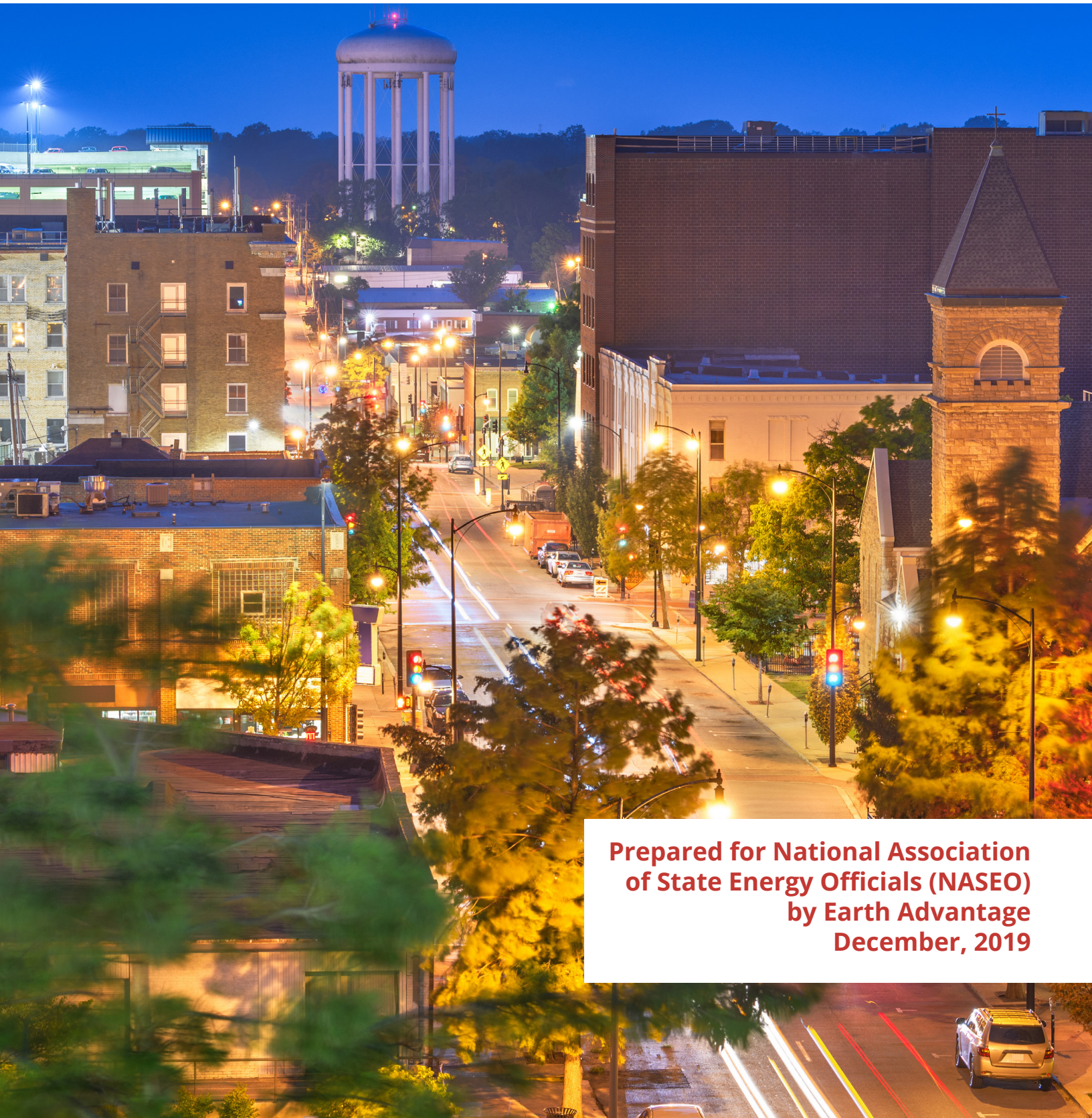
Home Energy Labeling

Steps states can take to support city-based home energy labeling initiatives



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Introduction

This best practice reference guide has been developed to assist State Energy Offices (SEOs) and other statewide organizations interested in increasing residential energy labeling activity in their state, especially through local government action. This reference guide incorporates experience from Earth Advantage's participation in the U.S. Department of Energy's State Energy Program funded Energy Metrics to Promote Residential Energy Scorecards in States (EMPRESS)[1] project and from supporting over twenty cities with planning a residential labeling program.

States and cities are increasingly looking for tools to address their carbon reduction goals through market transformation. Energy labeling efforts administered through states and cities can be more durable than utility efficiency programs and can prioritize the corollary benefits of energy labeling programs, such as increased consumer protection and the integration of home energy data into the real estate market.

However, for most cities, the prospect of developing a local home energy labeling program from scratch can seem like a daunting, time-consuming, and potentially expensive endeavor. State level entities can play an important role in helping to remove some of the real and perceived barriers to energy labeling program deployment at the local level. States can bring tangible support by taking steps to develop consistently applied standards, enable an accessible technical infrastructure, and support a knowledgeable cadre of energy efficiency and real estate professionals. These state actions can help local governments start labeling programs, generate useful results, and put the programs on a path for sustainable growth.

The following four-step set of recommendations can be used by SEOs to assess their own state goals and to assist cities or other local organizations within their states with developing and managing a local energy labeling initiative. These steps can be taken by the SEO regardless of whether local governments in their state are considering investing in a voluntary energy labeling program or developing a policy that mandates energy labeling as part of a real estate transaction or other triggering event.

[1] For more on the EMPRESS project and residential energy labeling program development, including a guidebook and case studies, please see https://empress.naseo.org/.

FIRST:
Define the State's Role

Before a state agency embarks on a residential energy labeling initiative, it should first determine how it can have the greatest impact over the long-term. Being realistic about the SEO's own strengths and challenges and the existing energy labeling activity in the state will help ensure that an energy labeling program is established that has a better likelihood for sustained impact. A number of factors will determine the optimal role for each state energy office:

- The extent and location of current energy labeling activity in the new homes market, especially HERS ratings
- The extent and location of current energy labeling activity in the existing homes market, whether through utility programs or through market-based services such as via home performance or home inspection companies
- The number of local governments with a climate action plan that specifically calls-out developing an energy labeling policy or program
- Local government capacity to administer their own local energy labeling program (generally determined by the size of the city and the extent of its sustainability-focused staffing)
- State agency staffing capacity, both short-term (1-2 years) and longer term (3+ years)
- State agency staffing technical residential building science expertise
- State agency staffing with technical energy modeling knowledge
- State agency staffing with real estate training/outreach experience
- State energy efficiency or carbon reduction goals specifically calling for reduction of energy use in the residential sector
- State agency administrative authority over energy labeling activity
- 3rd party organizations in the state with energy labeling program development expertise

Regardless of the specific capacities a SEO decides it has to be most impactful, the overriding focus should be to ensure dependable information is delivered to all local markets throughout the state and is done so in a consistent manner. The recommendations that follow outline ways that a state can support this message of consistent, dependable information while enabling cities to initiate and manage their own energy labeling initiatives.

SECOND:
Set the Rules

State agencies are generally particularly well positioned to establish a comprehensive understanding of the rules under which energy labeling activity should occur. A state agency can help to set the conditions for energy labeling activity by creating foundational rules and some level of consistency across the state for what will be deemed "authorized" energy labels in the state and who can deliver them. Having statewide rules in place gives comfort to local government decision-makers, as they can point to these existing rules when developing a local program or policy. It also provides evidence to the real estate industry that there is a defined level of professionalism with home energy assessments that are consistently applied across the state. The end result is that these real estate professionals gain greater confidence with the information contained on the energy label itself, become more likely to introduce the energy information to their home buying or selling clients, and become more likely to participate in and support local labeling initiatives. Setting consistent rules can also help reduce overall market confusion, whether among homeowners, home performance professionals, or broader real estate industry participants like appraisers and lenders.

CREATE ASSESSOR LICENSURE

A first step a state can take to help with developing consistent standards is to ensure that home energy assessors becomes codified as a distinct, state-authorized contracting service with their own licensure and insurance requirements. In most states, the responsibility for overseeing contractor credentialing is done at the state level by a state agency. In states where this is not the case, this action could be done across local contractor licensing authorities.

By establishing a baseline set of qualifications for home energy assessors, the state agency is helping to create a level of credibility for this category of contracting professionals and to the energy assessment process itself. Because home energy assessors sometimes do not offer installation contracting services that require licensure, establishing a distinct category with specific standards helps to ensure that the market receives consistent levels of service. This also helps to ensure that homeowners receiving an assessment have an established pathway for registering a complaint if they deem professional standards have not been met.

State Example: Oregon[2]

The state of Oregon established training requirements for "Home Energy Assessors" as well establishing a specific "Home Energy Performance Score Contractor" license through legislation and subsequent rule-making. Under Oregon law an individual may not undertake, offer to undertake, or submit a bid to do work as a home energy assessor unless the individual is certified as a home energy assessor by the state. Additionally, a business may not undertake, offer to undertake, or submit a bid to assign a "home energy performance score" (e.g. any home energy label) unless that business is licensed by the State of Oregon's Construction Contractors Board as a "home energy performance score contractor" and has an owner or an employee who is certified as a home energy assessor. In addition, state law provides that a person may not use the title of home energy assessor or advertise themselves as providing those services unless the person is certified by the state as an authorized home energy assessor.

Oregon Construction Contractors Board License Endorsements[3]			
Endorsement Classifications	**Scope of Work**	**Limitations**	**Bond & Insurance**
Home Energy Performance Score Contractor (HEPSC)	Contractors with an HEPSC endorsement may operate a business issuing home energy performance scores	HESPC contractors can perform no other contractor activities	$10,000 Residential bond $100,000 per occurrence insurance

TRAINING REQUIREMENTS FOR HOME ENERGY ASSESSORS

Individuals producing any home energy labels in Oregon must:

1. Be certified as a "home energy assessor" by the Oregon Construction Contractors Board
2. Have completed training in the software program used to produce the U.S. Department of Energy's Home Energy Score™
3. Have successfully completed one of the following training and certification programs:
    a. Training and certification as a Building Performance Institute Building Analyst or Home Energy Professional Energy Auditor;
    b. Training and certification from the Residential Energy Services Network (RESNET) as a Home Energy Rater;
    c. Training and certification from the Oregon Training Institute as a Residential Energy Analyst;
    d. A professional credential recognized by the U.S. Department of Energy as a prerequisite for qualification as a Home Energy Score Certified Assessor™;
    e. Other training and certification program or work experience approved by the department.

[2] 2017 ORS 701.529, 2017 ORS 701.532, 2017 ORS 701.534

[3] https://www.oregon.gov/CCB/Documents/pdf/Licensing%20Forms/Structuretypeschart041516.pdf

COORDINATE LABEL DESIGN

In many states the delivery of energy labels is occurring for both new construction and existing homes, but with different scoring systems and market-facing labels. In some states a local utility program may be issuing their own energy label. This reality can create confusion amongst the general public and within the real estate industry and limit the overall effectiveness of all energy labeling efforts in the state. SEOs can play a beneficial role in developing rules outlining the information that must be contained on market facing labels and help ensure that specific localized data is used for key metrics. In some instances, it may be useful for the state agency to actually design a uniform statewide energy label that can be provided to the market regardless of the originating rating or scoring system and that includes locally relevant information and messaging.

To ensure consistent information is conveyed to the market, the following information could be required on all state-authorized energy labels:

- Annual energy use information by fuel type
- Annual or monthly energy cost information by fuel
- Renewable energy production by fuel
- Cost savings by fuel displaced by the generation of renewable energy
- Average annual utility retail residential energy price in dollars, by fuel type
- Estimated carbon emissions resulting from the energy used in the home, based on the carbon intensity of the fuel by utility provider

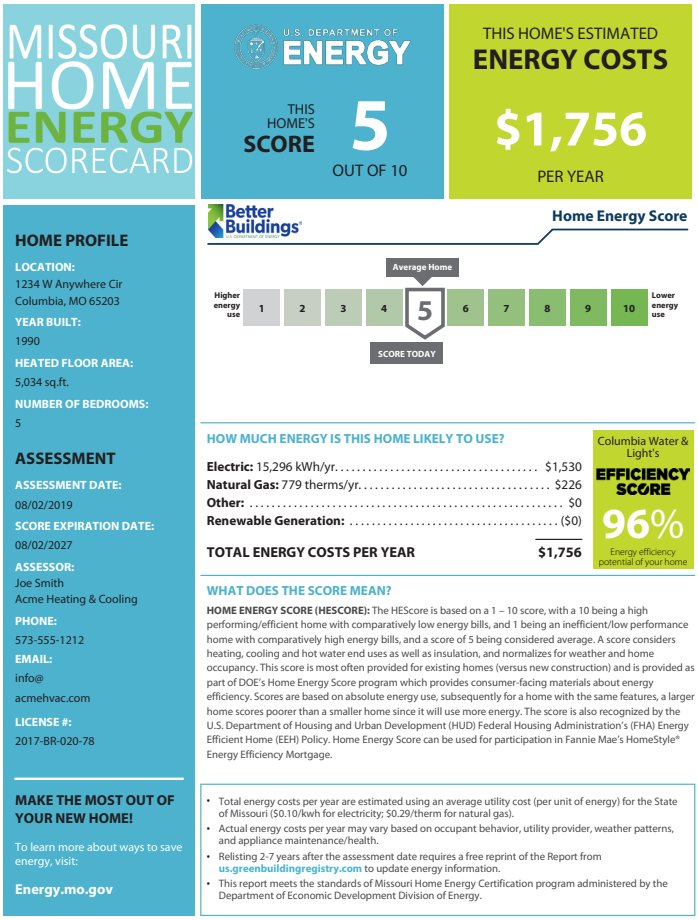
A consistent, statewide label can be augmented by some degree of flexibility that allows local governments to customize branding and messaging to support their specific logo, local efficiency or carbon reduction goals, and local market partners (e.g. entities that offer efficiency incentives or financing support).

To ensure consistent information is effectively conveyed to the market, the SEO can implement best practices for labels to be used by cities that include the following considerations:

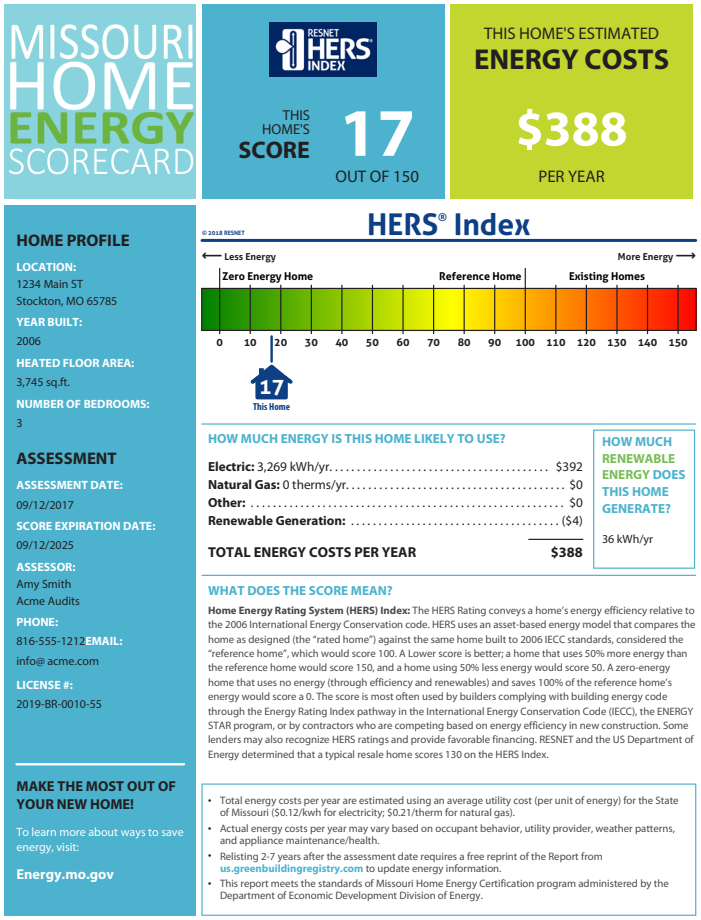
- Make the report visually engaging, easy to understand, and brief (1-2 pages)
- Avoid technical jargon
- Integrate scale/index of applicable scoring system/s
- Translate label text into other languages and/or adjust for local literacy levels
- Customize energy improvement recommendations to support state energy reduction goals
- Balance label design goals
    - Improvement recommendations contained on the label should not be designed to act as a detailed scope of work for contractors
    - Language should activate homeowner action with clear call-to-action

State Example: Missouri

The Missouri Home Energy Certification (MHEC) program supports both new and existing single-family homes in Missouri. The state developed a label that provides consistent information and messaging, with only the HES score and HERS rating and the respective scale/index appearing different based on whether it is an existing or new home.



Front side of Missouri Home Energy Scorecard representing Home Energy Score and Columbia Water & Light's custom Efficiency Score.



Front side of Missouri Home Energy Scorecard representing RESNET HERS® Index scale

THIRD:

Enable Statewide Energy Labeling Infrastructure

To help activate energy labeling activity, state governments can invest in developing general program infrastructure that cities or local utility programs can access and use as the underpinnings for their own program activity. Providing access to key energy labeling program infrastructure components will reduce cost burdens on local governments interested in developing a program and on local utilities interested in integrating energy labeling activity into their existing programs. Having centralized, uniform program infrastructure will also make it easier to integrate with real estate industry systems, such as Multiple Listing Service (MLS) databases.

For states interested in existing residential labels, one helpful state agency role is to act as the official U.S Department of Energy (DOE) Home Energy Score "Partner" and to take on the administrative responsibilities that come with this Partner status. The Home Energy Score provides a nationally standardized "miles-per-gallon" rating for existing homes. The Home Energy Score Partner determines how Home Energy Scores will be offered in a defined market area and oversees the work of local, authorized Home Energy Assessors who deliver the score in that defined geography. Cities may find the responsibilities of being the Home Energy Score Partner too much of an administrative or technical burden, and therefore a state entity could remove that barrier by serving as a statewide Home Energy Score partner. As the Home Energy Score Partner, the state would be the coordinating entity with U.S. DOE's Home Energy Score program staff. The state agency would also at a minimum undertake or contract to a 3rd party the following roles:

- Manage assessor onboarding: including supporting assessor training, credentialing, and any state licensure requirements
- Manage Home Energy Score assessor authorization, including mentoring sessions with prospective assessors
- Maintain the Home Energy Score assessor network
- Manage the in-field and/or remote quality assurance requirements for the Home Energy Score-related scoring activity in the state

States can also support local government program activity by providing or enabling centralized program administration service, including:

- IT infrastructure to create consistent, publicly accessible scoring information. This can include an energy label generation system that can deliver the state's customized energy label through authorized assessors to the market in real time. It can also include providing public mapping through a database of home energy scores and linkage to Multiple Listing Services (MLS) and other real estate listing portals.
- A centralized hotline to answer energy labeling program questions from the general public and real estate professionals. This role can be managed or supported by the state in order to reduce administrative burden on a locally-managed energy labeling program, especially those being run in smaller cities where administrative capacity is generally very limited.

State example: Oregon

The Oregon Department of Energy (ODOE) developed the Oregon Home Energy Score program which serves as an umbrella program for market-based voluntary energy labeling activity across the state, while also offering key program infrastructure components that can be integrated into local government energy labeling policies or initiatives. ODOE's role as the Home Energy Score Partner means that local governments do not need to undertake those responsibilities themselves. Instead, ODOE contracts with a 3rd party to ensure a sufficient supply of home energy assessors are authorized and credentialed in local markets and that at least 5% of all scores generated in the state are assessed for accuracy. Local governments who develop a local energy labeling program based on Home Energy Score can take advantage of this existing assessor onboarding and quality assurance structure without taking on those management duties themselves. ODOE also developed an Oregon Home Energy Score label that mirrors the City of Portland Home Energy Score label. ODOE makes this label available to all interested local governments, along with the opportunity to customize the label with city branding and some localized messaging. ODOE is also planning on offering other administrative support to local governments with energy labeling programs, including a centralized hotline to intake homeowner or realtor inquiries. These state-provided features significantly reduce the program development burdens and implementation costs for local governments.

FOURTH:
Analyze and Educate

By first setting rules for statewide energy scoring and establishing a shared energy labeling infrastructure for local program delivery partners, states can then more easily advocate for the development of local energy labeling program activity. Conducting outreach to cities will be more successful if the state agency can clearly communicate how energy labeling programs support state goals and the concrete actions the state can take to assist cities in developing a local program or policy. Cities with existing climate action plans are the most likely to be receptive to energy labeling program development support. After identifying these cities, states can facilitate and support a local government planning process to evaluate a proposed energy labeling program. Through this process, the state can help ensure that local governments create appropriate goals for the program, that potential impacts are accurately factored, and stakeholder engagement is comprehensive and strategic.

HELP CITIES SET GOALS

To help cities consider outcomes of an energy labeling program, states can facilitate a discussion about overall program goals. Energy labeling programs can provide certain measured benefits, but local governments should decide on their specific quantitative goals. The goals a city selects can also inform the type and extent of the energy labeling program structure and delivery mechanism. The following are questions that can be used by the SEO to help a city pinpoint their program outcomes and frame how they should most effectively design their program delivery:

- What is the goal for overall residential energy savings? (% reduction)
- What is the goal for overall residential carbon reduction? (% reduction)
- What is the goal for % of labeled homes performing retrofits in years 1-3. What is the goal for % of labeled homes that perform retrofits thereafter?
- How many jobs are expected to be created (energy assessors and retrofit contractors)?
    - What is the goal for the number of additional women- and minority-owned businesses?
- For a local government considering a mandatory energy labeling policy, what is the goal for participation/compliance rate in year 1 of implementation and the % participation/compliance rate thereafter?

HELP CITIES DOCUMENT THEIR LOCAL ENVIRONMENT

To assist cities in understanding the local context that can inform program design and delivery strategies, state energy offices can help facilitate an analysis of current market conditions. This analysis can look at the existing pool of qualified professionals who could be tapped to supply or promote energy labels, as well as local housing demographics to help focus city labeling planners on effectively meeting the needs of that local community.

Labor Market Metrics:

- # of trained home energy assessors today (e.g. HES, HERS, other)
- # of certified home inspectors today
- # of real estate agents and firms; note proportion with green designations (National Association of Realtors (NAR) Green Designee, EcoBroker, etc.)
- # of installation providers / contractors

Housing Market Metrics:

- Residential Building Typologies:
  - % single-family (1-4 unit), % multifamily (>5 unit)
  - % built since 2010, % built 1990-2010, % built 1970-1990, % built before 1970
  - % single-family rented, % single-family owned
  - % single-family units house low-to-moderate income (LMI) constituents
- Sale Trends:
  - # homes listed and sold annually on average (based on at least past 2-3 years)
- Rental Trends:
  - # homes rented annually on average
  - What process is in place for registering / permitting / licensing rental units in 1-4-unit buildings?
- Equity analysis:
  - % of rentals that house LMI tenants
  - Racial/ethnic demographics by owner-occupied vs. rental housing

HELP CITIES CALCULATE POTENTIAL PROGRAM IMPACT

SEOs can also support cities by providing an initial analysis of energy labeling program impacts by jurisdiction. This analysis can be done prior to or in concert with the goal-setting exercise. An impact analysis can serve as a starting point for determining the potential outcomes of a home energy labeling program in each city based on the program delivery structure and the estimated number of homes that could receive an energy label.

- Number of energy labels delivered: Estimated goal based on historical volume, planned or existing incentives, number of real estate listings, and/or number of rental homes, etc.
- Minimum number of energy raters required: Estimated based on average length of assessment and estimated number of assessments possible per day to meet program labeling goals
- Number of homes retrofitted: Estimated based on percentage of total labels delivered
- Energy Savings: Based on an estimate of retrofit rates from typical energy labeling programs
- Total Energy Cost Savings: Community-wide energy cost savings from energy efficiency improvements
- Carbon Reduction (tons CO2): Community-wide carbon reduction from energy efficiency improvements
- Increased Real Estate Value: Estimated based on average market premiums for more energy efficient homes
- Impact on LMI and under-served communities: Estimated change in energy savings, cost savings, and real estate value for these particular communities

PROVIDE STAKEHOLDER MAPPING ASSISTANCE

State energy offices can assist local governments by facilitating a stakeholder mapping exercise in order to identify stakeholders with whom to engage, inform, and build buy-in for a home energy labeling program. Key stakeholders include: city mayor, city council, city planning / building department, real estate agents / local and/or state real estate association, home performance contractors, homeowner associations and landlords, affordable housing associations, tenant's rights organizations, home energy raters/assessors, utilities, homebuilder associations, and home inspector associations. For each stakeholder, note the value proposition of energy labeling that will likely resonate with that person or entity, and note the likely concerns of each stakeholder.

As a follow up from the stakeholder mapping process, SEOs can help convene stakeholder meetings to promote the benefits of energy labeling and the state's commitment to establishing and coordinating statewide consistency for local energy labeling program activity. SEOs can also provide strategic guidance to cities about when in the program development cycle stakeholder meetings provide the most benefit. For example, in developing a voluntary energy labeling program it will be important to engage the real estate industry early in the process, while for a city contemplating a mandatory policy it could be more useful to engage local real estate association staff after the policy proposal has been developed and city policy champions are solidified.

ADMINISTER REAL ESTATE INDUSTRY TRAINING

Real estate professionals are an effective channel to convey home energy efficiency information to the general public, and particularly to prospective home buyers. While there are existing training courses for real estate professionals available in most markets, these trainings usually provide mainly helpful introductory information about the benefits of energy efficiency and green building techniques. These existing trainings for real estate agents do not convey detailed information about specific state energy labeling efforts and city-level energy labeling programs.

State energy offices can support local energy labeling efforts by administering no-cost trainings to real estate professionals that details the steps the state has taken to support energy labeling. The goal of the trainings should focus on increasing real estate agent literacy about the existence of any state or local energy labeling programs and specific details on how that information can assist their real estate clients. These trainings should provide Continuing Education Units (CEUs) and convey clear guidance about how real estate agents can use the locally available energy labels with their clients to ensure they are fully informed about the relative energy performance of the homes they are considering for purchase. Separately, local appraisers can be informed about the availability of locally relevant home energy performance information that can be used as part of their calculation of home value.

State example: Alabama

Alabama's Department of Economic and Community Affairs (ADECA) has been leading market education on the benefits of energy labeling for over a decade. ADECA coordinated the delivery of Sustainability Training for Accredited Real Estate Professionals for appraisers and real estate agents that highlighted the features and benefits of new and existing high-performance homes and the advantages of energy efficiency and energy savings. ADECA also supported the development of online curriculum to allow local partners to continue providing quality training to the real estate community.

CONCLUSION

Residential energy labeling programs are a growing trend in the US and are increasingly seen as a tool to help address local climate goals. Energy labeling programs can provide information that protects consumers, increases the frequency of energy improvements, establishes durable linkages in the real estate market, and aids home sellers in recouping the investments they make in their home's energy performance. Using the four steps outlined above, State Energy Offices can be instrumental in creating the conditions in which cities can more quickly and cost-effectively develop and implement an energy labeling program.

For more detailed guidance on energy labeling program development and recent trends with national energy labeling systems, please visit the EMPRESS project at:

empress.naseo.org

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NASEO is the only national non-profit association for the governor-designated energy officials from each of the 56 states and territories. Formed by the states in 1986, NASEO facilitates peer learning among state energy officials, serves as a resource for and about state energy offices, and advocates the interests of the state energy offices to Congress and federal agencies.

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