

TREAT HPXML 2.1 Reporting

This document lists all of the required non-energy modeling related inputs required for TREAT files to be submitted to state programs including **New York Home Performance with Energy Star** and **California Energy Upgrade California: Home Energy Upgrade**. When modeling for these programs please be sure to follow the guidelines below.

HPXML is an industry standard report that can be used to communicate modeling details between modelers and programs, or between differing software packages. This document provides information detailing how selections and entries in the TREAT interface determine what is included in the HPXML 2.1 report.

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Generating the HPXML 2.1 Report

- All HPXML Reports are found in the TREAT Reports Section
 - Select “TREAT Reports”
 - Select “Data Exports/Request Forms”
 - Select “HPXML 2.1 – NYSERDA” if in NY. Otherwise select “HPXML 2.1”
- See guidance in the **Visual Inspections and Measurement** section and the **NYSERDA Measure Codes** for select programmatic requirements.
 - If modeling for program compliance be sure to consult with program implementers for additional information regarding modeling requirements.

Package Types

- Packages must be assigned a type corresponding to the typical phases of an energy audit and retrofit project. Available package types include: proposed workscope, approved workscope, construction-period testing, job completion testing, and quality assurance/monitoring.
- Packages can now be assigned a date which Visual Inspections and Measurement entries can be associated with.

- HPXML 2.1 exports are generated by selecting one of the model packages, and the package name, type, and date are included in the HPXML report.

Dates

- The Audit/Test In date is entered on the Project Description screen.
- Dates can be added for various phases of the construction process by first adding and configuring packages of improvements appropriate for each phase.
- Visual Inspections and Measurements are assigned to the available dates for reporting purposes.

Actual Energy Consumption Data

Note: utility information is not required to generate a TREAT model, but is recommended for accuracy. If you do include utility data please follow the steps below:

- Energy Consumption data is included in the HPXML report if the user takes advantage of the TREAT billing analysis engine.
- The user must enter utility bills into TREAT and subsequently configure a billing analysis period and run a billing analysis before generating the HPXML report.
- To generate an HPXML report with actual consumption data the user should:
 - On the Select Reports screen select the HPXML report
 - Under the Package tab select Base Building or the name of the desired package.
 - Under the BillingPeriods tab select the desired billing period.
 - Export the XML

Visual Inspections and Measurements

- Visual inspections and Measurements can be used to capture a wide variety of building science information including details relevant to energy modeling and health and safety conditions.
- The **inspection wizard** makes it easy to add multiple Visual Inspections and Measurements to your model at the same time. Within the Measurement Wizard and Inspection Wizard users should select the **HPXML dataset** to work with the most comprehensive list of options.
- Audit and package dates are available in the wizard to make it easy to associate observations with the date of the correct visit to the home.
- Each inspection or measurement must be unique for a given date, for example there can only be one “Combustion Appliance Zone CAZ – Depressurization Limit” reading assigned to the date of the audit.
- It is important to know that many required or important fields are found only on these screens such as Ducts Sealed and Duct Material that are required for submission to energy efficiency programs.
- In the Inspection Wizard, any inspection that applies to the building being modeled is likely **required by the program for submission**. Missing Visual Inspections and Measurements may cause conflicts when submitting your files to the program.
- To add Visual Inspections to a model the user should:
 - Navigate to the Visual Inspections screen.
 - Click on Inspection Wizard

- In the Dataset dropdown select HPXML
 - Click on the observations check boxes to enter an observation for each line.
- Add Measurements to the model using the same steps used for Visual Inspections.

NYSERDA Measure Codes

- Any Measure not approved by the program will result in a portal error. Certain existing conditions or improvements require an additional health and safety measurement. For example, existing Duct Systems needs to have a “Duct Sealed” and “Duct Leakage Method” associated with the system. If the “Duct Leakage Method” is “visual inspection” then an additional “visual inspection measurement is required. Any modeled improvements must also have visual inspections associated as well.

Users have two pathways to model improvements with a given visual inspection. Using ductwork as an example:

Pathway 1

1. In the VISUAL INSPECTION section, follow the steps above to open the inspection wizard, be sure your dataset reads “HPXML”. Model the duct leakage method and duct sealed inspections and associated it with the audit date found at the top of the visual inspection wizard.
2. In the IMPROVEMENTS section model Distribution System Improvements separately from an HVAC system improvement.
3. Combine the HVAC and Dist. System improvements in a package to model savings
4. In the VISUAL INSPECTION section of TREAT model a duct leakage method and duct sealed inspection and associate it with the proposed package.

Pathway 2

1. In the VISUAL INSPECTION section. Model the duct leakage method and duct sealed inspections and associated it with the audit date found at the top of the visual inspection wizard.
2. In the IMPROVEMENT wizard add a “visual inspection improvement”
3. Be sure to use one of the approved codes below.

Pathway 1 should be your first choice when modeling most standard visual inspection improvements.

If you DO NOT see a proposed measure in the HPXML dataset list then model it using the “Other” visual inspection and be sure to include the correct measure code.

- NYSERDA developed measure codes as a way of passing information on qualified accessories and qualified health and safety information. Information should either have a specific measure code or an installed component and a replaced component.
- **Users should only report on the list of inspections below (if they apply).**

Eligible Measure	Measure Category	Measure Code
Asbestos abatement	Health & safety	NYSERDA_AsbestosAbatement
Cost of removing an oil tank when done in connection with a heating system replacement	Health & safety	NYSERDA_OilTankRemoval
Cost of replacing a faulty oil tank when done in connection with a heating system replacement	Health & safety	NYSERDA_OilTankReplacement
Dryer vent repair	Health & safety	NYSERDA_DryVentRepair

Electrical service upgrade necessary when installing a new heating/cooling unit	Health & safety	NYSERDA_ElectricalService
Gas leak repair	Health & safety	NYSERDA_GasLeakRepair
Lead abatement work	Health & safety	NYSERDA_LeadAbatement
Measures to provide sufficient combustion air and prevent CAZ depressurization, spillage, or inadequate draft	Health & safety	NYSERDA_CAZSafety
Radon abatement work	Health & safety	NYSERDA_RadonAbatement
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	Health & safety	NYSERDA_HomeRepairs
Repairs/upgrades to heating and/or DHW systems to correct spillage, inadequate draft, CO failures	Health & safety	NYSERDA_CoMitigation
Upgrade of knob and tube wiring in order to install insulation	Health & safety	NYSERDA_KnobAndTubeUpgrade
Duct sealing	Improvement	NYSERDA_DuctSealing
Duct insulation	Improvement	NYSERDA_DuctInsulation
AC coil when not installed with condenser	Qualified accessories	NYSERDA_HVACAccessories
Air cleaners	Qualified accessories	NYSERDA_AirCleaners
Attic pull-down stairs	Qualified accessories	NYSERDA_AtticAccess
Attic soffit, gable, or ridge vents	Qualified accessories	NYSERDA_AtticVenting
Attic storage areas/mechanical areas	Qualified accessories	NYSERDA_InsulationAccessories
Chimney liners and caps	Qualified accessories	NYSERDA_ChimneyLinersAndCaps
Drywall as thermal barrier for spray foam or air sealing	Qualified accessories	NYSERDA_ThermalDrywall
Fuel conversion accessory items	Qualified accessories	NYSERDA_FuelConversionItems
Furnace humidifier	Qualified accessories	NYSERDA_FurnaceHumidifier
Germicidal UV lights or HEPA filters	Qualified accessories	NYSERDA_UVHEPA
Oil burner replacement	Qualified accessories	NYSERDA_OilBurnerReplacement
Thermal barriers for spray foam	Qualified accessories	NYSERDA_ThermalOther
Water heater pipe insulation	Improvement	NYSERDA_WaterHeaterPipeInsulation
CO and smoke detectors	Qualified accessories	NYSERDA_COandSmokeDetectors
DHW pressure relief valves	Qualified accessories	NYSERDA_DHWPressureReliefValves

Gas oven replacement	Qualified accessories	NYSERDA_GasOvenReplacement
Water heater tank insulation	Improvement	NYSERDA_WaterHeaterTankInsulation
Moisture barrier installed in crawlspace	Improvement	NYSERDA_MoistureBarrierCrawlspace

Third Party Certifications

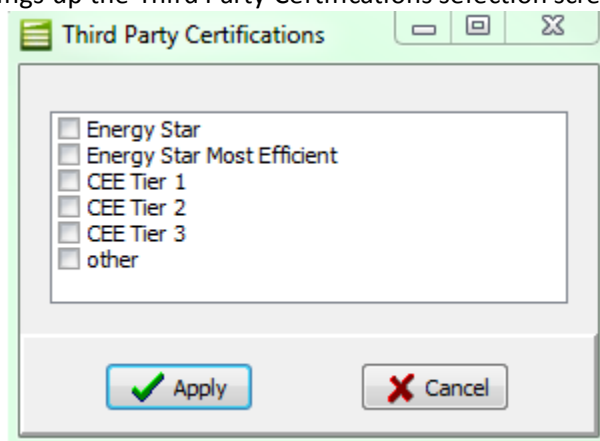
Third party certifications can be entered where appropriate for a variety of building systems in TREAT including:

- Windows
- HVAC Plants
- Hot Water Systems
- Appliances
- Doors (Storm Doors)

Certifications for all of these systems, except for appliances, are controlled using the golden certifications button on the appropriate screens:



The certification button brings up the Third Party Certifications selection screen:



The user selected certifications for the equipment in question will appear within the HPXML report.

Appliance Third Party Certification

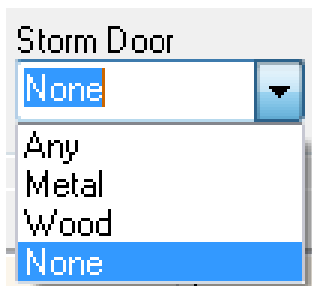
Appliance certifications are determined through the inclusion of the certification within the name of the appliance. Certification in appliance names are not case sensitive.

Use the table below as a guideline:

Text String in Appliance Name	becomes	Certification in HPXML 2.1 Export
energy star	→	Energy Star
energy star most efficient	→	Energy Star Most Efficient
cee tier 1	→	CEE Tier 1
cee tier 2	→	CEE Tier 2
cee tier 3	→	CEE Tier 3

Storm Doors (New York Only)

Storm doors are added to door entries in TREAT while the door is initially being created within the Door Library. The Storm Door dropdown allows the user to sort the door library for doors with metal or wood storm doors, or lacking a storm door.



Windows – Shading & Window Treatments, Movable Insulation R Value

In order to specify reporting or performance details for windows in TREAT the user should select the window entry in question from the Windows screen, and click the “Custom Properties” button. Please note that Window Treatments and Movable Insulation fields are for reporting purposes and will not affect energy calculations.

Various shading and window treatment options are available in TREAT including:

- External Overhangs
- Awnings
- Solar Screens
- Solar Film
- Deciduous Tree
- Evergreen Tree
- Building
- Other

Movable Insulation R Value gives the user the ability to include the R value of temporary or seasonal insulation window panels in the HPXML export.

Lighting Types

The lighting technology of fixtures must be identified in the HPXML 2.1 export through the inclusion of the technology within the description/name of the lighting fixture. This feature works only for the list of technologies below. The text string in the lighting name is not case sensitive.

Text to Include in Fixture Description	becomes	Fixture type in HPXML 2.1
t4, t5, t8, t9, t10, or t12	→	Fluorescent tubes with corresponding tube type
led	→	Light Emitting Diode
cfl	→	Compact Fluorescent

Equipment Information

- Equipment information including manufacturer, model, and year can be recorded for HVAC and DHW equipment and appliances.
- The “Equip Info” button on the HVAC, and DHW screens and the “Appliance Details” button on the Appliance screen can be used to access the Equipment Information window.