installation of attic insulation so as not to damage newly installed insulation.

BEST PRACTICES:

- Follow energy audit guidelines as detailed in ANSI/BPI-1200-S-2017 Standard Practice for Basic Analysis of Buildings
- Photo documentation of existing conditions
- Use of IR camera to assess insulation and air infiltration
- Energy education and coaching with customer

Residential Energy Audit Program Participation Agreement

January 1, 2020 – December 31, 2024

V1.0

Definitions:

Area Median Income (AMI):
The statistical midpoint of household earnings for each county in New York State, or State median income, whichever is higher.

Implementation Contractor:
Organization working under contract with NYSERDA to provide administrative and Program support functions such as data collection, reporting, invoicing and quality assurance.

New York Home Performance Portal (NY HP Portal):
Web-based program management software used by NYSERDA, Implementation contractors, and Participating Auditors to input audit information and upload documents.

Participation Agreement:
This Participation Agreement ("Agreement") establishes the terms and conditions under which Participating Auditors may participate in the Residential Energy Audit Program ("the Program") and offer Residential Energy Audits to qualified customers in New York State.

Participating Auditor:
Participating Auditors are companies or organizations that have meet the participation criteria as detailed in this Participation Agreement, the Program Manual and any Program announcements and have been approved by NYSERDA to offer Residential Energy Audits. Participating Contractors in NYSERDA's Residential Existing Homes Program meet the definition of a Participating Auditor.

Residential Energy Audit:
An energy audit conducted by a Participating Auditor in accordance with the policies and procedures detailed in this Residential Energy Audit Participation Agreement, Program Manual and any Program announcements.

Article I. General Program Information

Section 1.01 Residential Energy Audit Program Overview

The objective of the Residential Energy Audit Program (Program) is to provide homeowners with trusted information about a home's energy performance and to provide them with a roadmap/pathway/report to making sound energy efficiency and clean energy investments into their homes.

The Program will deliver no cost residential energy audits to the owners of one to four-unit residential buildings with income levels above 80% of Area Median Income where the audits are performed using a network of participating, certified, residential energy auditing contractors. Audits for owners of buildings with income levels below 80% of Area Median Income are provided for under NYSERDA's Residential Existing Homes Program.

Participating Auditors must comply with all policies and procedures detailed in this Agreement, the Residential Energy Audit Program Manual and any Program announcements.

Should a Participating Auditor no longer choose to offer residential energy audits under this Agreement, they are required to immediately inform NYSERDA and remove all references to NYSERDA and the Residential Energy Audit Program from their website.

This Agreement is valid through December 31, 2024, or until Program funds are depleted, whichever comes first.

Article II. Participation Requirements

Section 2.01 Participating Auditor and Certified Staff

Each individual conducting audits for a Participating Auditor must maintain at least one of the certifications listed below. By entering into this Agreement, the Participating Auditor authorizes NYSERDA to share and obtain information with and from these certifying bodies for the purpose of verifying certifications the Participating Auditor must have at least one of the certifying organizations and employ staff with one or more of the certifications listed below:

- Association of Energy Engineers (AEE) Certified Energy Auditor
- American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)-Building Energy Assessment Professional
- Building Performance Institute (BPI) Building Analyst
- Building Performance Institute (BPI) Energy Auditor
- Building Performance Institute (BPI) Multifamily Building Analyst
- Home Energy Rater (HERS) Rater
- Investor Confidence Project (ICP) Quality Assurance (QA) Assessor
- Leadership in Energy and Environmental Design (LEED) Rater

The Participating Auditor shall provide NYSERDA written documentation that identifies each individual who will be performing audits and their certifications. As an ongoing requirement, the Participating Auditor shall immediately inform NYSERDA of any change to the list of certified staff that would result in a lack of compliance with these requirements.

Section 2.02 Licensing

It is the sole responsibility of the Participating Auditor to obtain and maintain any required federal, state, county, or municipal government licenses required for conducting residential energy audits and to not perform work for which they are not licensed. The Participating Auditor shall produce evidence of current licensing upon request by NYSERDA. Failure to comply with licensing requirements may result in disciplinary action.

Section 2.03 Permits

It is the sole responsibility of the Participating Auditor to obtain and comply with the terms of any required permits for conducting residential energy audits prior to the start of work. The Participating Auditor shall produce evidence of applicable permits upon request by NYSERDA. Failure to comply with permitting requirements may result in disciplinary action.

Section 2.04 Codes

All Participating Auditors must perform work in compliance with all applicable codes, regulations, laws, and standards in the jurisdiction where conducting work.

Section 2.05 Health and Safety

Each Participating Auditor must have a health and safety plan and maintain a copy of the plan at the work site.

Section 2.06 Insurance

a) The Participating Auditor, at no additional cost to NYSERDA, shall maintain or cause to be maintained throughout the term of this Agreement, insurance of the types and in the amounts specified in this Section. All such insurance shall be evidenced by insurance policies, each of which shall: (1) reference this Agreement; name or be endorsed to cover the Participating Auditor as the insured, and NYSERDA and the State of New York as additional insured; and reference all work to be performed under the Program; (2) provide that such policy may not be cancelled or modified until at least 30 days after receipt by NYSERDA of written notice thereof; and be reasonably satisfactory to NYSERDA in all other respects. NYSERDA reserves the right to request insurance documentation and copies of sub-contractor agreements for any sub-contractor, and to request the identity of all participating individuals**.**

The types and amounts of insurance required to be maintained under this Section are as follows: (1) commercial general liability insurance for bodily injury liability, including death, and property damage liability, incurred in connection with the performance of this Agreement, with minimum limits of $1,000,000 in respect of claims arising out of personal injury, sickness, or death of any one person, $1,000,000 in respect of claims arising out of personal injury, sickness or death in any one accident or disaster, and $1,000,000 in respect of claims arising out of property damage in any one accident or disaster, and (2) Workers' Compensation coverage as required by New York State.

Not less than 15 days prior to the date any policy furnished or carried pursuant to this Agreement will expire, the Participating Auditor shall deliver to NYSERDA a certificate(s) of insurance evidencing the renewal of such policy(s), and the Participating Auditor shall promptly pay all premiums thereon due. No work shall be performed under this

Agreement without current insurance. NYSERDA will not make payments for projects completed under this Agreement without current insurance certificates.

b) In the event of threatened legal action, claims, encumbrances, or liabilities that may affect NYSERDA hereunder, or if deemed necessary by NYSERDA due to events rendering a review necessary, the Participating Auditor shall deliver to NYSERDA a certified copy of each policy upon request.

Within five working days, or contemporaneously with the requirements of each insurance policy, the Participating Auditor shall notify NYSERDA in writing of the occurrence of any accident, event or incident involving personal injury or property damage that might reasonably result in any complaint or claim, in law or in equity, against the Participating Auditor, any non-customer party to the applicable Program participant agreement or NYSERDA.

Section 2.07 Professional Liability Insurance

Some Participating Auditors only provide energy auditing services and do not complete installation work. For these business models, the Participating Auditor shall carry professional liability insurance (errors and omissions) with a minimum limit of $1,000,000.

Section 2.08 Workers' Compensation

The Participating Auditor shall maintain Workers' Compensation covering the obligations of the Participating Auditor as required under the provisions of the Workers' Compensation Law, Employers Liability, and Disability Benefits.

If a Participating Auditor is identified as a Sole Proprietor, the Participating Auditor must complete and submit form CE-200: https://ce-200-form.com/.

Section 2.09 Participant Issues and Dispute Resolution

NYSERDA and its Implementation contractors have no responsibility to provide dispute resolution assistance. Regardless of the nature of, or parties involved in, the dispute and any resolution, the Participating Auditor shall hold NYSERDA and its Implementation Contractor(s) harmless from any legal action. Failure to resolve issues in a timely manner may result in disciplinary action. NYSERDA requires the Participating Auditor to maintain a dispute resolution policy on file. If a Participating Auditor becomes involved in a dispute with a customer over business practices, the Participating Auditor shall work to settle the dispute amicably utilizing the Participating Auditor's customer dispute resolution policy.

NYSERDA may request a copy of the Participating Auditor's dispute resolution policy at any time and specifically in the event a Customer notifies NYSERDA of an issue.

Article III. General Application Information

Section 3.01 Application Requirements

The applicant shall provide NYSERDA the information below when submitting the Participation Agreement Application Signature Form, as requested by NYSERDA, or when there are changes or updates to the information previously provided.

(a) Completed Participation Agreement Application Signature Form: The applicant must read and submit the completed Agreement Application Signature Form to NYSERDA

indicating agreement with its terms. The Agreement Application Signature Form must be submitted by an individual with the full power and authority to enter into an Agreement on behalf of the company.

(b) Employee roster of certified individuals who will be conducting Residential Energy Audits including proof of certification credentials.

(c) Detailed description of at least three audits or energy efficiency projects completed in the last six-months including customer address and phone number.

(d) Certificate of Insurance (See Sections 2.06 and Section 2.07 of this Agreement for details)

(e) Professional Liability Insurance (if applicable)

(f) DBA form (if applicable)

It is NYSERDA's sole discretion to request additional information as necessary for determining the eligibility of an applicant in meeting the requirements of this Agreement.

Section 3.02 Evaluation Criteria for Auditor Acceptance

NYSERDA will conduct due diligence in the evaluation of the applicant and the information provided on the Participation Agreement Application Signature Form and review all submitted documentation prior to approving an Agreement. NYSERDA will not make a determination on any Participation Agreement until all the requested information is received by NYSERDA from the applicant. The decision to fully execute an Agreement is at NYSERDA's sole discretion.

(a) NYSERDA key evaluation criteria include, but are not limited to the following:

- **(i)** The applicant's commitment to fair and ethical business practices as demonstrated through review of resources including, but not limited to, the Better Business Bureau, NYS Department of Labor, and consumer reviews.
- **(ii)** A minimum of six months experience working in the field of residential, one-to-four family energy efficiency completing audits, ratings, or similar services.

(b) For applicants who have participated in or who are currently participating in this or other NYSERDA programs, the past performance of the applicant and/or certified individuals in other NYSERDA programs which may include but is not limited to:

- **(i)** The quality of workmanship documented through Quality Assurance (QA) / Quality Control (QC) processes.
- **(ii)** Demonstration of the applicant's ability to properly, and consistently, follow policies and procedures.
- **(iii)** Satisfactory and expedient resolution of non-conformances discovered during QA field inspection(s).
- **(iv)** Satisfactory and professional interaction with NYSERDA staff, participants, other contractors and Implementation Contractors.
- **(v)** Satisfactory record of fair and ethical business practices.
- **(vi)** Responsiveness to participant complaints, Implementation Contractor inquiries, and NYSERDA directives.

(vii) Has not been suspended or terminated from a program.

Article IV. Agreement Terms

Section 4.01 Program Participation Terms

Upon entering the Agreement, each Participating Auditor shall commit to promoting the Residential Energy Audit offering.

The Participating Auditor acknowledges this Agreement is completely voluntary. NYSERDA may deny an applicant's application or terminate a Participating Auditor for reasons including failure to maintain standards, poor performance, unresponsiveness or inappropriate behavior. In all cases involving a Participating Auditor's participation status, NYSERDA's written decision is final.

As a condition for offering and associated benefits, each applicant and Participating Auditor understands and agrees to the terms and conditions outlined in this Agreement and any distributed and/or posted by NYSERDA or an Implementation Contractor.

Section 4.02 Enforcement

In all cases, or at any time, NYSERDA's failure to enforce any provisions of this Agreement shall not constitute a waiver of such provisions, nor does it limit NYSERDA's ability to enforce such provisions in the future.

Section 4.03 Residential Energy Audit Program Changes

NYSERDA reserves the right to make changes to the Residential Energy Audit Program upon notice to the Participating Auditor. Programmatic changes announced through Residential Energy Audit Program Announcements will supersede policies and procedures in this Agreement. Such notifications shall be communicated via email. It is the Participating Auditor's responsibility to ensure the appropriate contact's email address is on file with NYSERDA in the event of staff additions/losses or responsibility changes.

Section 4.04 Post Termination Obligations

Articles V, VII, VIII, IX and Sections 2.06(b) and 2.09 shall survive termination of this Agreement.

Article V. Relations with Residential Energy Audit Program Participants

Section 5.01 Program Participant Inquiries

Participating Auditors shall promptly and appropriately respond to inquiries referred to the Participating Auditors by NYSERDA or NYSERDA's Implementation Contractor.

Section 5.02 Timely Communication

Participating Auditors shall ensure prompt and accurate reporting of all completed Residential Energy Audits. Participating Auditors shall respond to inquiries from Customers, NYSERDA staff, and Implementation Contractors in a prompt, professional, and courteous manner.

Section 5.03 Business Practices and Professionalism

The Participating Auditor is expected to be an ambassador for the Program and any conduct contrary will result in disciplinary action. The Participating Auditor shall comply with all requirements detailed in this Agreement, the Program Manual and any Program Announcements, treat all customers fairly, provide accurate information and deliver promised services in a timely, competent, professional, and reasonable manner.

The Participating Auditor shall not engage in behavior that adversely impacts NYSERDA or other Participating Residential Auditors, tarnishes NYSERDA's service marks, and/or diminishes the profession or service in the eyes of the public.

Section 5.04 Participating Auditor Employee Past Performance

The Participating Auditor shall not engage in unfair or inaccurate representations of NYSERDA, the Residential Energy Audit Program Implementation Contractors, other Participating Residential Auditors or affiliates.

At NYSERDA's discretion, an employee of a Participating Residential Auditor who has demonstrated unprofessionalism or unethical behavior while conducting Residential Energy Audits may be prohibited from working in the Residential Energy Audit Program. This includes any staff member associated with a former Participating Residential Auditor who was under suspension or terminated from the Residential Energy Audit Program or any other NYSERDA program. NYSERDA will notify the Participating Auditor of any individuals prohibited from working on Residential Energy Audit projects and these individuals will continue to be prohibited from working in the Residential Energy Audit Program unless written consent is provided by NYSERDA.

Section 5.05 Proper Use of Program Marketing Material and Logo

Participating Auditors may request permission to use NYSERDA's Attribution Logo following the guidelines listed in the Program Manual. Participating Auditors are not NYSERDA employees, contractors, partners, or representatives. Participating Auditors and their employees must therefore identify themselves as representatives of the Participating Auditor's company, not as representatives of NYSERDA or as NYSERDA employees.

Section 5.06 Computer, Operating System, and Internet Access Minimum Requirements

The Participating Auditor shall have access to a computer with an operating system capable of running any required and necessary software (Microsoft Excel) and accessing the NY HP Portal. The Participating Auditor shall ensure that all computer equipment has an antivirus solution, and that this solution is kept to the most current level necessary. The Participating Auditor is prohibited from downloading any type of hacking tools, including, but not limited to, network sniffers, vulnerability scanners, or password cracking tools.

The Participating Auditor shall have an active email account(s) with the ability to receive emails from NYSERDA and Implementation Contractor and check email on a regular basis for Residential Energy Audit Program announcements and other communications. The Participating Auditor shall ensure the email addresses on file with NYSERDA are current and must identify a primary program contact.

Article VI. Residential Energy Audit Requirements

The Participating Auditor acknowledges that failure to follow requirements and procedures stipulated in this Agreement, the Program Manual and any Program announcements will result in disciplinary action as detailed in Section 9 of this Agreement.

Section 6.01 Residential Audit Report Delivery

The Participating Auditor shall provide the customer with a finalized Residential Energy Audit report within seven (7) calendar days of completing the audit site visit. The report shall comply with the Audit procedures documented in this Agreement, the Residential Audit Program Manual and Program announcements. Residential Energy Audits should be uploaded to the NY HP Portal no later than 30-days from the date that the Residential Energy Audit was conducted. Submissions after this deadline will be rejected and ineligible for reimbursement.

Section 6.02 Residential Energy Audit Reimbursement

NYSERDA will reimburse the Participating Auditor the dollar amount detailed in the Program Manual for each instance where an audit for an eligible customer is completed and submitted in accordance with the Residential Energy Audit Program requirements. In instances where an audit is submitted but upon program review does not meet program requirements, NYSERDA reserves the right to deny payment of the audit reimbursement.

Article VII. Quality Assurance and Quality Control

Section 7.01 Quality Assurance and Quality Control

Administrative review of submitted Residential Energy Audits will be completed to ensure program rules are followed and customers are receiving quality energy audits. Field quality control will be completed on an as-needed basis. The Participating Auditor shall not inhibit or discourage customers from participating in the quality assurance process and shall make a good faith effort to facilitate this process.

Article VIII. Participating Auditor Status Designations

Section 8.01 Participation

The Participating Auditor shall be classified as one of the below listed status designations. NYSERDA reserves the right to modify the definition, limitations, and requirements of the participation status designations at any time. NYSERDA retains sole discretion for determining the Participating Auditor's status designation. In all cases, NYSERDA's written decision is final.

(a) Full Status
A Participating Auditor who abides by the conditions of this Agreement and provides quality services using industry best practices shall have the status designation of Full Status Participating Auditor r.

(b) Probation
Probationary Status is reserved for Participating Auditors that have failed to meet the requirements of the Program. Probation is prescriptive in nature with both a specific list of results to be achieved and a time frame for achieving those results. The terms of the Probation will be defined in a disciplinary letter from the Program.

(c) Suspension

The terms of the suspension will be defined in a disciplinary letter from the Program. NYSERDA has sole discretion in determining the length of the suspension period and the grounds for suspension.

A Suspended Participating Auditor shall be removed from the NYSERDA website and shall not represent themselves as a Participating Auditor, accept any applications for, nor recruit new participants into, the Program except in the execution of remedial action as approved by NYSERDA.

(d) Terminated

Auditors designated with the 'Terminated' status are prohibited from offering audits to Customers for the remainder of the Participation Agreement term. A Terminated Auditor shall be removed from the NYSERDA website and shall not represent themselves as a Participating Auditor. A Terminated Auditor forfeits its eligibility to provide Residential Energy Audits to its Customers. All references to NYSERDA must be removed from all marketing materials, vehicles, and advertising including vehicle clings and websites, as applicable.

If appropriate, NYSERDA may notify the New York State Attorney General, the New York State Department of Labor, the Better Business Bureau, the Building Performance Institute or other certifying bodies, or others of NYSERDA's findings and decision to terminate the Participating Auditor. In the event a Terminated Auditor's company is sold to new owners, the company must reapply; the use of the terminated Company's name, or similar derivations, will be allowed at NYSERDA's discretion.

Article IX Standard Terms and Conditions

Section 9.01 Relationship of the Parties

It is understood and agreed that the personnel furnished by the Participating Auditor to perform the services stipulated in this Agreement, including personnel who may perform such services at NYSERDA's offices, shall be the Participating Auditor's 's employee(s) or agent(s), and under no circumstances are such employee(s) to be considered NYSERDA's employee(s) or agent(s), and shall remain the employees of the Participating Contractor, except to the extent required by section 414(n) of the Internal Revenue Code.

The relationship of the parties to this Agreement is that of independent contractors. Nothing in this Agreement shall be construed as creating a partnership, joint venture, employment, agency, legal representation or other relationship between NYSERDA and the Participating Auditor for any reason, including but not limited to unemployment, workers' compensation, employee benefits, expense reimbursement, vicarious liability, professional liability coverage or indemnification. Neither party shall have the right, power or authority to obligate or bind the other in any manner not specified in this Agreement.

Section 9.02 No Benefits

The Participating Auditor agrees that the personnel furnished by the Participating Auditor are determined to be "leased employees" within the meaning of section 414(n) of the Internal Revenue Code, the Participating Auditor acknowledges that leased employees are excluded from participation in the employee benefit plans, funds and programs provided by NYSERDA to

its employees including, but not limited to, any group health plan, sickness or accident plan, retirement plan, retirement plan or similar benefit plan provided to employees by NYSERDA, by the terms of such benefit plans, funds or programs. The Participating Auditor agrees to notify NYSERDA if it maintains (or ceases to maintain) a plan described in section 414(n)(5)(B) of the Internal Revenue Code.

Section 9.03 Notification of Claims/Events

The Participating Auditor expressly acknowledges NYSERDA's need to be advised, on an immediate basis, of the existence of any claim or event that might result in a claim or claims against NYSERDA, the Participating Auditor and/or a member of a Participating Auditor's staff. Accordingly, the Participating Auditor expressly covenants and agrees to notify NYSERDA of any such claim or event, including but not limited to, requests for accommodation and allegations of harassment and/or discrimination, immediately upon the Participating Auditor's 's discovery of the same, and to fully and honestly cooperate with NYSERDA in its efforts to investigate and/or address such claims or events, including but not limited to, complying with any reasonable request by NYSERDA for disclosure of information concerning such claim or event even in the event that this Agreement should terminate for any reason.

Section 9.04 Information

The Participating Auditor shall not use information obtained from NYSERDA or NYSERDA's designees in conjunction with the Residential Energy Audit Program for any purpose other than to implement obligations under this Agreement.

The Participating Auditor acknowledges that information obtained from NYSERDA, or NYSERDA's designees, may include certain information concerning the Residential Energy Audit Program or Customers that is non-public, confidential, or proprietary in nature. The Participating Auditor agrees such information will be kept confidential and will not, without NYSERDA's prior written consent, be disclosed by the Participating Contractor, its agents, employees, contractors, or professional advisors, other than is expressly required to implement its obligations under this Agreement.

Section 9.05 Program Participant Personal Private Information

All Participating Auditors performing work in association with the Residential Energy Audit Program are required to comply with the NYSERDA External Contractor Data Security and Controls Policy. In general, when corresponding with customers, Implementation Contractors, and NYSERDA, use the NYSERDA External Contractor Data Security and Controls Policy to determine the type of customer information that can be shared based on the platform being used. To minimize the occurrence of incoming emails containing confidential information, please instruct customers to redact utility account numbers, social security numbers and bank account numbers if you are requesting documents containing this information. Participating Auditors who fail to comply with the NYSERDA External Contractor Data Security and Controls Policy will be subject to disciplinary action.

Section 9.06 Indemnification

The Participating Auditor shall protect, indemnify and hold harmless NYSERDA, its Implementation Contractors, and the State of New York from and against all liabilities, losses, claims, damages, judgments, penalties, causes of action, costs and expenses (including, without limitation, attorneys' fees and expenses) imposed upon or incurred by or asserted

against NYSERDA or the State of New York, resulting from, arising out of or relating to Participating Auditor's performance of this Agreement. including, but not limited to, any claim or suit resulting from or related to mildew, fungus, moisture intrusion or mold of every type and nature. Obligations of the Participating Auditor under this Section shall survive any expiration or termination of this Agreement and shall not be limited by any enumeration herein of required insurance coverage.