



Missouri Division of Energy
Missouri Home Energy Certification
(MHEC)

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NASEO 2018 Energy Innovations and Intersections

September 24, 2018

M I S S O U R I

Department of Economic Development
Division of Energy



About Missouri Division of Energy

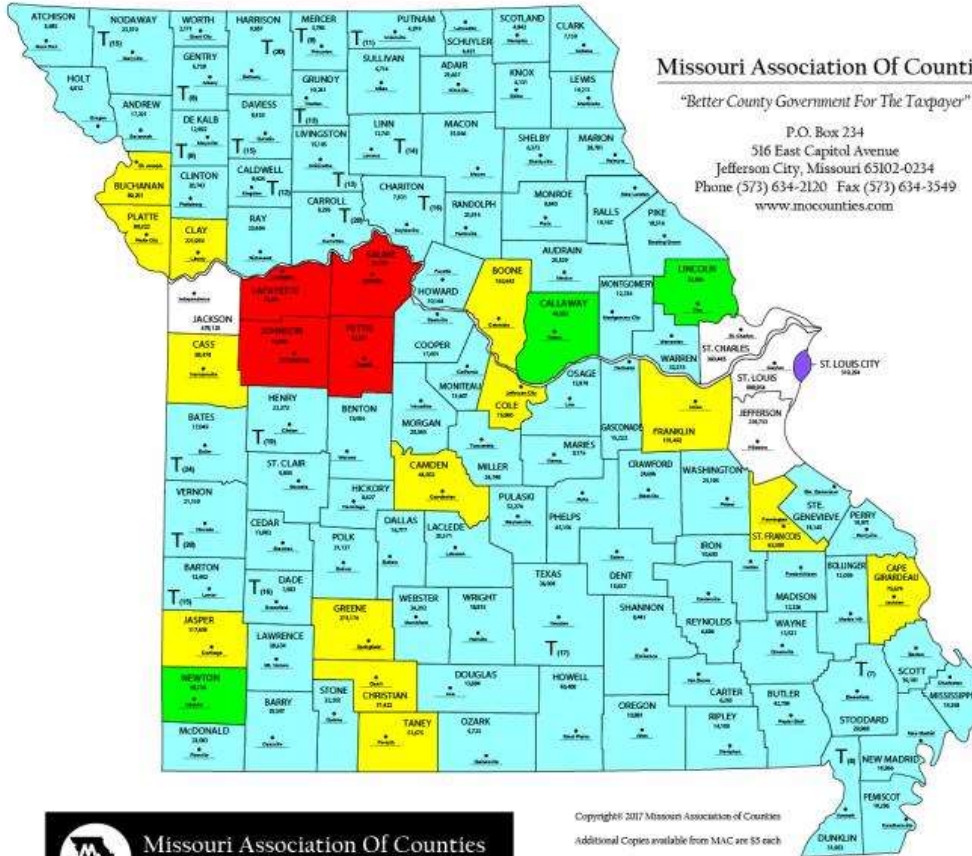
As the state's energy office –

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



Missouri Association Of Counties

"Better County Government For The Taxpayer"

P.O. Box 234
516 East Capitol Avenue
Jefferson City, Missouri 65102-0234
Phone (573) 634-2120 Fax (573) 634-3549
www.mocounties.com

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Additional Copies available from MAC are \$5 each

Based on 2010 Census Data
(numbers under county names denote population figures)
STATE OF MISSOURI POPULATION = 3,988,927



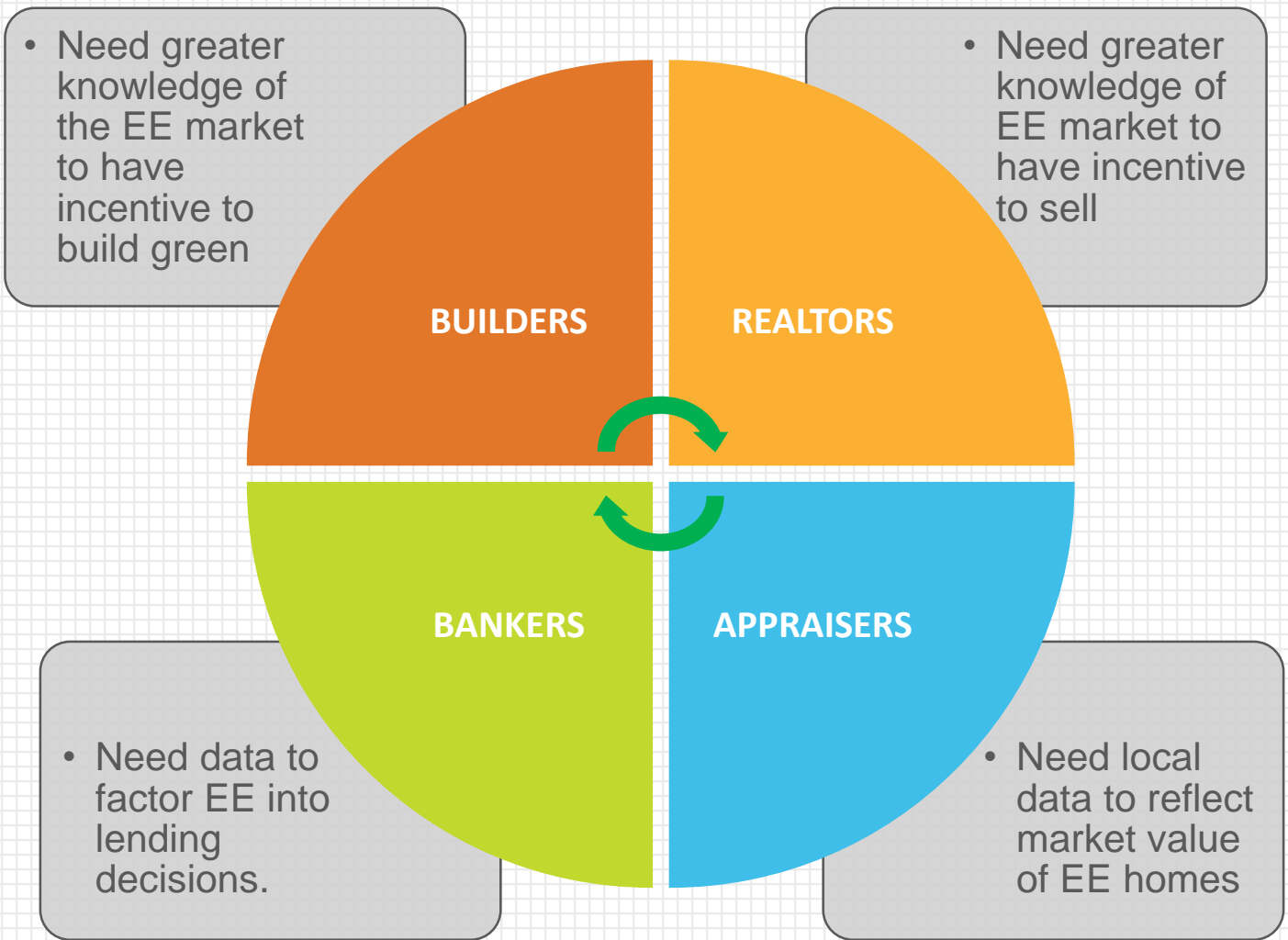
Missouri Association Of Counties
Key To Data

- 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 \$600 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 \$600 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.
- 21 Township Counties . . . (#) = 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

The Missouri Division of Energy's Home Energy Certification Program

This home has achieved a superior level of energy performance and includes the following home energy components:

Certified GOLD

Home address:
1234 Main Street
Anywhere, MO 12345

Home Energy Auditor:
John Doe

Program Provider:
Program Name

System and score:
HES = 8 (or HERS = 65)

Certificate Issued:
June 3, 2015

Certificate Number:
0603141236

- Energy Star heat pump with SEER of 14.5
- R-49 insulation installed on attic floor
- R-15 insulation installed in conditioned basement band joist wall cavity
- Thermal envelope testing of 3ACH50

Kristy Manning
Director, Division of Energy

The Missouri Home Energy Certification (MHEC) Program is designed to provide for a voluntary approach to promote energy efficient homes through a clear and meaningful recognition program. For more information regarding the program go to <http://energy.mo.gov/energy/mhec>.

- 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 65 or less on the HERS Index.
- Score of 8 or greater on the HEScore.
- 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.

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



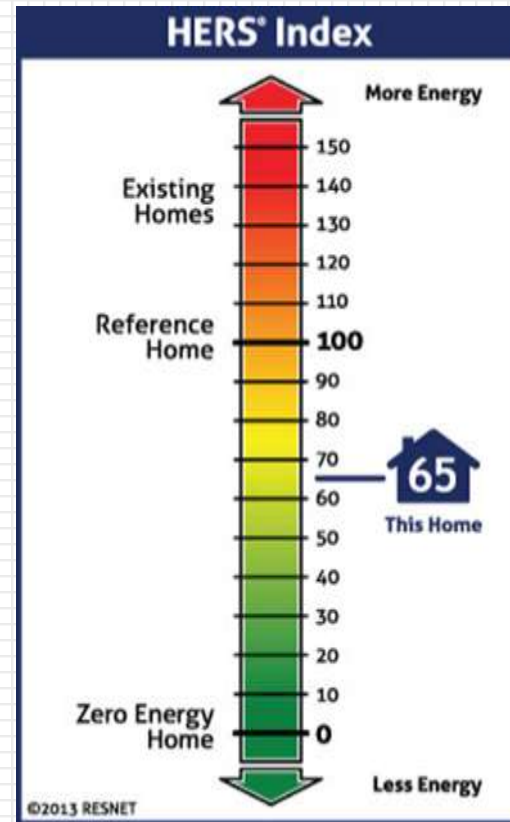
Comparable Home

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 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



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.



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.

Green MLS

Buyer

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

Appraiser

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

Lender

Provided data to factor EE into lending decisions

Builder

Provided incentive to build green

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
 LDI: 05/10/2004 MKT TIME: 109
 OMD: LISTING MKT 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 878: N
 OWR: Fee Simple
 CRP: UNINCORPORAT
 MODEL: GRANT DIM: 72 X 125
 RMS: 6 BR: 3 BTH: 2 MBB: N
 CAR: 2 WF: N Tax: \$2,687
 SAS: N PIN: 1006305019

ROOM NAME	SIZE	LEVEL	FLOORING	WIN TRMT	ROOM NAME	SIZE
Living Room:	16X13	Main Level	Hardwood	N	4th Bedroom:	
Dining Room:					UTL:	13X9
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		

Remarks: IMMACULATE BRICK HOME, BEAUTIFULLY UP-DATED, EAT-IN-KITCHEN, FIREPLAC
 LANDSCAPED, SPRINKLER SYSTEM, LRG. PATIO AND HOT TUB, GREAT NEIGHBORHOOD I BLD
 55 AND 1-355 2003 TAXES ONLY \$2700. PLS. SEE SHOWING INSTRUCTIONS FOR CO-ORDI

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: _____



Green Building Registry™



Search for green and energy efficient data on Missouri homes

Enter the address you're looking for

Street

Unit, apartment, suite, etc.

City State Zip Code

SEARCH



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.



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 64th 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-0015-19

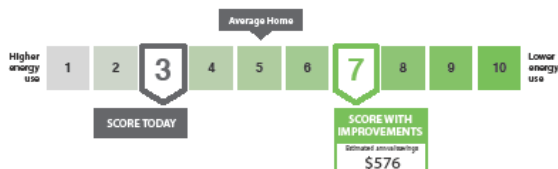
MAKE THE MOST OUT OF YOUR NEW HOME!

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:
1339 NE 35th Ave
Columbia, MO 65201
YEAR BUILT:
2017
HEATED FLOOR AREA:
1,100 sq. ft.
NUMBER OF BEDROOMS:
3

ASSESSMENT

ASSESSMENT DATE:
02/24/2018
SCORE EXPIRATION DATE:
02/24/2026

ASSESSOR:

QBR Admin
Earth Advantage
PHONE:
5555551212
EMAIL:
earth@
greenbuildingregistry.com
LICENSE #:
12845678

MAKE THE MOST OUT OF YOUR NEW HOME!

To learn more about ways to save energy, visit:

Energy.mo.gov

HERS INDEX

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?

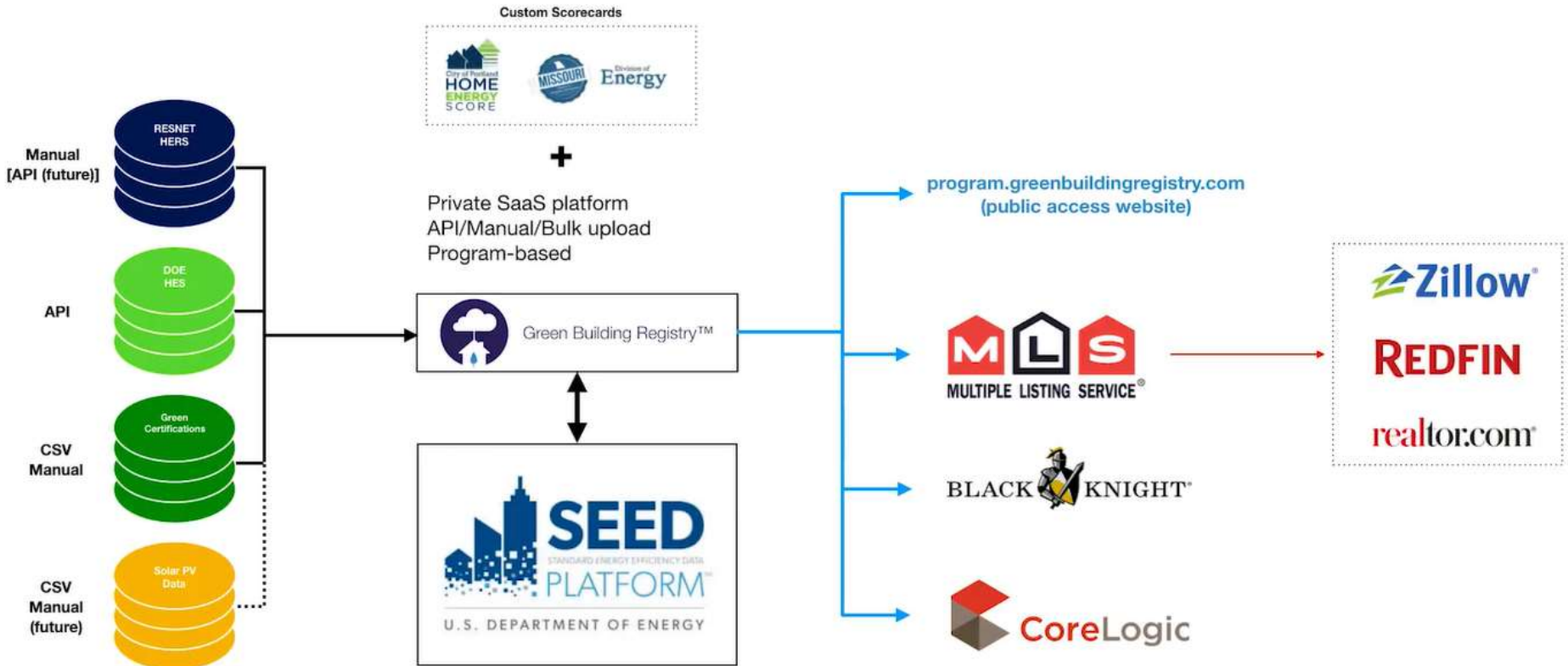
Home Energy Rating System (HERS) Index: The HERS Index conveys a home's energy efficiency relative to the 2006 International Energy Conservation Code. HERS uses an asset-based energy model that compares the home as designed (the "rated home") against the same home built to 2006 ICC standards, considered 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. HERSNET and the U.S. 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/Ccf for natural gas).
- Actual energy costs per year may vary based on occupant behavior, utility provider, weather patterns, and appliance maintenance/health.
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Green Building Registry™

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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