Who’s Keeping Score?
Using Home Energy Score and Home Performance with ENERGY STAR Together

Better Buildings Conference
May 17th, 2017
Presenters

- Joan Glickman & Ely Jacobsohn, U.S. Department of Energy
- Terry Freeman, Columbia Water & Light
- Elizabeth Murphy, United Illuminating Co.
- Scott Bloedorn, Focus on Energy
- Pamela Brookstein, Elevate Energy
Using Home Energy Score to promote HPwES, Weatherization, and more

Ely Jacobsohn
Program Manager
Home Performance with ENERGY STAR
U.S. Department of Energy

Joan Glickman
Program Manager
Home Energy Score
U.S. Department of Energy
What is Home Performance with ENERGY STAR?

A public-private voluntary partnership program focused on turning building science-based recommendations into solutions for improved, energy-efficient homes

✓ **Trust** – the work and the worker
✓ **Quality** – third-party quality assurance
✓ **Whole-House Approach** – methodical, thoughtful improvements

[Link to ENERGY STAR website](http://www.energystar.gov/homeperformance)
Projects Since 2002

Over 600,000 Projects Completed!
Challenges and Roadblocks

- Sustainable Program Funding
- Cost Effectiveness
- Weather
- Energy Prices
- Contractor Retention
- Finding Qualified Employees
- Lack of Consumer Awareness
- Market Saturation
Why Is Residential Labeling Important?

Labels make the invisible, visible.

Home Sellers want to get credit for their investments in energy efficient equipment and other features.

Home Buyers want to know what they’re buying and be able to predict monthly expenses (e.g., utility costs).

Labels can help capture the value of EE at time of sale.
What Data and Information Comprise a Home Energy Score?

- Home Energy Score is based on a home’s assets that affect energy use.
- Assets reflect those parts of the property that typically convey at time of sale.
- The Scoring Tool applies standard assumptions about occupant behavior and local weather to allow “apples to apples” comparison between homes.
Home Energy Score Highlights

- New Score Report design with customizable layouts *May 2016*
- New website with content for Assessors and homeowners *August 2016*
- Energy Efficiency for Real Estate Professionals resource *October 2016*
- Faster and more user-friendly Simulation Training tool *January 2017*
- Scoring Tool version 2017: Accounts for ductless mini splits, evaporative coolers, and solar PV installations *February 2017*
- “Find an Assessor” search tool on the Home Energy Score website *February 2017*
- *And more to come!*
## Integrating Home Energy Score and Home Performance with ENERGY STAR

<table>
<thead>
<tr>
<th>Home Energy Score can be used with HPwES</th>
<th>Can help meet some of the HPwES Minimum Requirements</th>
<th>Homeowner Report with a list of recommended improvements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wholehouse Evaluation</td>
<td>Perfect for Single measure incremental upgrade oriented program models</td>
<td>No Cost to Use HEScore</td>
</tr>
<tr>
<td>HEScore is easy to use - evaluations can typically be completed in less than an hour</td>
<td>Just need to add Health and Safety and Diagnostics when Needed</td>
<td></td>
</tr>
</tbody>
</table>
HPwES and HEScore
Home Performance with ENERGY STAR®

Since 2007
# Rebates for home improvements

<table>
<thead>
<tr>
<th>Type of Improvements</th>
<th>Minimum Requirement</th>
<th>Rebate Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attic Slope</td>
<td>Fill cavity</td>
<td>$500</td>
</tr>
<tr>
<td>Attic Insulation</td>
<td>R-50</td>
<td>$500</td>
</tr>
<tr>
<td>Duct Insulation</td>
<td>R-13</td>
<td>$300</td>
</tr>
<tr>
<td>Duct Leakage</td>
<td>50 CFM</td>
<td>$300</td>
</tr>
<tr>
<td>Rim joist</td>
<td>R-13</td>
<td>$20</td>
</tr>
<tr>
<td>Air Sealing</td>
<td>0.5 ACH50</td>
<td>$420</td>
</tr>
<tr>
<td>Wall</td>
<td>R-13</td>
<td>$500</td>
</tr>
<tr>
<td>Floor over</td>
<td>R-19</td>
<td>$500</td>
</tr>
<tr>
<td>Crawl space wall</td>
<td>R-10</td>
<td>$500</td>
</tr>
<tr>
<td>Windows and Doors</td>
<td>Low E and ≤.30 U Value</td>
<td>$500</td>
</tr>
<tr>
<td>Heat Pump</td>
<td>15 SEER</td>
<td>$200</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$1200 Max</td>
</tr>
</tbody>
</table>
**Energy Consumption History**

<table>
<thead>
<tr>
<th>Month</th>
<th>Year</th>
<th>Electric kWh</th>
<th>Fossil ccf</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan.</td>
<td>2016</td>
<td>705</td>
<td>121</td>
</tr>
<tr>
<td>Feb.</td>
<td>2016</td>
<td>561</td>
<td>127</td>
</tr>
<tr>
<td>Mar.</td>
<td>2016</td>
<td>538</td>
<td>87</td>
</tr>
<tr>
<td>Apr.</td>
<td>2016</td>
<td>679</td>
<td>58</td>
</tr>
<tr>
<td>May</td>
<td>2016</td>
<td>600</td>
<td>14</td>
</tr>
<tr>
<td>Jun.</td>
<td>2016</td>
<td>1881</td>
<td>17</td>
</tr>
<tr>
<td>Jul.</td>
<td>2016</td>
<td>2947</td>
<td>12</td>
</tr>
<tr>
<td>Aug.</td>
<td>2016</td>
<td>2151</td>
<td>12</td>
</tr>
<tr>
<td>Sept.</td>
<td>2016</td>
<td>3527</td>
<td>13</td>
</tr>
<tr>
<td>Oct.</td>
<td>2016</td>
<td>1056</td>
<td>12</td>
</tr>
<tr>
<td>Nov.</td>
<td>2016</td>
<td>969</td>
<td>16</td>
</tr>
<tr>
<td>Dec.</td>
<td>2015</td>
<td>511</td>
<td>79</td>
</tr>
<tr>
<td>Base</td>
<td></td>
<td>525</td>
<td>13</td>
</tr>
</tbody>
</table>

**Costs:**

- **Cooling:** $9610
- **Heating:** $407
- **Total Cost:** $1057

**General Comments:**

1. Seal around or just remove the window Air unit and install an attic fan cover.
2. Seal all outlets and switches with foam gaskets and child protective caps.
3. Insulate attic to R-30 and bury duct under the cellulose.
4. Due to the age of the equipment it is recommended to consider replacing the HVAC system with high efficiency units or a heat pump. This could save over 25% on heating and cooling cost.
Post Assessment

Heating and cooling savings
• Derived from HERS modeling
Pre and Post HEScore – Since 2012

Missouri Home Energy Score

Home Energy Score
The U.S. Department of Energy’s Home Energy Score assesses the energy efficiency of a home based on its structure, heating, cooling, and hot water systems. For more information visit HomeEnergyScore.gov.

This Home...

CURRENTLY WASTES 29% OF ENERGY ON INEFFICIENCIES

COULD SAVE $319 EACH YEAR ON ENERGY COSTS

COULD ELIMINATE 19% OF CO2 EMISSIONS WITH COST-EFFECTIVE UPGRADES

This Home...

CURRENTLY WASTES 19% OF ENERGY ON INEFFICIENCIES

COULD SAVE $148 EACH YEAR ON ENERGY COSTS

COULD ELIMINATE 11% OF CO2 EMISSIONS WITH COST-EFFECTIVE UPGRADES
Easy add-on

Our HPwES program requires contractors to perform Home Energy Score (Pre and Post)

Contractors supply the score for free
• We already pay up to $500 for the Pre and Post HPwES Assessment.

Contractors were already gathering the info.

After a few hours of training, contractors enter data to score homes in less than 5 minutes online.
Software and Integration

Input and tracking software, built in-house

Future API with Home Energy Score to reduce double data input
Training was originally provided locally by CWL

Training is now provided by Home Energy Score online for free! (Much easier on us)
QA = Reliability and Credibility

5% of homes scored must be rescored by partners.

Proven and double checked modeling
• Third party verified like HERS

Creates trust and is already being used by FHA and Fannie Mae
Verify Program Energy Savings

Partner data export

Very helpful
BSP training for realtors (Home Energy Score included)

Create Home Energy Score saturation

Prepare for Point of Sale awareness

Working towards Green MLS tie-in
  • Third Party Verified
Understanding HEScore

Great miles per gallon type rating….*but*

- Some don’t think it’s good to score less than a 10
- People don't get excited about low scoring homes
- Home that score 1 of 1 can be an issue
Efficiency Score

Compares Mbtu of Score Today and Score with Improvements

Columbia Water & Light’s EFFICIENCY SCORE

90%

Percentage of your home’s energy efficiency potential with 100% being the most efficient.

ESTIMATED ANNUAL ENERGY COSTS
$1,225-$1,658

ADDRESS 123 Efficiency Way
HOME SIZE (square ft): 1601
YEAR BUILT: 2003
ASSESSMENT DATE: 1/27/2017

Columbia Water & Light’s Efficiency Score indicates the percentage of a home’s maximum energy efficiency potential as modeled by the U.S. Department of Energy’s 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.

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Columbia Water & Light
701 E Broadway
Columbia, MO 65201
Who’s Keeping Score?
Connecticut’s Integration of Home Energy Score with HPwES

Elizabeth Murphy
Energize Connecticut

- Statewide initiative which helps consumers reduce their energy bills, save money, and reduce their carbon footprint
- A partnership of the Energy Efficiency Fund, the Connecticut Green Bank, Department of Energy and Environmental Protection (“DEEP”) and local electric and gas utilities
- Funded by a charge on customer electric and natural gas bills
Home Energy Solutions (HES)

- HPwES program offering direct-install energy efficiency products and services for single family (1-4 units) homes
- Comprehensive energy assessment for low co-pay
- BPI certified technician:
  - Addresses all energy-saving opportunities
  - Generates Home Energy Score
  - Qualifies home for add-on measure rebates
  - Reviews financing options
Home Energy Score Integration

- Connecticut was first statewide implementer in April 2015
  - Over 20,000 scores generated to date!

- Home Energy Score is a feature of all HES assessments in qualifying homes

- All HES lead technicians are required to be Assessors
  - More than 200 active Assessors
HES Mobile Tool

- Customized Android app for tablet or cell phone
- Streamlines data collection for HES and score
- Models savings based on usage
- E-mails comprehensive report to customer while onsite, including Home Energy Score report with recommendations
Benefits of the Home Energy Score

▪ Customized report reinforces the importance of completing energy upgrades

▪ The “miles per gallon” is an easy explanation to help educate customers on their homes energy usage

▪ Helps provide the customer with a road map for their energy projects and shows them their potential improved score with savings
Engagement with Solar Industry

- 2017 Coffee and… matchmaking events designed to integrate energy efficiency and solar
- Promoted Home Energy Score to solar and home improvement contractors
- Announced that solar will be incorporated within score in 2017
Connecticut Green Bank now accepting the Home Energy Score!

- Green Bank adopted the Home Energy Score as an option for homeowners to meet the energy audit requirement
- Home Energy Score report is preferred proof of participation in HES to access financing and incentives
Engagement with Real Estate Community

- Educate realtors to understand value of energy efficiency
- Educate customers
  - Improve understanding of how energy improvements affect home performance
  - Showcase ability to compare homes when buying
- Incorporate MLS autosharing language into customer release
For more info on Connecticut’s program visit:

EnergizeCT.com/HES

EnergizeCT.com/DOEHomeEnergyScore
Who’s Keeping Score?

Using Home Performance with ENERGY STAR® and Home Energy Score together.

Scott Bloedorn
Focus on Energy is Wisconsin utilities’ statewide energy efficiency and renewable resource program. Since 2001, the program has worked with eligible Wisconsin residents and businesses to install cost-effective energy efficiency and renewable energy projects.
Background

- Home Performance with ENERGY STAR®
  - Since early 2000’s
  - Annually (2011 – current): 1,500 – 2,300 projects
    - Combines: income & non-income qualified projects

- Home Energy Score
  - Pilot: 2014 & 2015
  - Direct install program (Express Energy Efficiency)
    - 1,000 HES assessments
Home Performance - Barriers to Scale (2014 & 2015)

- **Budget**
  - Is the customer able to financially invest?

- **Timing**
  - Is this the right time or does the customer have another goal?

- **Access**
  - Can the customer find a HPwES Trade Ally?
  - Does the customer know about Focus on Energy?
Barriers continued….

- Willingness
  - Does the customer want to invest the time, money?

- Too complex
  - Does the customer want a simplified process?

- Qualified Leads for Trade Allies
  - Less time performing assessments, qualifying customers.
Step #1 - 2016

- Rebid Home Performance Program
  - Assessment software – Snugg Pro

- Developed HES training – 8 hours
  - Offered incentive – free tablet
  - Over 95% success, 40 Trade Allies

- Scoring - 2017
  - Contractual KPI – 67% of assessments include HES
  - Integrate HES into Certificate of Completion (COC)
  - Add ‘look-up’ for Trade Allies
Step #2 - 2017

• Develop Self-Sustaining Home Energy Score
  – PSC, Office of Innovation, DOE, others…

• Develop standalone HES assessment

• Engage stakeholders

• Drive more HES assessments

• Qualified HPwES leads
Step #3 – Self-Sustaining Model

- Non-Home Performance Trade Allies & Contractors
  - Lower cost for training
    - attendees cover the cost
  - Upon HES certification
    - Access to scoring tool, listed on website
    - 5 HES
  - Purchase additional HES
    - $500/20 HES; ability to earn $1,500
Why - Self-Sustaining Model?

• Answer basic questions (Customers)
  – Lower investment for customers
  – Simplified report – easier to understand

• More Assessments (Program & Trade Allies)
  – Better market data
  – Analytics to target offers

• Stakeholder Engagement (Utilities & PSC)
  – New participants
Next Steps

• Continue planning & implementation processes
  – HPwES TA meeting – value proposition
  – Stakeholder outreach & training

• Weatherization
  – Qualifying customers (WI)
  – Can we share software?

• Workforce Development?
  – Apply for funding (grants)

• Public portal? (2018) – real estate market
Contact Info

Scott Bloedorn
Scott.bloedorn@cbi.com
Who’s Keeping Score?

Better Buildings Summit
May 2017
High Performance Homes: Benefits for Today and Tomorrow
What are the Benefits of a High Performance Home?

- Cost less to heat and cool
- Are more comfortable
- Healthier for their occupants

**Sources:** Energy Star, U.S. Department of Energy

March 2017
High Performance Homes can sell for a higher price and spend less time on the market.
Why are scores/certificates so important to the real estate transaction?
My Home Performance with ENERGY STAR Story
My Home Performance with ENERGY STAR Story
My Home Performance with ENERGY STAR Story

**Before** Massive Energy Efficiency Retrofits

**After** Massive Energy Efficiency Retrofits
What in the world...
A Certificate to the Rescue

Contractor Name

List of Upgrades

ENERGY STAR Logo
As of 2016, over **1.5 million homes** are considered High Performance Homes. These are new and existing homes that have third-party verifications* identifying energy upgrades.
Density Map and the Lone Wolf
Pamela Brookstein
Market Transformation Specialist
Pamela.Brookstein@elevateenergy.org
773-269-2220

ElevateEnergy.org/Value-High-Performance-Homes