

U.S. Department of Energy's Home Energy Score

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An “MPG” for Homes



U.S. Department of Energy created nationally **standardized** “miles-per-gallon” home score

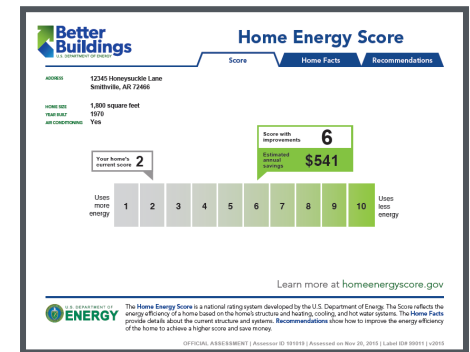
What’s the Value?

✓ For Program Providers

- ✓ **Reliable, consistent** modeling tool
- ✓ **Customizable report**; available at **no-cost**
- ✓ 😊 Homeowners

✓ For Homeowners

- ✓ **Easy** to understand homes’ energy performance
- ✓ Exposes “**hidden**” value
 - ✓ Gives homeowner a way to **document investments in efficiency improvements** when ready to sell
 - ✓ Makes insulation and air sealing **visible and** equipment ratings (SEER, AFUE) **meaningful**



Part 1: The Score



Home Energy Score

Score

Home Facts

Recommendations

ADDRESS 12345 Honeysuckle Lane
Smithville, AR 72466

HOME SIZE 1,800 square feet

YEAR BUILT 1970

AIR CONDITIONING Yes

Your home's
current score **2**

Score with
improvements

6

Estimated
annual
savings

\$541

Uses
more
energy

1

2

3

4

5

6

7

8

9

10

Uses
less
energy

Learn more at homeenergyscore.gov




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 **Home Facts** provide details about the current structure and systems. **Recommendations** show how to improve the energy efficiency of the home to achieve a higher score and save money.

OFFICIAL ASSESSMENT | Assessor ID 101019 | Assessed on Nov 20, 2015 | Label ID# 99011 | v2015

- Takes an hour or less to complete
- Can be generated by utilities, contractors, home inspectors, others
- On-line tool can be used directly or linked to other software tools
- No reporting requirements, all automated
- Free to user

Part 2: Home Facts

“Home Facts” provides the inputs the assessor used and the Home Energy Scoring Tool’s estimated energy use for the home, given standard conditions.




Home Energy Score


Score

Home Facts


Recommendations

**About this home**

Assessment date
Address
City, state, zip
Year built
Number of bedrooms
Stories above ground level
Interior floor-to-ceiling height (feet)
Conditioned floor area (all stories combined, square feet)
Direction faced by front of house
Has the house been air sealed?
Air leakage rate


**Estimated energy use per year**

Total (MBTUs)
Score basis (MBTUs)
Electricity (kWh)
Natural gas (therms)

**Comments**

For more information on calculation methods, technical terms and units please visit the Home Energy Score web site.

OFFICIAL ASSESSOR




Home Energy Score


Score

Home Facts


Recommendations

**Roof, attic & foundation**

Roof / Attic 1
Attic floor area (square feet)
Roof construction
Roof color
Attic or ceiling type
Attic floor insulation
Foundation / Floor 1
Floor area (square feet)
Foundation type
Floor insulation above basement or crawlspace
Foundation walls insulation level


**Walls**

All sides

**Windows & skylights**

Skylights
Does the house have skylights?
Windows
Window area front
Window area back
Window area right
Window area left
Window Construction
All sides

For more information on calculation methods, technical terms and units please visit the Home Energy Score web site.




Home Energy Score

Score

Home Facts

Recommendations

**Systems**

HVAC System 1
Percent of conditioned floor area served by system100

Heating
TypeCentral gas furnace
Efficiency value80% AFUE

Cooling
TypeCentral air conditioning
Efficiency value12 SEER

Duct locationUnconditioned attic
Are the ducts insulated?No
Conditioned spaceNo

Are the ducts sealed?Percent in tight condition
No75%
No25%

Hot water
TypeNatural gas storage
Efficiency value0.55 EF

5 | Building Technologies Office

eere.energy.gov

Part 3: Recommendations



Home Energy Score

Score

Home Facts

Recommendations

Address: 12345 Honeysuckle Lane
Smithville, AR 72466



Repair now: These improvements will save you money, conserve energy, and improve your comfort now

Estimated utility bill savings (\$/year)

Attic 1 / Increase attic floor insulation to at least R-49

187

Ducts 1 / Add insulation around ducts in unconditioned spaces to at least R-8

71

Ducts 1 / Have your ducts professionally sealed to reduce leakage

171



Replace later: These improvements will help you save energy when it's time to replace or upgrade

Estimated utility bill savings (\$/year)

Furnace 1 / Pick one with an ENERGY STAR label

106

Central Air 1 / Pick one with an ENERGY STAR label

80

Water heater / Pick one with an ENERGY STAR label

34



With these Improvements
reduce your home's carbon
footprint by: **27%**



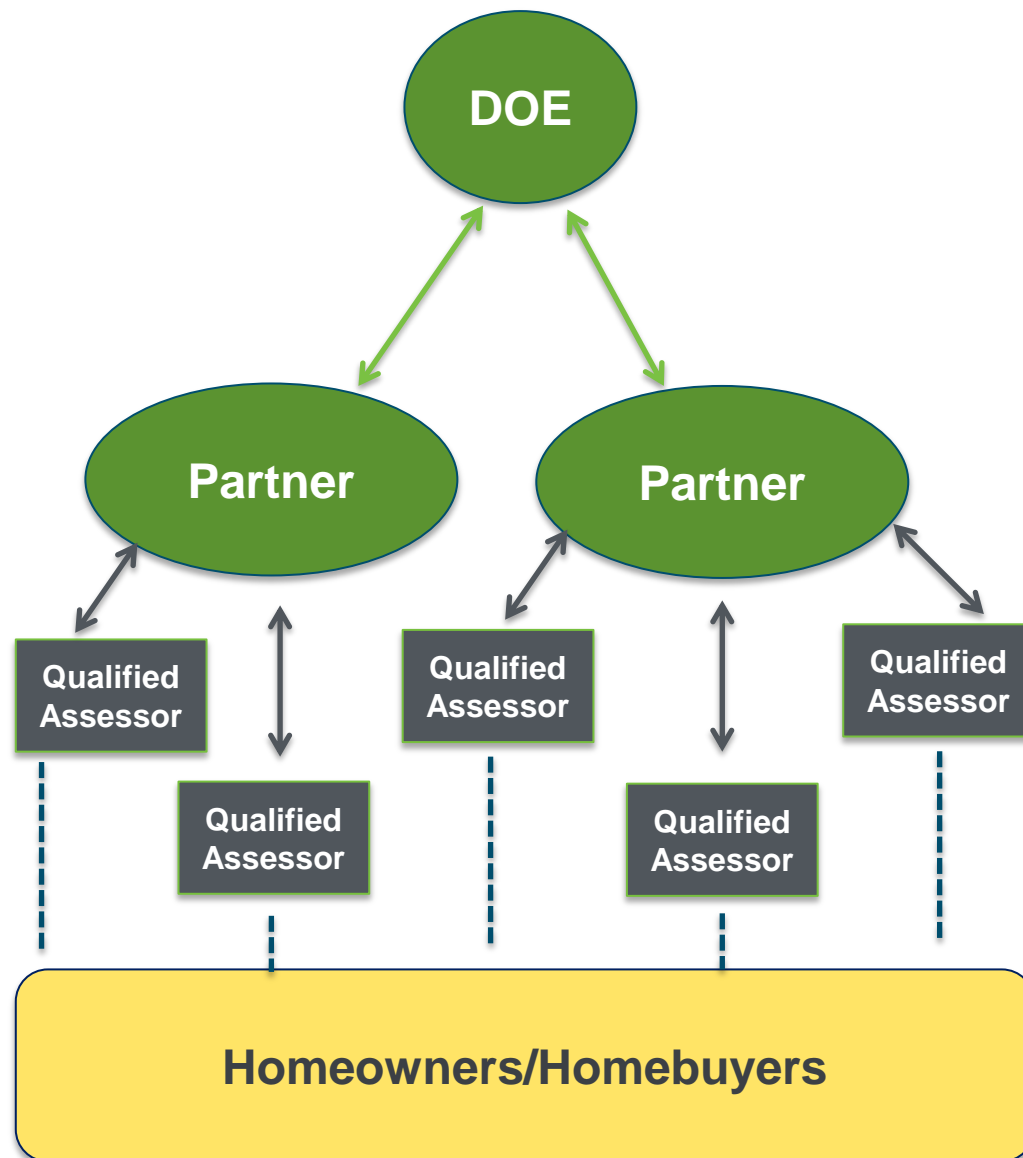
The Home Energy Score recommendations for efficiency improvements are based on selected data from the home's assets, not information from a complete energy audit. When making energy related upgrades, homeowners should consult with a certified energy professional or other technically qualified contractor to ensure proper sizing, installation, safety, and adherence to code.

homeenergyscore.gov

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- Recommendations categorized as “Repair now” and “Replace later”
- Some Partners and Assessors provide their own recommendations
- Tool can generate “Upgrade Score” based on custom recommendations

Implementation Method



- Partners (states, utilities, large volume contractors, associations) determine how Score will be offered.
- Qualified Assessors working under the partners provide the score to homeowners and homebuyers
- Score can be provided through many avenues
 - ✓ Home Performance with ENERGY STAR
 - ✓ Direct Install programs
 - ✓ Utility rebate programs
 - ✓ Real estate transactions
 - ✓ And more...



- ✓ Minimize transaction costs
 - ✓ Can be used in parallel with existing in-home audit program
 - ✓ API available to avoid double data entry
 - ✓ 3-D Sim training and testing: free & at your own pace
 - ✓ Committed to continuous improvements and open to Partner feedback
 - e.g., Looking for new approaches to streamline Quality Assurance

U.S. DEPARTMENT OF ENERGY
Home Energy Score Home Energy Scoring Tool
Data Collection Form

Location Information
Address: _____ City: _____ State: _____ Zip: _____
Assessment Type: Initial / Final / QA / Alternative EEM (Energy Efficiency Measures) / Test / Corrected / Mentor

Assessment Date: _____ Qualified Assessor: _____
Comments: _____

House Information
Year Built: _____ # of Bedrooms: _____ # of Stories Above Grade: _____
Average Ceiling Height (ft): _____ Conditioned Floor Area (sq ft): _____



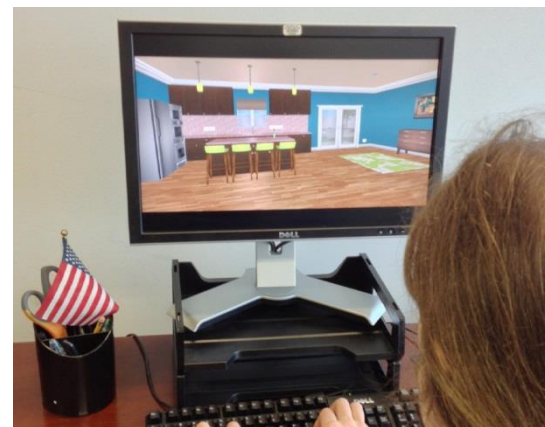
- ✓ Third-party software companies can license the Home Energy Score API to build applications that exchange data with the tool
 - ✓ Use API and avoid double data entry
- ✓ Software companies and organizations that completed API integration:
 - ✓ Cake Systems, EnergySavvy, EnergySoft, Home Inspector Pro, Optimizer, PSD/TREAT, United Illuminating, Spirit
- ✓ Other software companies evaluating or about to complete API integration
 - ✓ Snugg Pro, CLEAResult



Images courtesy Richard Szydlowski,
Minnesota Center for Energy and Environment

New Training and Testing Opens the Market to More Assessors

- ✓ This 3-D Tool developed with significant input from outside experts & practitioners.
 - Uses computer-based simulations to recreate a range of job-site scenarios.
- ✓ DOE conducted in-classroom/in-the-field validation study
 - Confirmed effectiveness of simulation tool in determining a candidate's competency to deliver the Home Energy Score.
- ✓ DOE recognizes certifications from many different building-related organizations.
- ✓ As a result...Many more building professionals are now be able to offer the Score.





Empowering you to make
smart energy choices

Home Energy Score: Connecticut

Evan Seretan,
The United Illuminating Company

February 3, 2016



UIL HOLDINGS COMPANIES

What is Energize ConnecticutSM?

- State's branding initiative to help consumers save money and use clean, affordable energy.
- Energize Connecticut programs are a partnership of the Energy Efficiency Fund, the CT Green Bank, the state, and local electric and gas utilities
- Funded by a charge on customer energy bills.

U.S. DOE Home Energy Scoring Tool

- Why Home Energy Score?
 - PA 11-80 mandated weatherizing 80% of CT homes by 2030
 - Ability to leverage successful direct install program
 - No additional cost to customers
 - Statewide input process including involvement from CT Department of Energy and Environmental Protection (DEEP)
 - Ease of Use
 - National Recognition of tool and name

U.S. DOE Home Energy Scoring Tool

- Home Labeling Policy Considerations
 - Vehicle to streamline weatherization with 80 % goal in mind
 - Provide CT homeowners with a baseline to gauge the energy consumption of their homes
 - Ability to compare homes when purchasing
 - Better understanding of how energy improvements affect the performance of the home
 - Integration with technology currently being used

Home Energy Solutions

- Small customer co-pay
 - \$99 for market rate customers
- Direct install of core services
 - Blower door guided air-sealing
 - HVAC flow tests & duct sealing
 - Installation of energy efficient CFLs and LEDs
 - Up to 6 courtesy LEDs
 - Low flow showerheads & aerators
- DOE Home Energy Score
- Health, Comfort and Safety



Experience and Certifications

- Lead Technicians
 - BPI Analyst Certification
 - BPI Envelope Certification
 - 4,000 hours of industry experience
 - DOE HEScore Qualified Assessor
- Comprehensive energy assessment of home and home's systems
- Technicians perform various safety tests to ensure home is performing safely



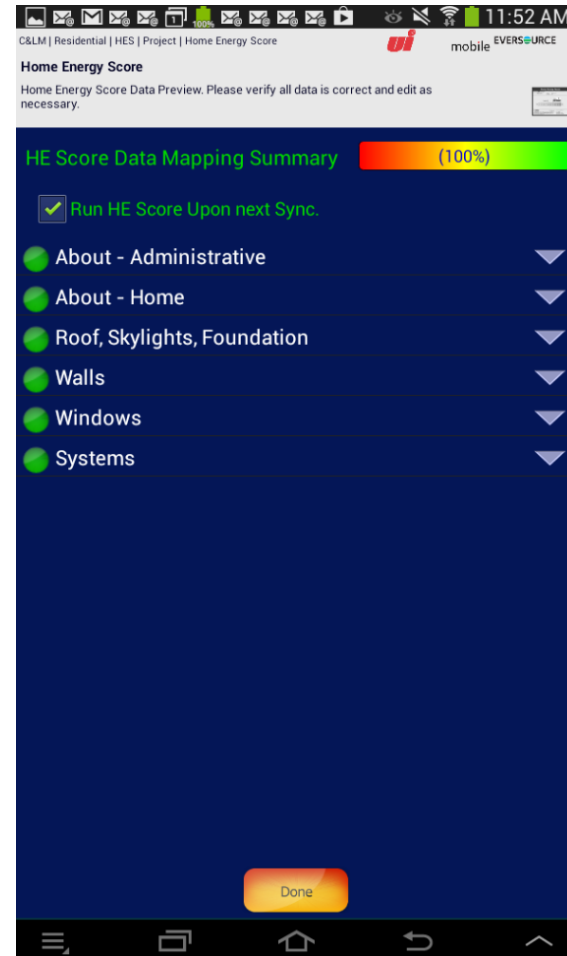
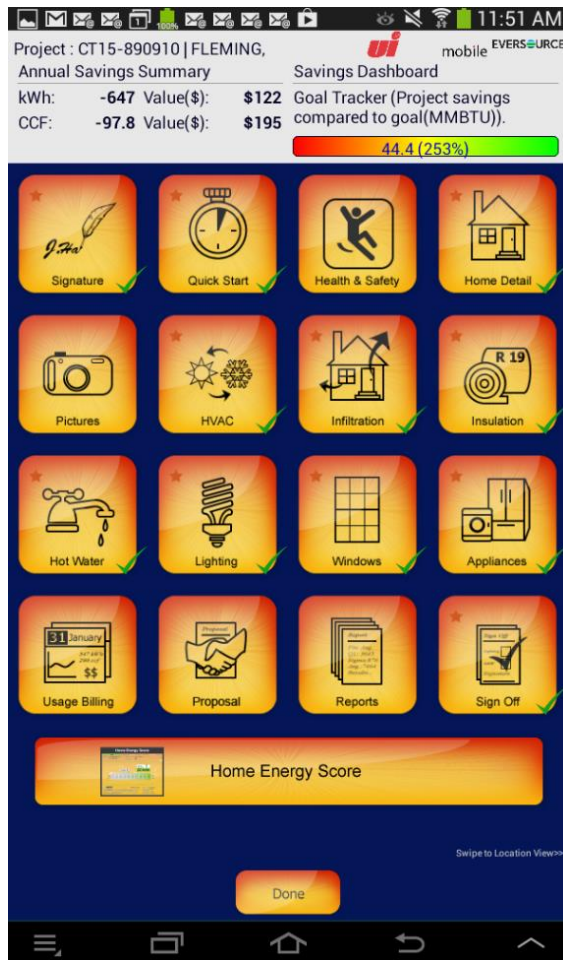
HES EnerNet Android Application

- Customized Android Application
- Tablet or Cell Phone
- Secure data exchange
- User log-in with password protection
- User specific jobs uploaded to device wirelessly
- Customer signature capture, account data access
- Camera enabled for attachment to project
- Mapping software
- E-mail reports to customer while onsite

DOE HEScore Integration

- Connecticut became first statewide implementer on 04/01/2015
- All HES lead technicians are required to be HEScore Assessors
- HES mobile application collects all information and models savings based on customer usage
- Streamlines audit and Home Energy Score data
- On pace to have over 10,000 HEScores in first 12 months!

DOE HEScore Integration



Challenges

- Management of nearly 200 Assessors
- Communication between IT Platforms (API)
- Updates to tool and coordination
- Ensuring accuracy of data
- Costs of Operating Program
- QA Process

Future Opportunities

- Provide consumers with a greater understanding of home performance and energy use
- Transparency and/or home certifications
- Integration with MLS/Real Estate Market
- Greater market penetration for deeper energy efficient retrofit projects

Contact Information

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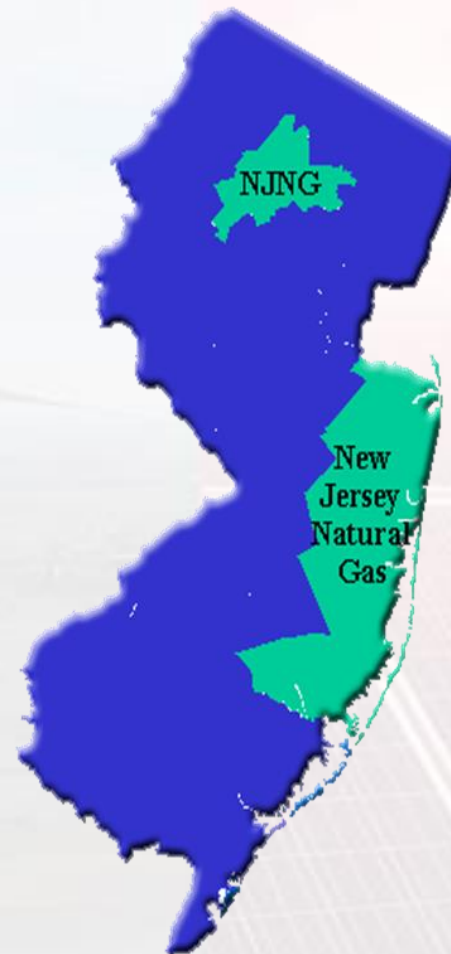
Know the Score

Using Home Energy Score to Motivate Customers



February 3, 2016

- Established in 1952
- Largest independent Local Distribution Company in New Jersey
- Provides safe, reliable service to over 510,000 customers
- Maintain over 7,100 miles of natural gas pipelines
- Primarily residential and small commercial customer base
- Launched The SAVEGREEN Project® in September 2009



56,000+ Phone Calls

200,000+ Unique visitors to micro site

33,000+ Energy Audits completed

34,000+ Enhanced Rebates

7,000+ customers have participated in 0% APR Financing

2,300+ contractors have participated in our program

\$105 Million + in grants, incentives and OBRP loans

12,500+ Home Energy Scores conducted



Three Paths

- Installation of a qualified high-efficiency furnace or boiler
 - ❖ \$500 rebate – customer must have NJNG energy audit
 - ❖ “Any” contractor
 - ❖ [NJNG Auditor Scores the Home](#)
- Installation of a qualified high-efficiency furnace/boiler AND water heater
 - ❖ \$6,500 OBRP at 0% with a 5 year term – customer must have NJNG energy audit
 - ❖ Contractor needs to be trained by NJNG
 - ❖ [NJNG Auditor Scores the Home](#)
- Customers taking a whole-house approach
 - ❖ Installation of qualified equipment and additional energy efficiency measures
 - ❖ NJCEP Home Performance with Energy Star (HPwES) contractor (requires BPI Certification)

➤ Strengths

- Volume of rebate customers
- Direct NJNG interaction with customers through audit
- Strong program awareness
- Outreach with contractors and supply houses

➤ Challenge- Motivate large base of rebate customers to do additional HPwES work.

- ❖ Customer mindset- 2nd investment
- ❖ No formal program structure in NJ for transition
- ❖ Limited # of air sealing and insulation contractors in HPwES in NJ

Decided to add Home Energy Score to audit process to help inform and influence customers

- Began Home Energy Score in 2012 to leverage our auditor recommendations.
- Early Adopters and provided DOE feedback
- We adopted EnergySavvy and worked through an API to deliver the score
- Only a few minutes extra time
- Study to evaluate whether HES influences customers
 - Limited marketing and supplemental promotion to customers

Using the Score as a motivator

6 to 1 ratio of customers entering through the HVAC path.

Represent an opportunity to offer another pathway to HPwES

Utilize HES to help motivate customers to do additional HPwES work.

Customers are presented with their score and asked to sign a release.

Release allows NJNG to share the customers audit information with HPwES contractors.

- We are beginning to see the results
- Over \$ 1 million of additional job activity in fiscal year 2015
- We have seen almost this much activity already in 2016
- Conclusion of DOE Study
 - All customers now receive the score
 - Use as marketing tool
 - Reinforce with customers and leverage DOE brand

- The Home Energy Score is free and easy to implement
- A good value addition to an existing Energy Efficiency Program
- Good motivator for customers
- Easy for customers to understand

Thank you!

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Implementation Highlights

- ✓ CW&L , a perfect marriage between a HPwES and the Home Energy Score program ~ 6,000 scores to date
- ✓ CLEAResult in MI, capitalizing on the Score's user-friendly report ~ 600 scores
- ✓ PosiGen in LA, integration with solar program ~700 scores
- ✓ Focus on Energy, initially planned with a direct install program and now plans to integrate into HPwES ~ 900 Scores
- ✓ Statewide adoption
 - AL, AR, CO, CT, MO, OR, VT with others exploring adoption (e.g. MA, NH, NY, RI)
- ✓ Local governments using the Score in disclosure policies

HOME ENERGY SCORES
COMPLETED

33937

As of January 31, 2016



New FHA Policy Incentivizes Use of the Score

Tying the Score to Financing

- ✓ New FHA Mortgagee Letter (September 2015) allows lenders to provide a 2% stretch on debt-to-income ratios for borrowers purchasing or refinancing a home
 - ✓ Home must score 6 or higher
- OR
- ✓ Borrower must demonstrate that they are taking action to improve home's score to 6 or higher

2%



National Partners

- Appraisal Institute
- CoreLogic
- Council of Multiple Listing Services
- Green Button Alliance
- Home Innovation Research Labs
- Home Performance Coalition
- Homes.com
- Institute for Market Transformation
- National Association of Realtors®
Center for Realtor® Technology
- National Association of State Energy Officials
- PicketFence.com
- Real Estate Standards Organization
- Realtors Property Resource LLC
- U.S. Green Building Council

Local Partners

California - Build It Green

Colorado - Colorado Energy Office, IRES

DC Metro - DC SEU, MRIS

Illinois/Chicago Metro

- Elevate Energy
- Illinois Department of Commerce & Economic Opportunity
- Midwest Real Estate Data (MRED)

Northeast

- NEEP
- VEIC

Oregon/Portland Metro

- Clean Energy Works
- Earth Advantage
- Oregon Department of Energy
- Regional Multiple Listing Service

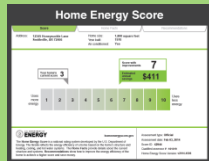
Vision

Widespread use of reliable home energy information at all relevant points in the real estate transaction, enabling fair value at sale for energy efficient / high performing homes

1

Expand Pipeline

- Of homes with verified energy information (e.g., Home Energy Score, Zero Energy Ready Homes, ENERGY STAR)



2

Develop Tools & Systems

- That facilitate the standardized and automated flow of home energy information from credible sources to relevant users



3

Demonstrate Use

- Of home energy information in MLS listings, appraisal forms, and other relevant applications



4

Recognize Champions

- In relevant fields, highlight their successes, and encourage adoption of best practices



5

Success Metric

Significantly expand availability and use of reliable home energy information in five or more pilot markets to demonstrate replicable models of automated, linked systems influencing home sales

Motivate Homeowners

Data Collection Mechanism

**Transparent
Calculation
Methodology**

Integration with existing programs

Free

Easy and quick



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www.HomeEnergyScore.gov