

## Linking Efforts to Improve Disaster Resistance and Energy Efficiency of Homes

Measures that promote disaster resistance in homes have close links to those that promote energy efficiency. Many of the same technologies that promote energy efficiency for a home — such as double-paned windows and seals on exterior openings — also provide greater disaster resistance. Many of the types of retrofits for enhanced disaster resistance and energy efficiency involve the same components of a home — windows, roofs and doors. Therefore, retrofits serving both purposes can be installed at the same time.

In recent years, there has been a substantial amount of federal funding available to support energy-efficient home renovations, but few, if any, programs provide funding to enhance both energy efficiency and disaster resistance. Combining these two goals within funding and incentive programs could create more cost-effective solutions for home hazard mitigation and energy conservation. If homeowners and builders are already getting funding and incentives to incorporate energy-efficient features into homes, why not provide incentives for vital disaster-resistant features at the same time?

It is important to explore options for blending home disaster-resistance and energy-efficiency efforts. This includes expanding research and technical assistance, incorporating materials and technologies that serve both goals, and creating programs that provide financing and incentives for both disaster resistance and energy efficiency.

### Expanding Research and Technical Assistance to Help Communities Build Both Safer and Greener

The growing importance of disaster resistance and energy efficiency in recent years has spurred state and local governments and organizations to research the best practices to enhance these qualities in homes and to inform at-risk communities about these practices. Many industry and trade groups, research institutions, advocacy groups and government agencies have explored ways to build, upgrade — and in post-disaster situations — rebuild both safer and greener. They have used this knowledge to help educate builders and homeowners how to make their homes more disaster resistant and energy efficient.

### Proposed Changes to the Weatherization Assistance Program

Created by the Energy Conservation and Production Act of 1976 (ECPA) and run by the Department of Energy, the federal Weatherization Assistance Program (WAP) provides the main source of weatherization funding for households generally earning up to 125 percent of the federal poverty level or 60 percent of the state median income (whichever is greater).

The program was initially designed to offer lower income households funding to make energy-efficient improvements to their homes. Given the linkages between energy-efficient and disaster-resistant home improvements, Senator George LeMieux of Florida proposed an amendment to the ECPA that would allow incentives for disaster-resistant improvements, so long as they also increase a home's energy efficiency.

The proposed amendment has received support from multiple advocates and is currently under consideration in the Senate.

## SOLUTIONS IN ACTION

### Soldiers Grove, Wisconsin

The village of Soldiers Grove, Wisconsin, is located along the Kickapoo River in the southwest part of the state. The village has endured decades of repeated flooding. After Soldiers Grove was struck by the worst flood in its history in 1978, the village worked with the Army Corps of Engineers to relocate its downtown using federal disaster recovery funds.

The village relocated 24 apartments, 10 houses and 30 businesses to higher ground. The new downtown district was built as a solar village, with all buildings heated by solar energy. According to the American Planning Association, this was likely the very first example in the U.S. of rebuilding both safer and greener.

## SOLUTIONS IN ACTION

### Greensburg, Kansas

Greensburg, Kansas, a town with a population of approximately 900, had to rebuild after a tornado destroyed most of the town's homes and commercial structures in May 2007. Intending to rebuild more resiliently and efficiently, and to reinvigorate the town's economy, Greensburg developed a reconstruction plan that incorporated both disaster-resistant and energy-efficient buildings.

The reconstruction effort placed strong emphasis on eco-tourism, putting the development of safer, more energy-efficient homes on display to boost tourism, and therefore the town's economy. A nonprofit group called Greensburg GreenTown set up the Chain of Eco-Homes Competition, which has initiated the design and construction of 12 "eco-homes" that will represent the best examples of disaster-resistant, energy-efficient homes.

This series of issue briefs was made possible through the generous support of WeatherPredict Consulting.

For more information on linking efforts to improve the disaster resistance and energy efficiency of homes visit [www.housingpolicy.org/toolbox/strategy/policies/distrest\\_energeff.html](http://www.housingpolicy.org/toolbox/strategy/policies/distrest_energeff.html)

To discuss this topic with other policymakers, practitioners and researchers, visit the related HousingPolicy.org Forum discussion group at [forum.housingpolicy.org/group/housinganddisasters](http://forum.housingpolicy.org/group/housinganddisasters)

## Materials and Technologies That Provide Both Disaster Resistance and Energy Efficiency

Certain materials and building technologies provide greater resilience in the face of severe storms and energy-efficiency. Concrete homes provide better insulation and protection from wind and flying debris. The expanded use of such materials could provide a more cost-effective way for new and existing homes to be both more resistant to disasters and more energy efficient.

## Programs That Provide Financing and Incentives for Both Disaster-resistant and Energy-efficient Improvements

There are multiple programs that provide financial support and incentives to homeowners for either disaster-mitigation measures or energy-efficient upgrades. Programs that combine financing and incentives for these two goals may be more cost-effective for both the homeowner and the entity providing support. Subsidy dollars could go further serving both purposes at once as opposed to individually, and homeowners could save time and money upgrading homes with disaster-resistant and energy-efficient retrofits at the same time.

Although there are currently no programs in place that explicitly provide financing or incentives for both disaster-resistance and energy efficiency in homes, there are some current efforts to develop and implement such programs.

U.S Senator George LeMieux of Florida and other advocates have proposed changes to the Weatherization Assistance Program that would allow for the funding of both energy-efficient and storm-resistant improvements for lower income households. Currently, program funds are only eligible for energy-efficient upgrades.

In addition, advocates have been working with the current administration and Congress on the new HOME STAR program (also known as "Cash for Caulkers") to include incentives for disaster-resilient improvements and related inspections. This would be in addition to the incentives for energy inspections, audits and energy-efficient improvements that the program already provides.

## Meadowlark House — Greensburg, Kansas

The design plans for the Meadowlark House was the winner of the Chain of Eco-Homes Competition held in Greensburg, Kansas, (see above *Solutions in Action* box) in 2009, which sought the best home designs incorporating energy efficiency and disaster resilience.



Rendering of Meadowlark House, Greensburg KS

STEVEN LEANER STUDIO/GREENSBURG GREENTOWN

The Meadowlark House incorporates many sustainable and disaster-resistant elements, including a chemical-free wall system that consists of wood blocks made from sustainable resources. The wall system provides a high level of insulation, reduces energy costs and can resist the forces of strong winds.