


Home Energy Score Gateway

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Home Energy Scoring Tool




The Department of Energy's Home Energy Scoring Tool allows Assessors to:

- Generate clear, credible home energy assessments at a reasonable cost;
- Recommend customized upgrades and other cost saving tips; and,
- Help consumers compare the energy use of different homes.

The Home Energy Scoring Tool is quick and easy to use. Assessors can gather the information needed to assess a home in one short site visit. This low-cost, high value assessment can be provided as a stand-alone service or as an add-on to a home inspection or comprehensive energy assessment.

For more information on how to become an Assessor or receive a Home Energy Score, visit www.homeenergyscore.gov.



Webinars and Videos: What is Home Energy Score?
Learn more about the Home Energy Score and the latest program updates by visiting the Webinars page where you can download slides and recordings of past webinars.







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Project Summary

Timeline:

Start date: 9/24/2014

Planned end date: 9/24/2021

Key Milestones

1. Joint Modeling & Admin Gateway: 2/12/2017
2. Streamlined training & processes: 9/30/2018
3. Integration of new OS/E+ models: 9/30/2020
4. Streamlining & Transition to NGO: 9/30/2021

Budget:

Total Project \$ to Date:

- DOE: \$2.04M (2014 – current)
- Cost Share: N/A

Total Project \$:

- DOE: \$3.30M (2014 – 2021)
- Cost Share: N/A

Key Partners:

DOE Office of Energy Efficiency and Renewable Energy (EERE)
Lawrence Berkeley National Laboratory (LBNL)
National Renewable Energy Laboratory (NREL)
Interplay Learning

Project Outcome:

A 'gateway' to Home Energy Scoring capabilities that provides:

- Web-based tools to enable DOE to manage partner engagement, assessor training, program reporting, and quality assurance activities
- Web-based interfaces to provide partners and assessors initial access to Home Energy Scoring capabilities
- API's for third-party software providers to apply DOE-certified residential energy scoring models

Team



DOE EERE:

- Program administration
- Partner and stakeholder communication
- Energy scoring policy and strategy subject matter experts



Pacific Northwest
NATIONAL LABORATORY

PNNL:

- Seamless integration of energy modeling and program administration services
- Systems software engineering and web-based delivery subject matter experts



Lawrence Berkeley
National Laboratory

LBNL:

- Residential energy scoring modeling codes (DOE2)
- Residential building science subject matter experts



NREL:

- Residential energy score modeling codes (Open Studio / Energy Plus)
- Building data transfer protocol (HPXML) subject matter experts



Interplay Learning:

- Online training services
- 3-D training subject matter experts

Challenge

Problem Definition: The development of a DOE-provided model to perform energy scores for residential buildings is only one piece of an end-to-end solution that can be applied by the general EERE community.

To be effectively applied by the larger community, additional tools and processes must be developed (and operationally supported) that enable:

- **DOE** to administer the operation application of the models by government and private partners. Includes identifying and managing partners (and partner-specific score labels), orchestration of training and authorizing assessors, and support of quality assurance and reporting activities.
- **Partners** to identify **assessors**, support residential assessments, and share energy-related information with home owners and ‘data registrar’ that ultimately deliver residential energy information to multiple listing services and other commercial entities.
- **DOE** to offer ‘free’ entry-level residential scoring tools that allow local organizations to begin applying Home Energy Scoring tools without a significant investment, engaging communities in the process, before requiring investments in commercial value-added products.
- **Third-party software providers** to apply Home Energy Score models as part of their value-added offerings. Organizations have a choice of DOE or commercial services.

Approach

Home Energy Score Gateway: Administration

- Provides a web-based tool (and processes) for DOE to administer partners, assessors, software providers, quality assurance, and reporting activities in support of DOE's Home Energy Score Better Buildings effort

Home Energy Score Administration Tool

Millard

[Logout](#)

Assessors

[Score Homes](#)

[Edit Account](#)

[Edit Public Profile](#)

Moderate

[Partners](#)

[Assessors](#)

[Software Providers](#)

[API Keys](#)

[Unblock Users](#)

[All Users](#)

Partner

[Test-Opt](#)

[Edit Partner Settings](#)

Resources



Home Energy Score Partners

- [Add Partner](#)
- [Email Partners](#)

Name ▲	# Assessors	Custom Label Configuration	Software Provider	Application
	0			
4CORE	3		PNNL	Production GL longer valid)
ADECA	10	pending	PNNL	Production GL longer valid)
AEEE	8		PNNL	Production GL longer valid)
AREQ	16		PNNL	Production GL longer valid)
ASHI	107	approved draft	PNNL	Production GL longer valid)
Babylon	0	approved	PNNL	Production GL longer valid)
BPI	91		PNNL	Production GL longer valid)

Approach

Home Energy Score Gateway: Execution

- Provides a focal point for partners and assessors to become involved in the effort
- Provides entry-level tools and processes

Building ID: 197299
External ID: Electric furnace test
Assessment Type: Test
Address: 7715 West 13th Avenue
Kennewick, WA 99338

✓ **About this Home**

✓ Roof, Attic & Foundation

✓ Walls

✓ Windows & Skylights

✓ Systems

[View Summary](#)

[Back to Dashboard](#)

About this Home

The tool is appropriate for single family homes only, including townhouses, row houses, and duplexes. It is not appropriate for mobile homes or multifamily housing.

Assessment date
Enter the date that the on-site energy assessment was conducted.

Comments

Home details

Year built ?

Number of bedrooms ?

Stories above ground level ?

Interior floor-to-ceiling height ?

Conditioned floor area (all stories combined) ?
square feet

Direction faced by front of house ?

Was a Blower Door test conducted on this house? ? Yes No

Has the house been professionally air-sealed? ? Yes No/Don't Know

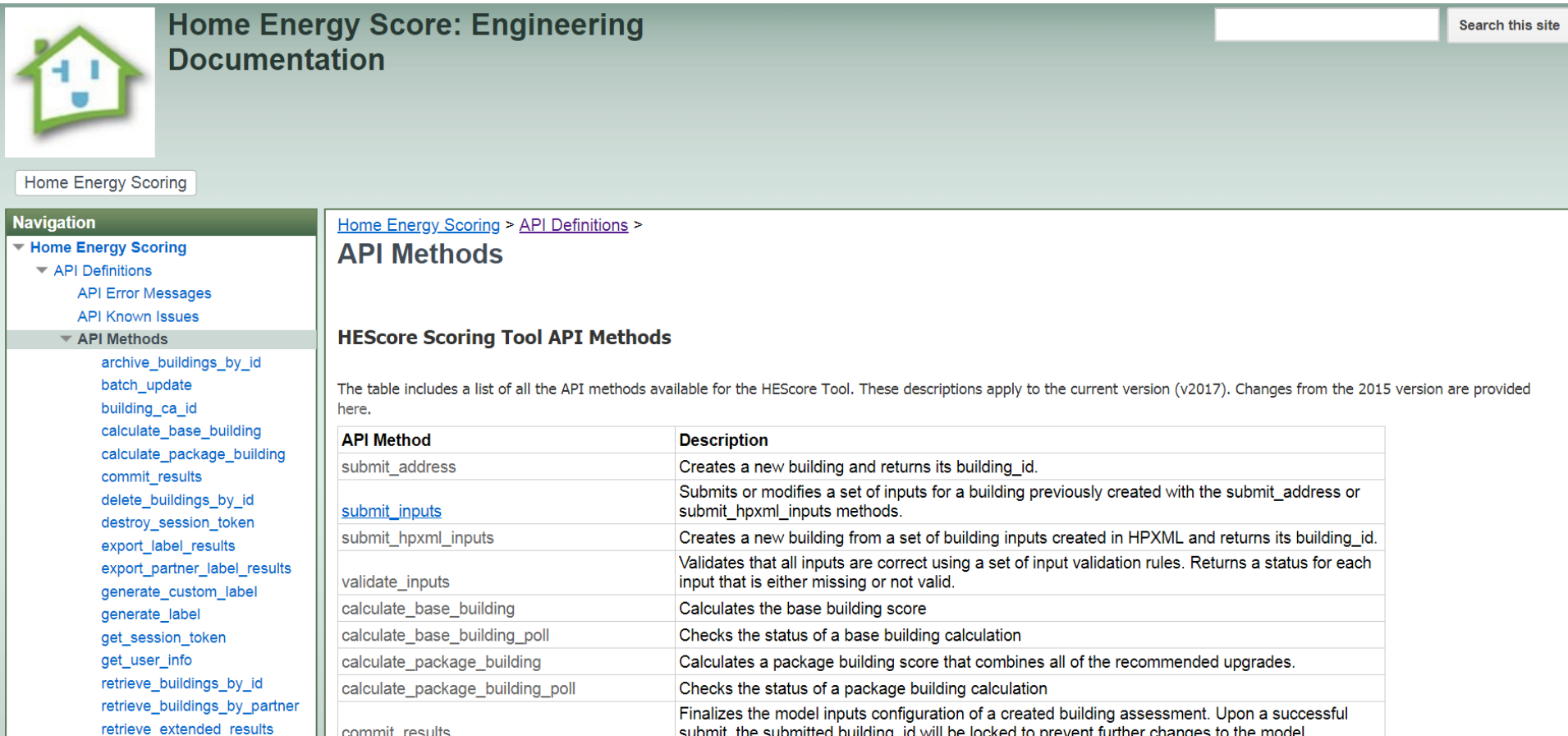
[Save & Exit](#)

[Next](#)

Approach

Home Energy Score Gateway: Transition to Commercial Entities

- Provides a single, DOE-certified method for scoring homes that can be applied by third-party, value-added providers



The screenshot shows the 'Home Energy Score: Engineering Documentation' website. It features a navigation menu on the left with categories like 'Home Energy Scoring', 'API Definitions', and 'API Methods'. The main content area displays 'API Methods' and 'HEScore Scoring Tool API Methods'. A table lists various API methods with their descriptions. A search bar is located in the top right corner.

Home Energy Scoring

Home Energy Score: Engineering Documentation

Search this site

Navigation

- Home Energy Scoring
 - API Definitions
 - API Error Messages
 - API Known Issues
 - API Methods
 - archive_buildings_by_id
 - batch_update
 - building_ca_id
 - calculate_base_building
 - calculate_package_building
 - commit_results
 - delete_buildings_by_id
 - destroy_session_token
 - export_label_results
 - export_partner_label_results
 - generate_custom_label
 - generate_label
 - get_session_token
 - get_user_info
 - retrieve_buildings_by_id
 - retrieve_buildings_by_partner
 - retrieve_extended_results

Home Energy Scoring > API Definitions > API Methods

HEScore Scoring Tool API Methods

The table includes a list of all the API methods available for the HEScore Tool. These descriptions apply to the current version (v2017). Changes from the 2015 version are provided here.

API Method	Description
submit_address	Creates a new building and returns its building_id.
submit_inputs	Submits or modifies a set of inputs for a building previously created with the submit_address or submit_hpxml_inputs methods.
submit_hpxml_inputs	Creates a new building from a set of building inputs created in HPXML and returns its building_id.
validate_inputs	Validates that all inputs are correct using a set of input validation rules. Returns a status for each input that is either missing or not valid.
calculate_base_building	Calculates the base building score
calculate_base_building_poll	Checks the status of a base building calculation
calculate_package_building	Calculates a package building score that combines all of the recommended upgrades.
calculate_package_building_poll	Checks the status of a package building calculation
commit_results	Finalizes the model inputs configuration of a created building assessment. Upon a successful submit the submitted building_id will be locked to prevent further changes to the model

Approach

Home Energy Score Gateway: Transition to Commercial Entities

- Transition to data registers and downstream commercial consumers, including multiple listing services
- Will assist in collecting data for home performance with Energy Star Program



HOME ENERGY LABELING INFORMATION EXCHANGE (HELIX)

Impact

Home Energy Score Stakeholders...

- 31 states have at least 1 qualified assessor
- 26 active Home Energy Score Partners
- 670+ active assessors
- 89,000+ official scores have been generated

Value-added Providers

- 12+ software providers using the API
 - 6 are creating Scores
 - 3 of these are extracting data only
 - 5 are in developing their offerings, still need to go through DOE product review

Downstream consumers

- Transition to Green Building Register mandated 2015, to be completed in 2018
- Use mandated by the City of Portland, January 1, 2018
- HELIX data register, in testing stage using ‘developer’s sandbox’



Progress

- Late-stage development, baseline administration tools in place since 2016
- Mature Agile development method delivers high-quality, production-level products
 - Highest-priority features are delivered first
 - Incremental updates ensure real-world issues are addressed in a timely manner
 - End-to-end verification and validation is conducted for each new / updated feature
- Key accomplishments
 - Cyber security review and upgrades
 - API's ensure third-party software can only access to partner / assessor-specific data
 - Dashboards to administer training process flow and assessor tracking
- End-to-end integration of new modeling features
 - Direct evaporative cooling
 - Mini-split heat pump
 - Ability to describe a photovoltaic system
 - Assessment of 'preconstruction' homes
 - Window shading
 - Instantaneous water heaters
- New administration features in progress
 - Additional administration, quality assurance, and reporting features being added
 - Adding business rules and streamlining the home assessment process
 - Continued automation and streamlining of assessor training with Interplay

Stakeholder Engagement

- Mid / mature-level capabilities
- Transitioning from ‘scoring’ homes to transitioning residential data to downstream consumers
- Find-an-Assessor service for EERE and partners
- Assessor sign-up and tracking services for partners
- Working with government and commercial entities to provide data transfer services from DOE-provided Home Energy Score database to local data registers
- Addition of quality assurance, training mentor, and other role-based dashboards to provide additional end-to-end services

Remaining Project Work

- Supporting quality assurance and mentoring roles
- Continued refinement of assessment process business rules and their inclusion in both DOE-provided interfaces and APIs
- End-to-end integration of new modeling features
 - Interfaces and APIs
 - Reporting
 - Documentation
- End-to-end integration of new residential modeling tools
 - Replace DOE2 with OS/E+ residential model components
 - Integration with SEED
- Potential to transfer administration services to other DOE programs
 - Currently assist in collecting home performance with Energy Star data
 - Could cost effectively (re)apply administration tools to provide HPwES system

Thank You

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