



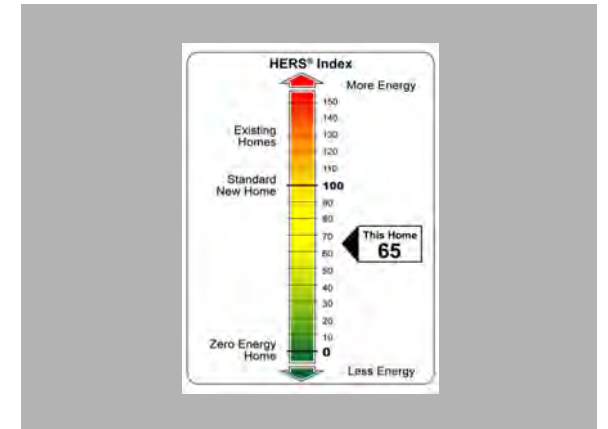
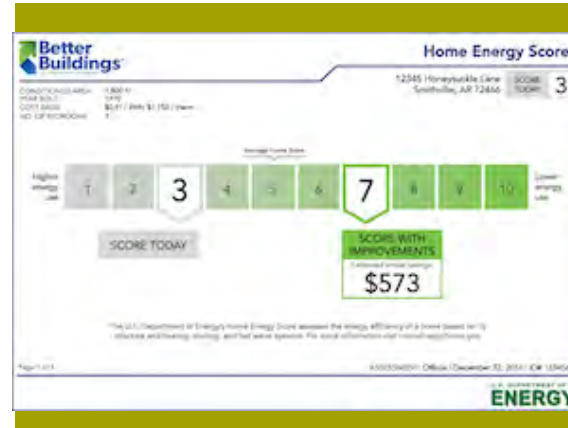
Home Energy Labeling: A Guide for State and Local Governments

Created by the EMPRESS Team



The EMPRESS (Energy Metrics to Promote Residential Energy Scorecards in States) project is a State Energy Office-led 2017-2018 project supported by funding from the U.S. Department of Energy State Energy Program and private sector partners. The project is focused on enhancing large-scale residential home energy labeling and harmonizing various energy scoring programs to better support the market valuation of energy efficient homes.

Project Partners Include: the Rhode Island Office of Energy Resources, the Massachusetts Department of Energy Resources, the Missouri Division of Energy, the Arkansas Energy Office, the Oregon Department of Energy, the National Association of State Energy Officials, Earth Advantage, Energy Futures Group, and Vermont Energy Investment Corporation.



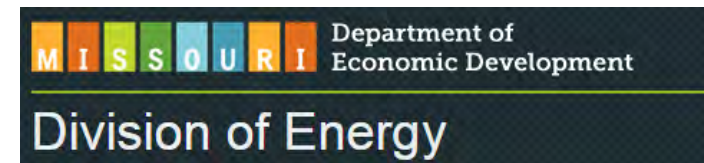
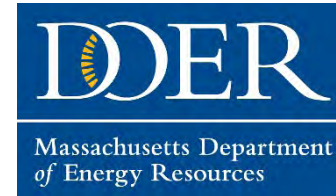
Home energy labeling policy EMPRESS

NASEO Webinar –
EMPRESS Home Energy Labeling Policy Guidebook
November 1, 2018



The EMPRESS Team

- Rhode Island Office of Energy Resources (OER)
- National Association of State Energy Officials (NASEO)
- Arkansas Energy Office (AEO)
- Massachusetts Department of Energy Resources (DOER)
- Missouri Division of Energy (DE)
- Oregon Department of Energy (ODOE)
- Earth Advantage (EA)
- Energy Futures Group (EFG)
- Vermont Energy Investment Corporation (VEIC)





Presenters

- Kaci Radcliffe, Energy Analyst, Oregon Department of Energy
- Alissa Whiteman, Energy Efficiency Program Manager, Massachusetts Department of Energy Resources
- Becca Trietch, Administrator of Energy Programs, Energy Efficiency, Rhode Island Office of Energy Resources
- Andy Popp, Manager of Energy Efficiency, Division of Energy, Missouri Department of Economic Development



Energy Metrics to Promote Residential Energy Scorecards in States (EMPRESS)

- EMPRESS is a State Energy Program funded grant
- GOALS:
 1. Developed recommendations for consistent elements to be included in home energy labeling initiatives
 - E.g.- GHG impact, Mbtu/year, total energy cost, date of issue, etc.
 2. Encourage Home Energy Score (HES) and Home Energy Rating System (HERS) to use a single energy modeling engine to promote consistency and reduce confusion



EMPRESS Resources

Home Energy Labeling: A Guide for State and Local Governments

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The EMPRESS (Energy Metrics to Promote Residential Energy Scores) State Energy Office-led 2017-2018 project supported by funding from the U.S. Department of Energy State Energy Program and private sector partners. The project focused on large-scale residential home energy labeling and harmonizing various programs to better support the market valuation of energy efficiency.

Project Partners include: the Rhode Island Office of Energy Resources, the Missouri Department of Energy Resources, the Missouri Division of Energy, the Oregon Department of Energy, the National Association of State Energy Officials, Energy Futures Group, and Vermont Energy Investment Corporation.

[HOME](#)[ENERGY LABELING](#)[CASE STUDIES](#)[ABOUT EMPRESS](#)[RESOURCES](#)

Sample Legislation & Ordinances

[Home](#) > [Case Studies](#) > [Sample Legislation & Ordinances](#)

The EMPRESS Team is accepting comments on this material until October 19, 2018. To submit comments on any material on this page, please use the "Submit a comment" box at the bottom of the page.

Label Component Matrix: Metrics and Information for an Asset-Based Home Energy Performance Label

		A. Policy Objective		B. Metric Characteristics						
		Greenhouse Gas (GHG) Reductions	Energy Use Reductions & Cost Savings	Use case(s)	Durable	Granular (Impact on the home to change the score)*	Readily Understood by Consumers**	Cost of Delivery	Finance Industry Recognition	
Choose one or more primary metrics	1. Primary Metrics***									
	Home Energy Rating System (HERS) Index	Usually Yes-improvement in HERS/HES is generally correlated with GHG reductions.	Yes - Directly compares the home's energy & cost to the reference code IECC 2006	Primarily used for new home marketing programs (e.g., ENERGY STAR) & code compliance; can also be used for existing homes.	Somewhat - Index will change when reference code baseline is updated and/or when	Yes	The Index generally requires some explanation by the	Generally \$400-1000	Available, but not often used	
	Home Energy Score		Yes - Directly compares source energy & cost to the national averages (derived from 2009 Energy Information Agency data)	Primarily used for existing homes; initiative used for new homes.						
	Greenhouse gas (GHG) impact	Yes	Yes Indirectly-reduction in GHG emissions may be correlated with a reduction in energy use and/or cost depending on fuel mix							
	Site energy use in millions of British Thermal Units per year (MBtu/year)	Usually Yes-reduction in MBtu or kWh-equivalent is generally correlated with GHG reductions	Yes - lower MBtu and kWh-e metrics directly indicate lower energy use and/or cost.	New						
	Site kilowatt hour equivalent per year (kWh-equivalent/year)									
<h1>Case Studies & Sample Labels</h1> <p>Home > Case Studies</p> <p><i>The EMPRESS Team is accepting comments on this material until 12/31/2019. If you have any comments on any material on this page, please use the "Submit Comment" link at the bottom of this page.</i></p> <p>Advancing large-scale home energy labeling and harmonizing the disparate energy scoring programs is a complex task. The EMPRESS team has conducted a targeted evaluation of effective programs and the factors that have led to their success. What we have learned from these programs can help inform the development of a national program about the possible adoption of mandatory or voluntary building labeling in a country with 50 unique energy markets.</p> <p>This section offers case studies across nine jurisdictions and gives State Energy Offices and other stakeholders a look at the best practices and tools. These case studies cover characteristics of current programs, including how they are implemented, the data they use, and the tools they use. To make it easier to compare programs, we have categorized them into three categories: Mandatory, Voluntary, and Hybrid.</p> <p>Existing home energy labeling strategies include:</p> <ul style="list-style-type: none">mandated utility bill disclosures at time of saleindependently designed asset ratings,other data to help homeowners, real estate professionals, and homebuyers obtain comparable energy information for residential properties <p>By and large, the market has driven the development of these tools, serving the interests of energy efficiency advocates, utility companies, and real estate professionals. As these programs evolve, it is important to ensure that they are designed to be effective and to provide the information that homeowners need to make informed decisions about energy efficiency improvements.</p>										

Case Studies & Sample Labels

[Home](#) > [Case Studies](#)

The EMPRESS Team is accepting comments on this material until October 19, 2018. To submit comments on any material on this page, please use the "Submit a comment" box at the bottom of this page.

Advancing large-scale home energy labeling and harmonizing the disparate energy scoring programs that have evolved in the past decade, require a targeted evaluation of effective programs and the factors that have led to their success. What programs are in place now—and what does that tell us about the possible adoption of mandatory or voluntary building labeling in a country with 50 unique states?

This section offers case studies across nine jurisdictions and gives State Energy Offices and other decision-makers information on home energy labeling best practices and tools. These case studies cover characteristics of current programs, several of which are still evolving. The list presented here is not exhaustive, look at the state of home energy labeling program implementation in 2017. Case studies are listed in the categories of Mandatory and Voluntary.

Existing home energy labeling strategies include:

- mandated utility bill disclosures at time of sale
- independently designed asset ratings,
- other data to help homeowners, real estate professionals, and homebuyers obtain comparative energy performance information about residential properties

By and large, the market has driven the development of these tools, serving the interests of early adopters of home energy labeling. Many state energy programs and utility programs have picked them up as they emerged, using them to help satisfy state energy reduction goals.

EMPRESS.NASEO.org



How can the EMPRESS project help me?

- The EMPRESS team has compiled:
 - Background information on Home Energy Score and Home Energy Rating System, including cost
 - Sample legislation and ordinances
 - Pros and cons of voluntary and mandatory approaches
 - Recommendations for elements that should be on all labels
 - Examples of labels used in other jurisdictions
 - Workforce identification and training recommendations
 - Information on working with real estate professionals
 - <http://empress.naseo.org> for more



Resources

- EMPRESS: <http://empress.naseo.org>
- HELIX: <https://neep.org/home-energy-labeling-information-exchange-helix>
- Home Energy Information Accelerator:
<https://betterbuildingsinitiative.energy.gov/accelerators/home-energy-information>

Learn more

- HELIX Summit: December 7, 2018. Providence, RI. <https://neep.org/events/2018-helix-summit>





Thank you

Ed Carley

National Association of State Energy Officials

Buildings Program Manager

703-299-8800 x 119

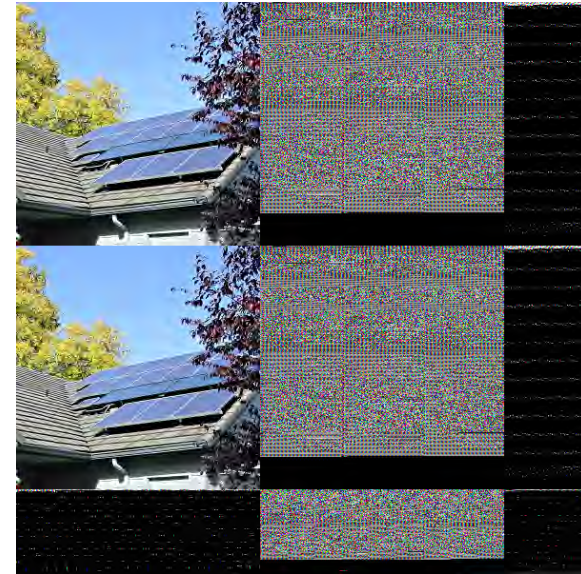
ecarley@naseo.org



Oregon Department of ENERGY

NASEO Webinar –
EMPRESS Home Energy
Labeling Policy
Guidebook

Kaci Radcliffe
November 1, 2018



Home Energy Scoring

Bringing transparency and value to buyers and sellers. Scores communicate information, but labeling is inconsistent.



A Solution that Serves the Market

- **Owners:** Value and potential for energy upgrades
- **Buyers:** Transparency, added metric to assess home
- **Contractors:** Meaningful, consistent information
- **Real estate professionals:** Credible information on the listing

Statewide Framework

- *Market based delivery* • *Enabling local action* • *Statewide Consistency* •

Oregon Administrative Rules

- Outline requirements for residential and commercial energy performance scores
- Training requirements for licensed home energy assessors and define requirements for score systems

License and Training

- Must obtain Home Energy Assessor certification to issue scores
- Assessors complete training on USDOE Home Energy Score, Oregon Weatherization, and other approved alternates.
- Specialized training in the system used for issuing scores

Statewide Framework

Stakeholder Panel

- Support department's rulemaking process for updating program requirements and administrative rules.
- Review score system applications, and recommend approval or denial to ODOE's director.
- Recommend criteria for approval of training and certification programs or work experience for entities proposing score systems.
- Recommend criteria for content and formatting of a standard energy measures label to be included in home energy performance score reports.

Statewide Framework

Home Energy Scoring reports must include:

- (a) The home energy performance score and explanation of the score
- (b) Estimated annual energy use in retail units of energy, by fuel type
- (c) Estimated annual energy generated on-site in retail units of energy, by type of fuel displaced
- (d) Estimate of monthly or annual energy cost in dollars, by fuel type, based on utility retail
- (e) Current average annual utility retail energy price in dollars, by fuel type, used to determine the annual energy cost
- (f) Comparison of score that provides context for the range of possible scores, e.g., home with similar consumption, built to same code, or similar energy efficiency upgrades
- (g) Name of the entity that assigned score and license number
- (h) Date the assessment was performed

Local Adoption & Leadership

City of Portland Home Energy Score

- Adopted policy December 2016.
Effective January 2018.
- Require sellers of single-family homes to disclose Home Energy Report and Score at time of listing.
- Green Building Registry to auto-populate scores in the MLS
- City of Portland Home Energy Score website: www.pdxhes.com
- **6,600 scores since November 2017**



THE PROGRAM

Homes that are listed for sale in the Portland real-estate market are required to receive a Home Energy Score, which provides comparable and credible information about a home's energy performance. Homes will be scored



Search for green and energy efficient data in the City of Portland Home Energy Score program

; lowest energy use

Enter the address you're looking for

Street Address

Unit, Suite, Apt, etc.

City State Zip Code

SEARCH



U.S. DEPARTMENT OF
ENERGY

THIS
HOME'S
SCORE **1**
OUT OF 10

THIS HOME'S ESTIMATED
ENERGY COSTS

\$2,932
PER YEAR

Score
today:

1

Score with
improvements*:

9

Estimated energy savings
with improvements:

\$1,672 PER YEAR

Estimated carbon reduction
with improvements:

57% PER YEAR

HOME PROFILE

LOCATION:
1234 Anyplace St
Portland, OR 97201

YEAR BUILT:
1923

HEATED FLOOR AREA:
945 sq. ft.

NUMBER OF BEDROOMS:
2

ASSESSMENT

ASSESSMENT DATE:
12/22/2017

SCORE EXPIRATION DATE:
12/22/2025

ASSESSOR:
Maria Gomez
Gomez Energy Partners

PHONE:
503-555-1211

EMAIL:
mgomez@
gomezenergy.com

CCB LICENSE #:
1234567890

Flip over to learn how
to improve this score
and use less energy!



Home Energy Score



Official Assessment | ID#1234567

The Home Energy Score is a national rating system developed by the U.S. Department of Energy. The Score reflects the energy efficiency of a home based on the home's structure and heating, cooling, and hot water systems. The average score is a 5. Learn more at HomeEnergyScore.gov.

HOW MUCH ENERGY IS THIS HOME LIKELY TO USE?

Electric: 10,000 kWh/yr. \$930
Natural Gas: 0 therms/yr. \$0
Other: 776 gal/yr. \$2,002

TOTAL ENERGY COSTS PER YEAR \$2,932

How much
renewable
energy does
this home
generate?
____ kWh/yr

THIS HOME'S CARBON FOOTPRINT:



- Actual energy use and costs may vary based on occupant behavior and other factors.
- Estimated energy costs were calculated based on current utility prices (\$0.11/kwh for electricity; \$1.09/therm for natural gas; \$2.58/gal for heating oil; \$2.21/gal for propane).
- Carbon footprint is based only on estimated home energy use. Carbon emissions are estimated based on utility and fuel-specific emissions factors provided by the OR Department of Energy.
- Relisting 2-7 years after the assessment date requires a free reprint of the Report from: www.greenbuildingregistry.com/portland to update energy and carbon information.
- This report meets Oregon's Home Energy Performance Score Standard and complies with Portland City Code Chapter 17.108.

TACKLE ENERGY WASTE TODAY!

Enjoy the rewards of a comfortable, energy efficient home that saves you money.

☒ Get your home energy assessment. Done!

☐ Choose energy improvements from the list of recommendations below.

Need help deciding what to do first? Non-profit Enhabit offers free 15-minute phone consults with expert home advisors. Call 855-870-0049.

☐ Select a contractor (or two, for comparison) and obtain bids.

Checkout www.energytrust.org/findacontractor or call toll free 1-866-368-7878.

☐ Explore financing options at www.enhabit.org or www.energytrust.org.

* PRACTICAL ENERGY IMPROVEMENTS | COMPLETE NOW OR LATER

To achieve the "score with improvements," all recommended improvements listed below must be completed. Improvements all have a simple payback of ten years or less and may be eligible for mortgage financing. For a more detailed explanation of costs and payback, please get a bid from a contractor.

FEATURE	TODAY'S CONDITION	RECOMMENDED IMPROVEMENTS
Attic insulation	Ceiling insulated to R-10	Insulate to R-38 or R-49 if code requires it
Attic insulation	Ceiling insulated to R-19	Insulate to R-38 or R-49 if code requires it
Duct insulation	Un-insulated	Insulate to R-8
Duct sealing	Un-sealed	Reduce leakage to a maximum of 10% of total airflow
Envelope/Air Sealing	Not professionally air sealed	Professionally air seal
Heating Equipment	Oil furnace 80% AFUE	Upgrade to ENERGY STAR
Heating Equipment	Natural Gas/Propane Furnace	Upgrade to ENERGY STAR
Wall insulation	Insulated to R-0	Fully insulate wall cavities
Water Heater	Standard electric tank	Upgrade to ENERGY STAR, minimum 2.76 EF (Energy Factor)
Windows	Multiple types	Upgrade to ENERGY STAR
Air Conditioner	None	
Basement wall insulation	None	
Floor insulation	Insulated to R-0	
Foundation wall insulation	None	
Skylights	None	
Cathedral ceiling	None	
Solar PV	None	

Visit www.energytrust.org/solar to learn more

YOU CAN DO IT YOURSELF!

Looking for low-cost ways to cut energy waste, boost your comfort and lower your energy bills? Visit the resources below to learn about easy changes you can make today:

www.energytrust.org/tips and www.communityenergyproject.org/services

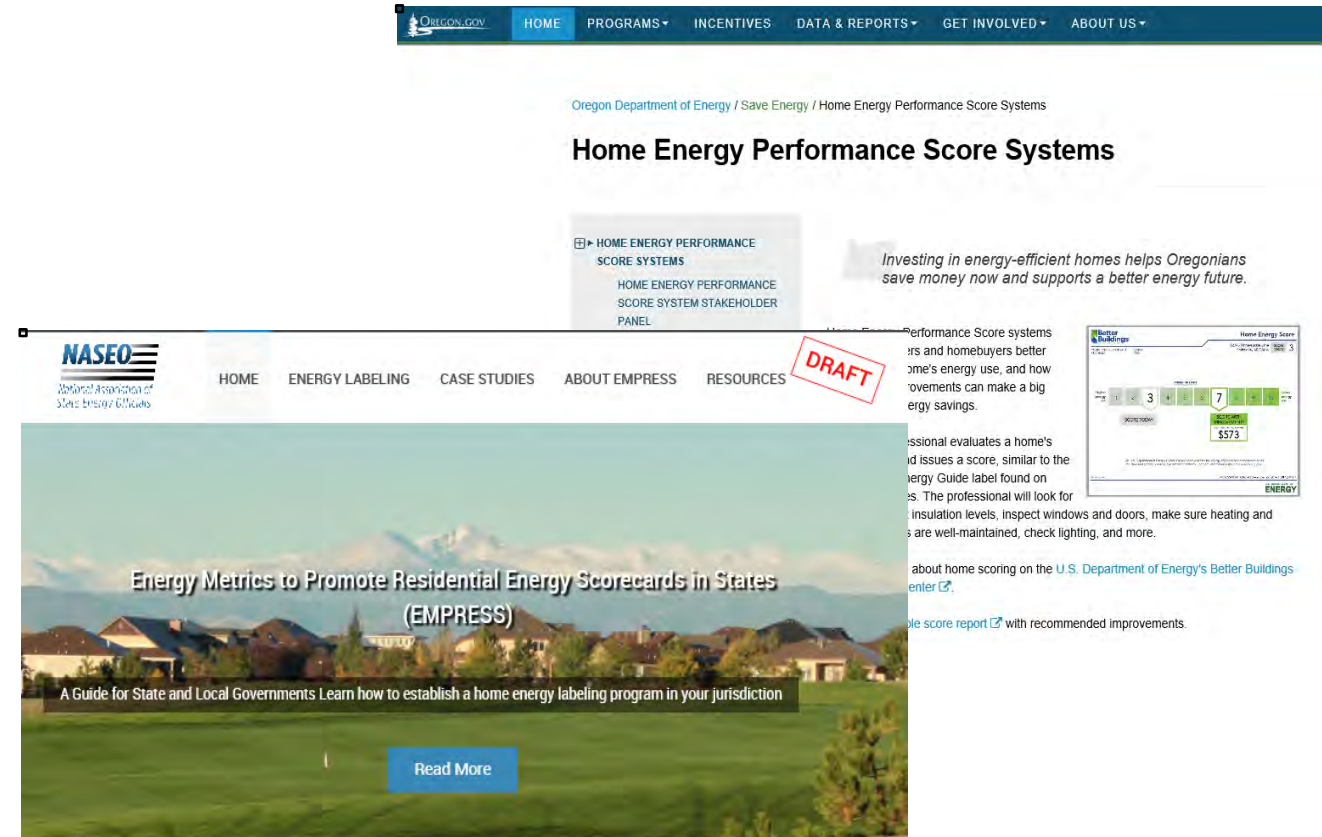
Looking Forward

EMPRESS Toolkit

- Local adoption with state coordination
- Time-of-listing policy, voluntary action
- Key labeling components to inform scorecard

RFP for Statewide Implementation:

- Proactive outreach to interested cities
- Ensure consistency across state
- Training and mentoring
- Quality Assurance
- Outreach and messaging



What is the EMPRESS Project

The Energy Metrics to Promote Residential Energy Scorecards in States (EMPRESS) is a State Energy Office-led project, supported by funding from the U.S. State Energy Program of the U.S. Department of Energy and private sector partners. The states' objective in undertaking the project is to advance large-scale home energy labeling, and harmonize various energy scoring programs to better support the market valuation of energy efficient homes. The EMPRESS project is led by the Rhode Island Office of Energy Resources, and includes as project partners the Massachusetts Department of Energy Resources, the Missouri Division of Energy, the Arkansas Energy Office, the Oregon Department of Energy, the National Association of State Energy Officials, Earth Advantage, Energy Futures Group, and Vermont Energy Investment Corporation.

A major deliverable from the EMPRESS project is the information and content on this website. If you are a local or state official, be sure to check out the [EMPRESS Guidebook](#) on how to establish a home energy labeling program in your jurisdiction.

Contact Info

Kaci Radcliffe

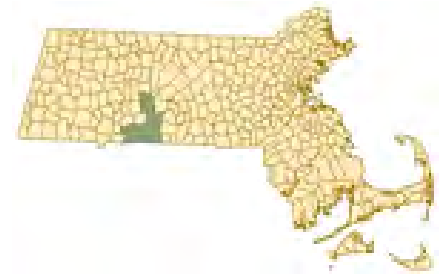
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Home Energy Scorecards in Massachusetts

11/1/18

Alissa Whiteman
Energy Efficiency Residential Programs
Mass. Department of Energy Resources (DOER)



Massachusetts Department
of Energy Resources

Creating A Cleaner Energy Future For the Commonwealth

Presentation Topics

1. MA Home Energy Scorecard Legislation
2. Experience with scorecards – Home MPG
3. Moving toward the future - scorecard design and metrics

Massachusetts' Energy Leadership

- Global Warming Solutions Act: reduce GHG 25% by 2020; 80% by 2050 (1990 baseline)
- Ranked #1 by ACEEE for eight straight years (2011-2018) for our energy efficiency programs and policies
- All EE offered under 1 statewide brand – Mass Save
- Aggressive EE goals:
 - 2016-2018 EE Plan will deliver \$8 billion in benefits
 - Proposed 2019-2021 Plan will deliver over \$8 billion in benefits
- 52,000 jobs and growing



DDER

Massachusetts Department
of Energy Resources

Building Sector Provides Substantial Opportunities to Reduce GHGs

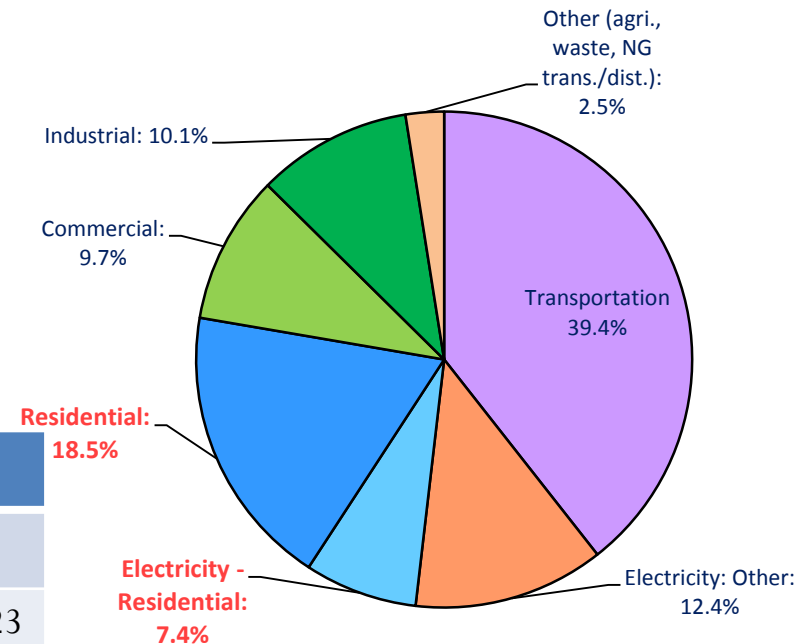
How do we reduce emissions in the residential building sector?

- Accelerate home energy efficiency improvements; and
- Improve the energy performance of new construction.

Mass Save® has succeeded with “low-hanging fruit” of energy efficiency:

	2015	2016	2017
# of Full HEAs	100,539	76,758	83,873
Lighting #	1,796,239	896,795	1,062,423
# Customers who Install Measures	35,284	29,900	25,360
Air Sealing Jobs #	30,849	25,894	22,910
Closure Rate	35.1%	39.0%	30.2%

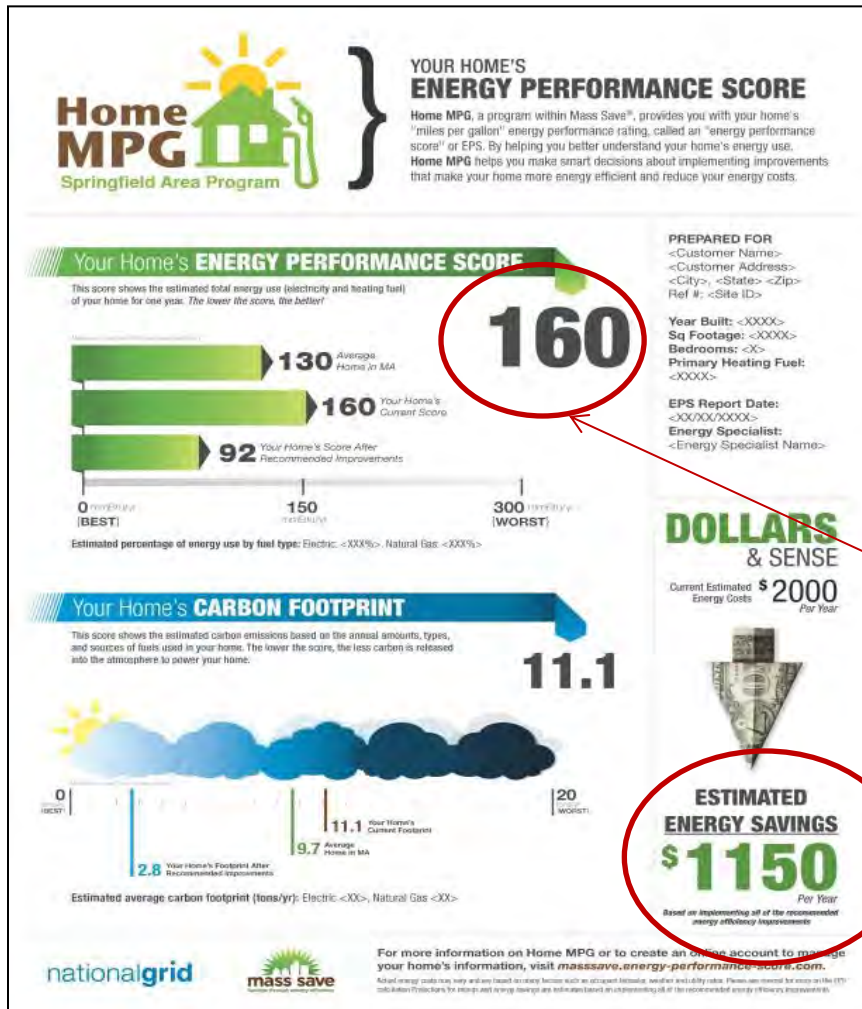
2014 MA GHG Emissions by Sector
74.5 MMTCO₂e



Why Scorecards in Massachusetts?

- Create Transparency for Consumers
- Help drive residential energy improvements, which will:
 - Lower energy bills for homeowners & renters
 - Improve home values; and
 - Reduce greenhouse gas emissions

Overview of Scorecard Proposal



What did the bill Propose?

Authorizes DOER to develop a home energy scorecard program for residential homes (1-4 units) that requires:

1. Scorecards to be produced following any home energy assessment in MA;
2. scorecards to be provided to potential buyers during a home sale.

Energy Performance Rating (0-300)

Potential Customer Savings

DOER

Massachusetts Department
of Energy Resources

Massachusetts Experience With Scorecards



DOER Home MPG Pilot

MA Department of Energy Resources (DOER) conducted a pilot program in 8 municipalities with the Mass Save home audit program, between 2013-2014.

Home energy scorecards were provided in conjunction with a homeowner's Mass Save audit and again after making efficiency improvements.

The Results:

- 3,800+ homes received scorecards
- 1,593 homes implemented energy efficiency improvements, which resulted in:
 - 32,000 MMbtus/year or \$650,000/year in energy savings; and
 - reduction in each homes annual energy consumption by an average of 20 MMbtus or \$400+/year
- Increased energy efficiency implementation:
 - 25% more households completed installations over Mass Save (business as usual);
 - 25% more savings per household over Mass Save.
- The vast majority of surveyed homeowners agreed
 - a scorecard should be included with an audit
 - a scorecard would be useful in the home-buying process



Massachusetts Department
of Energy Resources

Scorecard Design & Metrics

- Asset rating (not operational)
- Energy use metric: MMBtu/year
- Carbon footprint: carbon metric tons/year
- Compared to area average & expected score after implementing recommended measures
- Expected cost savings associated w/recommendations
- Post-implementation scores based on what was implemented & compared to prior scores



Home MPG Pilot Examples – Large Home

Oil Home in Wilbraham, MA

Year Built: 1956

Sq Footage: 2,891ft²

Bedrooms: 5

Heating Fuel: Oil

Score BEFORE: 195

Score AFTER: 156

Est. Energy Savings: \$908/year

Est. GHG savings: 3.5 tons/year

Total Mass Save incentive of \$3672 for:

21 CFLs, and 1 LED bulb

11 hours of air sealing

Wall insulation (\$2,740 from Mass Save)

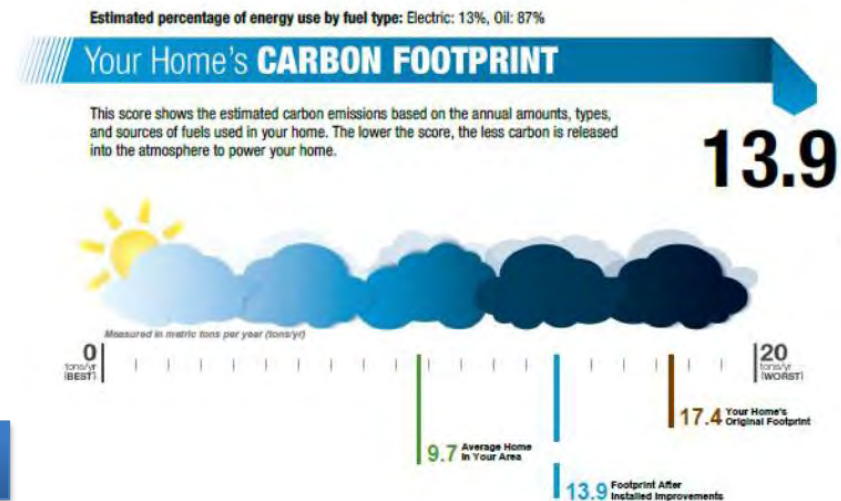
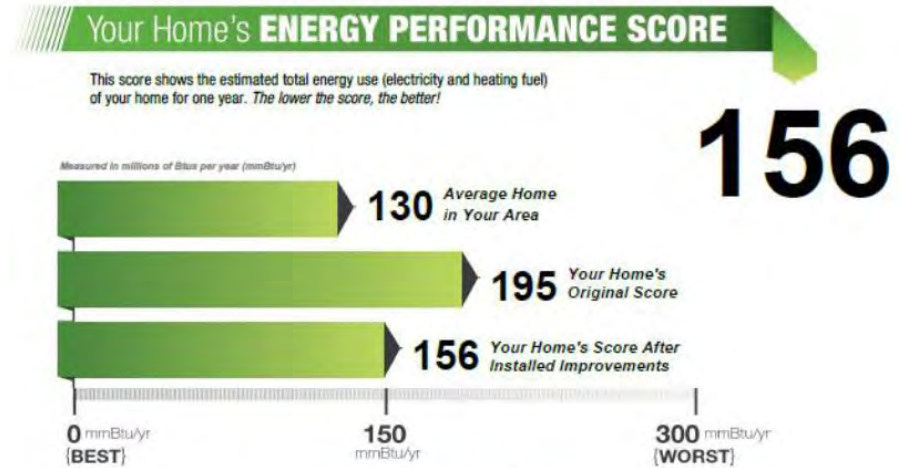
Homeowner cost:

This household** - \$913

Low-income household - \$0

Moderate income household* - \$274

2017 Zillow Home Value: \$293,000



* Mass Save covers up to 90% of insulation costs, up to \$3,000 for households at 61-80% of median income

** Mass Save covers up to 75% of insulation costs, up to \$2,000 for households above 81% of median income

Your Massachusetts Home Scorecard

This scorecard compares home energy use and carbon footprint to an average home in MA, and shows improvements based on recommended technology.

ABOUT

Address
123 Main St., Whately, MA, 01903

Year Built
1850

Sq. Footage
2735

of Bedrooms
3

Primary Heating Fuel
Fuel Oil

Assessment Date
N/A

Energy Specialist
Dave Saves

YEARLY ENERGY USE

Electricity
3,613 kWh

Fuel Oil
1,324 gallons

YEARLY COSTS & SAVINGS*

\$ 4,343

Pre-upgrade
Energy cost
per yr



Before

\$ 2,798

Post-upgrade
Energy Cost
per yr



After

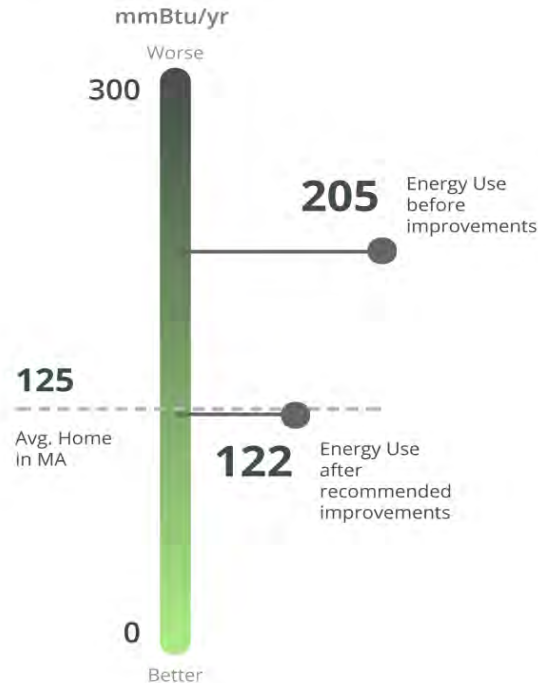
**SAVE
\$ 1,545**

Estimated
Energy Savings
per yr

Electricity: \$ 0.19/kWh, Propane: \$ 2.98/gallon, Oil: \$ 2.57/gallon.

HOME ENERGY USE

This shows the estimated total energy use (electricity and heating fuel) of your home for one year. The lower the energy use, the better!



Estimated percentage of energy use by fuel type:

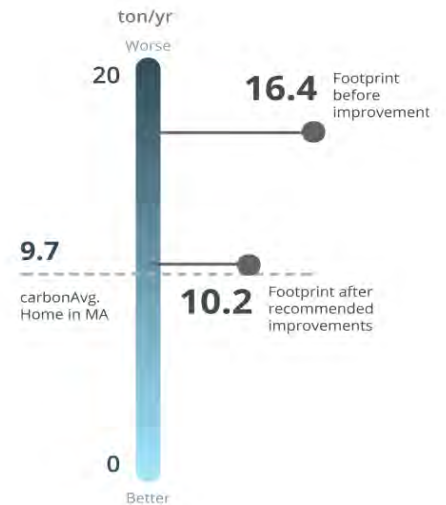
4% Propane

90% Fuel Oil

6% Electricity

HOME CARBON FOOTPRINT

This score shows the estimated carbon emissions based on the annual amounts, types, and sources of fuels used in your home. The lower the score, the less carbon is released into the atmosphere to power your home.



Estimated average carbon footprint (tons/yr):

93% Fuel Oil

7% Electricity

* Estimated costs and savings. Actual energy costs may vary and are based on many factors such as occupant behavior, weather and utility rates. Please see next page for more on the EPS calculation. Projections for score improvements and energy savings are estimates based on implementing all of the recommended energy efficiency improvements. Ref# 91997.

Where are we now with scorecards in Massachusetts?

- DOER is requiring scorecards to be integrated into the Mass Save home audit program
 - “before” and “after” EE implementation
- DOER to develop scorecard design & requirements with input from Mass Save Program Administrators
- Scorecards electronically provided to DOER on a quarterly basis
- Current MA Administration plans to re-file scorecard legislation in December



Massachusetts Department
of Energy Resources

Thank You!

Alissa Whiteman

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R.I. OFFICE OF ENERGY RESOURCES

Becca Trietch
Home Energy Labeling

The EMPRESS Team

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FUNCTIONAL AREAS for OER



Electric & Gas

Energy
Efficiency

Renewable
Energy

Heating

Transportation

Governor's
initiatives

CLEAN ENERGY FUTURE



1. Efficiency



2. Clean Energy

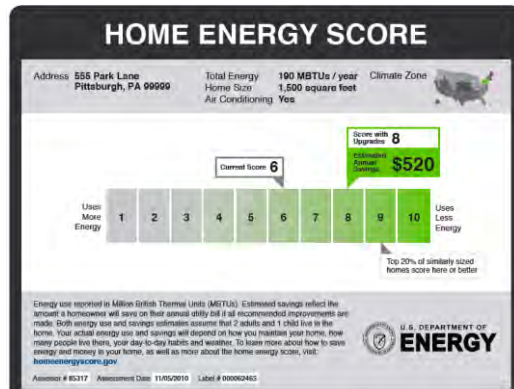


3. Electrification

Pilot Delivery of Home Energy Scores

nationalgrid

HERE WITH YOU. HERE FOR YOU.



nationalgrid
HERE WITH YOU. HERE FOR YOU.

What to Expect from a No-Cost Home Energy Assessment

- 1 Install Energy Saving Products**

Install energy saving products like LED bulbs, thermostats, and low-flow showerheads during your assessment at no cost.
- 2 Test Insulation**

Identify areas that may need additional insulation. Adding insulation is an effective way to boost comfort and reduce heating and cooling costs.
- 3 Look for Drafts**

Look for areas where your home might be leaking air, including door frames, walls, electrical outlets, and unfinished basements.
- 4 Check Appliances & Equipment**

Inspect the condition of your heating, water heating, and cooling equipment as well as your appliances. Equipment loses efficiency as it ages.

**Customer Consent and Release
DOE Home Energy Score Program**

The undersigned ("Customer") understands that The Narragansett Electric Company d/b/a National Grid ("National Grid") is collaborating with the United States Department of Energy ("DOE") to provide interested Customers who are homeowners with a Home Energy Score ("HES") report through the DOE's Home Energy Score Program ("Program"). Like a miles-per-gallon rating for a car, the Home Energy Score or HES provides an estimate of a home's energy use as well as associated costs and other information based on a standard assessment of its energy-related assets.

- ☐ By checking this box, the Customer hereby consents and agrees to the disclosure of Customer Information (as defined below) by National Grid or by its contractor, Rise Engineering, a division of Thielsch Engineering, Inc. ("Contractor"), to the DOE. "Customer Information" will include Customer's address, description of home (e.g. year built, dimensions), and energy feature details (e.g. window types, heating and cooling system characteristics). Customer Information is needed for the DOE to (i) produce a HES report for the Customer's residence as set identified below ("Property") and (ii) deliver that report to the Customer. The Customer further understands that the DOE may publish or disclose analyses and aggregates using the Customer Information. Except as stated below, the DOE will not publish or disclose the Customer Information to any third parties and the DOE will not, directly or indirectly, identify the Customer in any publication or disclosure. Customers' name and energy consumption/utility bill information are not shared with DOE.
- ☐ By checking this box, the Customer hereby further consents and agrees to the inclusion of the Customer's HES report in future real estate listings and disclosure by the DOE of the HES report to any relevant multiple listing service, as well as to any intermediary databases serving to populate these listings, through accepted and secure methods of data transportation.

Customer agrees to release, indemnify and hold harmless National Grid, the Contractor and National Grid's affiliates and its and their respective officers, directors, employees, agents, successors and assigns from any and all liability, claims, losses, damages or expenses arising out of, resulting from or in connection with (a) the disclosure of Customer Information by National Grid or by the Contractor to the DOE and (b) any use of the Customer Information or Customer's HES report as described hereunder.

Customer Name: _____

Account number(s): _____

Address: _____



A waiver form is used to get permission from building owners to share a **home's score**

Remaining Question:

Will the Energy Efficiency
Program Administrator see
value in delivering these
scores?

If not, how will we get many
homes scored?





To influence the market broadly, information at time of listing is critical





Beta-testing HELIX in Rhode Island

Connecting MLSs throughout the country



Search for green and energy efficient data in the City of Portland Home Energy Score program

Enter the address you're looking for

Street Address

Unit, Suite, Apt, etc.

City

State

Zip Code

SEARCH





Training Real Estate Professionals & Appraisers

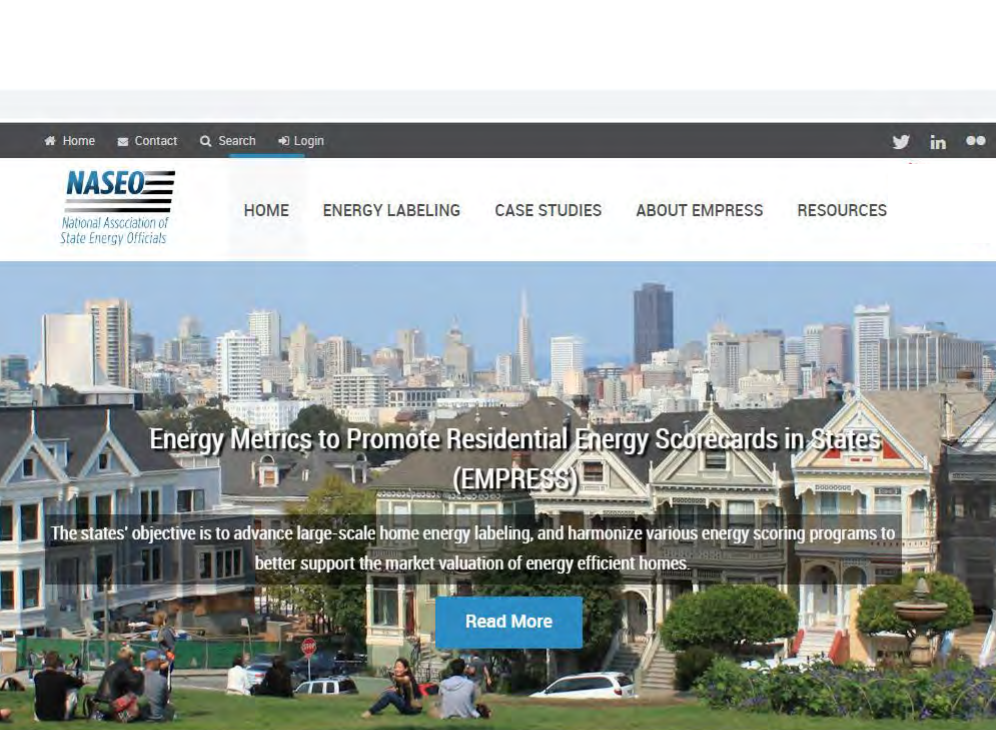




So they
can help
the market
understand
energy use
& costs in
buildings

Client File #:	Appraisal File #:																																						
Residential Green and Energy Efficient Addendum																																							
Client:																																							
Subject Property:																																							
City:	State:																																						
Zip:																																							
Additional resources to aid in the valuation of green properties and the completion of this form can be found at http://www.appraisalinstitute.org/education/green_energy_addendum.aspx																																							
The appraiser hereby certifies that the information provided within this addendum: <ul style="list-style-type: none">has been considered in the appraiser's development of the appraisal of the subject property only for the client and intended user(s) identified in the appraisal report and only for the intended use stated in the report.is not provided by the appraiser for any other purpose and should not be relied upon by parties other than those identified by the appraiser as the client or intended user(s) in the report.is the result of the appraiser's routine inspection of and inquiries about the subject property's green and energy efficient features. Extraordinary assumption: Data provided herein is assumed to be accurate and if found to be in error could alter the appraiser's opinions or conclusions.is not made as a representation or as a warranty as to the efficiency, quality, function, operability, reliability or cost savings of the reported items or of the subject property in general, and this addendum should not be relied upon for such assessments.																																							
Green Building: The practice of creating structures and using processes that are environmentally responsible and resource-efficient throughout a building's lifecycle from siting to design, construction, operation, maintenance, renovation, and deconstruction. This practice expands and complements the classic building design concerns of economy, utility, durability, and comfort (US EPA). High Performance building and green building are often used interchangeably.																																							
Six Elements of Green Building: A green building has attributes that fall into the six elements of green building known as (1) site, (2) water, (3) energy, (4) materials, (5) indoor environmental quality, and (6) maintenance and operation. The energy and water elements are the most measurable elements of green or high performance housing. Appraisers need savings amounts to develop an income approach to support energy efficient contributory value.																																							
THIRD-PARTY VERIFICATIONS (See types defined in glossary). The following verified items are considered within the appraisal analysis of the subject property:																																							
Green Certification Certification attest that the home meets certain minimum thresholds.	<table border="0"><tr><td>Environmental Protection Agency (EPA):</td><td><input type="checkbox"/> Indoor airPLUS</td><td><input type="checkbox"/> WaterSense</td><td><input type="checkbox"/> ENERGY STAR</td></tr><tr><td>Energy Department (DOE):</td><td><input type="checkbox"/> Zero Energy Ready Home (ZERH)</td><td></td><td></td></tr><tr><td>Home Innovation Research Labs (NGBS Home Remodel):</td><td><input type="checkbox"/> Bronze</td><td><input type="checkbox"/> Silver</td><td><input type="checkbox"/> Gold</td><td><input type="checkbox"/> Emerald</td></tr><tr><td>Living Building Challenge (LBC):</td><td><input type="checkbox"/> Living Building Certified</td><td><input type="checkbox"/> Petal Certification</td><td></td><td></td></tr><tr><td>Passivhaus Standard:</td><td><input type="checkbox"/> PHI Low Energy</td><td><input type="checkbox"/> EnerPHit</td><td><input type="checkbox"/> Passive House</td><td></td></tr><tr><td>Passive House Institute US:</td><td><input type="checkbox"/> PHIUS+ 2015</td><td></td><td></td><td></td></tr><tr><td>USGBC LEED:</td><td><input type="checkbox"/> Certified</td><td><input type="checkbox"/> Silver</td><td><input type="checkbox"/> Gold</td><td><input type="checkbox"/> Platinum</td></tr><tr><td>Other:</td><td></td><td></td><td></td><td></td></tr></table>	Environmental Protection Agency (EPA):	<input type="checkbox"/> Indoor airPLUS	<input type="checkbox"/> WaterSense	<input type="checkbox"/> ENERGY STAR	Energy Department (DOE):	<input type="checkbox"/> Zero Energy Ready Home (ZERH)			Home Innovation Research Labs (NGBS Home Remodel):	<input type="checkbox"/> Bronze	<input type="checkbox"/> Silver	<input type="checkbox"/> Gold	<input type="checkbox"/> Emerald	Living Building Challenge (LBC):	<input type="checkbox"/> Living Building Certified	<input type="checkbox"/> Petal Certification			Passivhaus Standard:	<input type="checkbox"/> PHI Low Energy	<input type="checkbox"/> EnerPHit	<input type="checkbox"/> Passive House		Passive House Institute US:	<input type="checkbox"/> PHIUS+ 2015				USGBC LEED:	<input type="checkbox"/> Certified	<input type="checkbox"/> Silver	<input type="checkbox"/> Gold	<input type="checkbox"/> Platinum	Other:				
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Other:																																							
Date Verified: / /	Green Certification Version: Organization URL:	ABOVE VALID ONLY IF CHECKED: <input type="checkbox"/> Verification reviewed on site <input type="checkbox"/> Verification attached to this report																																					
Energy Label Labels disclose the state of the home's energy assets:	RESNET's HERS Rating (0 to 150): <input type="checkbox"/> Sampling Rating <input type="checkbox"/> Projected Rating <input type="checkbox"/> Confirmed Rating	Estimated energy savings for this home: \$ ____ /year ____ kWh rate dated ____ / ____ / ____ Energy savings includes electricity, heating & cooling. Score below 100 indicates energy costs are expected to be lower than average code-built home. HERS index Report occupancy estimates energy cost based on number of bedrooms plus one. Only a "confirmed rating" is diagnostically tested.																																					
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What is the EMPRESS Project

The Energy Metrics to Promote Residential Energy Scorecards in States (EMPRESS) is a State Energy Office-led project, supported by funding from the U.S. State Energy Program of the U.S. Department of Energy and private sector partners. The states' objective in undertaking the project is to advance large-scale home energy labeling, and harmonize various energy scoring programs to better support the market valuation of energy efficient homes. The EMPRESS project is led by the Rhode Island Office of Energy Resources, and includes as project partners the Massachusetts Department of Energy Resources, the Missouri Division of Energy, the Arkansas Energy Office, the Oregon Department of Energy, the National Association of State Energy Officials, Earth Advantage, Energy Futures Group, and Vermont Energy Investment Corporation.

A major deliverable from the EMPRESS project is the information and content on this website. If you are a local or state official, be sure to check out the [EMPRESS Guidebook](#) on how to establish a home energy labeling program in your jurisdiction.

The EMPRESS team will host a webinar on the project on November 1, 2018 from 2:00-3:00pm ET. To register, please [click here](#).

<http://empress.naseo.org/>

Check out the EMPRESS Website

- ▶ Creating a start-up/implementation plan
- ▶ Defining what should be on a label
- ▶ Selecting a software/IT path
- ▶ Training professionals to deliver labels
- ▶ Educating Realtors & Appraisers
- ▶ Linking labels to MLSs



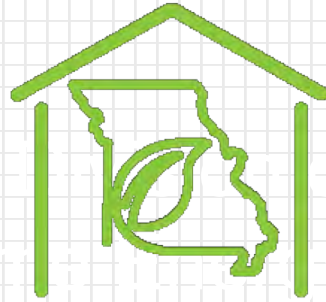
QUESTIONS?

Becca Trietch,

Energy Efficiency Program Administrator
Rhode Island Office of Energy Resources

becca.trietch@energy.ri.gov

www.energy.ri.gov



Missouri Division of Energy Missouri Home Energy Certification (MHEC)

EMPRESS Webinar

November 1, 2018



Department of Economic Development
Division of Energy



About Missouri Division of Energy

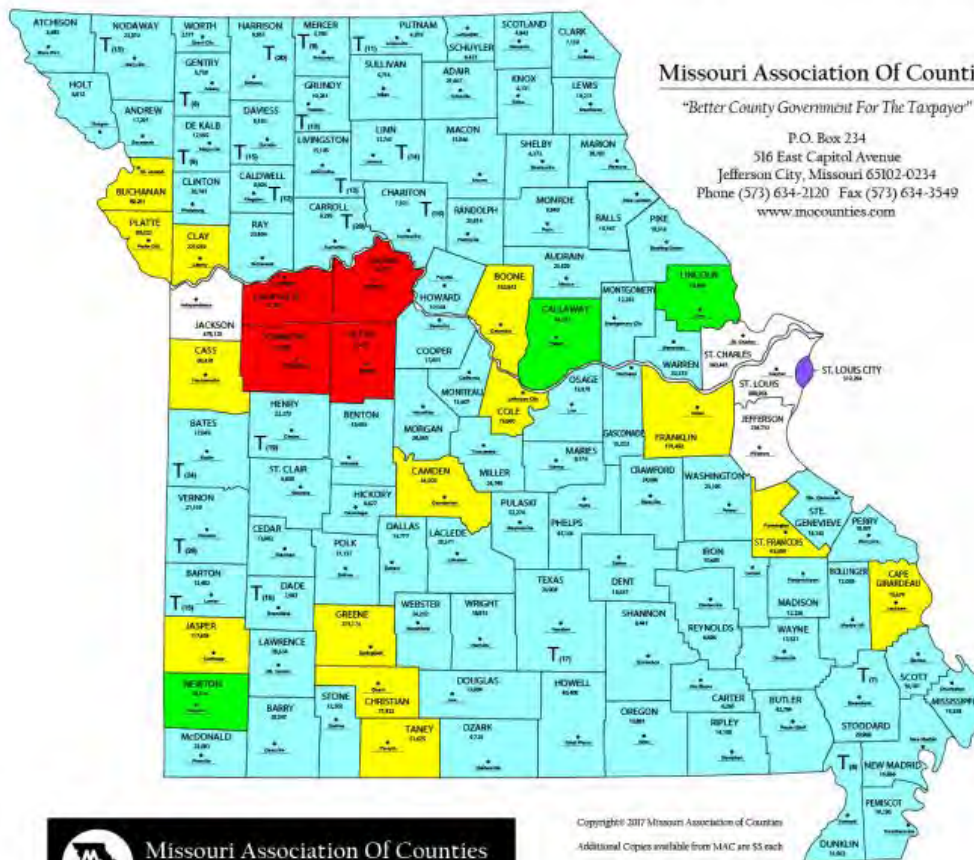
As the state's energy office –

The Missouri Division of Energy assists, educates, and encourages Missourians to advance the efficient use of diverse energy resources to drive economic development, provide for a healthier environment and to achieve greater energy security for future generations.

Missouri Landscape

- Relatively low utility rates.
- Home rule state.
- No statewide energy codes.
- No Public Benefit Funds for EE/RE

COUNTY CLASSIFICATIONS IN THE STATE OF MISSOURI



Copyright © 2017 Missouri Association of Counties

Additional Copies available from MAC are \$5 each

Based on 2010 Census Data
(numbers under county names denote population figures)
STATE OF MISSOURI POPULATION = 3,989,927



Missouri Association Of Counties Key To Data

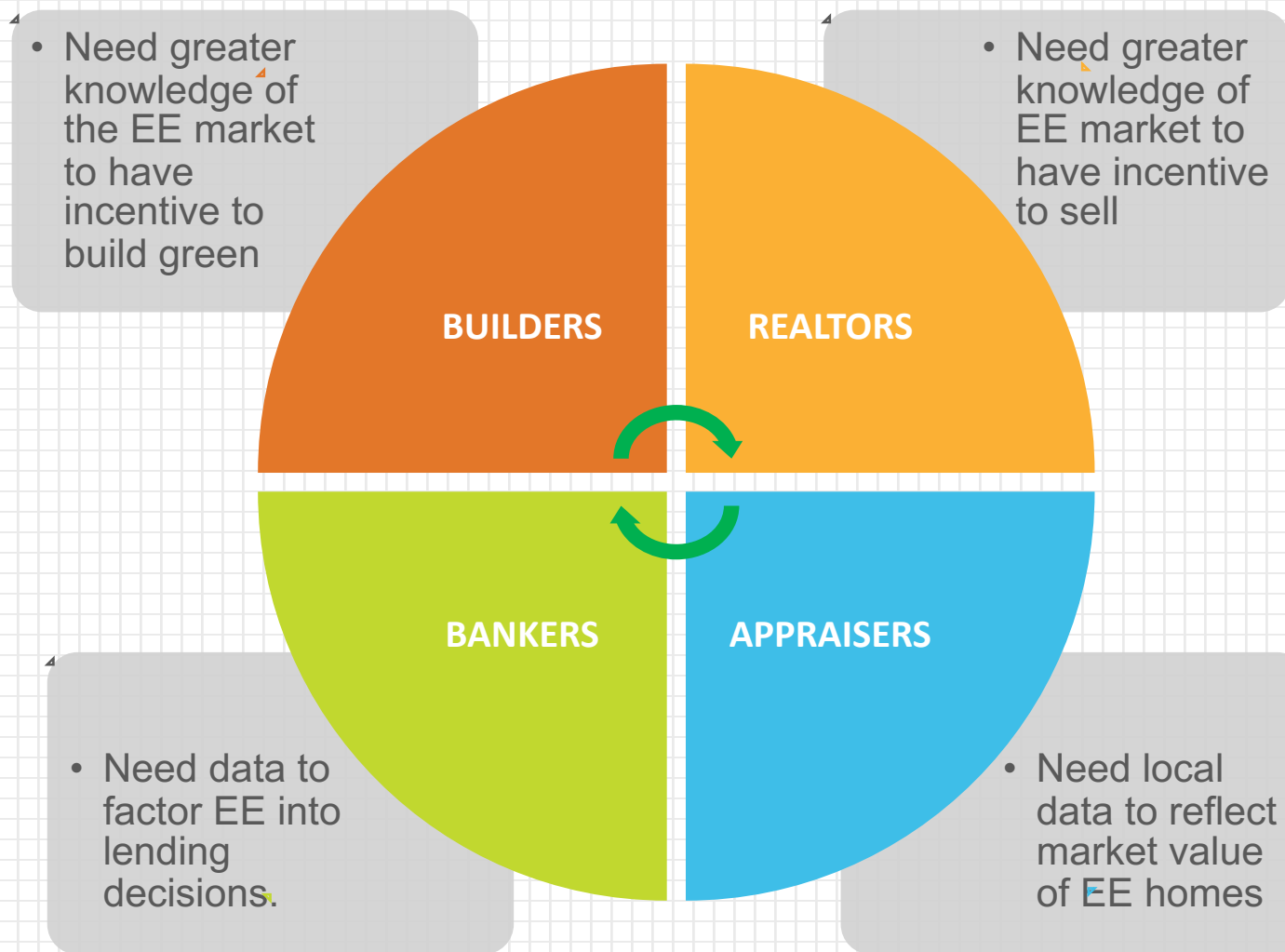
- Classification 1 - Charter . . . Counties with a charter form of government.
- Classification 1 - Noncharter . . . Assessed valuation of \$900 million and over after the county has maintained such valuation for five years.
- Classification 2 . . . Assessed valuation of \$900 million and over (but less than \$900 million) after the county has maintained such valuation for five years.
- Classification 3 . . . Assessed valuation of less than \$900 million.
- Classification 4 . . . Classification 2 counties, which would otherwise return to Classification 3 because of changes in assessed valuation, but which attained Classification 2 prior to August 13, 1988 and operate under the laws of Classification 2.

1 21 Township Counties . . . (T) = the number of townships in the county.

The Missouri Association of Counties, founded in 1972, is a nonprofit corporation established to provide a conduit of service for its member counties in matters that pertain to local, state and federal government activities. The association is a lobbying alliance of county administrative and elected officials who work to improve services for Missouri taxpayers. MAC strives to serve the best interests of local taxpayers (1) by promoting passage of priority bills and by monitoring other legislation before the state General Assembly to assess its effect on county government, (2) by providing training resources during annual conferences, and (3) by disseminating information and materials - all to increase the efficiency of county operations statewide.



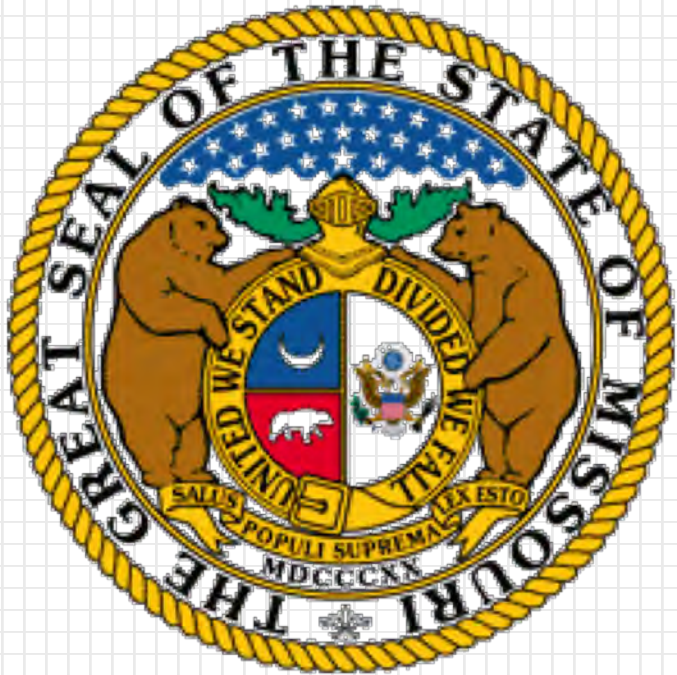
Department of Economic Development
Division of Energy



**Why Missouri Home
Energy Certification
(MHEC)?**

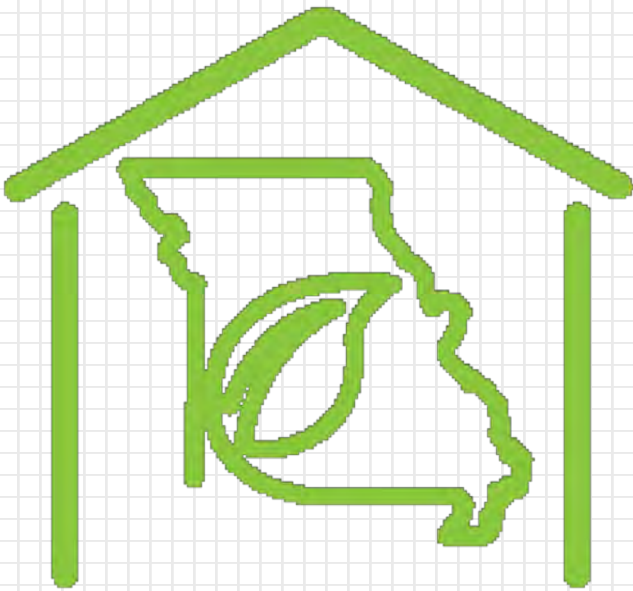


Why Missouri Home Energy Certification (MHEC)?



- Decrease marketplace confusion.
- Increase the level of awareness.
- Provide meaningful recognition.
- Recognize both new and existing homes.
- Make it voluntary.

MHEC Highlights



- Involved stakeholders.
- Incorporates existing national and local residential EE programs to create a level of consistency with a single platform.
- Recognizes both new homes and existing homes.

MHEC Program Overview



- Both new and existing single-family homes are eligible.
- Two certification levels: Gold and Silver.

MHEC Paths for Gold Certification

An eligible home must achieve one of the following:

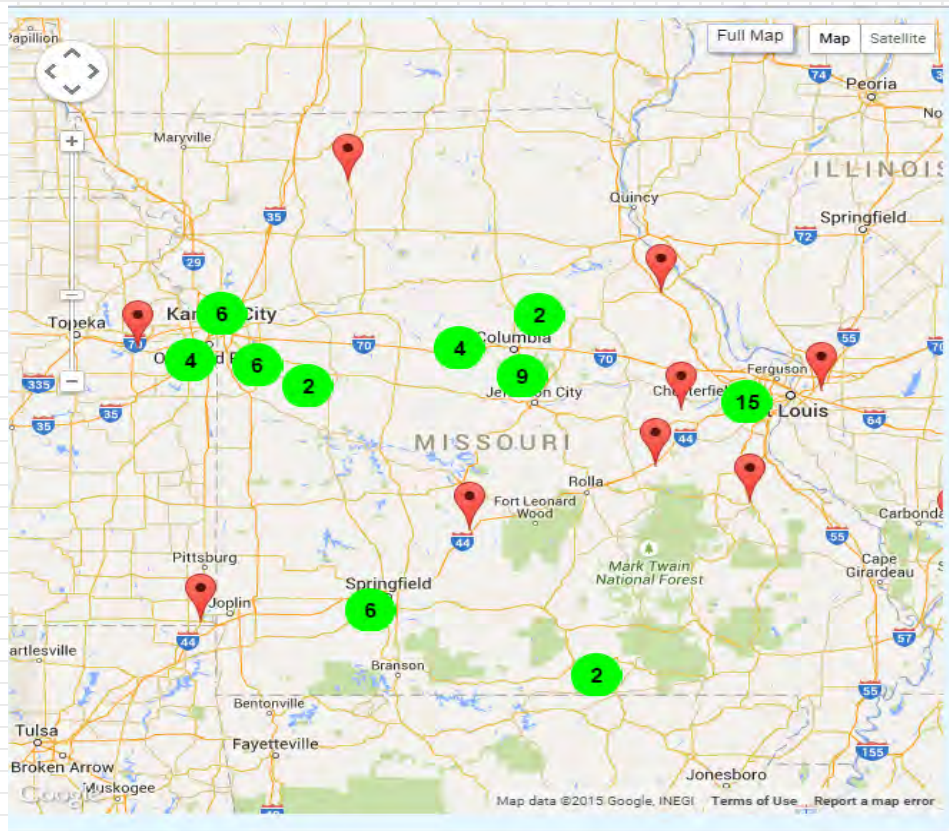
- Score of 8 or greater on the HEScore.
- Score of 65 or less on the HERS Index.
- Achieve the equivalence of the 2012 IECC for climate zone 4.
- Receive a Columbia Water & Light Efficiency Score backed by a HES of 8 or greater.
- ENERGY STAR™ Certified homes (after January 1, 2017).

MHEC Paths for Silver Certification

An eligible home must achieve one of the following:

- All cost effective improvements in HEScore have been implemented.
- 20 point decrease on the HERS Index.
- 90% efficiency rating on the CWL Efficiency Score.
- 20% energy savings as modeled by an approved program or approved modeling software.

Missouri Certified Home Energy Auditors



Application Form & Instructions:
energy.mo.gov/energy/hea

MHEC Next Steps

- Work with Investor-Owned and Municipal Utilities to align energy efficiency programs.
- Reach out to realtors, inspectors, appraisers, lenders and homebuilder organizations.
- Work with residential energy stakeholders to overcome technical and market barriers.
- Upgrade application platform to allow for auto-download of information - make it easy.

Sales Premiums and Faster Sales

- Homebuyers are willing to pay more for energy efficient homes.
- Studies show a sales premium of
 - 2-13% for designated EE homes^{1, 2, 3, 5, 8, 9, 10, 11}
 - Results in \$3,400 to \$8,800 premium^{4, 6, 7, 8, 9, 10, 11}



Designated Energy
Efficient



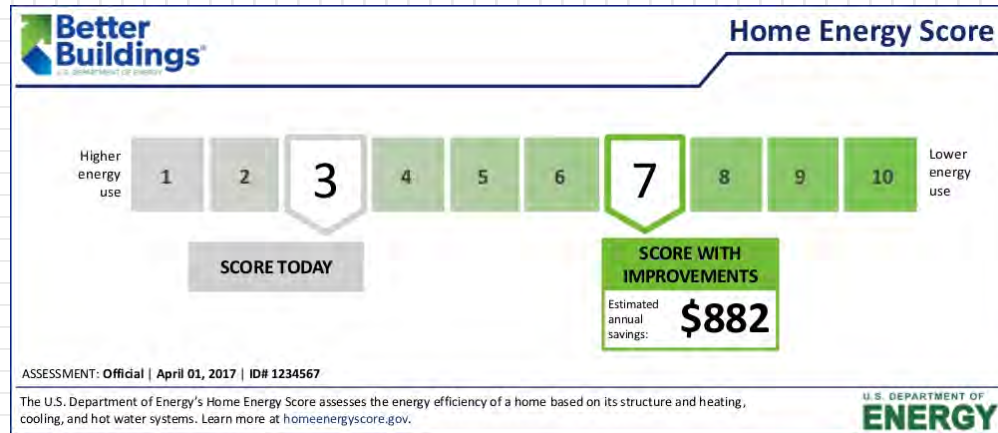
Comparable Home

Home Energy Checkups

- Analysis of a home's energy efficiency.
- Great place to start when trying to decide what EE upgrades will be most effective.
- Allows for comparative buying based on energy performance.
- Generally required for EE mortgages and other EE financing opportunities.
- Many kinds, but most widely used and recognized are the HERS Index and HEScore

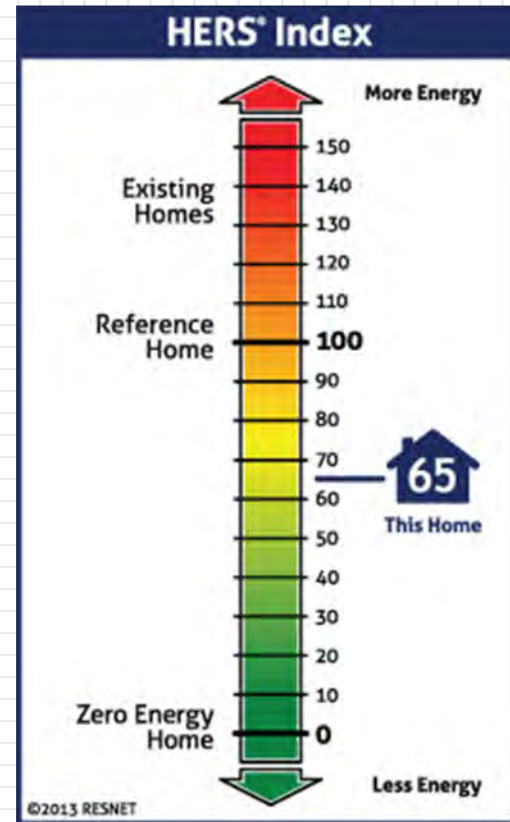
Home Energy (HEScore)

- Developed by Department of Energy
- Assesses energy-related assets to measure efficiency.
- Scale is set to local conditions, where 5 is the average home in each local area.
- 1-10 scale – high scores mean more efficient
- Works well for existing single family homes, townhomes, and duplexes.



Home Energy Rating System (HERS) Index

- Developed by the Residential Energy Services Network (RESNET)
- HERS Rater assesses home and compares data against a “reference home”
- Great tool for builders and code compliance
- Scale of 0-150



Green MLS

- Uses “green” data entry fields to identify green home features and certifications.
- Aims to increase EE and the use of RE by introducing information into the home buying process.
- The ability to value and educate on high performing homes will increase market penetration of high performing homes.

MLS with No Green Fields

- Add certification/ ratings and upgrades made in the comments or “remarks” section.
- Upload verifying documents from homeowner as an attachment
- Advocate for green field adoption on your MLS.

		Detached Single MLS #: 0411102 LDR: 05/10/2004 CTGP: A/1 LD: 05/10/2004 MKRT TIME: 109 OMD: LISTING MKRT TI CONT DT: 05/15/2004 SELLING OFC: CLSD DT: SELLING AGT: ADDRESS: 20W456 WESTMINSTER DRIVE CITY: DOWNERS GROVE DIR: WOODWARD SOUTH OF 87TH STR TO W BLT: 1987 B78: N OWN: Fee Simple CRP: UNINCORPORAT MODEL: GRANT DIM: 72 X 125 RMS: 6 BR: 3 BTH: 2 MBB: N CARS: 2 WF: N Tax: \$2,687 SAS: N PIN: 1006305019																																																									
		ASM: DIST#: 113 FREQ: Not Applicable WI: DIST#: 0 GRIS: BROMB JH: OLD QU HS: LEMONT EAST: 0 COORDINATES: NORTH: 0 SOUTH: 10																																																									
		<table border="1"> <thead> <tr> <th>ROOM NAME</th> <th>SIZE</th> <th>LEVEL</th> <th>FLOORING</th> <th>WIN TRMT</th> <th>ROOM NAME</th> <th>SIZE</th> </tr> </thead> <tbody> <tr> <td>Living Room:</td> <td>16X13</td> <td>Main Level</td> <td>Hardwood</td> <td>N</td> <td>4th Bedroom:</td> <td>13X9</td> </tr> <tr> <td>Dining Room:</td> <td></td> <td></td> <td></td> <td></td> <td>UTL:</td> <td></td> </tr> <tr> <td>Kitchen:</td> <td>18X11</td> <td>Main Level</td> <td>Vinyl</td> <td>Y</td> <td></td> <td></td> </tr> <tr> <td>Family Room:</td> <td>20X14</td> <td>Lower</td> <td>Hardwood</td> <td>Y</td> <td></td> <td></td> </tr> <tr> <td>Master Bedroom:</td> <td>16X12</td> <td>2nd Level</td> <td>Carpet</td> <td>Y</td> <td></td> <td></td> </tr> <tr> <td>2nd Bedroom:</td> <td>13X10</td> <td>2nd Level</td> <td>Carpet</td> <td>Y</td> <td></td> <td></td> </tr> <tr> <td>3rd Bedroom:</td> <td>11X9</td> <td>2nd Level</td> <td>Carpet</td> <td>Y</td> <td></td> <td></td> </tr> </tbody> </table>		ROOM NAME	SIZE	LEVEL	FLOORING	WIN TRMT	ROOM NAME	SIZE	Living Room:	16X13	Main Level	Hardwood	N	4th Bedroom:	13X9	Dining Room:					UTL:		Kitchen:	18X11	Main Level	Vinyl	Y			Family Room:	20X14	Lower	Hardwood	Y			Master Bedroom:	16X12	2nd Level	Carpet	Y			2nd Bedroom:	13X10	2nd Level	Carpet	Y			3rd Bedroom:	11X9	2nd Level	Carpet	Y		
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NC: N AGE: 11-25 Years AIR: Central Air AMN: Park/Playground APP: Oven/Range, Microwave, Dishwasher, Washer, Dryer, Disposal ATC: Unfurnished BAS: Crawl, None BAT: Shared Master Bath DIN: DRV: Concrete ELE: Circuit Breakers EQP: Humidifier, Ceiling Fan, Sump Pump, Sprinkler-Lawn EXT: Brick (BR) FPA: Patio, Storage Shed FPC: Concrete FPL: Location-Family Room, Gas Logs GAR: 2-Car Garage, Garage Door Opener(s) (Auto) PAR: None, Not Applicable																																																											
Remarks: IMMACULATE BRICK HOME. BEAUTIFULLY UP-DATED. EAT-IN-KITCHEN, FIREPLACI LANDSCAPED SPRINKLER SYSTEM, LRG. PATIO AND HOT TUB, GREAT NEIGHBORHOOD 1 BLD 55 AND I-355 2003 TAXES ONLY \$2700. PLS. SEE SHOWING INSTRUCTIONS FOR CO-ORDI		OD: KIT: Eating Area-Ta HEA: Gas, Forced Ai IMPW: Lake Michigan IMPS: Sewer-Public IMPO: Curbs/Gutters, INF: LDS: Landscaped Pr Lot Size: Less Than .2 MAI: None NCO: OTR: POS: Immediate ROF: Asphalt/Glass STY: Bi-Level, Tri-Le TPE: Split Level TRM:																																																									
INTERNET LISTING: All ADI: HERI: N CC: 2.5% - \$200 SHO: CALL 630-854-0883 OWNER PREFERS TO SHOW & NEG. OWNER: ANY MUSCARNERO BROKER: AMERICAN CAPITAL REALTY INC. AGENT: PARRY SINGH CO-LIST:		REMARKS INTERNET: Y FD: Y LIST: Exclusive Agency SCI: Limited Service/Entry Only AON: N ID#: 15801 ID#: 139347 AAN:																																																									



Department of Economic Development
Division of Energy

Green MLS

Buyer

Provides reliable EE information so that it can be a decision point in purchases

Appraiser

Provides specific EE data to reflect in market value of EE homes

Lender

Provides data to factor EE into lending decisions


Builder

Provides incentive to build green



Department of Economic Development
Division of Energy

Appraisal Institute's (AI) Green Addendum

 AI Reports® Form 820.05*	Client File #:		Appraisal File #:	17-1244	
	Residential Green and Energy Efficient Addendum				
	Client: Habitat for Humanity South Sarasota				
	Subject Property:				
	City: North Port		State: Florida		Zip: 34291
Additional resources to aid in the valuation of green properties and the completion of this form can be found at http://www.appraisalinstitute.org/education/green_energy_addendum.aspx					

- Information includes EE and RE features, which can be used by appraiser to form a more accurate valuation of property.
- Recently updated for ease of use and consistency between other agencies.

Green Addendum: Energy Labels

Energy Label Labels disclose the state of the home's energy assets.	RESNET's HERS Rating (0 to 150): <u>47</u> <input type="checkbox"/> Sampling Rating <input type="checkbox"/> Projected Rating <input checked="" type="checkbox"/> Confirmed Rating		Estimated energy savings for this home: \$ <u>692</u> /year <u>10</u> kWh rate dated <u>6/29/17</u> <i>Energy Savings includes electricity, heating & Cooling.</i> <i>Score below 100 indicates energy costs are expected to be lower than average code-built home. HERS Index Report occupancy estimates energy cost based on number of bedrooms plus one. Only a "confirmed rating" is diagnostically tested.</i> Data provided is from HERS Report attached.
	DOE's Home Energy Score Score (1 to 10): _____ <input type="checkbox"/> Official Score <input type="checkbox"/> Unofficial Score		Estimated energy savings for this home: \$____/year ____ kWh rate dated ____/____/____ <i>Energy Savings includes electricity, heating & Cooling.</i> <i>Score above five indicates energy costs are expected to be lower than average local home. Home Energy Score estimates energy cost based on state average energy rates and the home's energy features.</i>
	Other Energy Score: Range (____ to ____): _____		Estimated energy savings: \$____/year ____ kWh rate dated ____/____/____ Describe energy label system: _____
	Date Verified: <u>6/29/2017</u>	Score or Rating Version: <u>47</u> HERS Organization URL: <input checked="" type="checkbox"/> www.resnet.us/ <input type="checkbox"/> www.homeenergyscore.gov <input type="checkbox"/> Other: _____	ABOVE VALID ONLY IF CHECKED: <input type="checkbox"/> Verification reviewed on site <input checked="" type="checkbox"/> Verification attached to this report

**Okay. So how do we
make it easy?**





Green Building Registry™



Search for green and
energy efficient data on
Missouri homes

Enter the address you're looking for

SEARCH



Department of Economic Development
Division of Energy



Green Building Registry™

- Data solution that provides EE data for home at time of sale.
- Utilizes information from utilities, regional EE programs, PACE loans, and home energy ratings.
- Does not contain personal information such as homeowner name, etc.
- Data accessible to real estate agents, home buyers, and home appraisers.



Department of Economic Development
Division of Energy



Green
Building
Registry™

Green Building Registry™

MISSOURI HOME ENERGY SCORECARD



THIS HOME'S
SCORE **3** OUT OF 10

THIS HOME'S ESTIMATED
ENERGY COSTS

\$1,454
PER YEAR

HOME PROFILE

LOCATION:
2710 NE 84th Ave
Portland, OR 97213
YEAR BUILT:
1914
HEATED FLOOR AREA:
3,174 sq. ft.
NUMBER OF BEDROOMS:
5

ASSESSMENT

ASSESSMENT DATE:
01/29/2018
SCORE EXPIRATION DATE:
01/29/2026

ASSESSOR:
Matt Hopkins
Hopkins Home Inspection

PHONE:
503-869-5279

EMAIL:
matt@hopkinsinspections.com

LICENSE #:
2015-BR-0013-19

MAKE THE MOST OUT OF YOUR NEW HOME!

To learn more about ways to save energy, visit:

Energy.mo.gov



Home Energy Score



HOW MUCH ENERGY IS THIS HOME LIKELY TO USE?

Electric: 11,743 kWh/yr. \$1,291
Natural Gas: 227 therms/yr. \$163
Other: 0 gal/yr. \$0
Renewable Generation: (\$0)

TOTAL ENERGY COSTS PER YEAR \$1,454

Columbia Water & Light's
EFFICIENCY SCORE
96%
Energy efficiency potential of your home

WHAT DOES THE SCORE MEAN?

HOME ENERGY SCORE (HEScore): The HEScore is based on a 1 – 10 score, with a 10 being a high performing/efficient home with comparatively low energy bills, and 1 being an inefficient/low performance home with comparatively high energy bills, and a score of 5 being considered average. A score considers heating, cooling and hot water end uses as well as insulation, and normalizes for weather and home occupancy. This score is most often provided for existing homes (versus new construction) and is provided as part of U.S. Department of Energy's (DOE) Home Energy Score program. Scores are based on absolute energy use, subsequently for a home with the same features, a larger home scores poorer than a smaller home since it will use more energy. The score is also recognized by the U.S. Department of Housing and Urban Development (HUD) Federal Housing Administration's (FHA) Energy Efficient Home (EEH) Policy and can be used for participation in Fannie Mae's HomeStyle® Energy Efficiency Mortgage.

COLUMBIA WATER & LIGHT'S EFFICIENCY SCORE: Indicates the percentage of a home's maximum energy efficiency potential as modeled by the DOE Home Energy Score. The maximum energy efficiency is based on recommendations that provide a 10-year payback or less. Annual energy cost is based on equipment efficiency, size of home and number of bedrooms. The actual costs may vary due to weather, shading, occupant behavior, number of occupants and home maintenance.

- Total energy costs per year are estimated using an average utility cost (per unit of energy) for the State of Missouri (\$0.11/kWh for electric; \$0.20/Ccf for natural gas).
- Actual energy costs per year may vary based on occupant behavior, utility provider, weather patterns, and appliance maintenance/health.
- Relisting 2 - 7 years after the assessment date requires a free reprint of the Report from: missouri.greenbuildingregistry.com to update energy information.
- This report meets the standards of Missouri Home Energy Certification program administered by the Department of Economic Development Division of Energy.

MISSOURI HOME ENERGY SCORECARD



THIS HOME'S
SCORE **72** OUT OF 150

THIS HOME'S ESTIMATED
ENERGY COSTS

\$1,589
PER YEAR

HOME PROFILE

LOCATION:
3334 NE 55th Ave
Columbia, MO 65201
YEAR BUILT:
2017
HEATED FLOOR AREA:
1,100 sq. ft.
NUMBER OF BEDROOMS:
3

ASSESSMENT

ASSESSMENT DATE:
07/24/2018
SCORE EXPIRATION DATE:
07/24/2026

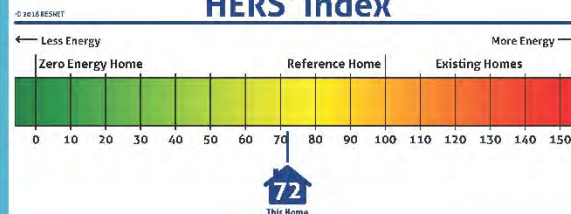
ASSESSOR:
GBR Admin
Earth Advantage
PHONE:
5555551212
EMAIL:
admin@greenbuildingregistry.com
LICENSE #:
12345678

MAKE THE MOST OUT OF YOUR NEW HOME!

To learn more about ways to save energy, visit:

Energy.mo.gov

HERS® Index



HOW MUCH ENERGY IS THIS HOME LIKELY TO USE?

Electric: 13,251 kWh/yr. \$1,458
Natural Gas: 653 therms/yr. \$131
Other: gal/yr. \$0
TOTAL ENERGY COSTS PER YEAR \$1,589

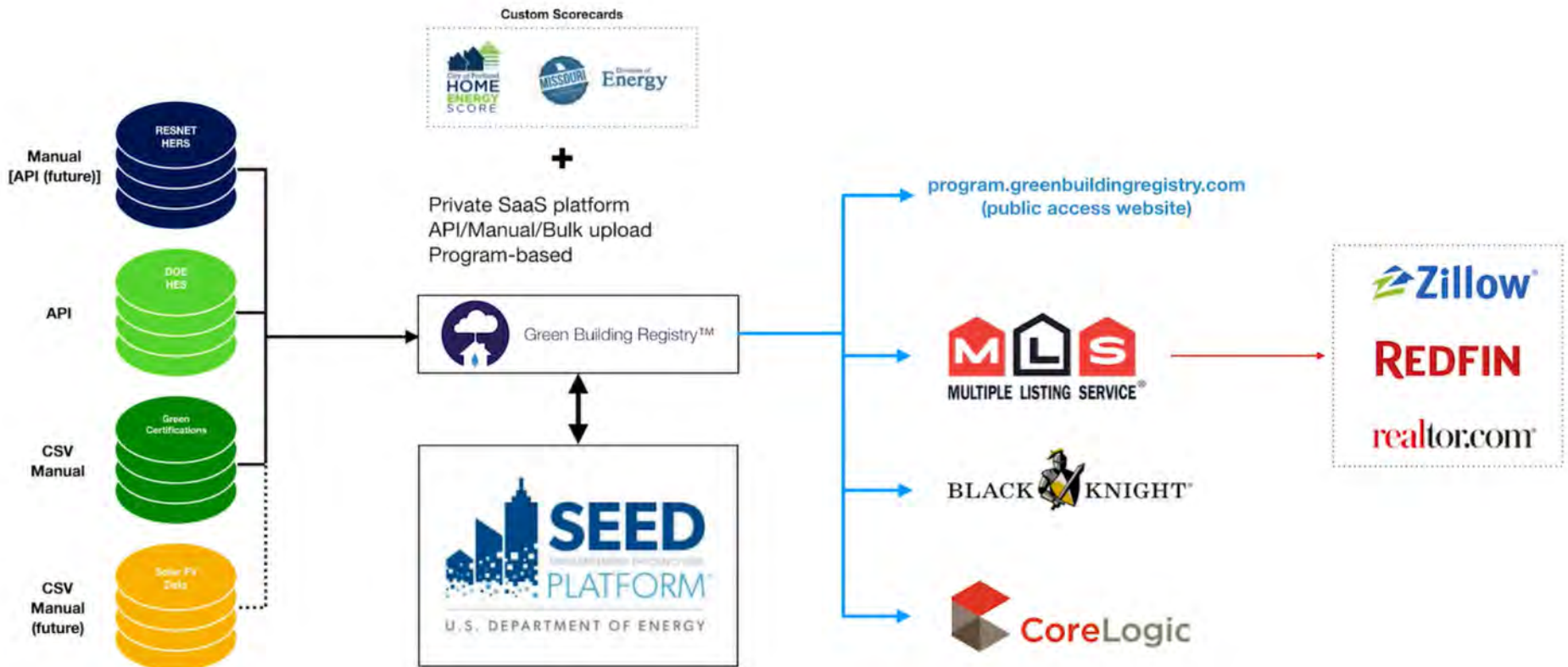
HOW MUCH RENEWABLE ENERGY DOES THIS HOME GENERATE?
_____ kWh/yr

WHAT DOES THE SCORE MEAN?

Home Energy Rating System (HERS) Index: The HERS Rating conveys a home's energy efficiency relative to the 2006 International Energy Conservation code. HERS uses an asset-based energy model that compares the home as designed (the "rated home") against the same home built to 2006 IECC standards, considered the "reference home", which would score 100. A lower score is better; a home that uses 50% more energy than the reference home would score 150, and a home using 50% less energy would score 50. A zero-energy home that uses no energy (through efficiency and renewables) and saves 100% of the reference home's energy would score a 0. The score is most often used by builders complying with building energy code through the Energy Rating Index pathway in the International Energy Conservation Code (IECC), the ENERGY STAR program, or by contractors who are competing based on energy efficiency in new construction. Some lenders may also recognize HERS ratings and provide favorable financing. RESNET and the US Department of Energy determined that a typical resale home scores 130 on the HERS Index.

- Total energy costs per year are estimated using an average utility cost (per unit of energy) for the State of Missouri (\$0.11/kWh for electricity; \$0.20/therm for natural gas).
- Actual energy costs per year may vary based on occupant behavior, utility provider, weather patterns, and appliance maintenance/health.
- Relisting 2-7 years after the assessment date requires a free reprint of the Report from missouri2.greenbuildingregistry.com to update energy information.
- This report meets the standards of Missouri Home Energy Certification program administered by the Department of Economic Development Division of Energy.

Green Building Registry™



SUMMARY

- The challenge
- Outreach is key – communicate - educate
- **Every stakeholder is critical.**

For More MHEC Information

Visit our program webpage:

<http://energy.mo.gov/energy/mhec> or

email mhec@ded.mo.gov

Contact:

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(573) 751-6981

andy.popp@ded.mo.gov

