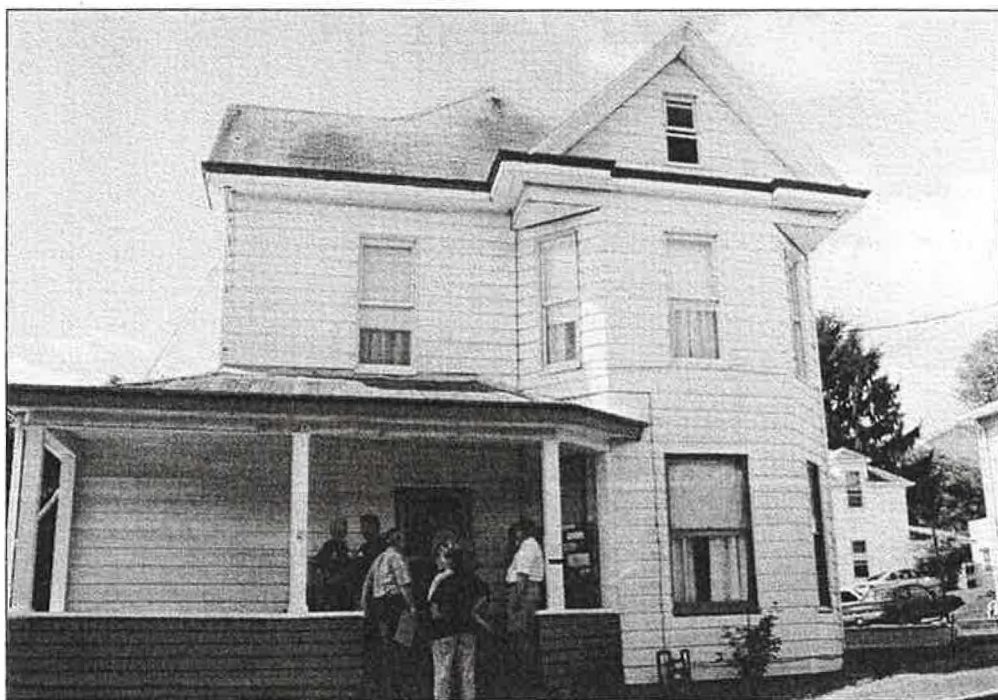


WEATHERIZATION PLUS: NEW OPPORTUNITIES

No more will weatherization crews find their hands tied when they see opportunities for energy savings in every corner—the Weatherization Plus plan will open the door to bring home advanced technologies.



BY GAIL MCKINLEY

Sometimes even perfectly installed insulation and exquisitely detailed air sealing work just aren't enough. For many low-income homes, insulation and air sealing alone won't make energy costs bearable, because these traditional weatherization measures address only space-heating and -cooling efficiency, which typically account for under 40% of a low-income household's energy bill. To address the other 60%, new measures to increase water-heating, lighting, and appliance efficiency are needed.

Auditors and crews of the Department of Energy's (DOE's) Weatherization Assistance Program, which is funded through state and local agencies (the "weatherization network") with grant monies appropriated by Congress, face this frustration on an almost daily basis. Weatherization crews often wish to take advantage of all energy saving opportunities while they are already in a house, but they know

that addressing certain energy efficiency needs—by replacing inefficient refrigerators and water heaters, for example—is beyond the current scope of DOE's program. Furthermore, advanced technologies—which are not currently used by most weatherization crews due to cost or availability constraints—could greatly increase the efficiency and effectiveness of the insulation and sealing work, as well. For example, Kim Fawcett-Kidney, an energy coordinator for an urban weatherization agency in Ohio, states, "The inclusion of electric baseload and advanced-technology measures would radically improve the services to our low-income clients. Although we have some utility funding for these measures in parts of our service territory, we have not been able to address this need comprehensively, despite the fact that the client's electric bill can be much larger than their gas bill." This desire to do more is the driver behind the weatherization network's collaboration with

DOE to establish a plan, called Weatherization Plus, to guide the evolution of the program in the coming years.

What Is Weatherization Plus?

Weatherization Plus is the term that was chosen in 1999 to characterize the network's plan for expanding the Weatherization Assistance Program from its current focus on heating and cooling energy conservation in low-income homes to a broader focus on whole-house energy usage and whole-community efforts. Adopting a whole-house approach will allow weatherization crews to address the comprehensive energy usage of low-income homes, including the building envelope, mechanical systems, electric baseload, indoor air quality, and occupant behavior, as well as the interaction

of these components. Crews will be able to use enhanced energy audit tools to help evaluate whole-house energy savings opportunities, to employ advanced technologies such as aerosol duct sealing when these are deemed cost-effective, and to replace certain particularly inefficient appliances, such as old refrigerators.

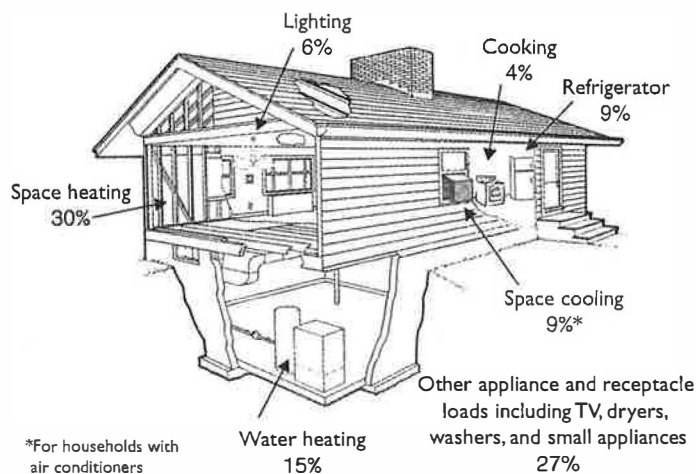
Additionally, the whole-community approach of Weatherization Plus encourages weatherization providers to serve as a resource for community-based efforts to conserve energy, boost economic activity, and improve the environment. They will also help to deliver other related benefits, such as lead poisoning risk assessment, disaster mitigation, and consumer education.

Magnifying the Benefits

The Weatherization Assistance Program got its start in response to the 1973 oil crisis, with volunteers assisting low-income families by installing such temporary measures as plastic storm windows, weatherstripping, and caulk. The program has evolved, and now professional staff use sophisticated energy audit protocols and advanced diagnostic equipment to determine which cost-effective measures and services should be installed to achieve the greatest energy efficiency and cost payback.

More than 5 million homes have been weatherized since the inception of the program; approximately 30 million households are eligible for weatherization service. Today, some 970 local agencies are weatherizing about 70,000 homes of low-income families each year, with DOE dollars. A study based on data from the early 1990s found that weatherization reduces average energy consumption per home by one-third for gas space heating, saving the average household \$193 annually in energy costs. Through Weatherization Plus, DOE is examining the potential to

Percent of Total Energy Costs by End-use in Households Up to 150% of the Poverty Line



In low-income households, other appliances make up almost the same percentage of total energy use as space heating does.

achieve 30% energy savings of the *entire* home energy bill, consistent with the goals of the White House initiative, Partnership for Advancing Technology in Housing (PATH). If weatherization can achieve this ambitious objective, it will save the average weatherized household approximately \$365 annually on its energy bill.

Many weatherization providers have managed to expand the types of services they offer to low-income homes by entering into partnerships with other



Each year, local agencies weatherize about 70,000 low-income homes, such as this one pictured here.

federal, state, community, and private entities. For example, the Cuyahoga County Department of Development in Ohio delivers weatherization services to more than 300 low-income households each year. But that's not all they deliver. With funding from the U.S. Department of Housing and Urban Development, Cuyahoga County also provides lead and mold/moisture abatement services and encourages weatherization recipients to apply for these services. By replicating this type of partnership model throughout the full network of providers, Weatherization Plus aims to magnify the benefits that the program can produce.

Accomplishing the Goals

In 1999 the weatherization network's Millennium Implementation Planning Committee (MIC), which includes representatives from federal, state, and local agencies with support from DOE staff and contractors, was convened to make the implementation of Weatherization Plus a reality. One of the first hurdles any long-standing program faces when refining its mission is regulatory. DOE is collaborating with the weatherization network to make the regulatory and legislative changes needed to increase the program's flexibility. The proposed regulatory changes were published in a recent Notice of Proposed Rulemaking (*Federal Register*, January 26, 2000, page 4332). At press time DOE was anticipating publication of the revised rule, reflecting public comments, by the end of September.

Another inevitable hurdle in any program expansion is the need for more funding. DOE maintains that Congress must reverse the funding cuts that it enacted in 1995 and step up to full funding for the Weatherization Assistance Program. Full funding is a prerequisite to nationwide implementation of Weatherization Plus strategies. DOE

is simultaneously helping state and local weatherization agencies to pursue other funding sources.

In addition, restructuring activities have the potential to add resources to weatherization through public benefits funds. The deregulation legislation in Pennsylvania, for example, included a systems benefits charge that will provide \$19 million for weatherization. The Pennsylvania bill also secured \$3.6 million for low-income renewable energy pilot programs. DOE training has played a role in supporting the weatherization network's efforts in Pennsylvania and other states to achieve low-income programs and protections under restructuring. Training has been performed in national and regional forums as well as through support of peer exchange among weatherization and other low-income advocates. DOE's financial support for network advocacy on behalf of low-income energy efficiency has been successful in the states of Pennsylvania, Massachusetts, and Washington, and in many other jurisdictions. DOE continues to sponsor training and technical assistance to help members of the network participate in electric utility restructuring proceedings.

To further expand resources available to the network, DOE is building partnerships with other programs at the national level and identifying potential opportunities that could be fostered locally. For example, DOE has partnered with the Federal Emergency Management Agency to deliver risk assessment services in tandem with weatherization services. The goal of this

partnership is to reduce the vulnerability of low-income homes to natural disasters while lowering household energy costs (see "Bulding for Disaster Mitigation" *HE* Jan/Feb '00 p. 28). DOE is also providing tools to help local agencies get the word out, and will increasingly support training on leveraging and related business techniques. Through exchanging information on program successes, interagency partnerships, appropriations at state and federal levels, and other leveraged funds from multiple sources, DOE aims to expand the resources available to the entire network.

To prepare the network for incorporating advanced technologies and techniques, the MIC is working with DOE support and technical resources to upgrade energy audit tools and improve network access to advanced technologies and skills training. The MIC is also developing a system to identify and assess advanced technologies to expedite their incorporation into the weatherization process.

Building for the Future

There are a number of local agencies that, in concert with their state agencies, could move into full-scale implementation of Weatherization Plus strategies immediately. These agencies could build on the groundwork that has been laid by their own efforts as well as by DOE, using

leveraged resources. Vermont, for example, has demonstrated success through its Residential Energy Efficiency Program to leverage utility incentives, weatherization funds, and owner investments to implement comprehensive energy efficiency measures. But for the network as a whole, implementation of Weatherization Plus must be built on a base of restored technical capability that relies on the return to pre-1996 budget levels. In the meantime, DOE will

continue working with the network to build a stronger foundation, in anticipation of eventual full funding.

With everyone's participation and support, Weatherization Plus will have a ben-



Modern weatherization techniques utilize advanced calculations run through a computerized energy audit, such as this audit in Maryland, to bring optimal energy savings and occupant comfort.

eficial, long-range impact on the effectiveness and reach of the Weatherization Assistance Program. With full-scale implementation of Weatherization Plus, weatherization crews won't have to walk away from homes leaving useful improvements undone. Instead, they will have the resources, technology, and flexibility to achieve more energy savings in more low-income households. By bringing greater energy cost savings to more low-income households, Weatherization Plus will increase the program's economic and environmental benefits in our nation's communities. 🏠

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This weatherization technician uses a blower door to identify and treat air infiltration in a Utah home.