

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

[EmPCalc 5.3.29](#)

Stage in Workflow:

Date Installed:

Fuel Costs:
 Electricity: Cost per kWh \$ -
 Natural Gas: Cost per Therm \$ -

Discount Rate:

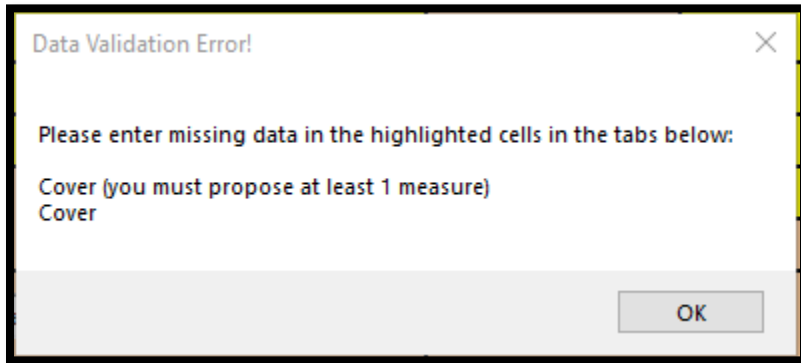
EmPower Project ID: EmPower Only
 Express Project ID: AHP Only
 Coordinated
 Market Only

Business Name:
 Contractor First Name:
 Contractor Last Name:
 Contractor Email:

Customer First Name: Address:
 Customer Last Name: City:
 Customer Phone: State:
 Site Zip (5):

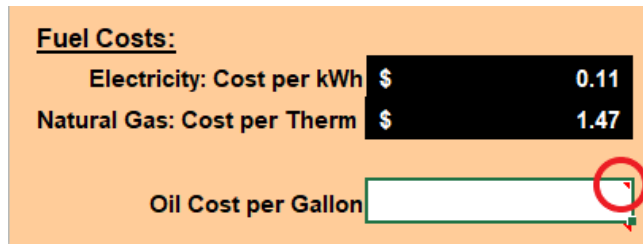
Number in Household	<input type="text"/>	Electric Utility Company	<input type="text"/>	Gas Utility Company	<input type="text"/>
Heating Fuel Type	<input type="text"/>	Heating Efficiency	<input type="text"/>	Region	<input type="text"/>
DHW Fuel Type	<input type="text"/>	Annual Electric Usage	<input type="text"/>	Annual Usage	<input type="text"/>
House Square Footage	<input type="text"/>	Housing Type	<input type="text"/>	kWh/SqFt	0.00
Owner or Renter?	<input type="text"/>	Central A/C?	<input type="text"/>	Mileage Rate	0.580
Audit & Education Cost	\$ -	Audit Type	<input type="text"/>	Mileage	<input type="text"/>
Stories Above Grade	<input type="text"/>			Total Cost	\$ -
Number of Units	<input type="text"/>	Basement Type	<input type="text"/>	Approved No-Show Fee	<input type="checkbox"/> Pre-Approval Required
Year Built	<input type="text"/>			Approved Additional Travel Fee	<input type="checkbox"/> Pre-Approval Required

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.”



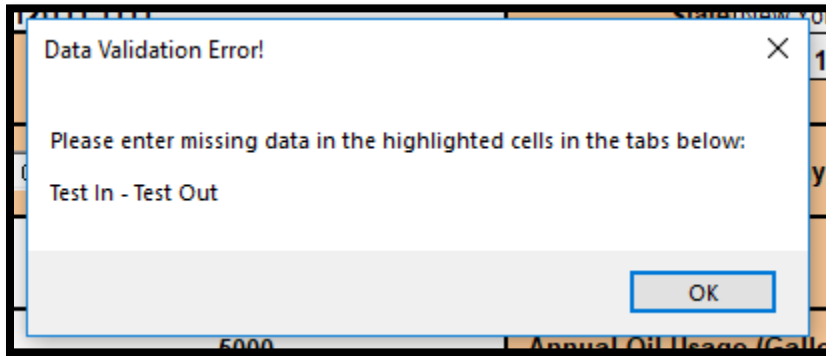
2. **Test In – Test Out Tab** - **Highlighted cells** must be completed and are required based on the XML file you are attempting to validate and export. **Modeling HPXML and Workscope HPXML require the Test In data be completed.** Additionally, the **Test Out Air Infiltration** is required at **Modeling 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.

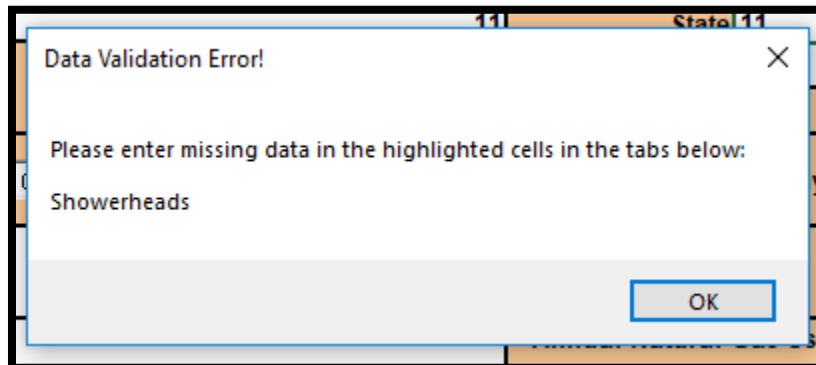
If any of the above is not completed appropriately, you'll be met with an error message.

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)			<input checked="" type="checkbox"/> ACH
General	Max ambient CO concentration (ppm) in living space			<input type="checkbox"/>
General	Max ambient CO concentration (ppm) in CAZ			<input type="checkbox"/>
General	CAZ worst case test pressure (Pa)			<input type="checkbox"/>
Heating System 1	Spillage test result (passed/failed)			<input type="checkbox"/>
Heating System 1	CO concentration (ppm) worst case scenario			<input type="checkbox"/>
Heating System 1	CO concentration (ppm) natural scenario			<input type="checkbox"/>
Heating System 1	Gas leaks present?			<input type="checkbox"/>
Water Heater 1	Spillage test result (passed/failed)			<input type="checkbox"/>
Water Heater 1	CO concentration (ppm) worst case scenario			<input type="checkbox"/>
Water Heater 1	CO concentration (ppm) natural scenario			<input type="checkbox"/>
Water Heater 1	Gas leaks present?			<input type="checkbox"/>
Oven	CO concentration (ppm) natural scenario			<input type="checkbox"/>
Bath	Fan present?			<input type="checkbox"/>
Bath	Fan vented properly?			<input type="checkbox"/>
Kitchen	Fan present?			<input type="checkbox"/>
Kitchen	Fan vented properly?			<input type="checkbox"/>
Clothes Dryer	Clothes dryer vented to exterior?			<input type="checkbox"/>
CO Detector Present?	CO detector present?			<input type="checkbox"/>
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	



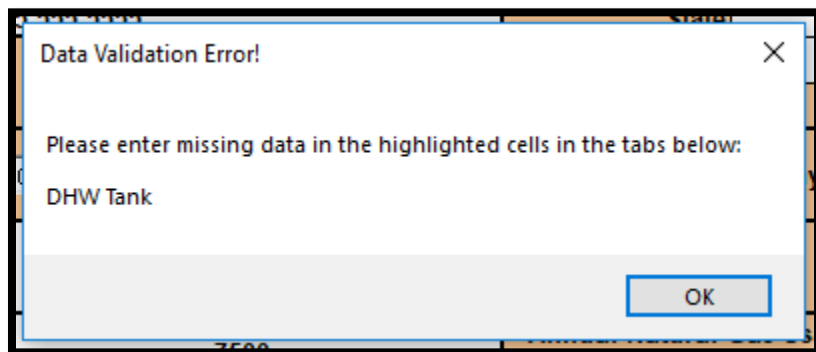
4. **DHW Tank** – When proposing a DHW Improvement, the **fields** below are required. If these are not populated, you will be prompted with an error message when you try to Export your XML file.

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.”

Replacement Type:	Standard DHW Tank	Replacement Tank Volume (gallons):	
Replacement Location:			
Replacement Fuel:			
Replacement Pipe R-value:			0
Replacement Heating Capacity (BTUh):			
Replacement Recovery Efficiency:			
Replacement Make:			
Replacement Model #:			
Replacement UEF:			
Water Temp (deg F):			

Targeted Measure




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.”

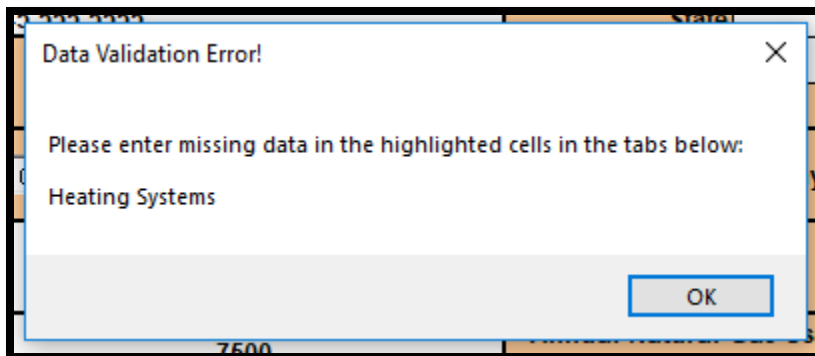
Heating Conversion/Replacement

Existing Heating Fuel: Replacement Fuel: Replacement System: 

Cost: \$ Replacement Make:

Replacement Model#:

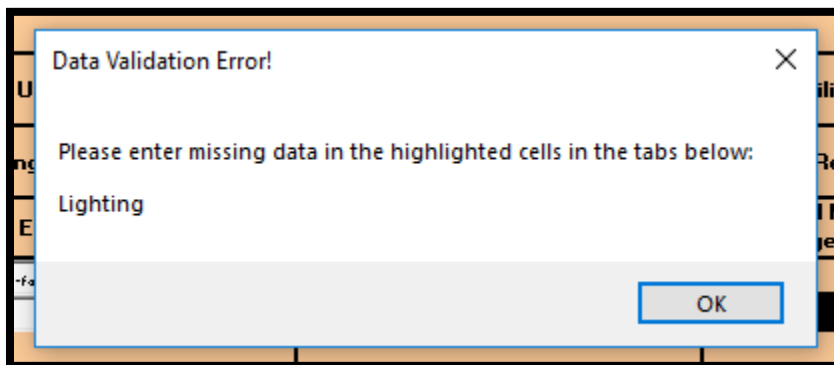
Existing Efficiency: Replacement Efficiency:



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.

<u>Lighting</u>		AHP Job Number
LEDS	# Bulbs Instld	17
Life of Measure	kWh Savings	#N/A
15.0		
Condolebr LED	# Bulbs Instld	

No more than 16 LEDs for EmPower projects. For AHP and Market Projects with 21+ bulbs, a lighting schedule is required



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.

Area 2 Existing Insulation				Proposed additional insulation		Cost
Attic Floored	Siding Type	Insulation Rating	Good	Insulation Type	Additional Measure	
		Fair				Fireproofing (Where Required)
Existing Insulation	Sq. Ft. (Inches)	0	0	Insulation (Inches)	Cost/SqFt	<input type="checkbox"/>
Life of Measure	kWh Reduced	Therms Reduced	\$ Savings	Cost	SIR	Final R Value
30	0	#N/A	#N/A	\$ -	0.0	#N/A
						<input checked="" type="checkbox"/> Targeted Measure

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.

Refrigerator 1 (Primary)	Existing Type	Pre-Usage 1	Existing Model Year	Replacement Size	Default Annual kWh	Annual kWh	Replacement Type	Replacement Certification
	bottom freezer	500	1990	22 cu ft Side By Side	570		bottom freezer	Energy Star

Energy Star appliances are only eligible for EmPower projects

- **Air Sealing** - If the **Pre CFM** value entered is too high, you will be prompted with an error message.

Blower Door CFM [X]

 This value is too high and will fail NYHP Portal validation.

Continue?

- **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.

Cost

\$ 150.00	CAZ Safety
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M1 Description:

CAZ Safety Description here.

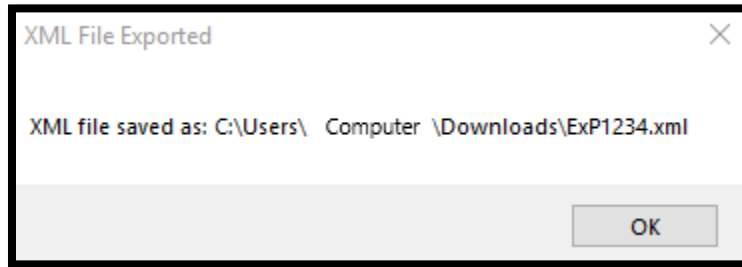
Additional Notes:

- 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**.

EmPCalc 5.21.21

STAGE IN WORKFLOW:	Modeling HPXML ▼	Validate and Export XML File
Date Installed		

- 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**.

Complete Modeling HPXML Due in 15 days

Assigned Feb. 5, 2019 [Jump to Timeline](#)

Due date: Feb. 19, 2019

Extend Due Date This task cannot be completed

Add Note View Project Page

* Required fields

The HPwES Express Contract workflow allows for automated reviews of workscope submissions, using Program approved HPXML compliant software.

Home Performance Comprehensive Recommendations *

1. **Choose File** No file chosen

Currently: 462-other-b3c14dc0754eeb4cf0ac.xml

Please submit your modeling software Audit package.

Add a Note (optional)

4. **Send Now** Save & Send Later

Open

This PC > Downloads

Search Downloads

Organize New folder

Name	Date modified
2. Exp1234	2/5/2019
EmPCalc-5.21.21 (25) (1)	2/5/2019
Saved Downloads	2/5/2019

File name: Exp1234 All Files

3. **Open** Cancel

- **(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.

Notes	Empower NY job number	AHP job number
HEALTH&SAFETY M1 Description: Condition of chimney liner is unsatisfactory. TEST IN - TEST OUT Notes: Unable to test due to weather.		

Choose one of the following: *

My company is working on this project alone ▼

Add a Note (optional) [-]

"HEALTH&SAFETY
M1 Description: Condition of chimney liner is unsatisfactory.

TEST IN - TEST OUT
Notes: Unable to test due to weather."

Who should see this note?

Program Managers Only

All Users

Send Now

Save & Send Later

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 Workscape 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@clearResult.com) and cc Pete Hoke (Peter.Hoke@clearResult.com) with the following information:

1. Contractor Name
2. Project ID
3. Explanation of issue
4. Screen shots as applicable