

Linking Energy Efficiency and Disaster Resilience Retrofit Programs

On June 14, 2010, over 50 attendees from federal agencies, nongovernmental organizations, Congressional staff and private industry met in the U.S. Senate Environment and Public Works Committee Room to discuss the benefits of linking energy efficiency and disaster resilience retrofit programs. The event, *Opportunities for Integrating Disaster Mitigation and Energy Retrofit Programs*, was convened by Ceres, The Travelers Institute, the Institute for Business & Home Safety (IBHS) and RenaissanceRe, and brought together more than 30 organizations.

The attendees gathered in recognition of a shared problem: while new buildings may be pushing the envelope of energy efficiency and disaster resilience, most buildings in the United States were not designed with energy constraints or natural hazards in mind. While there is growing momentum behind energy efficiency and the broader green building movement and well-established disaster mitigation programs in a number of states, the two communities have rarely collaborated—a potential source of inefficiency, given that both groups strive to improve the performance of the same buildings.

The challenges to upgrading building performance from an energy or disaster resilience perspective are similar, and include:

- Motivating property owners and appraisers to value energy savings, green building characteristics or disaster resilience;
- Adopting and enforcing building codes with minimum requirements for energy performance or disaster resilience;
- Training contractors to upgrade properties' energy performance or disaster resilience;
- Creating reliable certification and auditing programs to verify performance upgrades to retrofitted properties;
- Financing building retrofits, recognizing limited government funds for grant-driven financing and the high frequency of title transfer for most properties, which poses a challenge to traditional loan-based financing; and
- Identifying the patchwork of federal, state and private funding programs for building performance retrofits.

Attendees reached consensus on the strategic value of coupling energy and disaster retrofit programs, potentially under the umbrella of “high performance buildings.” Benefits of an integrated approach include:

- Significant cost savings to governments for contractor training programs;
- Streamlined performance certification & auditing processes for retrofitted properties;



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- Greater durability of energy retrofitted properties, resulting in longer-lived energy savings and reduced waste from damaged or destroyed buildings;
- Increased savings to households and businesses in the form of lower energy bills and insurance premiums; and
- Amplified job creation prospects for skilled workers.

While significant obstacles remain to our transformation into a nation of high performance buildings, attendees identified the following catalysts for change:

Research Opportunities

- Basic research on the energy and disaster resilience performance of green building technologies and materials to identify which are most effective. Cutting-edge facilities like the [IBHS multi-peril research center](#) may make such research possible.
- Building codes and performance criteria that reflect regional exposures to natural hazards such as earthquake, wildfire, windstorms and flood and set whole-building performance standards. Existing standards such as the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) Green Building Rating System™, IBHS' FORTIFIED for Safer Living® and FORTIFIED for Existing Homes™ programs, and the Portland Cement Association's proposed High Performance Building Requirements for Sustainability offer a foundation for the next generation of integrated standards.
- Toolkits to help communities understand where critical points of structural intervention overlap for energy and disaster retrofits, reflecting regional differences.

Legislative Opportunities

- Increased funding for the [National Multi-Hazard Mitigation Program](#), which seeks to reduce the total costs associated with natural and other related hazards to buildings by fostering and promoting consistent and improved multi-hazard risk mitigation strategies, guidelines, practices, and related efforts.
- Greater funding to enable community use of [HAZUS](#) to compare relative benefits of disaster mitigation investments.
- More explicit support for disaster mitigation retrofits in future climate legislation, as part of a broader adaptation strategy.

Programmatic Opportunities

- States developing energy efficiency or disaster mitigation programs and considering an integrated approach may look to recent developments in energy retrofit financing, such as [Property Assessed Clean Energy Bonds](#), which are repaid through annual tax assessments on the retrofitted property rather than a traditional loan payment, to identify new opportunities for funding high-performance retrofits.
- Federal agencies designing energy or disaster mitigation programs can look to guidance from the [National Institute of Building Sciences](#) and the [High Performance Building Caucus Coalition](#), which promote an integrated design approach for sustainable and durable buildings.

Opportunities for Integrating Disaster Mitigation and Energy Retrofit Programs

Monday, June 14, 2010, 9:00 am – 2:00 pm
Senate Environment and Public Works Committee Room
406 Dirksen Senate Office Building (SD-406)
Washington, D.C.

Extreme events—whether wildfire, flood, earthquake or hurricane—can cause massive damage in the span of minutes, hours or days, erasing the investments of property owners and displacing vulnerable populations into substandard housing. These losses can be better managed through trusted and affordable building practices for new and existing structures, and if coupled with energy efficiency measures, can ensure long-lived quality housing and significant cost savings for households and the federal government alike. Well-designed energy efficiency programs can save consumers between \$2 and \$3 for every federal dollar spent¹, while every federal dollar invested in disaster mitigation saves society approximately \$4 on recovery costs².

The program will comprise a series of panel discussions that will address the following:

- The need for mitigation to be incorporated into federal disaster policy;
- The cost savings a combined approach to energy efficiency and disaster mitigation brings for households and the federal government;
- Repercussions, such as higher insurance losses and displacement of vulnerable populations in substandard housing, caused by increasing populations in areas prone to extreme weather events; and
- The effect of mitigation strategies like appropriate building codes and home retrofits on weather-related losses.

¹ U.S. Dept. of Energy and U.S. Environmental Protection Agency, National Action Plan for Energy Efficiency, July 2006.

² National Institute of Building Sciences/Multihazard Mitigation Council. Natural Hazard Mitigation Saves: An Independent Study to Assess the Future Savings from Mitigation Activities. Vol. 1, 2005.



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9:00	Continental Breakfast
9:30 - 9:45	Welcome Sharlene Leurig, Ceres
9:45 - 10:15	Keynote: Before and After Disaster Strikes: Can you Think Green? Dr. Sandra Knight, Deputy Federal Insurance and Mitigation Administrator, Mitigation, U.S. Department of Homeland Security, Federal Emergency Management Agency (FEMA)
10:15 - 11:00	The Social and Economic Costs of Disasters and the Potential for Mitigation Warren Edwards, Community and Regional Resilience Institute Ed Laatsch, Federal Emergency Management Agency (FEMA) Eric Nelson, Personal Lines and Risk Management, The Travelers Companies, Inc. Joan Woodward, The Travelers Institute (moderator)
11:00 - 11:45	The Nexus of Disaster Mitigation and Energy Efficiency Wanda Edwards, Institute for Business and Home Safety (IBHS) Katie Rothenberg, U.S. Green Building Council Stephen S. Szoke, Portland Cement Association Debra Ballen, IBHS (moderator)
	Lunch will be provided
12:00 - 12:45	Luncheon Panel Session: Financing Retrofits Greg Hale, Natural Resources Defense Council Mike Italiano, Capital Markets Partnership Garrett Walton, Rebuild Northwest Florida Sharlene Leurig, Ceres (moderator)
12:45 - 1:30	Lessons Learned and Ways Forward Moderated discussion led by Michael Cohen, Renaissance Re



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