

HOME ENERGY SCORE

Ensuring A High-Quality Product

The Home Energy Score is an asset rating that allows homeowners, buyers, and renters to compare U.S. homes in terms of estimated energy use. Based on a standard in-home assessment of a home’s energy-related assets, the Home Energy Score Report provides information that can be included in Multiple Listing Service (MLS) listings and potentially influence home appraisals and financing.

To be a trusted source of energy information and therefore influential in the real estate market, there must be systems in place to assure high quality scores are consistently produced. After assessor training, testing, and mentoring, DOE’s Quality Assurance (QA) requirements ensure Home Energy Scores are reviewed for accuracy and corrected as needed. As a Desktop Quality Assurance (DTQA) Auditor, you play a unique and vital role in giving the Home Energy Score credibility and leading to success in the marketplace.

Your Role as a DTQA Auditor

To assure the quality of a Home Energy Score, your role is to compare the Score’s data inputs to the photo evidence in the DTQA packet and assess whether the data is verifiable and/or reasonable. By reviewing Home Energy Score Data, you can gauge whether the assessor has characterized the home appropriately and help assessors improve their accuracy when conducting assessments.

Assessing the DTQA Packet

To verify an assessor’s data inputs in the Home Energy Scoring Tool, you must have access to a complete DTQA packet compliant with DOE’s quality assurance protocol. After randomly selecting a packet to review, it should meet the following conditions:

- ▶ Clear and legible sketches with labeled dimensions as necessary.
- ▶ Photos of all exterior walls with all windows visible (e.g., additional photos from inside screened porches as necessary).
- ▶ Photos of all HVAC, mechanical equipment, and ducts, with fully legible images.
- ▶ Legible photos of ruler showing insulation depth and wall depth, using camera flash or a flashlight as necessary for clarity.
- ▶ Photos of foundation type that clarify whether it is vented, unconditioned, or conditioned space.

If the DTQA packet does not fully satisfy any one of the five above categories, it should be labeled as “Incomplete” and replaced with a new DTQA packet randomly selected for review. Notify the assessor every time a packet is incomplete to

minimize the chance of repeated issues. If an assessor has five or more DTQA packets labeled “Incomplete,” and has been notified on at least two separate occasions to improve performance, their participation in the DTQA program must be terminated.

If a DTQA packet satisfies the above conditions, then it should be assessed for accurate data entry.

Data Inputs Matter

You are helping to verify the first nationally-comparable rating system of energy performance designed for existing homes. This information can be used to appraise the home’s value and determine access to financing options. It is vital for the program’s success and the real estate community’s trust that the assessment is completed with accurate information. The following data points are particularly important in terms of how they can impact a Score and recommendations.

- ▶ **Assessors should measure the conditioned floor area.** Any space with duct registers or radiators should be included as conditioned space. This is not the same measurement as the foundation/floor area. The DTQA packet should include a sketch of the conditioned floor area with dimensions that explain the entered data. The measurement provided may be checked against online mapping information and estimations.
- ▶ **Appropriately de-rate equipment efficiencies using the Assessor Calculator.** Images of HVAC name plates should provide enough information to calculate the derated equipment efficiencies using the Assessor Calculator. The de-rated efficiency should rarely be less the values listed below, unless a lower number is measured. **The assessor should provide a picture showing the lower value as displayed on the measuring device.**

Minimum Equipment Efficiencies (BPI Standard 2400)	
Equipment, Efficiency Unit	Value
Combustion Furnace, AFUE	0.72
Combustion Boiler, AFUE	0.60
Heat Pump, HSPF	6.5
Heat Pump / Air Conditioner, SEER	9
Room Air Conditioner, EER	8
Gas fired storage water heater, EF	0.50
Oil fired storage water heater, EF	0.45
Electric storage water heater, EF	0.86
Electric heat pump water heater, EF	2.0

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Time-Savers

A few “rules of thumb” can help you check for inconsistent or very unlikely data, which might mean the home needs to be rescored. When reviewing a DTQA packet and its associated Score, be sure to check:

- ▶ **Combined roof area must be at least as big as combined foundation area.** If the roof area is smaller than the foundation area, then either the house has a hole in the roof (so the interior would no longer represent conditioned area), or the assessor entered data incorrectly. The combined foundation area can be smaller than the combined attic area if there is a vaulted or cathedral ceiling.
- ▶ **Verify that the window area on each side is reasonable.** Estimate the window sizes in photos and then check the Assessor’s inputs against your estimations.
- ▶ **Use online resources where appropriate.** Real estate listings, tax assessment data, and online maps can help verify the number of bedrooms, average ceiling height, the home’s age, and floor area.

Other Important Reminders

- ▶ Make conservative assumptions. If you cannot see properly applied sealants, assume ducts are unsealed. Short of photo evidence, assume the house is not professionally sealed. If you cannot see insulation, assume installation quality is fair when using the Assessor calculator to de-rate the insulation R-value.
- ▶ If there is a half-story (e.g. Cape Cod style), round up the

number of stories above grade. A walkout basement should be considered a basement, not a story above grade.

- ▶ Single paned windows with storm windows should be characterized as double paned windows.
- ▶ If you cannot see wall insulation, use the R-value estimation chart included below.
- ▶ Instantaneous and on-demand water heaters should be characterized as storage type heaters while using the manufacturer’s specified Energy Factor.

When to Initiate a Corrected Score

DOE sets the minimum standard for issuing a rescore. While reviewing the DTQA packet and its associated Score, you should enter the data you believe to be correct based on the evidence provided into the software tool provided using the “QA” assessment type. If the QA Home Energy Score value is more than one point off from the assessor’s Score, then a Corrected Score must be issued.

A QA Provider can request a rescore for additional situations; DOE sets the minimum standard for issuing a “Corrected” Score. The Partner may make the requirement more stringent.

Follow these Tips & Keep in Touch

By verifying the data entered for at least 5% of Home Energy Scores after the initial five assessments for each Assessor, you help assessors across the nation ensure a high-quality product to their customers.

If you have questions you need answered by the Home Energy Score Team, reach out to assessor@sra.com.

Remind Assessors to Use DOE’s Resources When Scoring Homes

All reference documents are accessible under the “Resources” tab of the Home Energy Score website. Remind assessors that these tools are available to improve the accuracy of their Home Energy Scores.

Data Entry Guidelines. This is also provided in the "Congratulations" email for completing the Sim, this document is a handy reference guide.

BuildingCenter.org. This website can help you determine HVAC equipment age when it is not readily apparent.

Assessor Calculator. This Excel document is required to de-rate insulation, estimate equipment efficiencies, and average values of components that vary throughout the home.

Default R-Values for Wall Cavity Fiberglass Batt Insulation (based in-part on Huang & Gu, 2002)				
Wall Construction Type	Year of Construction			
	1990 or after	1980-1989	1950-1979	Before 1950
2x4, 16 inches on center	R-7	R-7	R-3	R-3
2x6, 24 inches on center	R-11	R-7	R-7	R-4