

Integrating Energy Efficiency and Healthy Housing

Briefing Paper for the National Healthy Housing Policy Summit, May 2009; Updated May 2010

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Government Mandates, Incentives, and Funding to Increase Residential Energy Efficiency Present New Opportunities and Challenges

Housing consumes more than one-fifth of U.S. energy. The opportunities for significant household and societal benefits from residential energy efficiency measures are large yet difficult for many homeowners to realize on their own, particularly in low-income households. As a result, Congress, state legislatures, utilities, and local governments have launched a virtual cornucopia of mandatory and voluntary programs and policies. At the federal level, they include:

- The federal Weatherization Assistance Program;
- The Residential Energy Efficiency Tax Credit and Residential Renewable Energy Tax Credit (part of ENERGY STAR's numerous home-oriented programs);
- USDA loan guarantees and grants for retrofitting rural housing; and
- Energy-efficient mortgages through FHA and the VA, among others.

At the state and local levels, they include:

- At least 53 energy-efficient building codes;
- At least 20 states that prioritize meeting or exceeding state energy codes in their low-income housing tax credit-qualified allocation plans;
- About 22 renewable portfolio standards, mandatory conservation standards, and system benefit charges imposed on electric utilities;

- At least 30 state personal tax, property tax, and sales tax credits for energy-efficiency measures; and
- Over 600 government and utility energy audit, rebate, loan, and grant programs.

With the sharp rise in energy prices, the foreclosure crisis, the steep recession, and the high priority the Obama administration has placed on energy efficiency, Congress appropriated \$16 billion in new funds for energy efficiency and renewable energy projects in 2009, with an emphasis on home energy retrofits. That includes multi-billion dollar increases for the Low-Income Home Energy Assistance Program, Weatherization Assistance, the State Energy Program, and new Energy Efficiency and Conservation Block Grants, as well as \$1.25 billion for energy retrofits and green investments via the U.S. Department of Housing and Urban Development (HUD) Capital Housing Fund and Assisted Housing Stability Program. Estimates suggest that upwards of two million housing units will be made energy efficient in the next three to five years as a result. Additional support for home energy retrofits is under consideration in proposed legislation to address climate change and energy supply and demand for more than a year.

Done Correctly, Home Energy Efficiency Improves Occupant Health

Properly designed and executed, energy-efficient new homes have been shown to improve the general and respiratory health of occupants when compared to new homes built using traditional practices. Also, well-executed energy retrofits have resulted in improvements in self-rated health, a reduction in days off from school and work, and fewer visits to general health practitioners. An analysis of the Weatherization Assistance Program found that weatherized homes were at lower risk for fires, and their residents had less respiratory illnesses.

A high housing cost burden has been associated with lower general health status, high malnutrition, and more iron deficiency. Thus, the health benefits of energy efficiency to low-income families can be particularly significant because the income saved is often redirected to essential needs including food, medical insurance, and health care. Participants in the Weatherization Assistance Program not only save money on energy bills, but also gain an average of \$900 from reduced water costs, shut off fees, transaction costs and lost wages, and increased property values.

The Problem: Many Home Energy Efficiency Efforts Risk Harming Residents' Health by Failing to Incorporate Healthy Housing Best Practices

Well thought-out energy upgrades that reduce the production of contaminants (such as carbon monoxide, mold, and dust), improve ventilation, reduce moisture and condensation, increase safety, improve thermal comfort and offer residents a healthier environment. Many conventional energy upgrades, unfortunately, can harm the occupants' health risk, often unwittingly. For example, "tightening" a home without countermeasures for adequate outside air exchange can degrade indoor air quality and increase risk factors associated with asthma, allergies, and other respiratory ailments. Many energy retrofits even overlook simple, no-cost interventions like reducing the water heater temperature to 120 degrees, which saves energy and reduces the risk of scalding.

While some of the health effects of sustainable design and energy retrofitting have not been fully studied, we know that several health and safety interventions are vital to include in any energy retrofit, especially:

- Smoke and CO alarms;
- Repair of interior and exterior water leaks and elimination of standing water;
- Assurance of adequate ventilation for vented combustion appliances;
- Elimination of unvented combustion appliances;
- Kitchen and bath fans that exhaust to the outside;
- Lead-safe practices in older homes and lead dust clearance testing of the work area;
- Working air conditioner in at least one room of hot climate homes;

- Pre- and post-retrofit radon testing; and
- Properly sealing all leaks in ductwork, which are major pathways into the house for various contaminants and pests originating in basements, crawl spaces, and attics.

Our Challenge: Accomplishing Policy Change Collaboration

The challenges for us with such a strong stake in national healthy housing policy include ensuring that unprecedented "waves" of programs and investments in green housing and residential energy efficiency rolling across the U.S will support incorporation of healthy housing best practices into energy efficiency efforts.

Historically, the weatherization assistance program has lacked sufficient per-unit dollars to accomplish basic sealing and insulation plus limited action like water heater replacement. Federal regulations have only required that lead-safe work practices be used to "do no harm," and that states develop plans outlining how their program will manage health and safety issues. With the inception of recovery funding, in order to permit more thorough treatment of a unit, the average amount available through DOE was increased from \$2966 to \$6500 per unit. DOE now encourages Weatherization Assistance Program grantees to budget health and safety costs as a separate category and thereby exclude such costs from the average per-unit cost calculation affecting the calculation of energy savings. EPA has developed initial recommendations for addressing indoor air issues during weatherization. These recommendations should be further developed and incorporated into all energy efficiency programs to avoid unintentional consequences of energy retrofits.

FY 2010 Policy Agenda Related to Integrating Energy Efficiency and Health

- 1) **Facilitate Interagency Coordination and Provide Funding Support for Integrated Health and Energy Efficiency Activities.** For example:
 - Work collectively to pass Senator Jack Reed's and Congressman Robert Brady's Safe and Healthy Housing Act (H.R. 3891). Section 204 of the Act authorizes a new "Health Hazard Reduction Competitive Grant Program" at HUD that would provide flexible supplemental funding to local agencies that receive rehab, retrofit or repair funding from other federal programs, such as

CDBG, HOME, weatherization assistance, low-income home energy assistance, and rural housing assistance, to reduce health hazards in the same homes.

- Advocate for passage of the Healthy Housing Council Bill (S. 1658, H.R. 3793) to empower the relevant agencies to coordinate interagency activities integrating safe and healthy housing considerations with green design/energy retrofits.
- Work with the Administration to incentivize flexible use of categorical funding programs by state and local agencies and community-based organizations to advance energy, home repair, and health and safety goals. For example, with 15% flexibility, grantees with funds from the Weatherization Assistance Program and the Lead Hazard Control Program could address energy efficiency, water leaks, pest intrusion, condensation, safety hazards (e.g., inadequate lighting, window replacement where existing windows are coated with lead-based paint), and other basic safe and healthy housing practices.
- Modify energy auditing software to report monetized benefits of improved health in the return-on-investment (ROI) calculations.

2) Develop a Healthy Housing Label for Existing Homes: EPA has launched an ENERGY STAR Indoor Air Plus labeling program for newly-constructed homes. Build on EPA's experience with market-based approaches and develop a voluntary "healthy housing" labeling program for single-family and multifamily existing housing.

- Section 301 of the Safe and Healthy Housing Act (H.R. 3891) authorizes the creation of a voluntary "Healthy Home Seal of Approval" labeling program at EPA that would evaluate and promote health protective products, materials, and criteria for existing housing.

FY2011 Policy Initiatives (Discussion Draft)

1) Advance Home Star Legislation and Incorporate Health Considerations. Home Star for Energy Retrofit (H.R. 5019 – which has passed the House, S. 3177) will create energy savings and improved comfort for millions of families. The program can control

the negative effects of increased tightening of the building envelope and improve safety and health by:

- Expanding the scope of the Silver Star Rebates by adding bathroom and kitchen fans and carbon monoxide alarms to the measures for which rebates can be provided.
- Ensuring through the verification system that the ASHRAE 62.2 ventilation standard is met after air-tightness is improved for homes where Gold Star Rebates are provided.
- Requiring, if the home was built before 1978, that Gold Star Rebate verification include a visual check for dust/debris on the floor of the work area and a post renovation report.
- Encouraging those providing energy retrofit certification training to incorporate health and safety training.
- Measuring air changes, indoor air quality, and occupant health in program evaluation.

2) Make "Energy-Efficient Mortgages" Healthy. Work with the Congress and the Administration to build a standard healthy housing component into energy-efficient mortgages proposed in the Energy Efficiency in Housing Act (S. 1379 and H.R. 2336).

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