

## Weatherization and Workforce Guidelines for Home Energy Upgrades

### Improved Quality, Better Training

March 2011

The U.S. Department of Energy (DOE) Weatherization Assistance Program has developed *Workforce Guidelines for Home Energy Upgrades* to foster the growth of a high-quality home energy retrofit industry and a skilled and credentialed workforce. Public and private retrofit programs nationwide may adopt the guidelines to increase the consistency and effectiveness of the work they perform. Training providers may use them to improve course curricula and materials.

### Project Benefits

The project will benefit workers, homeowners, and the retrofit industry while helping reduce energy use and increase residential health and safety.

#### For Workers and Contractors

- Foster the growth of a high-quality home energy retrofit industry by creating good jobs that cannot be outsourced
- Build a well-trained retrofit workforce and promote workforce mobility by establishing a clear set of competencies on which to base worker credentials
- Help training programs develop higher-quality and more consistent curricula and training materials

#### For Homeowners

- Establish a clear baseline for quality retrofit work and a solid foundation for quality assurance
- Strengthen homeowner confidence that energy upgrades will be completed



An energy auditor visits a house to assess what energy efficiency upgrade measures it requires. *Photo from NREL/PIX 18037*

correctly and safely and provide the expected energy savings and health benefits

#### For the Residential Retrofit Industry

- Increase confidence in the energy efficiency finance community that retrofit work will be completed to a high standard of quality, reducing financing risks
- Improve the consistency and effectiveness of retrofit work performed under the DOE Weatherization Assistance Program and state, municipal, and utility retrofit programs nationwide. This improvement will, in turn, increase demand for private retrofit work.

The adoption of these guidelines, which were developed with funding made available through the 2009 Recovery Act, will help lay a permanent foundation for worker opportunities in energy efficiency. Workers with relevant skills who are seeking new opportunities and looking for an entry point into the

weatherization or home energy retrofit industry may benefit from increased mobility, career growth, and attractive wages.

### Components

The guidelines are the result of a historic collaboration between Weatherization Assistance Program technicians and trainers, home performance contractors, building scientists, organized labor, healthy homes and worker safety experts, and other professionals in the building trades and throughout the home energy upgrades industry. These guidelines include four interrelated components that support a skilled workforce performing high-quality retrofit work:

#### Defining the Work

1. **Standard Work Specifications** define the minimum requirements for high-quality work and the conditions necessary to achieve the desired outcomes for each energy efficiency retrofit measure.

**2. Technical Standards Reference Guide** for standards or codes defines the safety, health, materials, installation, and application standards for residential building energy efficiency retrofits. These technical standards were developed by industry or third-party standards development organizations, such as the American Society for Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE); the American Society for Testing and Materials (ASTM); and the Building Performance Institute (BPI).

**Defining Worker Competencies to Support High-Quality Work**

- 3. Job Task Analyses** identify and catalog the key steps a worker takes to complete an energy efficiency improvement in a home. The guidelines contain Job Task Analyses for four common home energy upgrade job classifications: Energy Auditor, Installer/Technician, Crew Leader, and Quality Assurance/Inspector.
- 4. Essential Knowledge, Skills, and Abilities** identify the minimum competencies that workers should possess to perform quality work and the conditions necessary to achieve the desired outcomes of a given energy efficiency retrofit measure.

**What's Next?**

The Weatherization Assistance Program will publish the *Workforce Guidelines for Home Energy Upgrades* in summer 2011. Later in 2011, using the Workforce Guidelines as a foundation, DOE will establish a national framework for worker certification and training program accreditation.

In 2009, the White House *Recovery Through Retrofit* interagency report identified the lack of a skilled and credentialed workforce as a barrier to growth in



A weatherization worker uses safety equipment that captures all dust in a home contaminated by lead paint. Healthy homes experts contributed to the *Workforce Guidelines for Home Energy Upgrades* to address occupant and worker safety issues. Photo from NREL/PIX 17966

the home retrofit industry. The publication of the guidelines and subsequent certification and accreditation efforts are part of a collaborative industry and government response to address that barrier.

For more information about this project, see the DOE Office of Energy Efficiency and Renewable Energy (EERE) Web site: [weatherization.energy.gov/retrofit\\_guidelines](http://weatherization.energy.gov/retrofit_guidelines)

**Weatherization and Industry Involvement by the Numbers**

Many industry and Weatherization Assistance Program experts collaborated to develop the guidelines:

- 35** = Weatherization experts who reviewed the guidelines for technical accuracy and regional climate variation
- 48** = Workforce development experts who cataloged job tasks
- 16** = Safety and health experts who reviewed the guidelines for worker and occupant health and safety rigor,
- 892** = Weatherization and industry workers who participated in surveys validating the job tasks
- 60** = Home energy retrofit industry experts who defined the standard work specifications
- 994** = Public comments received to the draft guidelines, strengthening the final document
- 34** = Number of states from which comments were received during the public comment period.