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Final Report

Process Evaluation of the 2009-2010 New Homes Program

Funded By:

EnergyTrust of Oregon

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E EXECUTIVE SUMMARY

This report presents the findings of a process evaluation of the 2009 and 2010 program years of Energy Trust of Oregon's New Homes program. This program, implemented by Portland Energy Conservation Inc. (PECI) and its subcontractors, Conservation Services Group (CSG), and Earth Advantage Inc., promotes improved new-home design techniques and the installation of energy-efficient materials and appliances.

In the past, this program has relied on promoting building to the ENERGY STAR® level. Following a code change that went into effect in June 2008, the program has offered the Energy Performance Score (EPS) as a way to rate and promote new site-built homes and claim savings on all upgrades above code. The goal of the EPS is to educate builders, realtors, and consumers to the relative efficiency of homes and transform market demand toward more energy-efficient homes.

For this evaluation, we reviewed program documents and data, conducted in-depth interviews with 14 Energy Trust staff and implementation contractors, three manufactured home market experts, and three manufactured home builders, and surveyed 37 participant and nonparticipant builders and 58 real estate professional trade allies (REPTAs).

MEASURE REVIEW

A review of the database of 2009 and 2010 program projects and measures found that the most common measures installed through the program were insulation, windows, ventilation, lighting, whole house infiltration, duct system, water heater, and gas furnace. Findings for EPS measures are similar for 2009 and 2010, but there were fewer standalones in 2010 than 2009. About three-quarters of EPS homes had seven to nine measures installed, with eight the modal number. What little variability existed among projects in the measures that were installed was determined largely by how home heating was handled. Generally, installing more measures meant a lower EPS. However, homes with more than seven measures tended to have higher EPS scores, which appeared to have been the result of a higher percentage of gas furnaces, rather than heat pumps, and a greater likelihood of including air conditioning, in homes with more than seven measures.

SITE-BUILT HOMES

Analysis of secondary data shows a continuing decline in new home building permits in Energy Trust territory, but an increase in the percentage of Oregon homes built to ENERGY STAR® specifications.

Preliminary data from an ongoing survey of builders found that most builders did not report significant problems meeting the 2008 code and did not expect significant challenges in meeting

the 2011 code. Nonparticipant builders, however, were more likely to expect challenges with the 2011 code. Builders preferentially sought code-related information from local builders associations and Earth Advantage Institute over the State Department of Building Codes and Energy Trust, with participant builders showing a stronger preference for Earth Advantage.

Builders' reasons for participating in the New Homes program suggest a possible segmentation between those who are opportunistically motivated and those driven purely by the desire to promote energy efficiency. While many participating builders indicated that building efficient homes conveyed a competitive advantage, nonparticipating builders tended to think that customers are not willing to pay for energy efficient features.

Earth Advantage is the dominant face of the program to participant builders, possibly to the extent that it limits Energy Trust's ability to link its name with the program. However, builders were generally satisfied with the program, particularly their interaction with program staff and training they had received.

Participant builders reported generally positive attitudes toward the EPS. Most found it easy to explain to customers and those who had an opinion reported that it was useful to homebuyers. A few, however, thought the EPS underscores high-efficiency homes and does not provide enough information on how to improve a home's efficiency.

Participant builders tend to market their home's efficiency primarily in in-person interactions with potential homebuyers and they were unaware of Energy Trust's marketing of the program; thus, builders may be missing opportunities to market their efficient homes.

Cost to the homebuyer appears to be the largest barrier to installing solar measures on new homes. While managing tax credits was not widely reported as a barrier to installing solar, most respondents would like additional information about solar tax credits and incentives, which may help control the largest barrier to installing solar, cost.

MANUFACTURED HOMES

The manufactured homes market in Oregon has shrunk to one-fifth of what it was in 2000. As a result, many market actors in the manufactured homes industry are experiencing serious financial hardships, resulting in the closing or consolidation of several companies, the diversification of product types offered, and the construction of smaller homes and less expensive homes.

Market experts estimate that 60% to 65% of manufactured homes sold in Oregon are ENERGY STAR®, but manufacturers provided diverse views about the role certifications such as ENERGY STAR® and Eco-rated play in customer buying decisions. Manufacturers do not currently receive incentives to construct more efficient homes. Moreover, because loan products for manufactured homes have higher interest rates than those for site-built homes, customers who want an Eco-rated home may be ineligible to purchase it because their loan terms will not allow them to exceed a certain price.

Manufacturers report willingness to build homes beyond ENERGY STAR® level if there is sufficient customer demand, the housing market stabilizes, or financial mechanisms such as financing options or increased incentives put high-efficiency homes in customers' reach. Manufacturers were resistant, however, to the idea of installing ductless heat pumps in homes, largely because of the cost.

REPTAS

A survey of 58 REPTAs found that REPTAs were satisfied with the training they received from Energy Trust. However, only slightly more than half were satisfied with the REPTA network overall and REPTA contact with Energy Trust was relatively low.

REPTAs reported that they *do* promote energy efficiency with clients and that they do so more since becoming trained Energy Trust trade allies. Almost all respondents said they discuss energy efficient home features with buyers and sellers, most frequently during home tours. They reported recommending specific efficiency upgrades, most commonly windows replacement, adding insulation, and upgrading the furnace. In addition, a large majority of REPTAs had listed energy efficient features or certification in the RMLS listing. Most REPTAs agreed that EPS is a good tool for promoting the efficiency of new homes.

REPTAs less frequently mention Energy Trust's services than they do efficiency in general, doing so somewhat more than half the time with homebuyers but less often with sellers. When they promote Energy Trust, it is most commonly in face-to-face interactions. Fewer than half reported displaying the Energy Trust logos on their marketing materials or on their electronic communications.

A large majority of REPTAs said their clients do not ask about energy efficient mortgages or financial options, and most have never referred buyers or sellers to the Umpqua Bank's Green Street Lending Program.[1] However, several REPTAs indicated interest in better financial options or discounts for energy efficiency upgrades and in training on energy efficient mortgages and financial options.

Awareness of coop marketing support is high among REPTAs but fewer than half had received marketing assistance since 2009. While satisfaction with the application process for marketing assistance was generally positive, a substantial minority of respondents were neutral or even dissatisfied with the process.

[1] Green Street was the only lending program available at the time of this review; however, Energy Trust (to distinguish from the Green Street program) no longer solely promotes Green Street.

RECOMMENDATIONS

Although Energy Trust's New Homes program has managed to maintain and even gain market penetration despite adverse market conditions, the above findings suggest a variety of recommendations.

Builder and REPTA Support

- ➡ **Recommendation:** Work with very-high-efficiency home builders to address their belief that the process for calculating the EPS is not accurate for very high efficiency homes.
- ➡ **Recommendation:** Work with builders and REPTAs to market efficiency features more actively, such as by helping builders work through the REPTA network to market efficiency features or by allowing builders to link their messages to program marketing.
- ➡ **Recommendation:** Be clear and consistent regarding what is expected of agents once they become a REPTA, and generate engagement by offering additional training on energy efficiency financing and possibly an incentive for new energy efficient homes that are purchased.

Program Marketing

- ➡ **Recommendation:** Energy Trust may consider exploring the segmentation of the builder market, including how to tailor marketing message to increase participation within each segment.
- ➡ **Recommendation:** Adapt program marketing materials to put more emphasis on promoting the credits and incentives associated with solar installations and train BOSs in how to explain them to builders.
- ➡ **Recommendation:** Continue and increase efforts to promote the program through local home builders associations, such as by asking the associations to host a link to the program website from their websites or to include information about the program in electronic communications with members. As part of this effort, as well as in program marketing materials, promote the New Homes program as a source of information about the 2011 energy code.

Manufactured Homes

- ➡ **Recommendation:** Energy Trust should consider providing incentives to manufacturers to offset the incremental cost of producing homes more efficient than ENERGY STAR®, including rebates to offset the cost of installing a DHP instead of a traditional heating source.

➡ **Recommendation:** Energy Trust could work with manufactured home financing companies to encourage lower interest rates for energy efficient manufactured homes.

MEMO

Date: October 4, 2011
To: Board of Directors
From: Sarah Castor, Evaluation Sr. Project Manager
Matt Braman, Residential Sector Manager, New Homes Program
Subject: 2009-2010 New Home Program Process Evaluation

The last process evaluation of the New Homes Program was completed in 2009. At that time, the program had just completed its transition to the both the 2008 residential code and the Energy Performance Score (EPS) for new homes. Today, it is adapting to the new 2011 residential code.

Results from the survey of builders show that participating builders have largely embraced the EPS and find it easy to explain to homebuyers. In addition, builders who have participated in the program report fewer challenges in meeting new residential codes than nonparticipants. The program works continuously with home builders associations to recruit new participating builders and provide information on the 2011 residential code. To date in 2011, the share of homes in areas served by Energy Trust that received an EPS is 19%, up from about 14% in 2010.

A few builders reported concern that the EPS does not accurately rate very high efficiency homes; the program is aware of a desire by some builders to reach “Net Zero” for their homes and will be developing a “Path to Net Zero” approach in 2012.

Builders did not report much awareness of Energy Trust marketing efforts for new homes. In Q4 of 2011, the program launched a consumer marketing campaign for new homebuyers encouraging potential homeowners to ask builders for the type of information an EPS can provide. Through the Smart Homebuyer Checklist questions buyers can ask builders are provided:

- What are the estimated monthly and annual energy costs for this home?
- What is the Energy Performance Score of this home?
- Is this home solar ready?
- Which high-efficiency features are built-in? (a list is provided)

Builders are no longer able to utilize the Oregon High Performance Homes tax credit to offset the cost of adding solar to new homes. In the absence of this incentive the program plans to focus on getting builders to make homes solar-ready and has set an ambitious goal to increase the market share of solar-ready homes. Solar-ready homes reduce the cost for homeowners to install solar in the future and qualify the builder for up to $400 in Energy Trust incentives.

Manufactured home builders report that Energy Star market share is over 50%, but that few buyers are interested in exceeding Energy Star, due to increased costs and lack of awareness of other energy efficiency labels. In 2010, the program began offering an additional incentive for eco-rated manufactured homes (a higher energy efficiency specification than Energy Star), but plans to discontinue this incentive in 2012 due to the lack of interest and the low volume of manufactured home sales overall. In 2012 program staff will examine if there are additional cost effective opportunities within this market beyond the current Energy Star level. If none, it is expected that the program would have to transition away from this market. In the meantime, Energy Trust will work with NEEA and BPA to develop a regional strategy for encouraging ductless heat pumps in new manufactured homes. Other options may be modular homes and/or the development of an EPS for manufactured homes, as a way to incent manufacturers to build beyond Energy Star.

Finally, results of a survey of Real Estate Professional Trade Allies (REPTAs) associated with both the new and existing homes program showed a need for more clarity around program expectations of REPTAs. The New Homes program will work with Existing Homes staff to re-evaluate the role of REPTAs and improve their engagement with Energy Trust.