Building America *Technical Highlight*

National Residential Efficiency Measures Database Aimed at Reducing Risk for Residential Retrofit Industry

Researchers at the U.S. Department of Energy (DOE) National Renewable Energy Laboratory (NREL) have developed the National Residential Efficiency Measures Database, a public database that characterizes the performance and costs of common residential energy efficiency measures. The data are available for use in software programs that evaluate cost-effective retrofit measures to improve the energy efficiency of residential buildings.

This database:

- Provides information in a standardized format.

Photo from Community Services Consortium, NREL/PIX 17430

- Improves the technical consistency and accuracy of the results of software programs.
- Enables experts and stakeholders to view the retrofit information and provide comments to improve data quality.
- Supports building science research and development.
- Enhances transparency of research results.

The database is accessible via the NREL Website, where users can view retrofit measures, download data electronically, provide feedback, and contribute to the project by uploading retrofit project and measure cost data.

The database has been well received by the retrofit industry and is already being employed by the following DOE energy analysis software tools:

- Home Energy Scoring Tool. Developed by Lawrence Berkeley National Laboratory (LBNL), this tool is used in DOE's Home Energy Score pilot program.
- Home Energy Saver. Developed by LBNL, this tool for consumers recommends cost-effective energy efficiency improvements to homeowners.
- Home Energy Saver Pro. Developed by LBNL, this professional-grade tool for contractors recommends cost-effective energy efficiency improvements.
- BEopt. Developed by NREL, this researcher-oriented tool determines optimal energy-efficient designs for new and existing homes; researchers use it to set DOE Building America Program research goals.

Key Research Results

Achievement

NREL's Residential Buildings Research Group developed a publicly available database of energy retrofit measures containing performance characteristics and cost estimates for nearly 3000 measures.

Result

The database provides a single, consistent source of current data for DOE and private-sector energy audit and simulation software tools and the retrofit industry.

Benefit

The database will reduce risk for residential retrofit industry stakeholders by providing a central, publicly vetted source of up-to-date information.

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NREL continues to expand and enhance the database based on feedback from retrofit industry professionals. The laboratory:

- Works with private-sector energy analysis software tool developers to facilitate the use of the measures data in their tool.
- Adds best practices field guides that detail proper implementation of measures to reduce the risks associated with field installations.
- Adds more details about cost estimates to improve the accuracy of recommendations made to homeowners and highlight the issues that affect installation costs.

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