

ENERGY PERFORMANCE LABELING AS A GREEN HOME MARKET DRIVER

By David Heslam

The US has put aside \$5 billion in the stimulus package for weatherization with the intent to upgrade at best a million homes (at an estimated \$5,000 per job). But this raises a serious question about the scale of our commitment. One million homes is one percent of the estimated number of residences in the U.S. If we are really serious about energy savings, what about the other 100 million American homes that representing 20% of our annual energy consumption?

Energy Labeling: a catalyst for residential energy improvements

In the current economy, we obviously have limited resources and cannot attack the problem with more dollars. We need to find a way to persuade homeowners to upgrade their properties through market forces. In the Northwest, recent data show that the conversion rate from energy improvements audits to energy improvement projects is lower than desired. In a 2008 survey of homeowners in Oregon by Earth Advantage Institute, the overwhelming majority asked for an energy efficiency indicator demonstrating how their home ranked, what they could do, what impact it would have and how they compared to some average. The best way to do accomplish this may be through energy performance labeling.

Needed: an easier and more effective metric

However, not all energy labels are effective. The metric used is very important. We need to make sure that we measure meaningful energy units that are understood in the marketplace. Some suggestions to rate homes include energy use per square foot per year or a relative index score from 0 to 100. Both of these fall short when compared to *energy use per year*.

Energy use per year, when measured systematically, is easier to decipher than other units and applies equally to all homes in all climates. Home owners will quickly understand that 4-bedroom homes will have higher energy use per year than 1 bedroom homes, just as they understand a large SUV will have lower miles-per-gallon (MPG) rating than a compact car. Energy efficiency-minded shoppers will look for the home with the lowest energy use per year that also meets their needs. The label will also provide them with a target energy use against which they can track their actual use. This could be especially engaging for homeowners if the house were equipped with an electronic display or “dashboard” that monitored energy use in real time, helping people to understand their energy behavior.

It's not just about energy: the carbon connection

Energy labeling alone doesn't tell us all we need to know. Carbon emission labeling is also of great importance. The importance of knowing the carbon emissions produced by a home will only grow over time. Any proposed labeling system must include a carbon metric. MPG stickers are a good example of an integrated energy and carbon standard. They have been in circulation for over thirty years as a respected performance indicator, and now carbon emission ratings are being combined with MPG ratings in many states.

Using energy labeling

Mandated energy labeling at the time of sale would be a great service to real estate buyers, realtors and lenders, creating more accuracy in measuring comparable homes. Additionally, requiring energy labeling whenever government-subsidized home energy improvements are made would also provide very helpful validating information to homeowners and subsidizing agencies alike. The results of pre-improvement and post-improvement ratings could be compared and the projected savings tracked against actual savings. This would allow homeowners and agencies to record the energy and carbon savings they have created.

The Energy Performance Score: a miles-per-gallon label for homes

Earth Advantage Institute's Energy Performance Score (EPS) is just such an energy label. Already in use for new homes in the Northwest, the EPS is now being rolled out as a MPG-style standard for existing homes, making comparison of homes by buyers easier and financially beneficial, while offering homeowners a natural market incentive to upgrade their homes as much as possible.

The EPS methodology was validated during a 2008 pilot program conducted on 300 existing homes by Earth Advantage Institute, with the support of Energy Trust of Oregon. This comprehensive initiative attracted national interest. The City of Seattle, City of Chicago, City of Houston, Clinton Climate Initiative, U.S. Department of Energy, New York State Energy Research and Development Authority, and the World Business Council for Sustainable Development are all assessing the final recommendations from the pilot report issued in August 2009. EAI's report details the best protocol, audit procedures, software modeling tools, price points, and consumer messaging for wide scale deployment of the EPS performance metric. The report also outlines the training curriculum developed by EAI that is needed for the trade contractor network, agencies, cities, and state energy offices.

How is EPS calculated?

An Energy Performance Score looks at a number of different criteria that are then fed into a software program for modeling. The procedure, conducted by trained professionals, includes collecting utility bill information, measuring and sketching the home, recording window type and shading, insulation values, exterior and interior lighting fixtures, appliances, inspecting ducts and performing a blower

door test. These data and other measurements are entered into a database to generate a model.

Fully Leveraging Energy Labeling

An effective EPS labeling system can galvanize energy efficiency activity in the home industry. An online web archive will store EPS ratings for clients and provide a linkage to MLS databases to allow realtors and homebuyers to see home scores. A web information portal will enable contractors to view submitted ratings and provide an online estimate for the job. Consumers can see contractor rankings and testimonials posted by other consumers, access instant finance approval, schedule a contractor to conduct the work, and schedule a follow-up EPS rating. The EPS will enhance work completed by Home Performance with ENERGY STAR contractors.

A host of additional benefits can be associated with the implementation of the EPS concept. The EPS offers an effective tool to gauge the overall carbon footprint of the existing housing stock, to link housing to climate impacts, and to reflect improvements that mitigate the effects of carbon emissions. Financial institutions have observed that preferred green mortgages can be introduced by designing a package around high EPS scores instead of linking to regionally specific green building brands. A similar approach is appropriate for insurance providers who wish to target this high performance housing market. Both sectors are motivated to position their products to capitalize on the energy savings and carbon reduction message offered by the EPS.

The Regional Multiple Listing Service in Portland, Oregon, has been approached with a view to displaying the EPS certificate for any listed home on the RMLS database. Certified “green” real estate brokers have begun to rely on the clear performance metrics that an EPS offers to secure and hold the attention of home buyers interested in energy savings, energy consumption, or carbon impact score. A homeowner investing in a remodeling project can request a pre-job EPS and a post-job EPS to determine that their investment improved the EPS score. EAI’s aim is to have the appraisal industry recognize that each EPS point improvement correlates to a specific gain in appreciable home value.

Is EPS In Your Future?

In August 2008, Earth Advantage Institute participated in the drafting of legislative concept language related to the EPS for consideration by the governor of Oregon as part of his climate change agenda for the 2009 session. This resulted in the passing of State Senate Bill 79 in mid-2009. The bill outlines a two-year voluntary period for the adoption of the EPS with an oversight body to monitor traction. Thereafter, the body will recommend when new and existing homes should be compelled to carry an EPS and what incentive structures should be adopted to enable compliance with carbon reduction goals.

Washington State passed HB1747, a bill that calls for a methodology to determine an energy performance score for residential buildings and for an implementation strategy to use the information to improve the energy efficiency of the state's existing housing supply. In Washington, D.C., Congressmen Henry Waxman and Ed Markey's April 2009 discussion draft of the American Clean Energy and Security Act calls for "the development of model performance labels for residential and commercial buildings." Secretary of Housing and Urban Development Shaun Donovan recently expressed interest in seeing a number reflecting the energy profile of a home similar to the MPG decal for cars.

An August 2009 report by the Center for American Progress and Energy Future Coalition states that "the imperative for a uniform set of evaluation, certification, performance, measurement and verification standards is so great that adoption of these nationwide standards at the state and local levels should be a precondition to receiving incentives and other supports within a national retrofit policy."

Clearly, a miles-per-gallon energy labeling system such as EPS can be a catalyst for change, offering both a market-based incentive to promote energy efficiency and carbon reduction, as well as a behavioral modification tool to current homeowners seeking to reduce energy costs or increase resale value.

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