

How Energy Efficiency Programs Can Help Capture the Value of Energy Efficiency in Residential Real Estate Transactions

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ABSTRACT

Homebuyers value energy efficient appliances and home features and in some regions, pay a premium for certified efficient homes. However, the home sale process frequently fails to account for the value of high-performance home attributes. If investments in energy efficiency were more accurately reflected in home resale prices, homeowners could have greater confidence that these investments would be recouped at resale, potentially leading to more investments in efficiency. Stakeholders at the local, regional and national level are undertaking a number of “green real estate” activities; however key gaps persist in transmitting information about homes’ energy performance to the market. This paper highlights obstacles and opportunities that energy efficiency programs are uniquely positioned to address, and provides examples of programs that are successfully working with real estate professionals to address the challenge of capturing the value of efficiency in home resale prices.

Residential Real Estate Transactions: a Significant Energy Efficiency Opportunity

Five million existing homes and 400,000 new homes are sold annually across the country (U.S. Census Bureau 2015). Most home sale transactions, however, do not yet adequately value energy efficiency. Standard practice does not make efficiency features visible to the real estate market or to homebuyers (Adams 2012, Stukel 2014). This presents a key barrier to large-scale adoption of residential energy efficiency; however the large number of residential real estate transactions represents a tremendous untapped opportunity to ignite the market for efficient homes and increase demand for residential energy efficiency.

Studies in several regional markets—Austin, Texas; California; Portland, Oregon; and Seattle, Washington— have found that homes with energy efficiency certifications (e.g., ENERGY STAR-Qualified) or that receive a HERS rating indicating an energy efficient home sell for 3% to 20% more than comparable non-certified or efficiency-rated homes (Desmarais 2015, Walls et al. 2013; Kok and Kahn 2012). In addition, most U.S. homebuyers rate heating and cooling costs and efficient equipment as somewhat to very important when purchasing a home (National Association of Realtors [NAR] 2014a).

Home purchases trigger a significant amount of consumer spending. Homeowners typically spend thousands of dollars annually on furnishings, appliances and home improvement during the first two years after purchasing a home, more than half of which is spent on home improvements (Siniavskaia 2008). This two-year period can be a critical window of opportunity. Providing information to agents and homebuyers during the home purchase process could help spur energy efficiency investments (Better Buildings, 2015).

Energy efficiency and real estate stakeholders are collaborating on a range of local, regional, and national initiatives to make the value of efficiency visible in home resale transactions. Such efforts include: expanding the use of standardized energy performance certifications, rating systems and labels; passing legislation requiring disclosure of homes' energy assets and/or consumption at time of resale; enabling interoperability of home efficiency data with data systems used by real estate professionals, and more (SEE Action 2015). One such widely recognized effort directed specifically to residential energy efficiency programs, the Value for High Performance Homes Campaign, offers the "Visible Value Blueprint" (CNT Energy 2013), a comprehensive guidance for program administrators who wish to engage the real estate community to help increase demand for home energy upgrades. In contrast to the Blueprint, this report provides a primer focusing on certain pervasive information flow gaps that energy efficiency programs are well-positioned to address. It offers steps that programs can undertake to address those gaps, from basic, relatively easy-to-implement actions to longer-term, more resource-intensive efforts.

Barriers to Valuing Energy Efficiency in Residential Real Estate Transactions

A literature review and interviews with energy efficiency program personnel and residential real estate professionals revealed several barriers to valuing residential efficiency that energy efficiency programs are well-positioned to help address. Barriers include the following:

- **Invisibility:** Many energy efficiency improvements and related safety, comfort, and durability attributes are essentially invisible (e.g., air sealing in the attic). Homebuyers cannot readily inspect them, and agents and appraisers may not ask about or understand the features.
- **Lack of standardized documentation:** Energy efficiency programs do not use standardized methods for documenting upgrades. Data for a specific region must be standardized in order to populate the local and regional Multiple Listing Service (MLS) searchable green data fields and provide accurate information to appraisers and buyers.
- **Lack of third-party verified certification:** Real estate agents strongly prefer marketing efficient homes using trusted third-party verified certifications, rather than technical information about home energy upgrades, because third-party certifications limit agents' liability when representing a home.
- **Time lag between upgrades and home sale:** A gap of up to 10 years or more (NAR 2014a) may pass between the time a home receives efficiency upgrades and when an agent needs that information to market the home. Homeowners typically do not have a convenient way to retain and communicate upgrade information to the listing agent.
- **Failure to assign qualified appraisers.** Mortgage market guidelines require appraisers to be fully competent to perform an appraisal on the type of property assigned, but compliance is uneven. Appraisers are typically assigned to properties based on fastest turnaround for completing appraisals and lowest appraisal price (CNT Energy 2013). Unless the borrower tells the lender that they are purchasing a high-performance home, it is highly unlikely that a qualified and certified green appraiser will be assigned, or that the home's energy efficiency features will be reflected in the appraised value.

The Critical Role of Energy Efficiency Programs

Residential energy efficiency programs, including local or state government-sponsored, regional, and utility customer-funded programs, are uniquely positioned to address some of these barriers. Programs and their partners such as home performance contractors and builders already capture most of the data needed by the real estate market, and programs can also leverage their relationships with program participant homeowners, who also have some of the information needed by the market. A report containing a comprehensive list). The rest of this paper presents promising examples of energy efficiency program efforts toward making efficiency visible in the home resale process. A report with a comprehensive list of resources for energy efficiency programs, including documentation and data standards, energy efficiency certification and rating systems, and education and training resources is available from the Better Buildings Home Energy Information Accelerator (Better Buildings 2015).

Energy Efficiency Program Activities

This paper is organized into three activity areas that program administrators can engage in to address the barriers to capturing the value of energy efficiency in the home resale process:

1. Document energy efficiency features in standardized formats.
2. Retain energy efficiency information and communicate it at the time of sale.
3. Support training resources for real estate professionals

Each activity area contains several activities that efficiency programs can engage in, categorized by level of effort or resource required. The activities range from foundational efforts easily accessible to many programs, such as affixing efficiency certification information to homes' breaker boxes, to more extensive efforts, such as working with local real estate agents to establish energy efficiency or green data fields in a local MLS.

Which activities a program administrator decides to undertake first will likely depend on the program's maturity and available resources, as well as the local market situation (e.g., the local inventory of high-performance homes or whether the local MLS has already established green data fields).

Activity Type 1: Document Energy Efficiency Features in Standardized Formats

Data collected by efficiency programs are often incompatible with MLS databases. Programs already require participating contractors to submit data in order to monitor upgrades and track program impacts. Programs can further help insure these data are documented in standard formats compatible with the local MLS and thus visible to the real estate market.

Foundational effort: issue a home energy rating or score

Programs can standardize the documentation of a home's energy efficiency performance by adopting well-established national and regional home energy rating systems such as the U.S. Department of Energy's (DOE's) nationwide Home Energy Score (HES) for existing homes, the RESNET Home Energy Rating System (HERS), the Home MPG program offered by Mass Save

in Massachusetts, and the Energy Performance Score offered by Energy Trust of Oregon. The various rating systems offer different levels of comprehensiveness to meet different market needs. All provide a rating or score that can be captured in MLS fields, if . Communicating efficiency ratings to homebuyers can positively impact home sale prices (Desmarais 2015).

Foundational effort: issue certificates that leverage existing national standards

The new home market has successfully used certification programs to raise the profile of the value of efficient homes (e.g., EPA’s ENERGY STAR Qualified New Homes). Efficiency upgrade programs can offer similar certification by becoming Home Performance with ENERGY STAR (HPwES) Program Sponsors and adapting the HPwES certificate template to develop their own versions of the HPwES Certificate of Efficiency Improvements or Certificate of Performance.

The Illinois Home Performance with ENERGY STAR (IHP) provides an example of a program that has adapted the HPwES Summary Certificate template (available in the HPwES Sponsor Guide) to document home energy improvements. IHP awards Certificates of Completion for two levels of home performance achievement: Silver (minimum 15% energy savings) and Gold (30% reduction in air leakage and other criteria). IHP Certificates are recognized with a checkbox in Midwest Real Estate Data (MRED), Illinois’ largest MLS. Program participants receive certificates that include key information agents recommend for inclusion in an MLS:

- Program name and issuing organization
- Certification level
- Date of certificate issuance
- Organization that verified the completed upgrade

As required by HPwES, the IHP certificate also includes the name of the contractor firm that performed the upgrade, a list of the specific improvements completed (e.g., leakage reduction rate, R-level of attic insulation), and date the improvements were completed. Examples of other home performance certificate programs include the Arlington County Green Home Choice in Virginia, Efficiency Vermont, Florida Green Home Certification Standard, Local Energy Alliance Program (LEAP) in Virginia, and Missouri Home Energy Certification Program.

Another example, Missouri Home Energy Certification (MHEC), awards its highest level of certification (Gold) for participating homes that achieve one of several markers: a score of 8 or higher on the HES scale, a score of 65 or lower on the HERS Index, or ENERGY STAR-qualified heating and cooling systems and a requisite number of energy efficient assets based on the 2012 International Energy Conservation Code (2012 IECC) for climate zone 4.

More extensive effort: work with the local MLS to add green fields

Nearly all of the homes sold in the United States are listed in an MLS, of which there are more than 850 independently operated across the country. A green MLS contains data fields specific to high-performance homes (e.g., efficiency certification information) and acts as a critical information-sharing hub for green real estate stakeholders.

Energy efficiency programs interested in adding green fields to the MLS will want to partner with a local champion in the real estate community, (e.g., a real estate broker who is committed to selling the value of green homes). Such an ally can provide entrée to the local Board of Realtors and in turn, the MLS. Programs should also consult the NAR's Green MLS Implementation Guide, which Colorado, Atlanta, Chicago, and other communities have used to guide their green MLS implementation processes. "Greening" the MLS can begin with basic actions such as including check boxes on the MLS form to indicate that the home for sale is ENERGY STAR certified, or has an energy upgrade certificate or energy rating label.

The Colorado Energy Office presents an example of an extensive collaborative effort to green MLSs across the state. The Energy Office had established a Residential Retrofit Working Group to increase demand for home energy upgrades and the group identified a need for energy efficiency financing options sustainable after Recovery Act funds were expended. Ongoing financing needed willing lenders, and associated appraisals for loan underwriting. In turn, appraisers would need reliable market data, much of which comes from the local MLS. Accordingly, the working group recognized it needed to build quality market data by adding green fields to MLSs across the state. A subcommittee that included real estate brokers, lenders, MLS representatives, utilities, and government staff launched the effort by developing guidelines to propose to the 20 MLS groups across the state. The Energy Office has used State Energy Program funds to provide grants to MLSs for training and IT upgrades. As of June, 2016, all of the MLSs in Colorado except one have added green fields (Stovall 2010, Rusin 2016).

NAR established the Green MLS Toolkit in 2009 and subsequently has required MLS providers to comply with the Real Estate Transaction Standard (RETS). RETS provides standard definitions for over 500 data terms and values for the most common property attributes in the United States, as used by real estate brokers, MLSs, and software developers. More recently, NAR developed the Green MLS Implementation Guide (Guide) to help MLS programming staff add green fields. The Guide identifies a subset of the RETS fields, divided into three tiers: 1) third-party green verified information (e.g., certifications), which the Guide recommends as the most essential fields; 2) technical fields; and 3) green marketing (or unverified) fields (NAR 2014b). The Guide provides energy efficiency programs and other stakeholders with information that can help them determine which data fields are feasible or necessary to add to their local MLS.

Extensive effort: use interoperable transfer of information to standardize data and streamline delivery to the MLS

States and utilities use a variety of software and data tools to capture energy upgrade information. As a result, many home performance contractors have had to learn multiple software programs, increasing their technology and training costs. To reduce this burden on contractors, and to enable delivery of reliable, comparable data to the real estate market, the Building Performance Institute (BPI) developed BPI-2101-S-2013 (BPI-2101): Standard Requirements for a Certificate of Completion for Residential Energy Upgrades. This standard defines a set of data requirements for two types of voluntary certificates: 1) Certificate of Performance, (includes an energy rating label such as a HES or HERS score); and 2) Certificate of Energy Improvements (documents energy efficiency measures).

BPI-2101 integrates with the Real Estate Transaction Standard (RETS) which defines home features to enable valuing them. While BPI-2101 identifies a large number of energy efficiency measures, programs do not need to use them all. Programs can use whatever subset of fields are appropriate for their particular certificate, e.g., assessment results, a specific measure, or comprehensive upgrade details (LeBaron 2014). BPI-2100-S-2019 (Standard for Home Performance-Related Data Transfer, or HPXML) is data transfer protocol used for BPI-2100. HPXML provides common language for facilitating information exchange between different databases. This standardized terminology enables interoperability between software systems so contactors and/or programs can streamline data collection and data transfer processes.

Implementing BPI-2101 and HPXML is a cutting-edge resource-intensive approach. It may require developing or retooling databases and communicating with multiple contractor software programs. U.S. DOE offers the HPXML Implementation Guide to help program administrators and software developers integrate BPI-2100 and 2200 into their operations and products. Several energy efficiency programs have begun pilot testing the BPI-2101 standard and HPXML.

In one example, New York State Energy Research and Development Authority (NYSERDA) launched a BPI-2101 and HPXML pilot in 2015. The program hoped to reduce contractor data collection burden create a more open market for multiple software vendors; speed up the project approval process; and enable sharing data with the local real estate market. As an first step, NYSERDA analyzed its entire program workflow and determined which data fields to include and exclude—a process that involved many conversations with contractors and software vendors. Through this process NYSERDA identified issues and created workflow changes that gave them a number of quick “wins” including reduced data entry burden, fewer contractor visits to the home, and faster, automated project approvals. These changes enabled more contractors to make a faster “kitchen table close” (Better Buildings 2015).

Another program, Arizona Public Service (APS) needed to securely collect data from field audits with minimal data loss and errors. APS implemented HPXML and partnered with energy auditing software vendors to develop a web-based portal and automation processes. The portal enabled APS to deliver and retrieve data to and from auditors in the field while the software automatically checked for errors and verified that the data complied with HPXML and APS program specifications. The automation reduced transaction costs for both the program and its contractors (Moore 2015).

Energy efficiency programs who want to team up with others may wish to join the DOE Better Buildings Home Upgrade Program Accelerator and Home Energy Information Accelerator. The Home Upgrade Program Accelerator helps programs with data management strategies and methods minimize program costs while improving overall program effectiveness. The Home Energy Information Accelerator focuses on making data more readily available to the MLS and real estate stakeholders.

Activity Type 2: Retain Home Efficiency Upgrade Information and Communicate it at Time of Sale

One of the most challenging barriers to valuing energy efficiency is the multi-year lag between the time when an energy efficiency program documents a home's efficiency features or upgrades and the time the home is resold. This information must be retained, possibly for many years, and communicated to the listing real estate agent and MLS when the home goes on the market, in order for the home's efficiency features to be properly marketed and valued.

Privacy regulations, often established via state legislation or state utility commission rulings, generally restrict energy efficiency programs from releasing personally identifiable information pertinent to home performance, such as a street address. Thus, in most cases, it is up to the homeowner to retain and communicate information to the listing agent (Adomatis, 2015). Real estate professionals report that homeowners rarely do this. Some stakeholders are undertaking long-term efforts to create a more effective process in which homeowners and homebuilders voluntarily sign a release allowing the energy efficiency program to retain the home's performance data and automatically populate an MLS listing.

Furthermore, staff turnover and short-term program cycles may jeopardize the ability of a program administrator to retain participant information that might be needed years later. Energy efficiency programs seeking ways to maintain consistent, long-term impact should work to institutionalize practices around collecting data and certifying home upgrades.

Foundational effort: Ensure efficiency information stays with the home

New home programs use a simple but powerful tool that existing home programs can also use to help bridge the information gap between time of upgrade and home resale: require that participating contractors and homebuilders attach stickers documenting the energy efficiency information to the home's circuit box. Manufactured homes consistently include an energy information sticker on the electric box (Adomatis 2014), and ENERGY STAR Certified New Homes Version 3 requires that certification labels be affixed to the home's circuit box. In addition, a growing number of county and local governments, such as Myrtle Beach, South Carolina, require that information about efficiency upgrades for energy code compliance be affixed to the home's breaker box.

Another tool that can help homeowners keep efficiency information with the home is the Appraisal Institute (AI) Residential Green and Energy Efficient Addendum (the Addendum), which provides an extensive list of fields for documenting a home's efficiency features, certifications and rating information. The Addendum can be completed by an appraiser, home builder, home performance contractor, home energy rater or other knowledgeable professional. In addition, some home performance software programs (e.g., RESNET Home Energy Rating Software) can automatically populate the Addendum's data fields with the results of a home energy assessment. Efficiency programs can educate their associate home performance contractors and home builders to advise homeowners to keep the Addendum with their home's other important papers.

Foundational effort: Engage program participants beyond the upgrade

Programs that may not have the financial resources needed to automate data transfer to an MLS have a simpler, relatively low-cost option that may increase the chance efficiency information will be included in a home's listing. Programs can periodically engage program participants and remind them to tout the value of their home's efficiency features when they sell the home.

Illinois Home Performance (IHP) provides an example of engaging program participants in multiple ways. The IHP website advises participants to share their home performance certificate with their real estate agent when they put the home up for sale. The website also recommends asking the agent to upload the certificate to the home's listing on the MLS. To reinforce this message, in 2015, IHP sent postcards to 200 program participants that offered to replace missing certificates and reminded homeowners to use the certificates when selling the home. One person out of the 200 requested a new certificate, and because the pilot effort proved not to be a resource strain, the program expects to send the postcards to a larger number of homeowners in 2016.

Foundational effort: Request program participant permission to share data

Programs can take the first step toward providing data to agents and buyers by obtaining program participants' permission to share their home's efficiency information. One example is DOE's HES program: the program provides HES Partner programs a Customer Participation Agreement to use with their customers. The agreement includes a section that asks for homeowner consent to share their HES report with the local MLS when the home goes on the market.

In another example, the Colorado Energy Office Green Real Estate Initiative worked with utility-run home energy assessment programs to launch a statewide HES program in late 2015. The opt-in approach encourages participants to sign a waiver with the local utility, which will allow the local program to provide a home's rating information directly to the local MLS. The program website includes an interactive Colorado map showing the locations of the four realtors to date (as of May 18, 2016) that have homes for sale whose sellers have agreed to sign the waiver and display their Home Energy Score.

More extensive effort: Ensure the home's efficiency is considered in appraisals

Real estate appraisers are unlikely to recognize the value of energy efficiency features if they have not had appropriate training (e.g., Appraisal Institute's Valuation of Sustainable Buildings Professional Development Program, Earth Advantage's Accredited Green Appraiser). Lenders or appraisal management companies typically order appraisals based on fastest turnaround and lowest appraisal cost, rather than a specific competency (CNT Energy 2013). Unless the homebuyer clearly indicates to their lender that they are purchasing a high-performance home, a qualified appraiser will likely not be assigned (Adomatis 2014).

Efficiency programs can help ensure accurate appraisals through several activities, including the following:

- Educate contractors or other professionals to document the home's high performance features in the Appraisal Institute Addendum.

- Advise program participants to keep the Addendum with their other home records and present it to their agent and lender when reselling the home.
- Educate real estate agents, appraisers, lenders and underwriters about the Addendum and the importance of using qualified appraisers for high-performance homes.
- Educate agents to recommend that interested buyers request a green-qualified appraiser from their lender take the first step toward providing data to agents and buyers.
- Post a list of local green-qualified appraisers or link to the Appraisal Institute Valuation of Sustainable Buildings Registry, which lists green-certified appraisers across the United States.

Oregon-based Earth Advantage (EA) provides an example of efforts programs can take to produce more accurate appraisals. EA offers trainings for green real estate professional certifications in different regions across the United States. EA has publicly posted on its website the list of appraisers who have earned EA's Accredited Green Appraiser designation. In addition, working on behalf of Energy Trust of Oregon, the state's third-party energy efficiency program administrator, EA presents brown bag talks at the offices of local lenders' offices, educating them on the importance of assigning competent green appraisers for high-performance homes and telling them how to find qualified appraisers.

More extensive effort: Automate data transfer to the MLS

Advanced approaches to transferring data will not only involve IT infrastructure and standard data protocols (e.g., BPI-2101 and HPXML) but also long-term engagement with multiple stakeholders. To support a national transition to automated data transfer, DOE's Better Buildings Initiative launched the Home Energy Information Accelerator as a collaboration among national, regional, state and local leaders in real estate and energy efficiency. The effort aims to develop automated, institutionalized systems that ensure homes' energy information reaches the MLS and other relevant points in residential real estate transactions. Teams from several pilot locations, including the U.S. Northeast with support from NEEP, Colorado, and the metro areas of Chicago, Portland, and Washington, D.C., have committed to developing and testing such automation with a goal of creating replicable systems that other regions can adopt or customize.

Virginia's LEAP provides an example of a program working with contractors and software vendors to automate data transfer. LEAP piloted the use of HPXML with single-measure contractors and four different contractor software vendors. The pilot succeeded technically—the data was transferred successfully to LEAP's database. However, for the first pilot, LEAP was unable to achieve the scale needed to cover administrative costs without additional grant funding; so for the time being, LEAP has put automated transfer efforts on hold (Better Buildings 2015).

Energy Trust of Oregon (ETO) investigated two separate options for enabling automated data transfer of homes' efficiency information to their regional MLS systems. One option involved ETO transmitting data directly to MLS aggregators—the companies that sell data to local MLS systems. The other entailed transferring information to county property tax records—a key information source for MLS aggregators. Both approaches involved technical and legal challenges. Ultimately, ETO succeeded in making arrangements with county officials to transfer homes' energy rating data to county property tax record databases.

Activity Type 3: Support Training Resources for Real Estate Professionals

While it is critical to properly document and communicate energy efficiency information to the real estate market, in order for the information to be useful, all relevant stakeholders must have the knowledge to use it effectively. Energy efficiency programs can support training for the key institutions and people that impact the value of energy efficiency in real estate transactions, including real estate brokers and agents, appraisers, home inspectors, lenders, and program contractors.

Education offerings for real estate professionals often serve different purposes (e.g., multi-day courses for earning an advanced designation, continuing education units (CEUs) required for license renewal, and additional classes for voluntary professional development). Most real estate professions require some kind of ongoing education to remain in good standing.

Real estate schools and courses are licensed and approved at the state level. Such state authorities include the Illinois Department of Financial & Professional Regulation, the Arizona Department of Real Estate, and the New Jersey Real Estate Commission in the Department of Banking & Insurance, for example. Energy efficiency program administrators interested in supporting educational offerings should begin by working with members of the local Board of Realtors to understand who licenses real estate stakeholders in a given state and what the renewal requirements are.

Foundational effort: Develop relationships with the real estate community

Energy efficiency program administrators can develop valuable relationships by attending and giving free “brown bag” talks at local real estate offices, and to appraisers, lenders, and home inspectors. Relevant topics include: green MLS fields; energy efficiency certifications and ratings; high-performance home features that can help sell homes; information about the local inventory of high-performance homes; home energy upgrade success stories; and upcoming green real estate trainings that offer CEUs. In addition, programs may find it helpful to team up with real estate professionals to help develop educational content and act as trusted messengers in the real estate community

Foundational effort: Provide recognition and affiliation

Efficiency programs often establish trade ally networks to help homeowners hire qualified home performance contractors and to help assure the quality of upgrade work performed for program participants. Trade allies can educate homeowners about the program, and programs often provide their allies with myriad benefits, including training, recognition, and marketing support. Similarly, a program can recognize and develop affiliations with local real estate professionals in order to help homeowners and buyers find qualified green real estate agents, appraisers, inspectors, or other professionals, and also enable real estate professionals to find each other.

Energy Trust of Oregon (ETO) offers an example of how programs can provide such support and recognition for the local real estate community. ETO developed a real estate ally designation and network, similar to its trade ally designation for approved subcontractor and builder program associates. The real estate ally designation is open to all real estate professionals who already have one of several types of green designation (e.g., Eco-Broker, NAR Green

Designation, LEED Professional). Those who have earned the designation include real estate agents and brokers, appraisers, mortgage brokers, and home inspectors. ETO promotes the allies on its website, lists them in an online searchable database, provides training, and connects the real estate and other trade allies in order to increase general interest and knowledge around green real estate and energy efficiency

Foundational effort: Partner to support classes that provide elective continuing education units

Programs across the U.S. are support real estate professional training efforts by partnering with existing local and national training providers. In Chicago, the Midwest Energy Efficiency Alliance (MEEA), a non-profit energy efficiency program implementer for IHP, worked with The NAR Green Designation team and the local Main Street Organization of Realtors to offer training to local real estate professionals. After testing different approaches, they found that the most successful ways to attract agents to the trainings included offering discounted prices (e.g., \$19 for a \$100 course) and promoting the classes through email campaigns to partner utilities, contractors, and real estate agents (through the local Board of Realtors). The program also found success with word-of-mouth advertising and messaging that emphasized the training would help real estate professionals expand their expertise and build their business. (Horton, 2014).

The Colorado Energy Office worked with the Colorado Chapter of the Appraisal Institute and the Colorado Coalition of Appraisers to subsidize training for 40 residential appraisers to become certified through the Appraisal Institute's Valuation of Sustainable Buildings Program. This number represents over 10% of the national total of appraisers with that certification. The Colorado Energy Office has also sponsored more than 60 trainings for real estate agents on the green MLS, and is developing a new course on the Home Energy Score. Additionally, the Colorado Energy Office is providing scholarships to home inspectors to cover the cost of BPI's Building Science Principles training and fees for participating in the BPI Rater program to enable them to qualify to become Home Energy Score Assessors.

Columbia Water & Light (CWL), a municipal utility in Missouri, is a Home Energy Score Partner that has been actively engaged in educating the real estate community around energy efficiency. The utility subsidizes the cost of BPI Building Science Principles (BSP) training (charging \$65 for \$200 class) for all local real estate agents. CWL holds BSP trainings twice a year and facilitates the test for the BSP Certificate of Knowledge. The utility plans to offer CEUs in the near future for real estate agents who take the training.

More extensive effort: Support nationally accredited certification for real estate professionals

Programs are also partnering with local real estate organizations to offer in-depth, nationally accredited training and the opportunity for local real estate professionals to achieve national designation. Nationally recognized green professional certifications for real estate agents include:

- The NAR Green Designation. Trainings are comprised of a three-day series of courses (i.e., Green 100, 200 and 300 courses). Topics in this training series include sustainability principles, certifications and labels, green building principles, existing home upgrades, and greening your real estate business.

- The EcoBroker Designation. Core curriculum consists of three 6-hour classes that cover health, comfort and efficiency measures, home certifications and financing, and greening your real estate business.

Several regional initiatives leverage national educational programs and supplement the curriculum with their own training courses. Local and regional trainings provide agents the added value of in-depth information about the local housing market. Examples of regional initiatives include the following:

- Earth Advantage Broker accreditation offers its own training to real estate brokers in multiple states (Alabama, Nevada, Oregon, Virginia, Washington) and satisfies the NAR's Green 100 course requirements. Graduates earn both the NAR and Earth Advantage designation.
- Build it Green, a nonprofit California program implementer, offers its own one-day course that satisfies the NAR Green 100 course requirement, and offers NAR's 200 and 300 courses.

Real estate professionals have numerous opportunities to gain CEUs at no cost. A number of programs have found it effective to subsidize the cost of classes in order to boost attendance. Build it Green is one of several programs that uses ratepayer-funded energy efficiency program funds to attract real estate agents to trainings. Build it Green tried offering the NAR Designation three-day training (\$600 per attendee) at a significant subsidized cost of \$50 and found it hard to fill the classroom, so the program now subsidizes the cost fully, offering the training for free to real estate agents (Tolentino, 2014).

Next Steps for Programs

Residential energy efficiency programs have a wide range of options and resources available to begin engaging the real estate community to make efficiency visible in the home resale process. The example activities provided in this paper fall into three main categories: 1) documenting efficiency upgrade information in standardized formats useful to the real estate market; 2) retaining data and communicating when the home is resold; and 3) supporting training for real estate professionals by leveraging existing resources, providing subsidies and guiding training content. The activities range from relatively low-effort initiatives to extensive collaborative efforts. State government and utility customer-funded energy efficiency programs across the U.S. are engaging in a range of such activities. Many of these initiatives are in the early stages and are not yet yielding many measureable results; however some programs have been able to make institutional changes that are producing promising early results.

The activities a program administrator starts with will likely depend on its situation and the state of the local green real estate market. Initial questions to ask include:

- Has the regional MLS established any green fields?
- Is there interest among local real estate professionals?
- Is there a growing inventory of high-performance homes?
- Are local green real estate trainings available?
- Does my program have relationships with members of the real estate community?

- Has my program established any energy efficiency certification and rating programs?
- Does my program have the authority to make participants' efficiency data available to real estate stakeholders?
- Does my program have the resources necessary to develop databases and work with software vendors?

Program administrators have an absolutely vital and unique role to play in bringing about more accurate valuation of energy efficiency in home resale process, which in turn will be a key part of taking residential energy efficiency to scale.

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