

# Residential Energy Assessment

## Program Manual

Version 3.0 | February 2023



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# Record of Revisions

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## Version 3.0

- Updated BPI certifications and program requirements.
- Updated primary program contact.

## Version 2.0

- Updated program name to Residential Energy Assessment Program.
- Updated and revised definition section.
- Revised program end date to December 31, 2025, or until Program funds are depleted, whichever comes first.
- Remove auto-enrollment of EmPower NY and Assisted Home Performance with ENERGY STAR® contractors into the program; contractors must apply to participate.
- Minor formatting changes.

# Definitions

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**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. Visit [nyscrda.ny.gov/assisted-home-performance](https://nyscrda.ny.gov/assisted-home-performance) for more information.

**Customer:** A New York State homeowner or renter who may participate in a NYSERDA program or is a current or former participant in a program.

**EmPower New York:** NYSERDA sponsored residential energy efficiency program that offers incentives for customers with incomes below 60% AMI. Visit [nyscrda.ny.gov/empower](https://nyscrda.ny.gov/empower) for more information.

**Implementation Contractor:** Organizations working under contract with the NYSERDA to provide administrative and support functions such as project approvals, technical support, reporting and, invoicing.

**New York Home Performance Portal (NY HP Portal):** The project workflow system used in the NY Residential Existing Homes Program and the Residential Energy Assessment Program.

**Participating Contractor:** Independent contractors approved by NYSERDA to offer program services, such as energy assessments.



**Participation Agreement:** The Participation Agreement (“Agreement”) establishes the terms and conditions under which NYSERDA-qualified Participating Contractors may offer program incentives and/or financing to qualified Customers in New York State.

**Public Service Electric and Gas Long Island (PSEGLI):** Electric utility provider for customers located in Long Island New York.

**Residential Assessment Workflow:** The section within the NY HP Portal where Participating Contractors will enter assessment information and upload required documents specific to the Residential Energy Assessment Program.

**Residential Energy Assessment:** An energy assessment conducted by a Participating Contractor in accordance with the policies and procedures detailed in this Program Manual, the Residential Energy Assessment Participation Agreement, and any Program announcements. The Residential Energy Assessment is one type of energy assessment that meets the Green Jobs -Green NY (GJGNY) assessment criteria. Other NYSERDA Programs, such as the Residential Existing Homes Program, also offer energy assessments that meet the GJGNY criteria, but have different requirements and procedures.

**Residential Energy Assessment Program Tool (Assessment Tool):** An Excel-based tool used for data collection and production of an energy assessment summary report that meets the criteria of a Residential Energy Assessment.

# 1 Program Summary

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## 1.1 Introduction

The New York State Energy Research and Development Authority (“NYSERDA”) administers the Residential Energy Assessment 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 assessment 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 assessments to eligible owners of one to four-unit residential buildings who have income levels above 80% of Area Median Income and where the assessments are performed using a network of participating, certified, participating residential energy contractors – herein referred to as “Participating Contractors.”

Participating Contractors must comply with all policies and procedures detailed in this Agreement, the Residential Energy Assessment Program Manual, and any Program announcements.

Should a Participating Contractor no longer choose to offer residential energy assessments under this Agreement, they are required to immediately inform NYSERDA and remove all references to NYSERDA and the Residential Energy Assessment Program from their website.

This Agreement is valid through December 31, 2025, or until Program funds are depleted, whichever comes first.

The policies and procedures described in this manual are applicable only to the Residential Energy Assessment Program. Customers and Participating Contractors 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 Contractors seeking to serve these customers will apply through the PSGELI program offering.

## 1.2 Administration and Implementation Services

NYSERDA is the Program Administrator and is responsible for:

- Establishing assessment standards
- Program design and policy development
- Participating Contractor management
- Issuing payments to Participating Contractors

CLEAResult is the Implementation Contractor and is responsible for:

- Assessment submittal reviews and quality assurance
- Program inquiries
- Process inquiries
- Payment invoicing to NYSERDA

## 2 Contractor Participation in the Residential Energy Assessment Program

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### 2.1 Participating Contractor Eligibility

#### Required Certifications

Each individual conducting assessments for a Participating Contractor must maintain at least one of the certifications listed below. By entering into this Agreement, the Participating Contractor authorizes NYSERDA to share and obtain information with and from these certifying bodies for the purpose of verifying certifications the Participating Contractor 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 Analyst Technician (BA-T)
- BPI Building Analyst Professional (BA-P)
- 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

Building Performance Institute (BPI) has replaced the BPI Building Analyst (BA) and BPI Envelope Professional certifications with the BPI Building Analyst Technician (BA-T) and the BPI Building Analyst Professional (BA-P) in early 2023. As of January 1, 2023, the program will continue to accept the BPI BA certifications until the expiration date. When an individual's certifications expire, they will be required to hold one of the certifications listed above.

The Participating Contractor shall provide NYSERDA written documentation that identifies each individual in the Participating Contractor's Participating Contractor business and their certifications. NYSERDA may approve alternative credentials on a case-by-case basis, based on a review of the training and work history of the applicant.

As an ongoing requirement, the Participating Contractor shall immediately contact NYSERDA via e-mail at [homeaudits@nyserda.ny.gov](mailto: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.

## 2.2 Becoming a Participating Contractor

### Participating Contractor Application and Evaluation

To apply for participation in the Residential Energy Assessment Program the applicant must submit the following documentation:

- The applicant must read and submit a completed Residential Contractor Application to NYSERDA indicating agreement with its terms. The Residential Contractor Application 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 Assessments including proof of certification credentials.
- Detailed description of at least three assessments 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<sup>1</sup>
  - Insurance policies shall list NYSERDA and the State of New York as additional insured.
- Professional Liability Insurance (if applicable)
- DBA form (if applicable)

It is NYSERDA's sole discretion to request additional information as necessary for determining the eligibility of an applicant. NYSERDA will email applicants from [homeaudits@nyserda.ny.gov](mailto:homeaudits@nyserda.ny.gov) with final determination regarding an application for participation.

### Evaluation Criteria for Contractor Acceptance

NYSERDA will conduct due diligence in the evaluation of the applicant and the information provided on the Residential Contractor Application and review all submitted documentation prior to approving an Agreement. NYSERDA will not make a determination on any Residential Contractor Application 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.

- NYSERDA key evaluation criteria include, but are not limited to the following:

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<sup>1</sup> Consult with your insurance company to determine if you need this coverage based on your business model.



- 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.
- A minimum of six months experience working in the field of residential, one-to-four family energy efficiency completing assessments, ratings, or similar services.
- 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:
  - The quality of workmanship documented through Quality Assurance (QA) / Quality Control (QC) processes.
  - Demonstration of the applicant’s ability to properly, and consistently, follow policies and procedures.
  - Satisfactory and expedient resolution of non-conformances discovered during QA field inspection(s).
  - Satisfactory and professional interaction with NYSERDA staff, participants, other contractors, and Implementation Contractors.
  - Satisfactory record of fair and ethical business practices.
  - Responsiveness to participant complaints, Implementation Contractor inquiries, and NYSERDA directives.
  - Has not been suspended or terminated from a program.

## 2.3 Participation Benefits

### **Ability to Offer Free Energy Assessments**

By becoming a Participating Contractor, you will be able to offer state-supported energy assessments to your customers and prospects. Customers may not be charged for these services, but NYSERDA will provide funding of \$150 to Participating Contractors for each complete assessment submitted to NYSERDA.

### **Marketing and Promotional Opportunities**

NYSERDA invests in marketing and outreach throughout New York State to promote energy assessments, 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 Contractors listed on NYSERDA’s website.

**Use of NYSERDA Marketing Materials**

Participating Contractors 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**

Receive prompt payment of assessment 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.

## 3 Customer and Project Eligibility

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### 3.1 Customer Eligibility

All owners of one- to four-unit residential buildings in New York State\* who have income levels above 80% of AMI using a Participating Contractor are eligible to receive a no-cost Residential Energy Assessment through this Program. Please check the NYSERDA [Residential Income Limits](#) website for customer eligibility.

*\*PSEG Long Island electric customers are not eligible for NYSERDA's Residential Energy Assessment Program and may apply for an energy assessment directly through their utility.*

### 3.2 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 assessment.

### 3.3 Customer Participation and Customer Attestation Form

Customers will work directly with their chosen Participating Contractor to schedule and complete their assessment. The Program does not require customers to fill out an assessment application. The Participating Contractor will provide the customer with the results of the energy assessment and then the Participating Contractor will provide the required assessment 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 assessment. The Participating Contractor will include this documentation as part of their assessment submittal.

NYSERDA's website [nyserdera.ny.gov/homeaudits](http://nyserdera.ny.gov/homeaudits) provides information about the Residential Energy Assessment Program and a list of Participating Contractors available. Customers can also access a list of Participating Contractors and information about the Program by calling 1-877-NYSMART.

# 4 Program Workflow

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## 4.1 Required Documentation

### 4.1.1 Residential Energy Assessment Program Tool

Participating Contractors will be required to complete and submit a copy of the **Residential Energy Assessment Program Tool (Assessment Tool)** to the Program. Participating Contractors will also provide a copy of the energy assessment 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 Contractors shall provide this summary report to a customer in a printed or PDF format; not in the Excel-based format.

### 4.1.2 Customer Attestation Form

For each assessment submitted for reimbursement, the Participating Contractor 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 assessment 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.

### 4.1.3 Electronic Signature Policy

Signatures are a declaration that a customer or Participating Contractor 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.

## 4.2 Residential Energy Assessment Process

### 4.2.1 Residential Energy Assessment Process Overview:

**Step 1:** Customer contacts Participating Contractor to schedule assessment.

**Step 2:** Participating Contractor performs assessment.

**Step 3:** Participating Contractor completes Residential Energy Assessment Tool.

**Step 4:** Participating Contractor provides a copy of the assessment summary report and Customer Attestation Form to customer, preferably within 24-hours of completing the assessment but no later than 7 calendar days following the assessment.

**Step 5:** Customer signs Customer Attestation Form.

**Step 6:** Participating Contractor enters customer information in NY HP Portal and uploads Excel copy of Assessment Tool and the signed Customer Attestation Form within 30 days of assessment completion.

**Step 7:** Participating Contractor receives reimbursement of \$150.

Customers will typically contact a Participating Contractor after hearing about the Residential Energy Assessment Program through public awareness campaigns, marketing efforts, word of mouth, or some other avenue. There is no customer application or pre-approval process. Customers work directly with the Participating Contractor of their choice and schedule the assessment.

The Participating Contractor will then conduct the assessment in compliance with the requirements detailed in this Program Manual, (including the Residential Energy Assessment Technical Requirements found in Appendix B) the Participation Agreement and any Program announcements, complete the NYSERDA Assessment Tool, provide the customer with the recommendations report, and have the customer sign the Customer Attestation Form.

### 4.2.2 Assessment Submission

Participating Contractors will provide the required assessment information and documentation to NYSERDA using the Residential Audit Workflow in the NY HP Portal after the assessment site visit has been completed and the assessment report was delivered to the customer. Participating Contractors will log into NY HP Portal access the Residential Energy Assessment Workflow, enter the customer's information into the system and upload the following documents:

- NYSERDA Assessment Tool in Excel format



- Signed Customer Attestation Form

For two- to four- unit buildings, the Participating Contractor must separately submit documentation and will receive the \$150 payment for each unit that received an assessment in a building.

#### 4.2.3 Assessment Submission Deadlines:

A completed assessment recommendations report, generated by the Assessment Tool, must be submitted to the customer no more than 7 calendar days after the completion of the energy assessment. It is best practice to review the assessment report with the customer in person at the conclusion of the home energy assessment visit and to provide a copy of the report to the customer on paper or as an electronic pdf within 24 hours of the assessment. Participating Contractors 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 Assessment 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 assessment. Participating Contractors are encouraged to submit assessments for reimbursement as soon as feasible after the assessment is completed in order to receive timely payment.

For step-by-step instructions on accessing and uploading documents to the Residential Assessment Workflow in the NY HP Portal, please refer to the Residential Assessment Workflow User Guide.

#### 4.2.4 Assessment Reimbursement

Assessments 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 assessment. NYSERDA will process invoices on a weekly basis. NYSERDA reserves the right to deny reimbursements for assessments that are determined not to have met Program requirements and deadlines.

For 2- to 4-unit buildings that meet the building type eligibility criteria detailed in Section 2.2, Participating Contractors may submit an assessment for each of the units individually and be reimbursed for each individual unit at a rate of \$150 each.

Participating Contractors may not submit an assessment to multiple programs for reimbursement; only one assessment incentive is allowed per completed assessment.

#### **Add-On Assessment Services**

Participating Contractors 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 Contractors may not charge customers for completing services that are within NYSERDA's prescribed minimum requirements.

# 5 Participation Status, Quality Assurance, and Compliance

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## 5.1 Participation Status Change

The Participating Contractor 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 Contractor's status designation. In all cases, NYSERDA's written decision is final. Refer to the Residential Energy Assessment 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 Contractor violations, which may result in a change in status. The participating Contractor 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 Contractor will have an opportunity to respond to the notice, appeal, or accept the terms of the notice.
- If the Participating Contractor 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.

## 5.2 Quality Assurance and Quality Control

Each submitted assessment will be reviewed for completeness and to ensure all required forms are submitted. A deeper review of submitted Residential Energy Assessments will be completed on a sampled basis to ensure program rules are followed and customers are receiving quality energy assessments.

The Program will review at least one assessment per Participating Contractor per invoicing period and will provide feedback to the Participating Contractors. If patterns of poor-quality assessments are found a higher rate of review will be instituted and the Participating Contractor will be notified via e-mail and

U.S. 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 assessment 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 assessment submittal deficiencies. Note: **Emails are not sent when assessments are returned for submission errors. It is the Participating Contractor's sole responsibility to check the NY HP Portal on a regular basis to address any returned assessment. Assessment submissions must be corrected within 14 calendar days of the assessment 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 Contractor 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 assessments the Participating Contractor may be subject to a change in Participation Status as detailed in Section 5.1.

# 6 Financing

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## 6.1 Access to Financing for Residential Energy Assessment Customers

The Green Jobs - Green New York Act of 2009 requires that customers who receive a GJGNY loan must first receive an energy assessment. 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 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.

## 7 Marketing and Cooperative Advertising Support

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Residential Energy Assessment participating contractors are eligible for cooperative advertising funding from NYSERDA. Additional information on this opportunity can be found at PON 4482.

Through partnerships with various electric and gas utilities, NYSERDA is managing a series of co-branded marketing campaigns to promote clean heating and accelerate the adoption of heat pumps in each utility's market.



# 8 Program Contact Information

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## **Contacts**

### Primary Contact Method:

Toll Free: 1-877-NYSMART

Email: [homeaudits@nyserda.ny.gov](mailto:homeaudits@nyserda.ny.gov)

### NYSERDA

Steven Wagner – Program Manager

Phone: 646-522-2281

Email: [Steven.Wagner@nyserda.ny.gov](mailto:Steven.Wagner@nyserda.ny.gov)

### Implementation Contractor (CLEAResult)

Rebecca Lloyd, Associate Program Manager

Phone: 518-207-4514

Email: [Rebecca.Lloyd@clearesult.com](mailto:Rebecca.Lloyd@clearesult.com)

# Appendix A: Residential Energy Assessment Technical Requirements

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## STANDARDS FOR 1-4 UNIT Residential ENERGY ASSESSMENTS

### 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 assessment for existing homes, herein referred to as a Residential Energy Assessment. Any program offering a Residential Energy Assessment 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 Assessment. **Diagnostic testing during the assessment 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 Assessment 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 Assessment Program Tool (Assessment Tool)

Participating Contractors will be required to submit a completed Residential Energy Assessment Program Tool to the Program. This tool produces a summary report with the following information:

- Residential Contractor Company name
- Name of Contractor
- Date of Assessment

- Customer name
- Building address
- Documentation of existing conditions, including health and safety concerns
- List of recommended upgrades
- Estimated annual savings, represented as a percentage of total energy consumption

Participating Contractors may use other energy modeling tools (in addition to the NYSERDA Assessment 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 contractor.

### **BILLING REVIEW**

The assessment must include an evaluation of the customer’s 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 Contractor 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 Assessment 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 Contractors 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 assessment shall include an assessment of potential water conservation measures. The energy assessment 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 assessment but can be conducted at the discretion of the contractor. 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 contractor 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 contractor shall inform the homeowner/occupants of the unsafe condition and advise evacuation of the home. The contractor shall leave the home and the appropriate emergency services and fuel gas providers shall be notified from outside the home. The contractor 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 assessment 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 NO<sub>2</sub>.

The Residential Assessment 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 Contractor 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 assessment 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





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