HELIX

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A3P STRATEGIES

CLEARLYENERGY

DOER
Massachusetts Department of Energy Resources

ENERGY FUTURES GROUP

NASEO
National Association of State Energy Officials

nep

SUSTAINABLE REAL ESTATE CONSULTING SERVICES

Vermont Energy Investment Corporation

VERMONT

VERMONT LAW SCHOOL

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Welcome

VERMONT
PUBLIC SERVICE DEPARTMENT

U.S. DEPARTMENT OF ENERGY

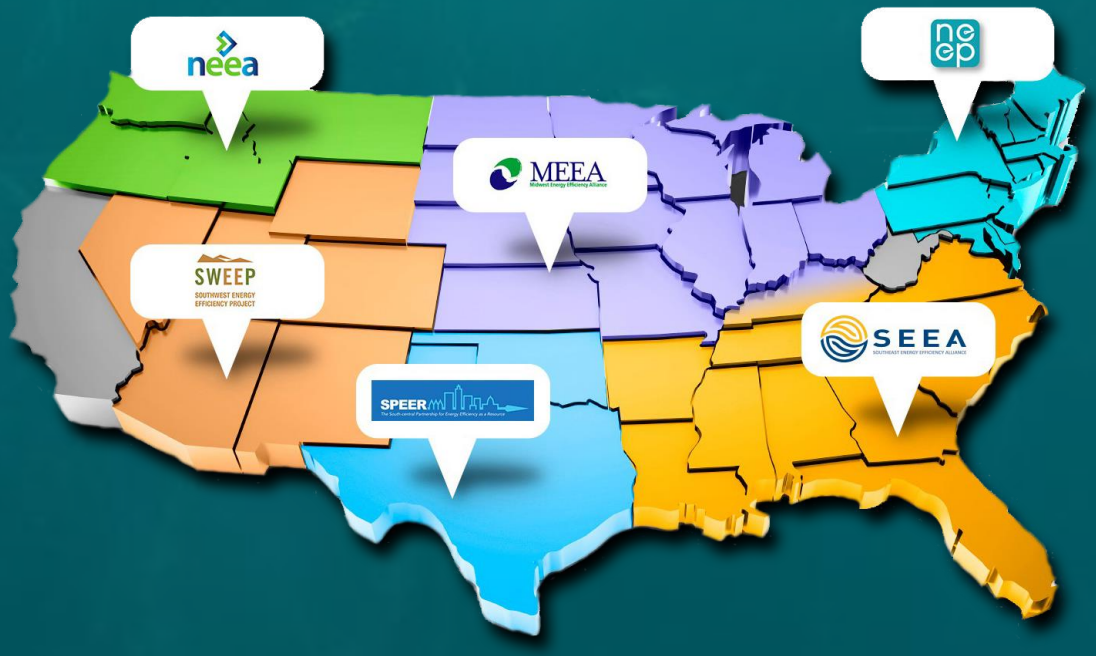
HELIX Welcome and Overview

Carolyn Sarno Goldthwaite, NEEP

Samantha Caputo, NEEP

About NEEP

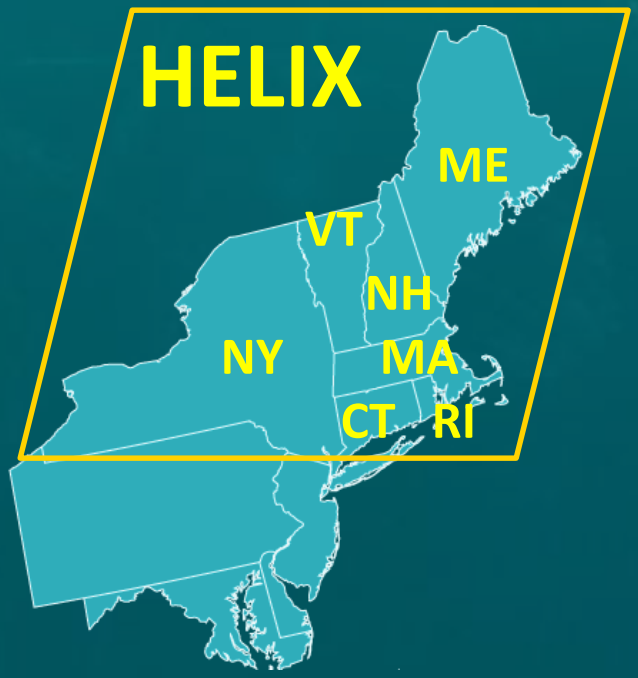
A Regional Energy Efficiency Organization



One of six REEOs funded in part by U.S. DOE to support state and local efficiency policies and programs.

Northeast Energy Efficiency Partnerships

- Long-term shared goal
  - To assist the Northeast and Mid-Atlantic region in reducing carbon emissions 80% by 2050 (relative to 2001)
- Mission
  - Accelerate energy efficiency as an essential part of demand-side solutions that enable a sustainable regional energy system
- Vision
  - That the region embraces next generation energy efficiency as a core strategy to meet energy needs in a carbon-constrained world
- Approach
  - Overcome barriers and transform markets through *Collaboration, Education, and Enterprise*



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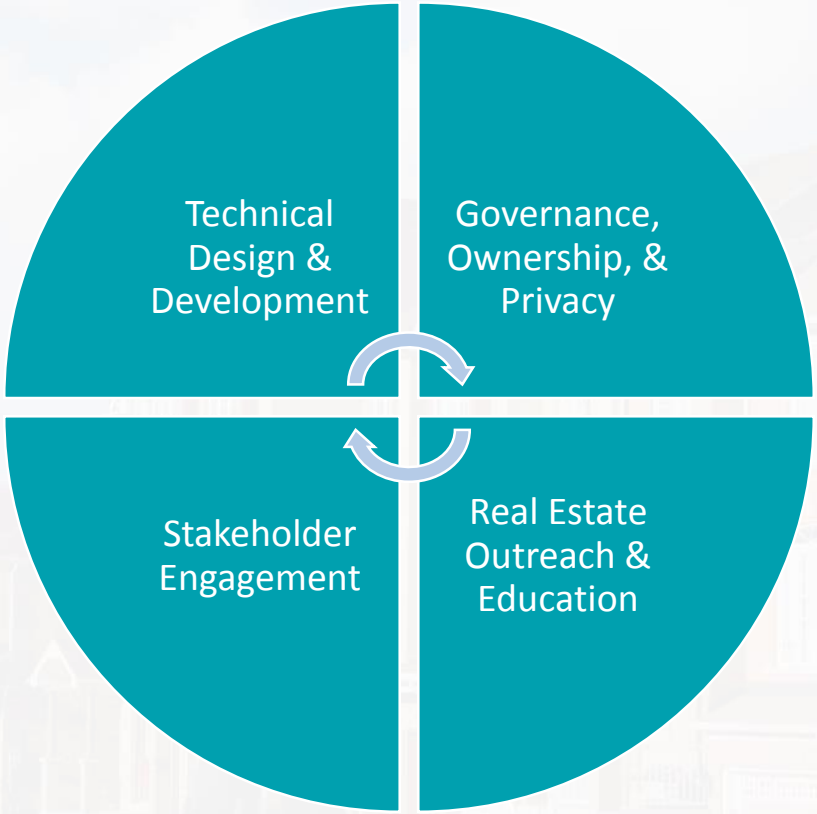
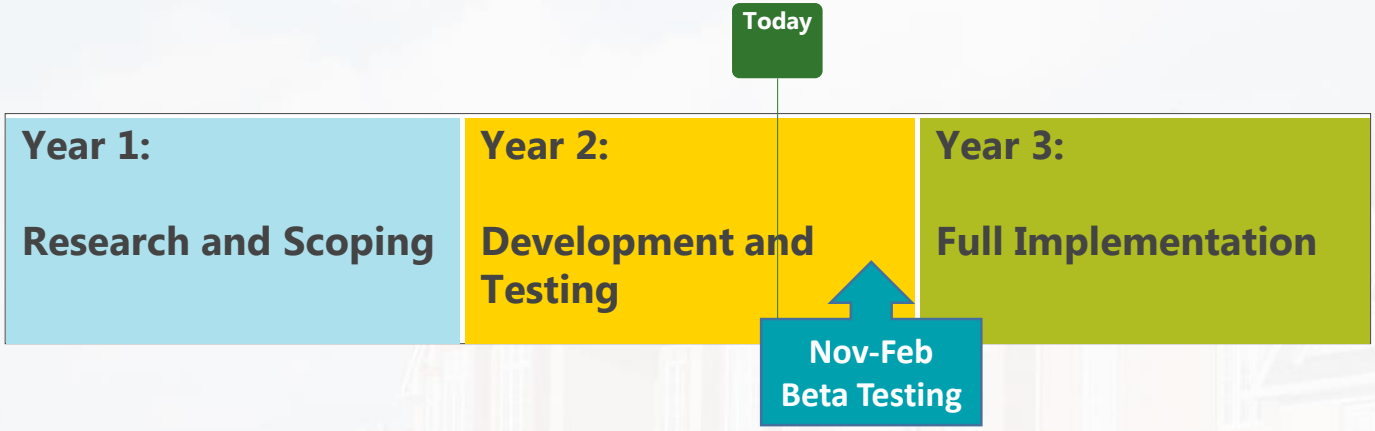
Goal: Connect Home Energy Investments to Property Values

Components of the HELIX Project



Where are we now?



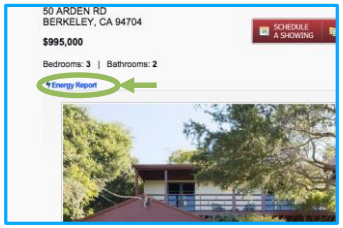
HELIX Demo

Understanding how home energy information is imported and exported

Veronique, ClearlyEnergy

About ClearlyEnergy

Incorporating energy and utility information in the real-estate process

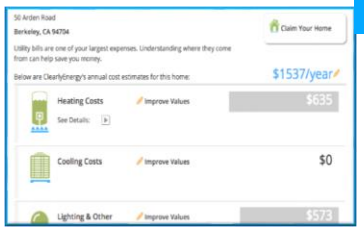


Listing / Portal / Map

ClearlyEnergy provides real-estate and other portals with easy access to the home's estimated energy footprint

*Homebuyers are increasingly asking about energy costs and solar benefits as part of the home purchasing process. For 38% of buyers, the home's energy efficiency is an "extremely" or "very" important decision factor.**

**MIT,Redfin,ClearlyEnergy survey*



Energy & Comfort Report

ClearlyEnergy's API breaks down costs and shows existing ratings for the home. Homeowners can improve the assumptions.

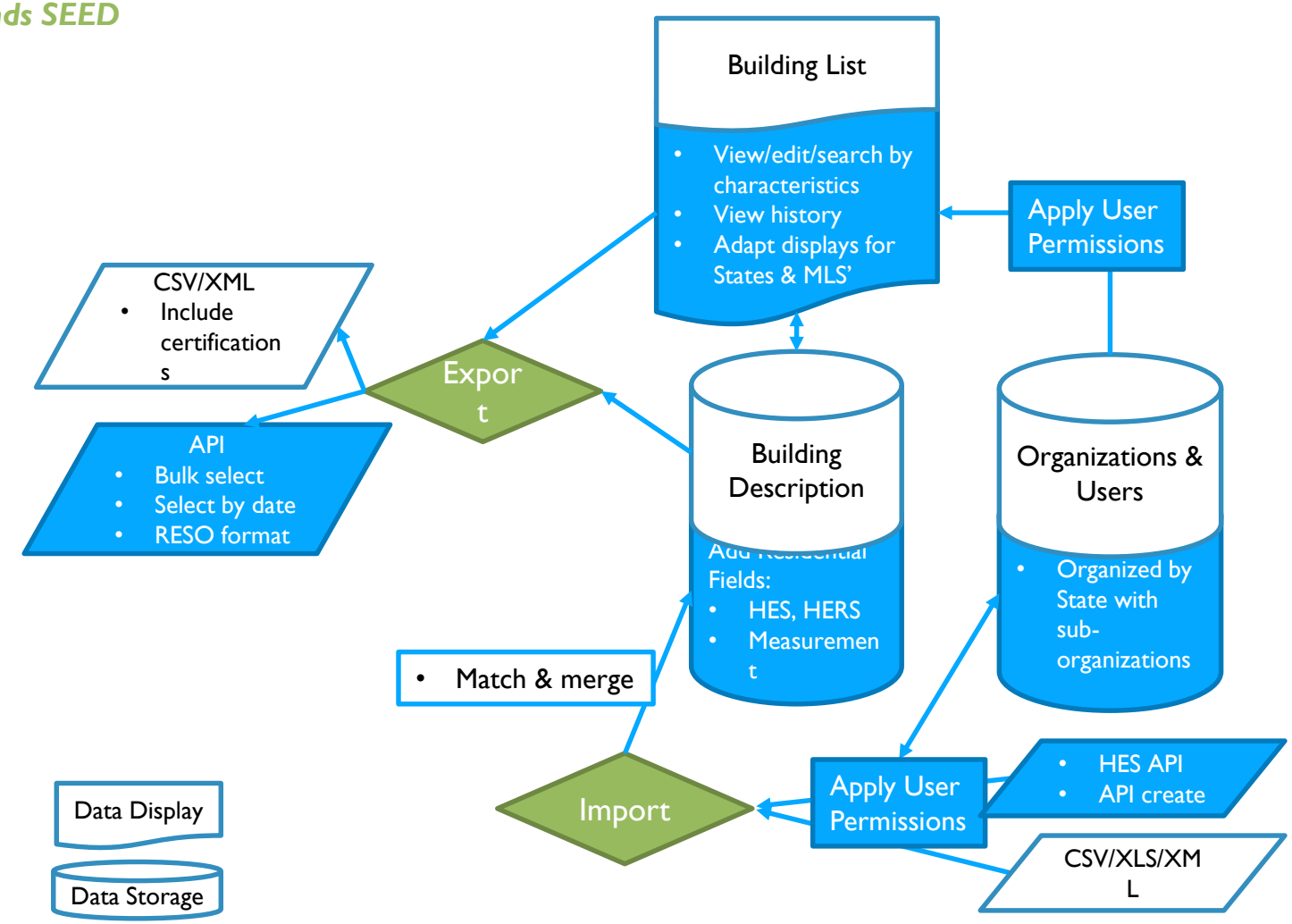
Savings & Incentives

Platform is designed to incentivize the homeowner to take action!

CLEARLYENERGY

HELIX Architecture

Expands SEED



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Questions?

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U.S. Department of Energy

The Latest with Home Energy Score and National Home Energy Labeling Efforts

Joan Glickman

U.S. DEPARTMENT OF ENERGY

Office of ENERGY EFFICIENCY & RENEWABLE ENERGY

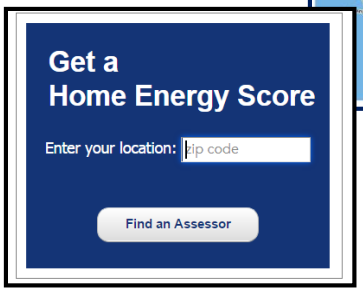
U.S. Department of Energy Scoring & Accelerator Updates

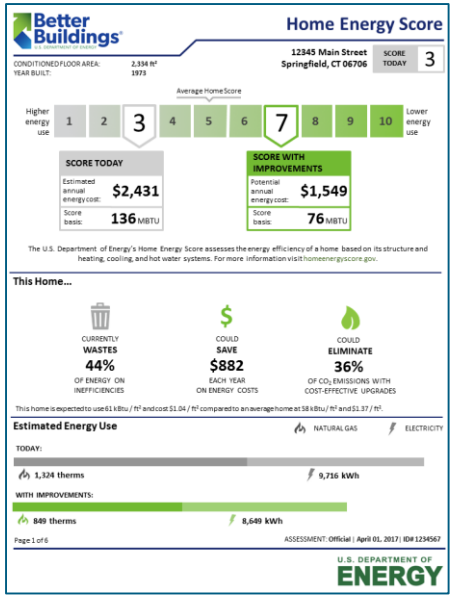
What's New?

- Home Energy Score
- Home Energy Information Accelerator
- In the Works

Home Energy Score Updates

- ✓ 75,000+ Homes scored
- ✓ 500+ Assessors nationwide
- ✓ "Find An Assessor" Tool
  - Now live on web site
- ✓ Remote Quality Assurance & Mentoring Now Underway
- ✓ FHA Homebuyer Counseling
  - Webinar for training orgs on November 28th!
- ✓ Outreach to REALTORs (e.g., education modules)





Social Media Campaigns… Getting the Word Out

Winter is coming.
Are you ready?

U.S. DEPARTMENT OF ENERGY
Home Energy Score

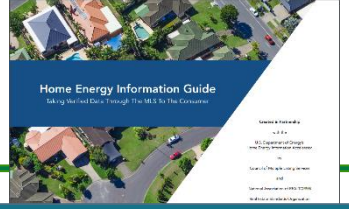
Know your home. Know your Score.

Home Energy Information Accelerator (HEIA): Successes to Date

Partner	Leadership In Action
Council of Multiple Listing with Real Estate Standards Organization & National of REALTORS	Authored the "Home Energy Information Guide: Taking Verified Data Through the MLS to the Consumer" • Guide intended to help real estate professionals and multiple listing services use the latest RESO data information. • The guide clarifies what constitutes "verified" information as well as how different types of information communicated to clients.
Real Estate Standards (RESO)	• Accelerated timeline for MLSs to adopt standard fields for home energy information from 2020 to 2018 fields.
Home Performance	Launched "HPXML website" • Explains the how's and why's for using HPXML, a data specification developed and used by the home • Includes a comprehensive section that focuses on the real estate transaction and the importance of
Appraisal Institute	Updated the "Residential Green and Energy Efficient Addendum" • Allows appraisers to more consistently document and value home energy information. • Corresponds to the latest Real Estate Standards Organization's fields for verified energy information.
California Regional MLS Build It Green U.S. Green Building Council	Implemented extensive training and enhanced data sharing with real estate professionals • Began development of green building data registry and more effective collaboration among key groups. • Trained more than 400 REALTORS and 60 appraisers on home energy features and valuation.

Home Energy Information Guide

(CMLS, NAR, RESO, DOE)



Clarifies Three Major Categories of Green Verifications

1. Green Certifications

- The home achieves standards of energy and/or green features
- Popular programs can vary by market

2. Energy Labels

- Applicable to any home
- Compares home to an accepted standard

3. Verified Energy Improvements

- Proof of investment in upgrades
- Clarifies differences with “comparable” homes

FY18 HEIA Partner Commitment Highlights

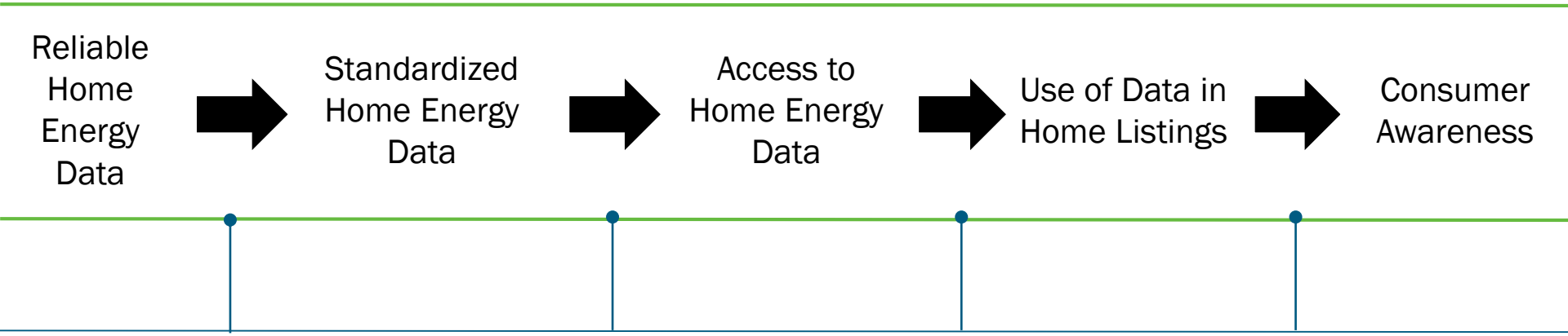
Partner	Commitment
Appraisal Institute	• Map use of Green Addendum • Update green courses
National Association of State Officials	• Create State Policy Toolkit
Real Estate Standards	• Report on the 100 largest MLS' implementation of green fields
Oregon	• Continue development and coordination for data auto-population
Northeast	• Beta test HELIX with an MLS • Pilot study of data flow with several states • Add PV data in addition to efficiency information
Chicago	• Report on new research regarding 2016/17 field usage of energy bill info
California	• Pilot Green Building Registry

Partners Cite Need for Additional Work on…

- Data access & privacy
- Greater uptake by national partners
  - e.g., RESO, CMLS, NAR, Appraisal Institute
- Information campaigns
- Integration with financing

Ongoing Issues

Home Energy Information Pipeline



Ongoing Issue:
Automated Energy Models (AEMs)

Ongoing Issue:
Privacy and data access issues

Ongoing Issue:
Market confusion

Ongoing Issue:
Limited access to financing

In the Works

- **Automated Energy Models**
  - Is there a way to turn these into a positive?
  - RMI analysis, using Home Energy Score data
  - Potential for improved remote asset assessments
- **Opportunities to reduce confusion and grow pipeline**
  - Common metric with ENERGY PLUS
    - Estimated BTUs, cost
    - HERS, Home Energy Score, GSEs, LEED, others?)
  - DOE's WX program
    - Plans to create new "NEAT" – could easily generate Score
- **Integration with financing**
  - Value EE at point of sale AND/OR finance upgrades as part of mortgage
  - Fannie Mae pilots with DOE and others

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Questions?

HELIX Ownership and Governance

Richard Faesy, Energy Futures Group

Three-Phase Approach

Phase 1: HELIX Project

- 2017-2018 NEEP will retain ownership rights and oversight while HELIX is a project of NEEP
- Under DOE grant contract

Phase 2: HELIX Subsidiary

- As HELIX becomes more independent and the future development is clearer HELIX is set up as a wholly-owned subsidiary of NEEP
- Ultimate structure post-NEEP determined before spinning off.
- Ensure HELIX is self-sufficient and financially viable before spun off.

Phase 3: HELIX Independence

- Timing & structure determined by NEEP Subsidiary Board of Directors, then approved by NEEP Board of Directors.
- Premature to determine timing and ultimate structure at this point

Governance Structure

Figure 1. Project Governance Structure

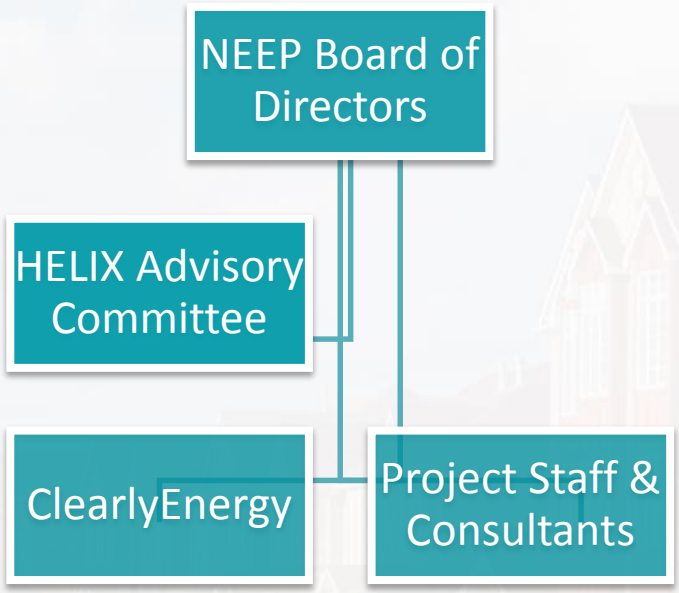
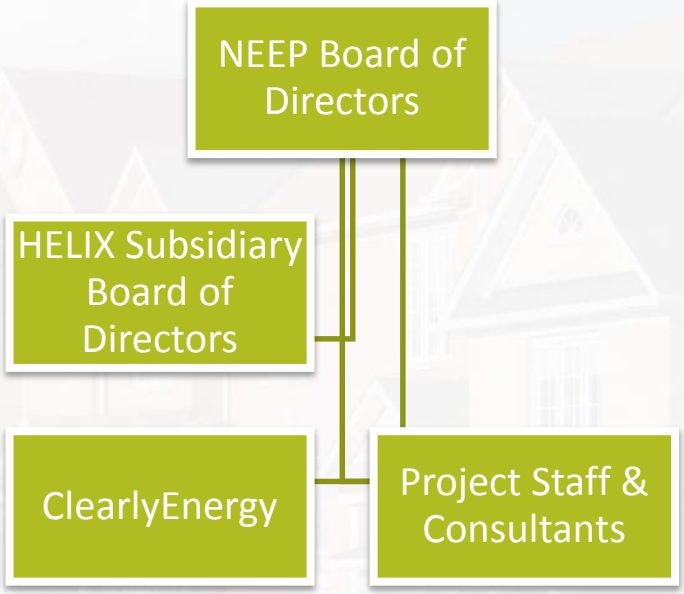


Figure 2. Subsidiary Governance Structure



HELIX Operational Plan

- Understanding Value w/Revenue Models
  - Maintaining non-profit status allows for receiving grants and general support
  - Explore charging for support, membership, and use
  - Need to create customer value and market the benefit of understanding a home's energy performance
- Members
  - HELIX Providers
  - HELIX Users
  - HELIX Supporters

- Populating the database
  - Data consent and privacy provisions will need to be maintained for each state

Questions for HELIX

- How can we best determine the value of HELIX in the real estate marketplace and by jurisdictions with an interest in promoting energy information?
  - What might they be willing to pay for this data?
- What is the interest that data aggregators have in HELIX?
  - Data access -Partnership
  - Financial -Ownership
- How does HELIX relate to other energy auto-pop efforts currently under development (e.g., Pivotal in NC, LBNL's PV Auto-Pop, California's efforts, etc.)?

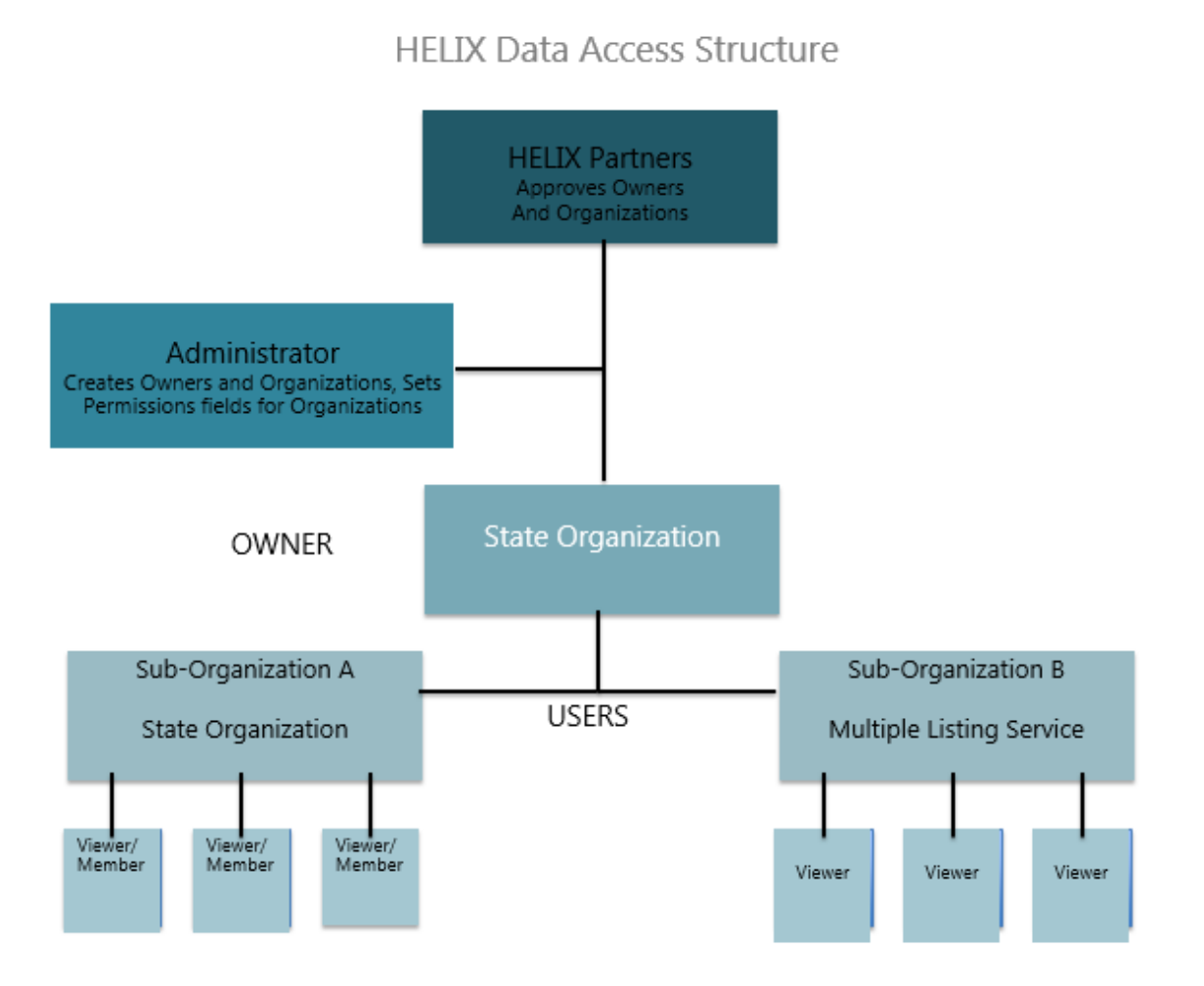
HELIX Database Access Protocols

Mark James, Vermont Law School

HELIX Testing
Database Access Protocols

- Develop Operational Policies to Maintain, Populate and Quality Control the HELIX Database
- Set rules and guidelines that will govern how HELIX manages data flows and access
- Beta testing
  - Making HELIX accessible to individuals and organizations outside of the project team
  - Facilitating access while maintaining privacy

HELIX Testing
Database Access Protocols



HELIX Testing
Database Access Protocols

- State Organizations and Multiple Listing Services
  - Supervising MLS access to data
    - State Organizations will have different management options
      - Full Control
      - Operational Sign Off
      - Minimal Supervision

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Questions?

BREAK for 10 Minutes

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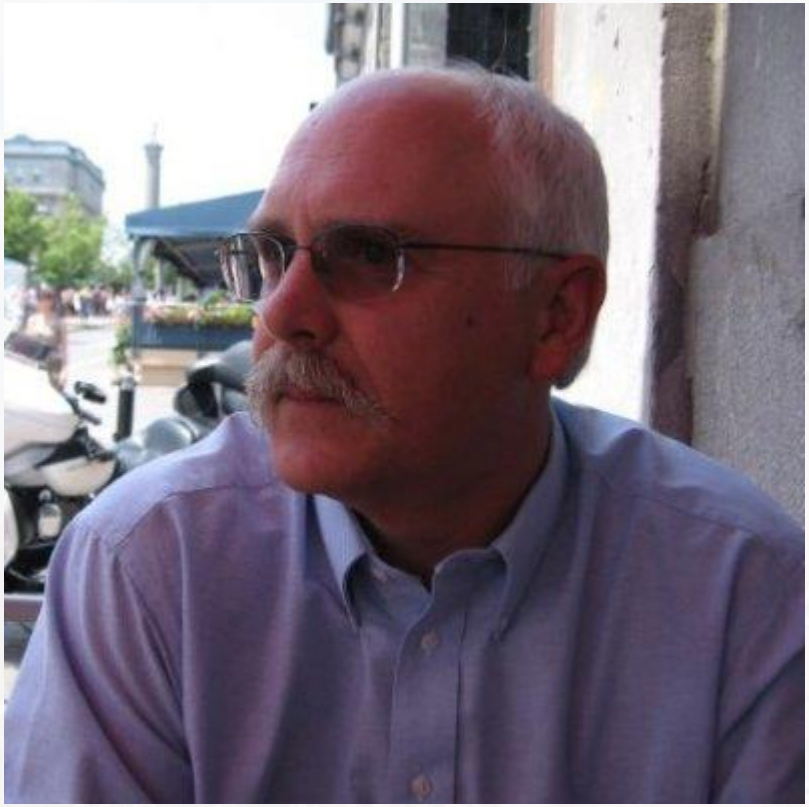
Real Estate Outreach and Education:

This "green stuff" so complicated- is help on the way?



Jeff Gephart, Vermontwise Energy Services

Education for Real Estate Professionals

Jeffrey Gephart
for: Efficiency Vermont

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Virtual Summit
November 15,2017

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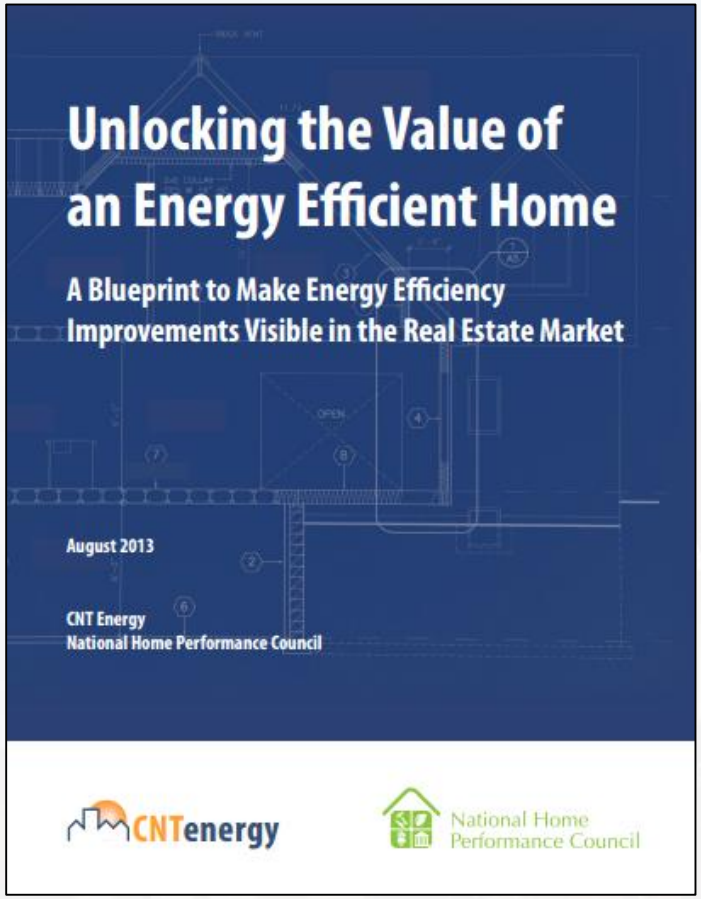
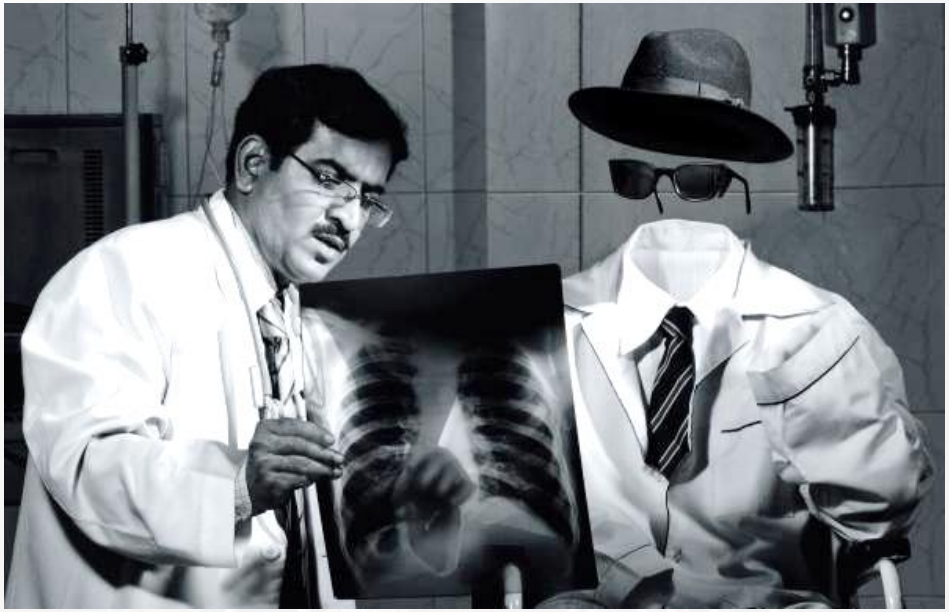


Market Transformation Strategy

Visible Value Blueprint



www.mredllc.com/comms/documents/Unlocking_the_Value_an_Energy_Efficient_Home.pdf

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Visible Value Blueprint – 7 Steps

1. **Document** energy efficiency features and improvements using consistent, standardized methods.
2. **Disclose inventories** of energy efficient homes to track supply.
3. Capitalize on existing [*and/or create*] **high-quality continuing education** and **designation training**.
4. Work with the **MLS** community to ensure that **data** about home energy efficiency improvements are incorporated **into for-sale listings**.
5. Ensure that the **data** about home energy efficiency improvements are incorporated **into** the **appraisal process**.
6. Develop standards and **IT solutions** that allow quicker, more accurate, **automated transfer of data**.
7. Work with partner **financial institutions** to ensure selection of **qualified appraisers**.

Education for Real Estate Professionals

Educational support for real estate professionals is needed because:

- The benefits of energy efficiency and sustainability are of increasing importance to home owners and home buyers.
- New and existing homes built or renovated following building science principles perform differently than the homes we're accustomed to and documentation by accredited, independent 3rd parties is increasing.
- Without knowledge of construction methods and benefits of a high performance home, real estate market professionals: appraisers, lenders, multiple listing systems, and Realtors®, are at increased liability risk when unaware of such major improvements in housing performance.

HELIX Message for Real Estate Pros

There is a lot going on in the green real estate space.

Solar panels, energy scores for homes, and green home certifications make the lives of real estate professionals significantly more difficult.

Can't anyone think of an easy solution?

There is a solution. It's called HELIX.

What's HELIX? HELIX is a place where all of this data is housed.

Imagine a day when you enter an address into your MLS and ALL your listing's green features auto-populate into the MLS.

Credit: Craig Foley, Sustainable Real Estate Consulting Services

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HELIX Message for Real Estate Pros

HELIX is a solution because:

- Data provided is verified by accredited, independent, 3rd parties
- Accurate input into MLS assured with auto-population
- Accurate data reduces liability for real estate professionals and MLS
- Enables real estate professionals to document energy efficiency and green building certifications in for-sale listings
- Improves ability to locate homes with energy efficiency and green building features to purchase, sell, and/or compare to

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We're not going to turn real estate professionals into building scientists but…

Building science?

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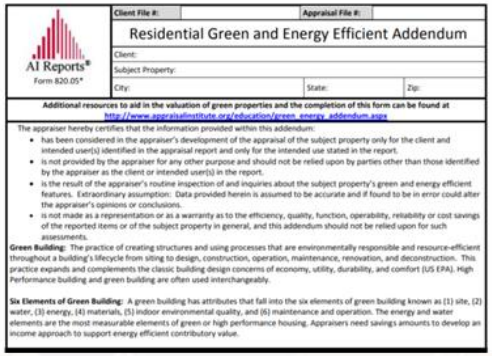
…but we can help them use the tools available: 3rd party verified documentation.

1. **Document** energy efficiency features and improvements using consistent, standardized methods.


AI Reports®
Form 820.05*

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

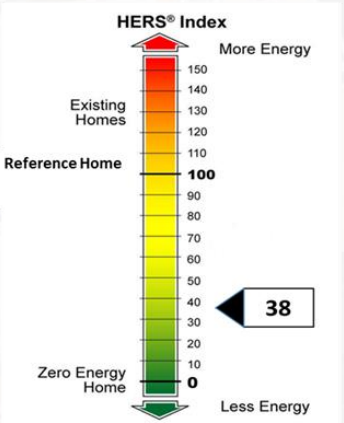
The appraiser hereby certifies that the information provided within this addendum:

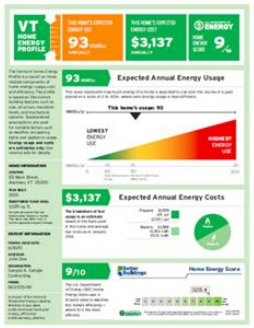
- has been considered in the appraiser's development of the appraisal of the subject property only for the client and intended user(s) identified in the appraisal report and only for the intended use stated in the report.
- is not provided by the appraiser for any other purpose and should not be relied 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.

- **Home Energy Rating**





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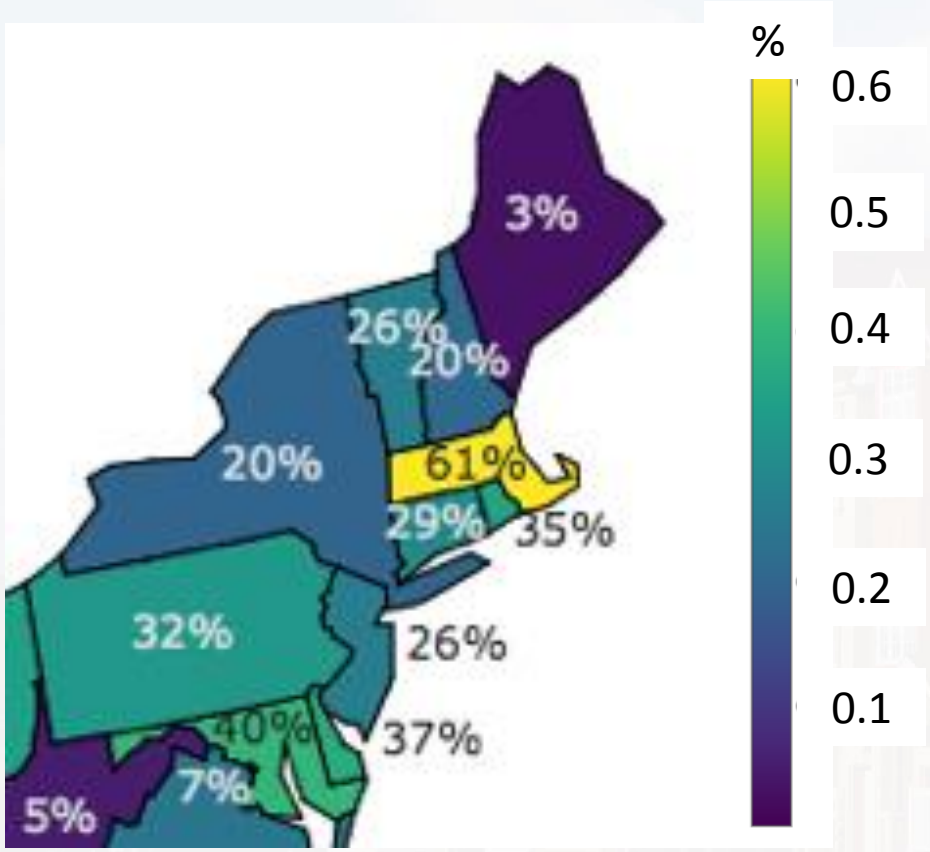
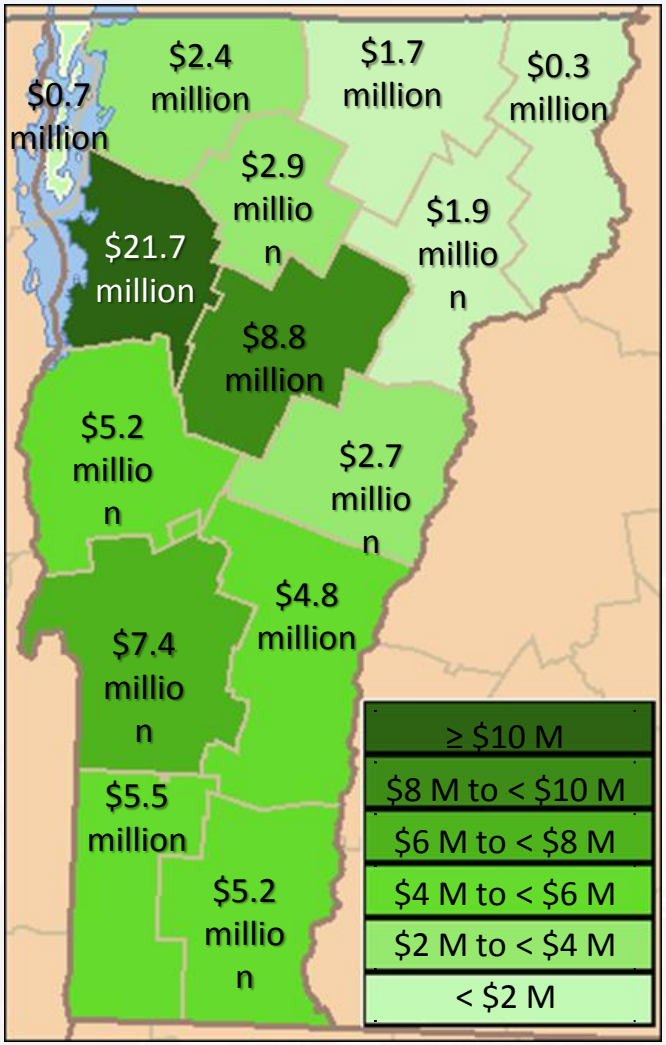
2. **Disclose inventories** of energy efficient homes to track supply.



What does the Northeast's green home inventory look like?

- 2016 new construction with HERS Index Scores
- MA leads the nation with 61% of new homes built in 2016 receiving HERS Scores



Disclosing Inventory via Commission Value

Existing Homes with Comprehensive Energy Audits & Weatherization Work Performed

Commission potential by county:
6% of median home price*
X
# of weatherized homes

*median non-vacation home price Jan-June 2017 – Source:
www.vhfa.org/news/blog/home-prices-rise-northern-vermont-counties-through-june-2017

Real Estate Market Education
Seeking Regional Allies

3. Capitalize on existing [*and/or create*] **high-quality continuing education** and **designation training**.

   Trade associations use education, particularly continuing education (license required), to increase the professionalism of their members and to raise critical, non-dues operating revenue.

Real Estate Market Education
Seeking Regional Allies

Efficiency and building certification programs that can provide state-approved, continuing education courses and instructors should be able to collaborate with the local chapters of the following trade associations to provide education about building efficiency and renewable energy:

Appraisal Institute **Association of Credit Unions** **Council of Multiple Listing Services** **Mortgage Bankers Association** **National Association of REALTORS®** **State Housing Finance Agencies**	**Others?** **Who among you are or know the allies and contacts for HELIX for educational collaboration in your state?** **Let's start getting CE credits approved and scheduling training!**

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Code of Ethics and Standards of Practice
of the NATIONAL ASSOCIATION OF REALTORS®

Article 11

REALTORS® shall **not undertake to provide specialized professional services concerning a type of property or service that is outside their field of competence** unless they engage the assistance of one who is competent on such types of property or service, or unless the facts are fully disclosed to the client. Any persons engaged to provide such assistance shall be so identified to the client and their contribution to the assignment should be set forth.

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Code of Ethics and Standards of Practice
of the NATIONAL ASSOCIATION OF REALTORS®

Article 11

Standard of Practice 11-1

When REALTORS® prepare opinions of real property value or price they must:

1. **be knowledgeable about the type of property being valued,**
2. **have access to the information and resources necessary to formulate an accurate opinion**, and

…unless lack of any of these is disclosed to the party requesting the opinion in advance.

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How do Realtors® stay relevant when evermore connected homes can track & disclose energy use?

Alexa, sell my home.

Real Estate Market Educational Activities

Multiple education strategies (light touch through deep dive) proposed:

- News articles and email blasts promoting education through real estate related associations
- Exhibits at conferences held by real estate related associations
- Short presentations at association meetings or for businesses - 15 to 30 minutes that promote HELIX and deeper educational offerings
- Continuing education credit approved courses (2 to 8 credits)
  - A 2-hour HELIX CE credit course will soon be available for state approval
- Day-long symposiums – *like the Vermont or New Hampshire Green Real Estate Symposiums*
- Designation training (deeper dives - usually more than 1 day)

National Association of Realtors® rolled out their **Green Designation** in 2008.

Out of 1.2 million Realtors® (NAR members), among the 2 million active licensed real estate agents in the U.S., ~50,000 (4%) currently have earned the NAR Green Designation.

Amanda Stinton, Director of Sustainability, National Association of Realtors®

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Vermont Realtors®

NAR **Green Designation** Training
Jan. 17-18, 2018, Manchester, VT

Green Realtor® rock star (*that's how they talk*) Craig Foley, Sustainable Real Estate Consulting Services.

Craig is an NAR Green Designee and course instructor.

TEDxSomerville - March 30, 2014

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4. Work with the **MLS** community to ensure that **data about** home **energy efficiency improvements** are incorporated **into for-sale listings**.

MLS staff provide training on the database and use of the green fields.

Program sponsors and MLS might develop more training opportunities utilizing MLS communications tools.

- Pop-up guides when hovering over green fields
- Webinars appended to MLS
- Other ideas/needs?

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5. Ensure that the **data** about home energy efficiency improvements are incorporated **into** the **appraisal process**.

"Nowadays people know the price of everything and the value of nothing."

Oscar Wilde, *The Picture of Dorian Gray*

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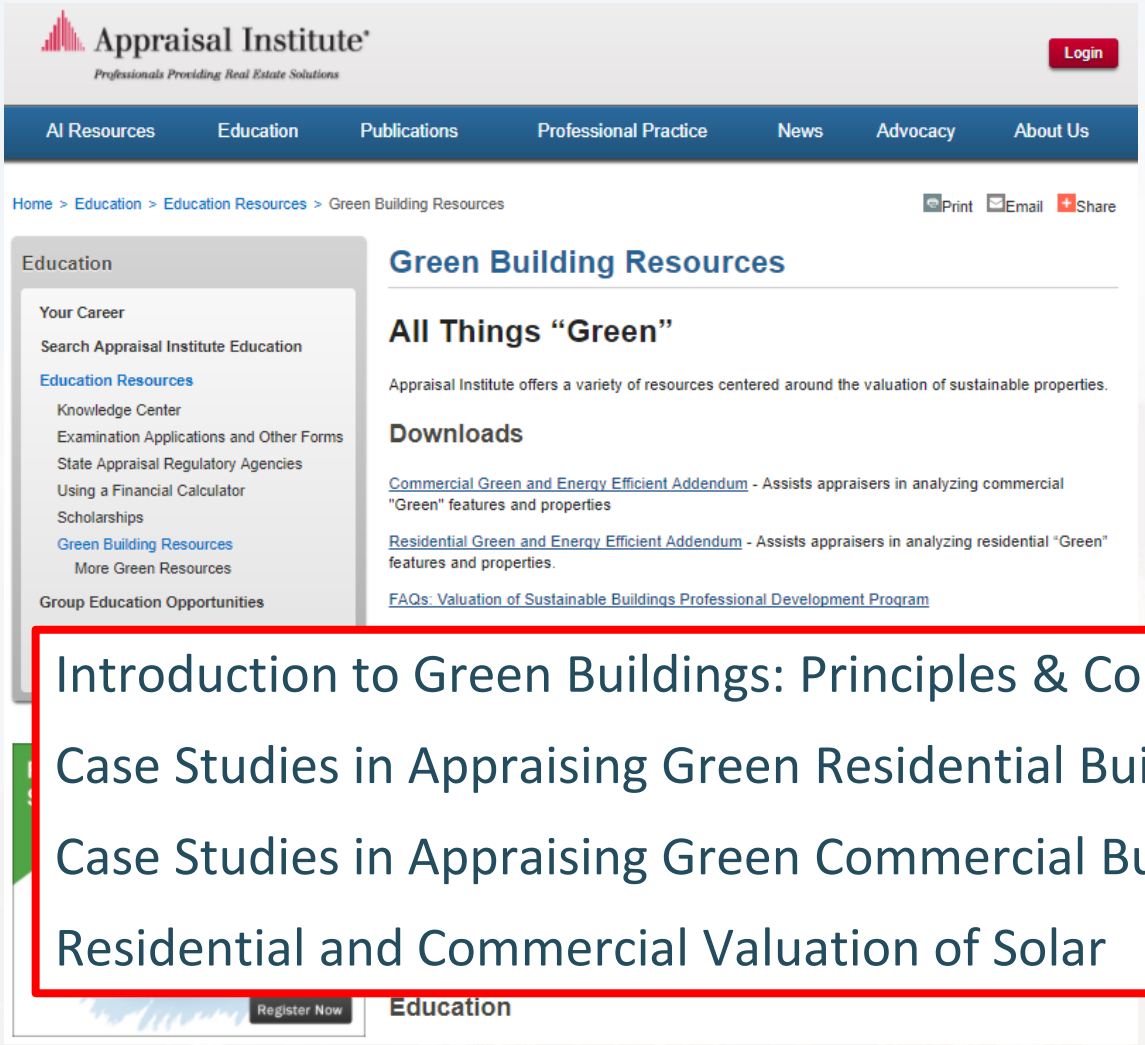

Valuation of Sustainable Buildings Professional Development Program & Registry

Introduction to Green Buildings: Principles & Concepts	7 CEUs
Case Studies in Appraising Green Residential Buildings	7 CEUs
Case Studies in Appraising Green Commercial Buildings	14 CEUs
Residential and Commercial Valuation of Solar	14 CEUs

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Appraisal Institute - Valuation of Sustainable Buildings Professional Registry Residential Listings

Appraisers Accepting For Fee Assignments as of 8/28/17

U.S. States & DC	Residential
Alabama	1
Alaska	9
Arizona	13
Arkansas	4
California	73
Colorado	14
Connecticut	3
Delaware	0
District of Columbia	1
Florida	19
Georgia	19
Hawaii	0
Idaho	0
Illinois	22
Indiana	8
Iowa	3
Kansas	2

U.S. States & DC	Residential
Kentucky	9
Louisiana	0
Maine	6
Maryland	4
Massachusetts	3
Michigan	2
Minnesota	1
Mississippi	0
Missouri	2
Montana	0
Nebraska	0
Nevada	6
New Hampshire	3
New Jersey	6
New Mexico	7
New York	9
North Carolina	3

U.S. States & DC	Residential
North Dakota	0
Ohio	5
Oklahoma	5
Oregon	4
Pennsylvania	4
Rhode Island	1
South Carolina	1
South Dakota	0
Tennessee	4
Texas	11
Utah	18
Vermont	9
Virginia	26
Washington	2
West Virginia	2
Wisconsin	2
Wyoming	0
Total:	346

Appraisal Institute®
Professionals Providing Real Estate Solutions

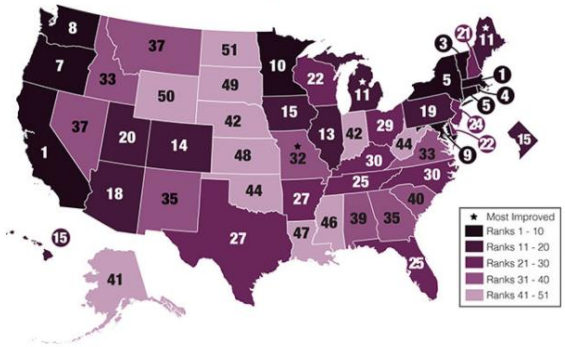
Valuation of Sustainable Buildings Professional Registry Listings		
State	Residential	Commercial
CT	3	1
MA	3	5
ME	6	0
NH	3	1
NY	9	1
RI	1	1
VT	9	5

Appraiser Education – New Course

Online, 8-hour continuing education approved course.

Home > Real Estate > 8 hr-Appraising Energy Efficient Residential Properties OR

8 hr-Appraising Energy Efficient Residential Properties OR



COURSE FEES	$109.00
TOTAL	$109.00

BUY NOW

Course Details
Format: Online
Test Attempts: 1
Percentage required to pass: 70%

Special Instructions
This course is approved for 8 hours of elective continuing education credit.
View course approvals here.

Rich Finigan

Amy McClellan

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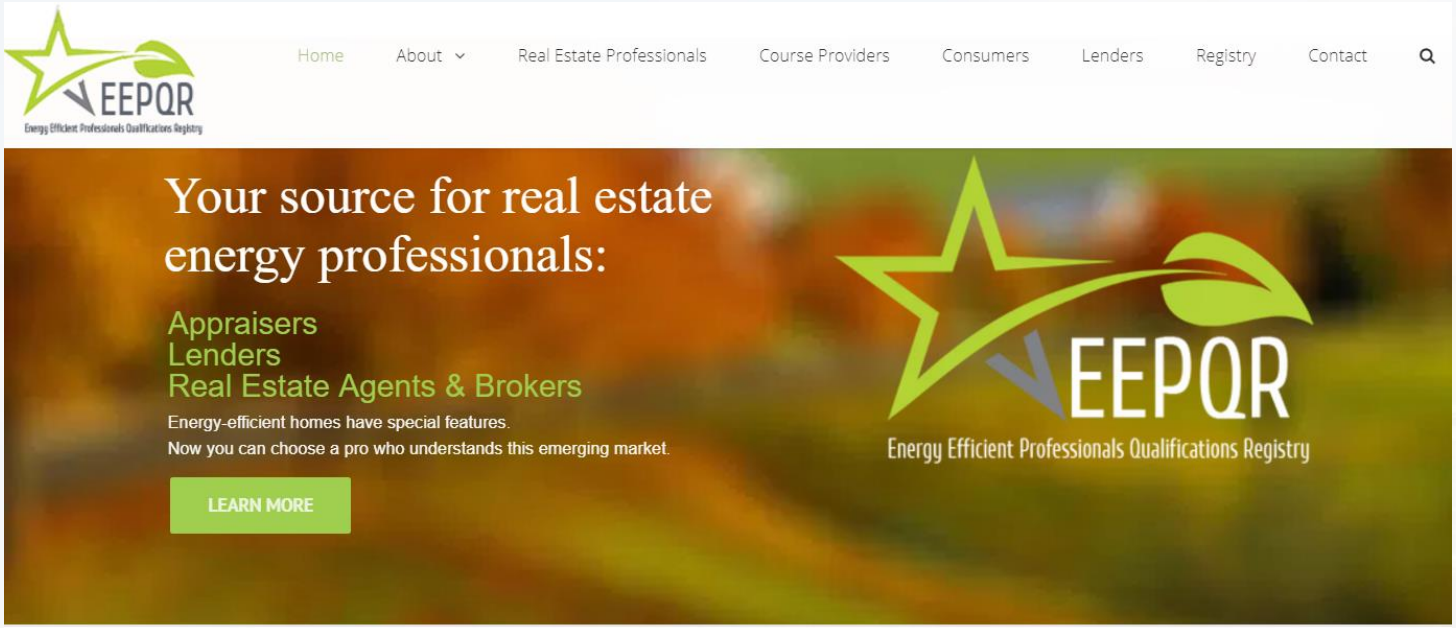
Finding Qualified Professionals



Welcome to the Energy Efficient Professionals Qualifications Registry

The Energy Efficient Professionals Qualifications Registry (EEPQR ~ pronounced "ep-i-cure") is the first "green" registry of real estate professionals. The EEPQR is designed to help consumers find real estate professionals who have the qualifications needed to assist with the home buying and selling process. Professionals listed in the registry have successfully completed advanced training in green building and sustainable practices, which makes them uniquely qualified to help buyers and sellers better understand the green features and benefits of a home.

A new professional registry born out of energy efficiency and real estate educational collaboration.

Vermont Realtors®

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Home Energy Labeling Information eXchange

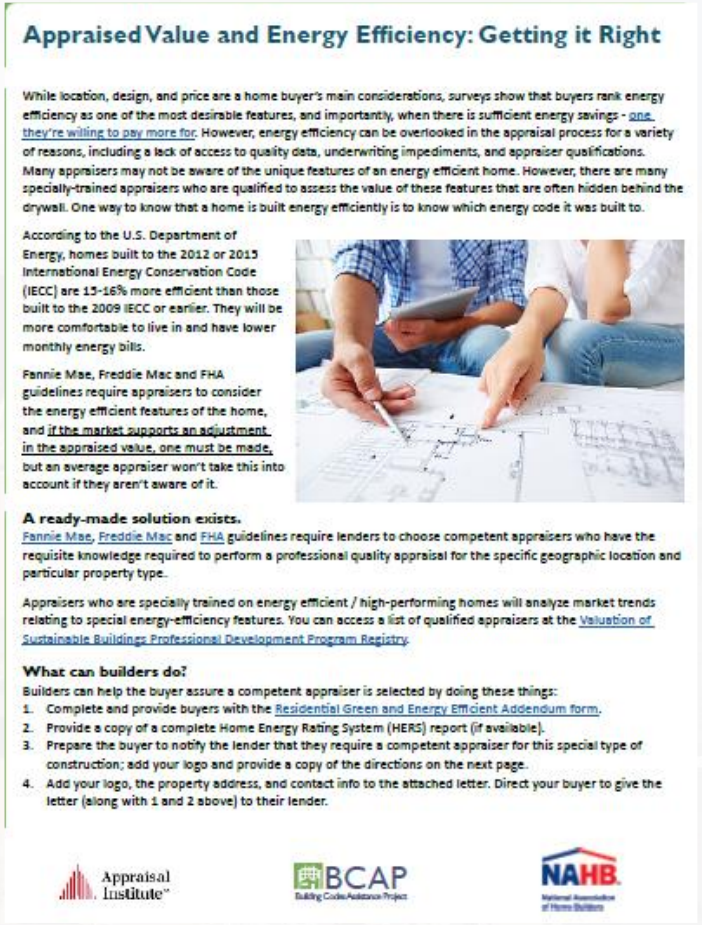
7. Work with partner **financial institutions** to **ensure** selection of **qualified appraisers**.

Engaging Lenders Using: *Appraised Value and Energy Efficiency: Getting It Right*

Explains why there are issues with appraisals:

- Changes in market demand
- Energy code updates
- Fannie Mae, Freddie Mac, FHA requirements for appraiser competency

http://bcap-energy.org/appraised-value-and-energy-efficiency-getting-it-right/



Appraised Value and Energy Efficiency: Getting it Right

While location, design, and price are a home buyer's main considerations, surveys show that buyers rank energy efficiency as one of the most desirable features, and importantly, when there is sufficient energy savings - one they're willing to pay more for. However, energy efficiency can be overlooked in the appraisal process for a variety of reasons, including a lack of access to quality data, underwriting impediments, and appraiser qualifications. Many appraisers may not be aware of the unique features of an energy efficient home. However, there are many specially-trained appraisers who are qualified to assess the value of these features that are often hidden behind the drywall. One way to know that a home is built energy efficiently is to know which energy code it was built to.

According to the U.S. Department of Energy, homes built to the 2012 or 2015 International Energy Conservation Code (IECC) are 15-16% more efficient than those built to the 2009 IECC or earlier. They will be more comfortable to live in and have lower monthly energy bills.

Fannie Mae, Freddie Mac and FHA guidelines require appraisers to consider the energy efficient features of the home, and if the market supports an adjustment in the appraised value, one must be made, but an average appraiser won't take this into account if they aren't aware of it.

A ready-made solution exists.

Fannie Mae, Freddie Mac and FHA guidelines require lenders to choose competent appraisers who have the requisite knowledge required to perform a professional quality appraisal for the specific geographic location and particular property type.

Appraisers who are specially trained on energy efficient / high-performing homes will analyze market trends relating to special energy-efficiency features. You can access a list of qualified appraisers at the Valuation of Sustainable Buildings Professional Development Program Registry.

What can builders do?

Builders can help the buyer assure a competent appraiser is selected by doing these things:

1. Complete and provide buyers with the Residential Green and Energy Efficient Addendum form.
2. Provide a copy of a complete Home Energy Rating System (HERS) report (if available).
3. Prepare the buyer to notify the lender that they require a competent appraiser for this special type of construction; add your logo and provide a copy of the directions on the next page.
4. Add your logo, the property address, and contact info to the attached letter. Direct your buyer to give the letter (along with 1 and 2 above) to their lender.

Appraisal Institute · BCAP Building Code Assistance Project · NAHB National Association of Home Builders

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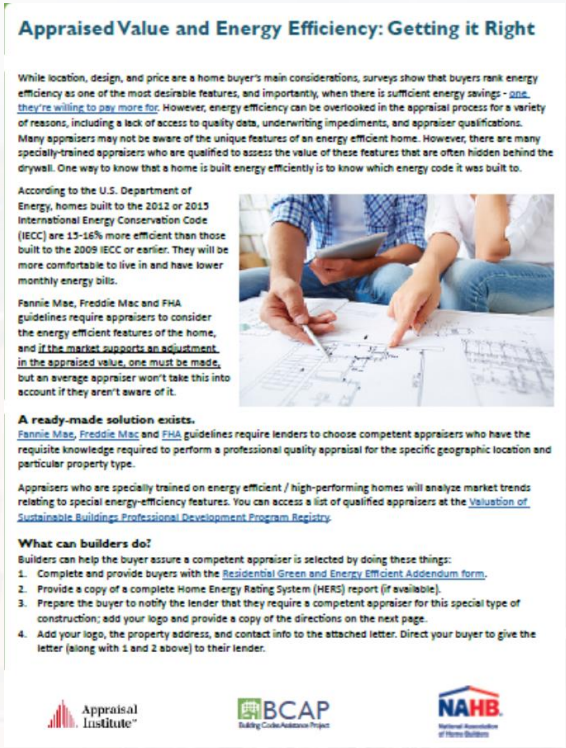
Engaging Lenders Using:

Appraised Value and Energy Efficiency: Getting It Right

Template letters for buyer and lender offer solutions:

- Prepares buyer for the mortgage application and appraisal
- What loan applicants need to do when seeking the mortgage
- For lender it describes why home is a special property type
- Provides a Registry where lenders can find qualified appraisers
- Explains course work those appraisers completed



Appraised Value and Energy Efficiency: Getting it Right

While location, design, and price are a home buyer's main considerations, surveys show that buyers rank energy efficiency as one of the most desirable features, and importantly, when there is sufficient energy savings - one they're willing to pay more for. However, energy efficiency can be overlooked in the appraisal process for a variety of reasons, including a lack of access to quality data, underwriting impediments, and appraiser qualifications. Many appraisers may not be aware of the unique features of an energy efficient home. However, there are many specially-trained appraisers who are qualified to assess the value of these features that are often hidden behind the drywall. One way to know that a home is built energy efficiently is to know which energy code it was built to.

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Fannie Mae, Freddie Mac and FHA guidelines require appraisers to consider the energy efficient features of the home, and if the market supports an adjustment in the appraised value, one must be made, but an average appraiser won't take this into account if they aren't aware of it.

A ready-made solution exists.

Fannie Mae, Freddie Mac and FHA guidelines require lenders to choose competent appraisers who have the requisite knowledge required to perform a professional quality appraisal for the specific geographic location and particular property type.

Appraisers who are specially trained on energy efficient / high-performing homes will analyze market trends relating to special energy-efficiency features. You can access a list of qualified appraisers at the Valuation of Sustainable Buildings Professional Development Program Registry.

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2. Provide a copy of a complete Home Energy Rating System (HERS) report (if available).
3. Prepare the buyer to notify the lender that they require a competent appraiser for this special type of construction; add your logo and provide a copy of the directions on the next page.
4. Add your logo, the property address, and contact info to the attached letter. Direct your buyer to give the letter (along with 1 and 2 above) to their lender.

Appraisal Institute · BCAP · NAHB

HELIX
Home Energy Labeling Information eXchange

Appraised Value & Energy Efficiency: *Getting It Right* – for **Home Performance Contractors**

Appraised Value and Energy Efficiency: Getting it Right

While location, design and price are a home buyer's main considerations, surveys show that buyers rank energy saving features and equipment (e.g., air and duct sealing, insulation, and high-efficiency heating, ventilation, and air conditioning equipment) as desirable features for which buyers are willing to pay more. The home may also have an addition built to the 2012 or 2015 International Energy Conservation Code (2012 IECC or 2015 IECC), which would make the addition between 15 and 16 percent more efficient than if built to previous codes.

However, energy efficiency may be overlooked in the appraisal process for a variety of reasons, including a lack of access to quality data, underwriting impediments, and appraiser qualifications. **Many appraisers may not be aware of the unique features of an energy efficient home.**

To ensure that a home's green and/or energy efficient features and equipment are taken into account during an appraisal, it is important to document the home's energy efficiency features in a standard format. This documentation may be completed as part of an energy upgrade through a program such as the Department of Energy's Home Performance with ENERGY STAR® program or as part of the generation of a recognized energy performance score, such as a Home Energy Score ("HEScore"), a Home Energy Rating System ("HERS") index, or other metric. It is also important for homeowners to choose an appraiser that is qualified to value the green and/or energy efficiency features of a high performing, energy efficient home in the local real estate market.

A Ready-Made Solution Exists

Fannie Mae, Freddie Mac and Federal Housing Administration require appraisers to consider the energy efficient features of the home. There are many specially-trained appraisers who are qualified to assess the value of these features that are often hidden behind the drywall.

What Can Contractors Do?

Contractors can help clients ensure that a qualified appraiser is selected by doing the following things:

1. Complete and provide homeowners with the *Residential Green and Energy Efficient Addendum*, available at http://www.appraisalinstitute.org/assets/1/7/InteractiveB20.04-ResidentialGreenandEnergyEffecientAddendum.pdf.
2. Provide homeowners with a copy of a completed third-party-certified inventory of home's energy efficiency features in a standard format, such as a certificate that conforms to the *Building Performance Institute's 2101-5-2013 Standard Requirements for a Certificate of Completion for Residential Energy Efficiency Upgrades*, available at http://www.hpxmlonline.com/wp-content/uploads/2017/02/BPI-2101-5-2013-Standard-Requirements-for-a-Certificate-of-Completion-for-Residential-Energy-Upgrades-2013-09-03.pdf, and/or a copy of a completed report with a HERS rating, HEScore, or other recognized energy performance score (if available).
3. Prepare the homeowner to notify the lender that they require an appraiser that is qualified to value energy efficient, high performing homes. Add your logo, the property address, and contact information to the letter for Lenders. Direct your client to give the letter (along with information outlined in the bullets above) to their lender.

BCAP · Appraisal Institute · Home Performance Coalition · BPI · EfficiencyFirst

For Buyers

ENSURING A QUALIFIED APPRAISER FOR YOUR HOME

Your home has higher energy efficiency or green standards than many others on the market because you or a previous owner implemented a whole-house energy upgrade, or installed green or high-efficiency equipment and features. Homes like yours typically perform better than homes built during the same period or earlier. Your home may be more healthy and comfortable to live in, and will likely have lower monthly energy bills than comparable homes without these features. Some of your home features may include:

- More wall and ceiling insulation to keep conditioned air inside your home
- Windows that keep the heat out in the summer months to improve comfort
- Fewer drafts and air leaks, which improve indoor comfort and reduce energy costs
- High-efficiency heating, ventilation, and air conditioning ("HVAC") equipment and sealed ducts, which reduce energy consumption and increase comfort by distributing heated and cooled air evenly through the home

What You Need To Know Regarding the Loan/Appraisal Process

Some lenders randomly assign an appraiser to estimate the value of a home. However, yours is not a typical home because it is a higher-performing building or one with unique green or high-performance features. Fannie Mae, Freddie Mac and Federal Housing Administration require appraisers to be qualified to appraise the specific property in the assignment. To ensure that the appraiser takes your home's unique features into account, you should clearly identify the property as a special property type, which requires an appraiser qualified in the valuation of energy efficient, high-performing homes.

What You Need to Do

Provide your lender with one or more of the following information provided to you by the builder, retrofit contractor, homeowner, energy rater, green certification, or Home Energy Rating System ("HERS") report:

- The lender letter regarding this special property type and the need for an appraiser qualified to value energy efficient, high-performing homes.
- A third-party-certified inventory of the home's energy efficiency features in a standard format, such as a certificate that conforms to the *Building Performance Institute's 2101-5-2013 Standard Requirements for a Certificate of Completion for Residential Energy Efficiency Upgrades*, available at http://www.hpxmlonline.com/wp-content/uploads/2017/02/BPI-2101-5-2013-Standard-Requirements-for-a-Certificate-of-Completion-for-Residential-Energy-Upgrades-2013-09-03.pdf.
- A recognized energy performance score, such as a Home Energy Score, a HERS rating, or other metric such as those listed on the Lawrence Berkeley National Laboratory's *Information Atlas for Appraising Green and High-Performing Buildings*, located at: https://sites.google.com/site/appraisinghpbuildings/key-topics/rating-systems.

BCAP · Appraisal Institute · Home Performance Coalition · BPI · EfficiencyFirst

For Lenders

Dear Lender,

The home located at: _____
is a special property type. It has green and/or energy efficient, high-performing features that may include:

- Existing home that has received an energy upgrade through a program such as the Department of Energy's Home Performance with ENERGY STAR® program
- Existing home with green, energy efficient or other high-performing features such as high-efficiency HVAC equipment, high-quality insulation, air or duct sealing, and similar features
- An addition built to the 2012 or 2015 International Energy Conservation Code (2012 IECC or 2015 IECC)

Description of energy efficient and/or green features:

_____
_____
_____
_____
_____
_____

A completed copy of the *Residential Green and Energy Efficient Addendum*, and the energy report (if available, or two years of utility bills) should be included with the appraisal engagement letter. Fannie Mae, Freddie Mac and Federal Housing Administration require lenders to choose appraisers properly qualified to value the green and/or energy efficiency features of a high performing, energy efficient home in the local real estate market.

You can access a list of appraisers who may have those qualifications at the *Valuation of Sustainable Buildings Professional Development Program Registry*, available at: http://www.myappraisalinstitute.org/findappraiser/green_sustainability_residential.aspx.

These specially-trained appraisers have completed 28 hours of education and passed three exams. If the appraisers on your panel are not on this list, they can complete 14 education hours online to get started at: http://www.myappraisalinstitute.org/education/course_descrb/Default.aspx?prgrm_nbr=826&key_type=CO.

Appraisers on this list are not required to be Appraisal Institute members but must take the required courses and pass the exams to be listed.

If you have questions, please contact:

NAME: _____
PHONE: _____
EMAIL ADDRESS: _____

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Home Energy Labeling Information eXchange

Appraised Value & Energy Efficiency: Getting It Right - for **Realtors®**

NATIONAL ASSOCIATION of REALTORS®
Official Designation

green

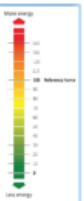
Appraised Value and Energy Efficiency: Getting it Right

While location, design, and price are a home buyer's main considerations, surveys show that buyers rank energy efficiency as one of the most desirable features, and importantly, when there is sufficient energy savings - one they're willing to pay more for[1]. However, energy efficiency can be overlooked in the appraisal and/or listing process for a variety of reasons, including a lack of access to data, underwriting impediments, and appraiser or agent qualifications. Many appraisers and/or agents may not be aware of the unique features or benefits of an energy efficient home. However, many appraisers and real estate agents are qualified to identify these features that are often hidden behind drywall. One way to peg the efficiency of a home is to know which energy code it was built to, or ask the homeowner if the home has earned an energy or green certification. A quick address search of the RESNET HERS Index database is a good place to start. If rated July 2012 or later, the RESNET registry will reveal the home's HERS Index.

According to the U.S. Department of Energy, homes built to the 2012 or 2015 International Energy Conservation Code (IECC) are 15-16% more efficient than those built to the 2009. They will typically be more comfortable to live in, have better overall performance, and lower monthly energy bills.

Fannie Mae, Freddie Mac and FHA require appraisers to consider the energy efficient features of the home, and if the market supports an adjustment in the appraised value, one must be made. Often, appraisers won't take energy efficient and green features into account if they aren't aware of them. This is where the listing agent must be sure that such features are accurately identified in searchable MLS fields and appropriate documents attached for potential buyers and appraisers to review.

The "HERS Index" scores a home's energy efficiency – the lower the score, the more efficient the home. A score of – 0 – indicates the home is "net zero energy" or produces as much energy as it uses. A score of 100 indicates the home is approximately built to 2006 energy code standards.



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A ready-made solution exists.

Fannie Mae[2], Freddie Mac[3] and FHA[4] require lenders to choose appraisers who have the requisite knowledge required to perform a professional quality appraisal for the specific geographic location and/or who are competent to appraise a particular property type. The Uniform Standards of Professional Appraisal Practice (USPAP) promulgated by the Appraisal Standards Board (ASB) of The Appraisal Foundation defines "competence" requirements for appraisers where USPAP is applicable.

[1] http://bcap-energy.org/homebuyer-demand-for-energy-codes/
[2] https://www.fanniemae.com/content/guide/sel122614.pdf#page=590
[3] http://www.freddiemac.com/singlefamily/appraiser_independence_faq.html#30
[4] http://portal.hud.gov/hudportal/documents/huddoc?id=40001HSGH.pdf#page=73

FOR BUYERS
ENSURING A QUALIFIED APPRAISER FOR YOUR HOME

Your home has higher energy efficiency or green standards than many others on the market. It should be more comfortable to live in and have lower monthly energy bills. Homes built to the 2015 International Energy Conservation Code (IECC) and the current Vermont Residential Building Energy Standard, are 15-16% more efficient than those built to the 2009 IECC or earlier. Some of your home features may include:

- More wall and ceiling insulation to keep conditioned air inside your home
- Windows that keep the heat out in the summer months to improve comfort
- Fewer drafts and air leaks, which improve indoor comfort
- Or, you may have a home built well before the new code but have invested in energy or green retrofits that makes your home more efficient than other homes built during the same time frame.

What You Need To Know Regarding the Loan/Appraisal Process

Some lenders randomly assign an appraiser to estimate the value of a home. However, yours is not a typical home if it is a higher-performing building or one with unique green features. Fannie Mae, Freddie Mac and FHA require that appraisers be appropriately qualified to appraise the specific property in the assignment. If you do not clearly identify the property as a special property type requiring an appraiser properly qualified in the valuation of energy efficient, high-performance homes, you may risk that an appraiser without the necessary qualifications will be chosen and that appraiser may not take these features into account.

What You Need to Do

Provide your lender with these things provided to you by the builder, homeowner, energy rater, green certification, or complete HERS Report:

- The lender letter regarding this special property type and the need for an appraiser properly qualified to value energy efficient, high-performing homes.
- The Appraisal Institute's Residential Green and Energy Efficiency Addendum, completed, if possible, with the assistance of the builder, energy rater, or green rater.
- The Home Energy Rating System (HERS) Report (if available)
- Vermont Home Energy Profile and/or Home Energy Score Report (A rating of 1-10; *applicable for existing homes only*).
- Documentation certifying any 3rd party verified building certifications earned.

FOR LENDERS

Dear Lender,

The home located at: _____
is a special property type. It is a green, and/or energy efficient, high-performing home as shown below:

- ☐ 2015 International Energy Conservation Code (2015 IECC) - the current Vermont Residential Building Energy Standard
- ☐ Existing home with Energy/Green Retrofits

Description of energy efficient and/or green upgrades:

_____
_____
_____
_____
_____
_____

A copy of the Green and Energy Efficient Addendum form, and the energy report (if available, or two years of utility bills) should be included with the appraisal engagement letter. Fannie Mae, Freddie Mac and FHA require lenders to choose appraisers properly qualified to value the green and/or energy efficiency features of a high performing, energy efficient home in the local real estate market.

You can access a list of appraisers who may have those qualifications at the *Valuation of Sustainable Buildings Professional Development Program Registry*, available at:

www.myappraisalinstitute.org/findappraiser/green_sustainability_residential.aspx.

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www.myappraisalinstitute.org/education/course_descrb/Default.aspx?prgrm_nbr=826&key_type=CO

Appraisers on this list are not required to be Appraisal Institute members but must take the required courses and pass the exams to be listed.

If you have questions, please contact:

NAME: _____
PHONE: _____
EMAIL ADDRESS: _____

www.greenresourcecouncil.org/Appraisal-Links

An opportunity not to be surprised by calls for real estate professionals competent regarding energy efficiency and renewable energy.

for Friday, April 22, 2016

- *AVCU Board Proposes Dual Membership Bylaw Amendment*
- *Course on Valuating Solar Promoted by VT Green Home Alliance*
- *CU Direct's Thrive! Taking Place May 5-6 at Foxwoods*
- *26 CUs, 1/4 Million Members Affected by Ecuador Earthquake*
- *Reminder: Register Now for NEFEC's May 6th Spring Meeting*
- *THANKS! to AVCU's Take a Chance Auction Donors*

ASSOCIATION of VERMONT CREDIT UNIONS

Announcing AI's ***Residential and Commercial Valuation of Solar*** course & promoting ***Appraised Value and Energy Efficiency: Getting It Right***.

Money talks – be fluent

Lenders need to convey that competence in appraising high performance homes is a must have in their rotation list or through their AMC.

Who has more influence on appraiser training than lenders?

HELIX
Home Energy Labeling Information eXchange

Too much of this green stuff?

Imagine a day when you enter an address into your MLS and **ALL** your listing's **green features auto-populate** into the **MLS**.

HELIX
Home Energy Labeling Information eXchange

HELIX
Home Energy Labeling Information eXchange

Questions?

Synergistic Activities

PV Auto-Pop and EMPRESS

Ben Hoen,

Lawrence Berkley National Labs

Richard Faesy,

Energy Futures Group

PV Auto-Pop:
Update and Synergistic Opportunities with HELIX

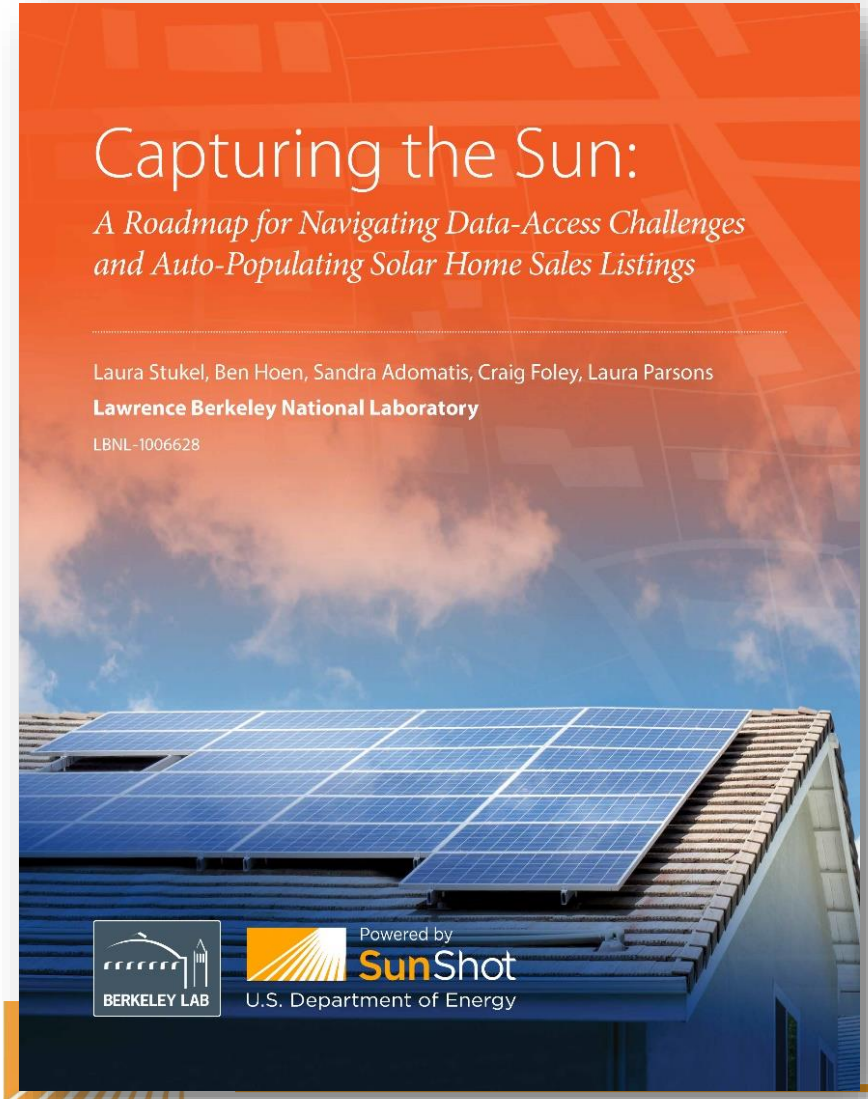
Ben Hoen

HELIX
Virtual Summit

Nov 15, 2017

This work was supported by the Office of Energy Efficiency and Renewable Energy (Solar Energy Technologies Office) of the U.S. Department of Energy under Contract No. DE-AC02-05CH11231

Capturing The Sun: A Roadmap



Lays out how solar characteristics can be "auto-popped" in MLSs

- Authors from real estate, appraisal, and MLS worlds
- Examines roadblocks
- Offers next steps
- Case studies from three geographies

Solar Field Specification For MLSs

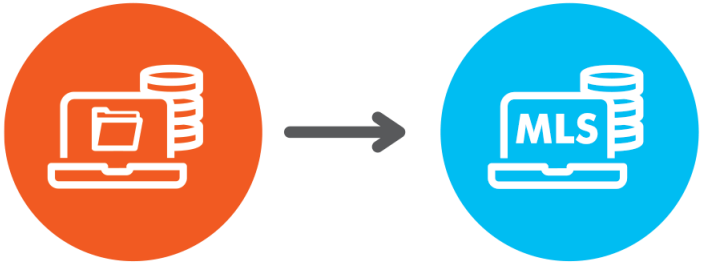
Data required for auto-pop of PV listings:

- Address
- Size of the system
- Year the system was installed
- Ownership details
- Actual or estimated annual system output

Direct To MLS Pathway

Tax aggregator imports data from the existing solar repository, then feeds to MLS

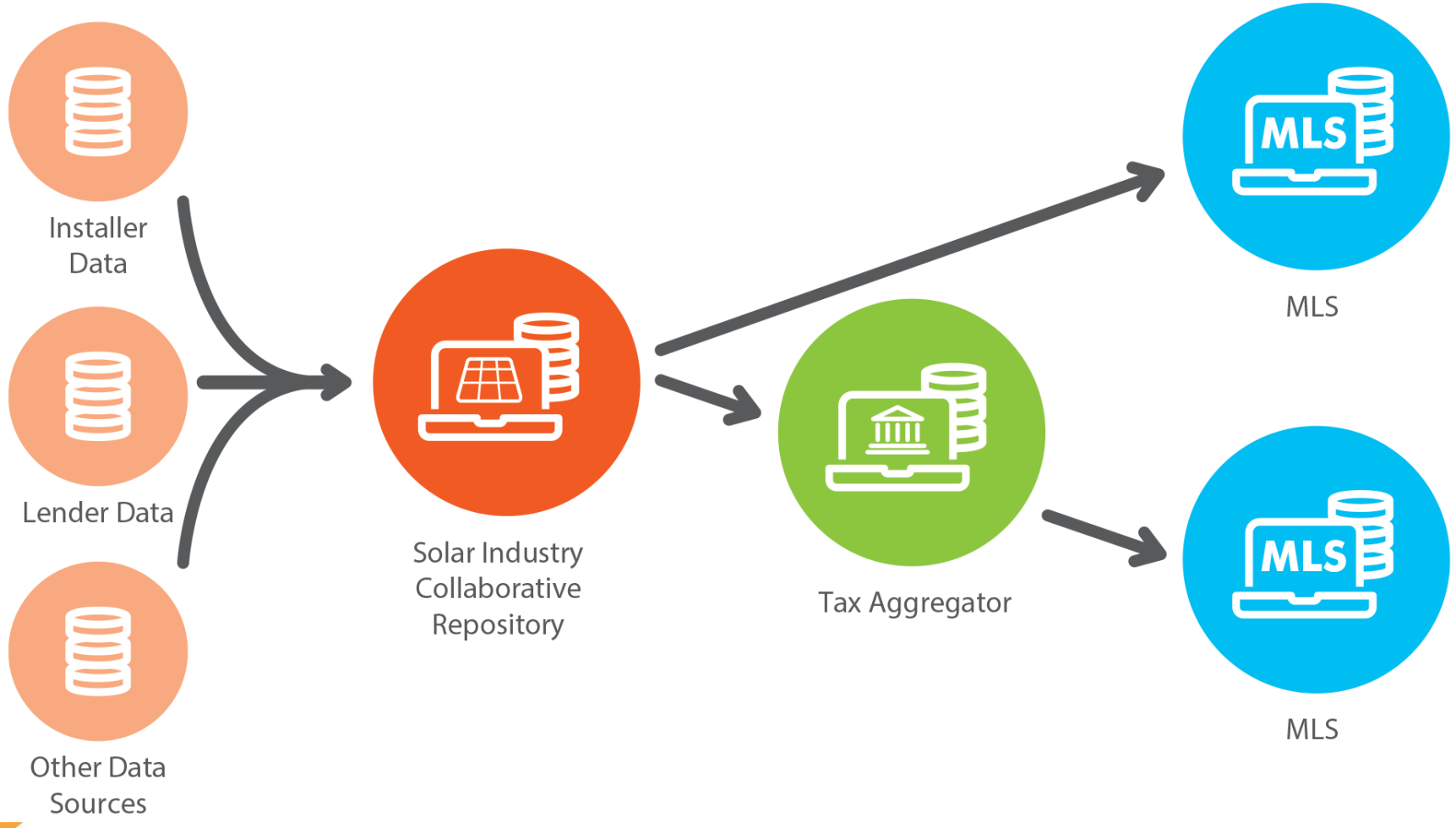
MLS imports directly from the existing solar repository



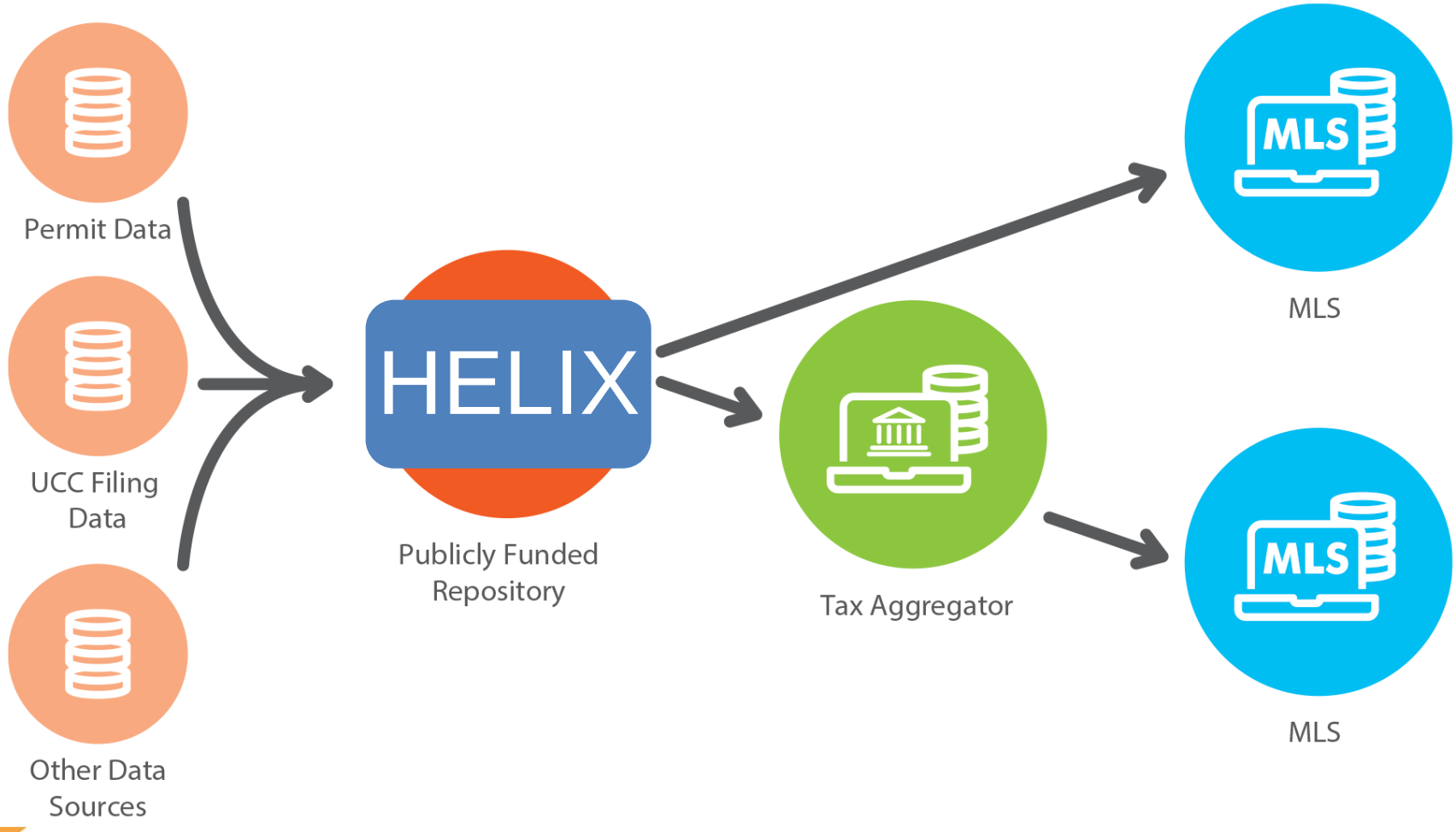
SunShot
U.S. Department of Energy

BERKELEY LAB

Solar Industry Collaborative Pathway



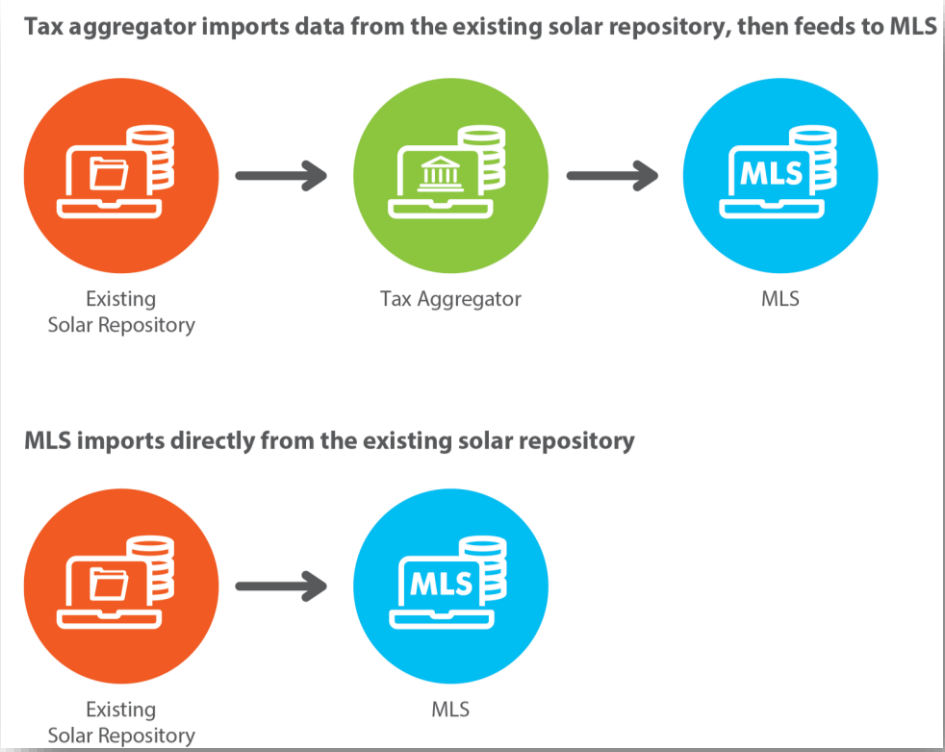
Publicly Funded Pathway



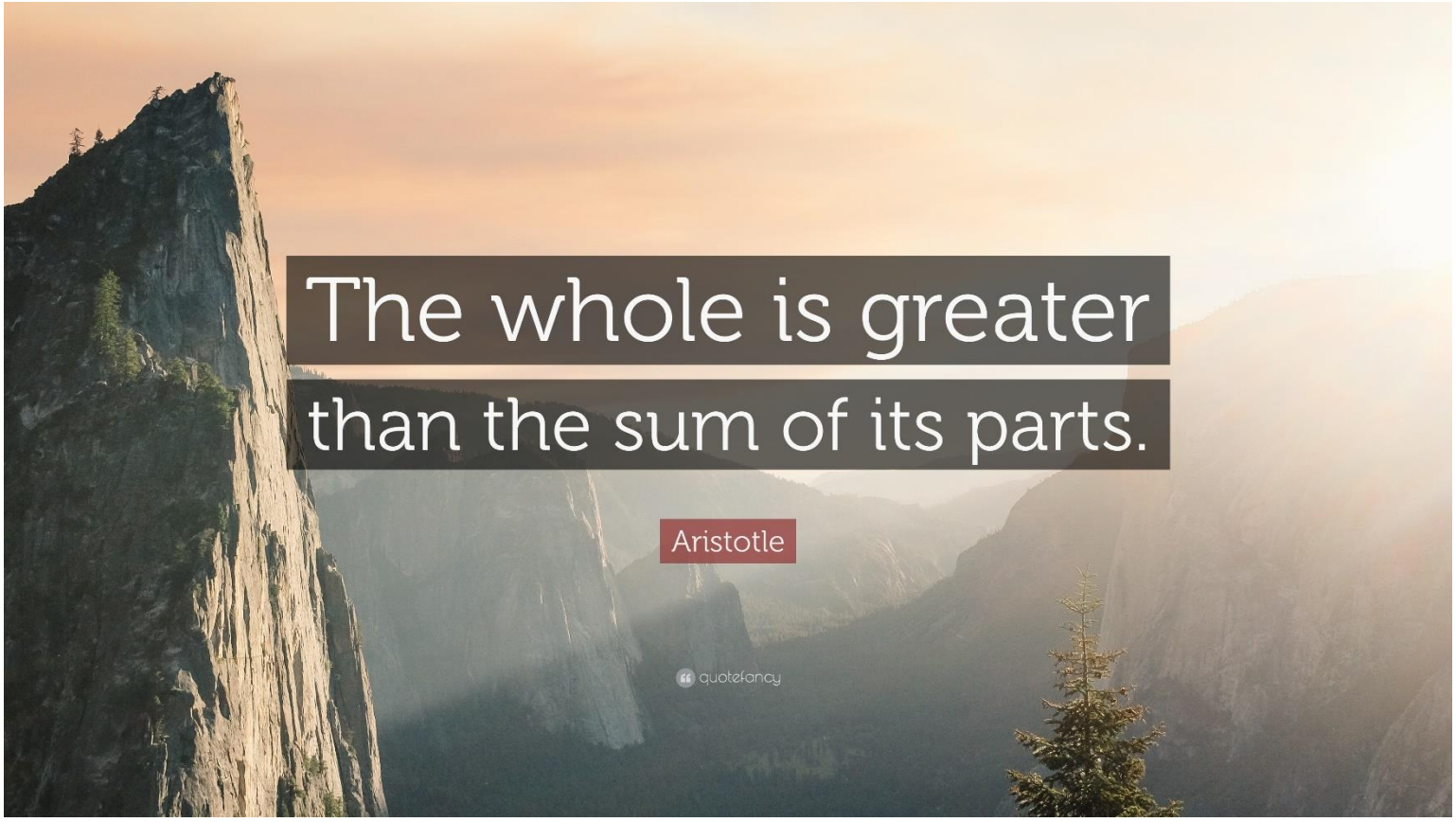
PV Auto-Pop Implementation Efforts Are Ongoing

5 Focus Geographies:

- Vermont
- Massachusetts
- Connecticut
- Southern California
- Colorado



Solar + Home Asset Ratings



Thank You

Ben Hoen
Lawrence Berkeley National Laboratory
845-758-1896
bhoen@lbl.gov

Links

Selling Into The Sun

Appraising Into The Sun

Leasing Into The Sun

Capturing The Sun

EMPRESS

(Energy Metrics to Promote Residential Energy Scorecards in States)

Richard Faesy, Energy Futures Group

STATE OF RHODE ISLAND
OFFICE OF ENERGY RESOURCES

NASEO
National Association of State Energy Officials

ENERGY FUTURES GROUP

The 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)

NASEO

earth advantage

ARKANSAS Economic Development Commission ENERGY OFFICE

DOER Massachusetts Department of Energy Resources

ENERGY FUTURES GROUP

MISSOURI Department of Economic Development Division of Energy

Vermont Energy Investment Corporation

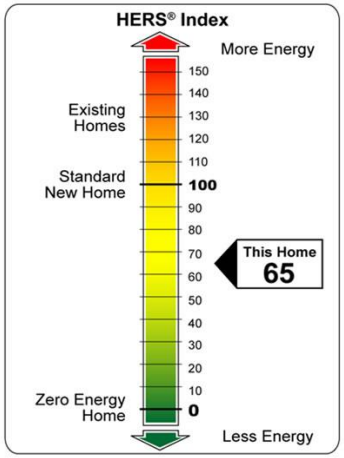
OREGON DEPARTMENT OF ENERGY

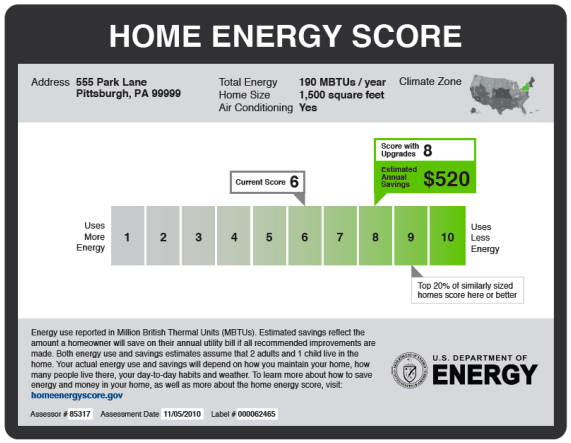
ENERGY FUTURES GROUP

NASEO

STATE OF RHODE ISLAND OFFICE OF ENERGY RESOURCES

Background





- Home Energy Labels have the potential to transform the residential building market by making energy efficiency visible
- 2 primary systems provide info on home energy performance in the US:
  - Home Energy Rating System (HERS) from the Residential Energy Services Network (RESNET)
  - Home Energy Score (HEScore) from the US Department of Energy (DOE)
- These two systems calculate and represent energy performance quite differently – leading to market confusion

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More Background

- **Scores & Certifications:**
  - LEED
  - Energy Star
  - HERS
  - HES
  - National Green Building Standard
  - Living Building Challenge
  - Etc.

Background Continued

- In the absence of transparency mandates, it's challenging to reach widespread market adoption of home energy scores/labels
- Many EE program administrators are also reluctant to incorporate scores into their programs without receiving attributable savings credit

New policies & regulatory approaches are needed to promote/incentivize the use of energy scores

Goals of the DOE SEP Grant

Goal 1: More closely align HERS and HEScore, so ratings and performance data are comparable and translatable

Goal 2: Develop and promote model policies and programs that encourage the voluntary use of residential energy data

Goal 3: Educate State Energy Offices, the real estate market, and other stakeholders on the policies, programs, processes, and market-facing information associated with a harmonized approach to home energy labeling

Key Tasks: Goal 1 (Harmonization)

- Facilitate conversations between stakeholders to reduce market confusion
- Standardize labeling tool outputs
- Produce a final report with recommendations:
- Support EnergyPlus as a common modeling engine for both systems

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Label Recommendations

- **Primary Metrics**
  - HERS 1-100
  - Home Energy Score 1-10
  - Site MMBtu/year
  - kWh-Equivalent/year
  - Greenhouse Gas Footprint
- **Cost Metrics**
- **Fuel Use and Price**
- **Supporting Information**
- **Supplemental Information**
- **Policy Objective**
  - Greenhouse Gas Reduction
  - Energy Use Reduction & Cost Savings
- **Program Design Considerations**
  - Durable
  - Granular
  - Readily Understood by Consumers
  - Cost of Delivery
  - Finance Industry Recognition

Key Tasks: Goal 2 (Policies/Programs)

- Convene stakeholder roundtables
- Review legal issues associated with energy policy transparency
- Review existing national, state, and municipal policies and regulations
- Develop a policy toolkit to include models of policies, legislation, regulations, and governance frameworks for states

Key Tasks: Goal 3 (Education)

- Disseminate the policy toolkit to a wide group of stakeholders including state energy offices, governor's energy advisors and state legislative personnel

- Share policy toolkit and harmonization recommendations at conferences in 2018, and through webinars, newsletters & websites

Timeline

- **2017:**
  - Stakeholder roundtables
  - Energy label metrics recommendations
  - Policy toolkit
  - EnergyPlus Working Group
- **2018:**
  - Harmonization recommendations to DOE, RESNET, states and jurisdictions
  - Toolkit and recommendations dissemination

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HELIX
Home Energy Labeling Information eXchange

Questions?

The HELIX Pilot

The market and policy drivers for beta testing HELIX

Elizabeth Murphy, United Illuminating

Julia Dumaine, Connecticut DEEP

Meg Garabrant,
New England Real Estate Network

Kevin Rose,
National Grid Rhode Island

Using the Home Energy Score to Build an Energy Efficient Real Estate Market

Connecticut Department of Energy and Environmental Protection

Agenda

1) What is Energize Connecticut?
2) Connecticut's Vision for the Future
3) How Connecticut is implementing the Home Energy Score
4) Next Steps

Energize Connecticut

- Created in 1998 by the Connecticut Legislature
- $240 million, ratepayer-funded initiative dedicated to empowering Connecticut to make smart energy choices, save money, and use clean, affordable energy.
- Managed and administered by
  - The Connecticut Energy Efficiency Fund
  - The Connecticut Department of Energy and Environmental Protection
  - The Connecticut Green Bank
  - Eversource
  - United Illuminating

Connecticut Department of ENERGY & ENVIRONMENTAL PROTECTION

energize CONNECTICUT CT SM

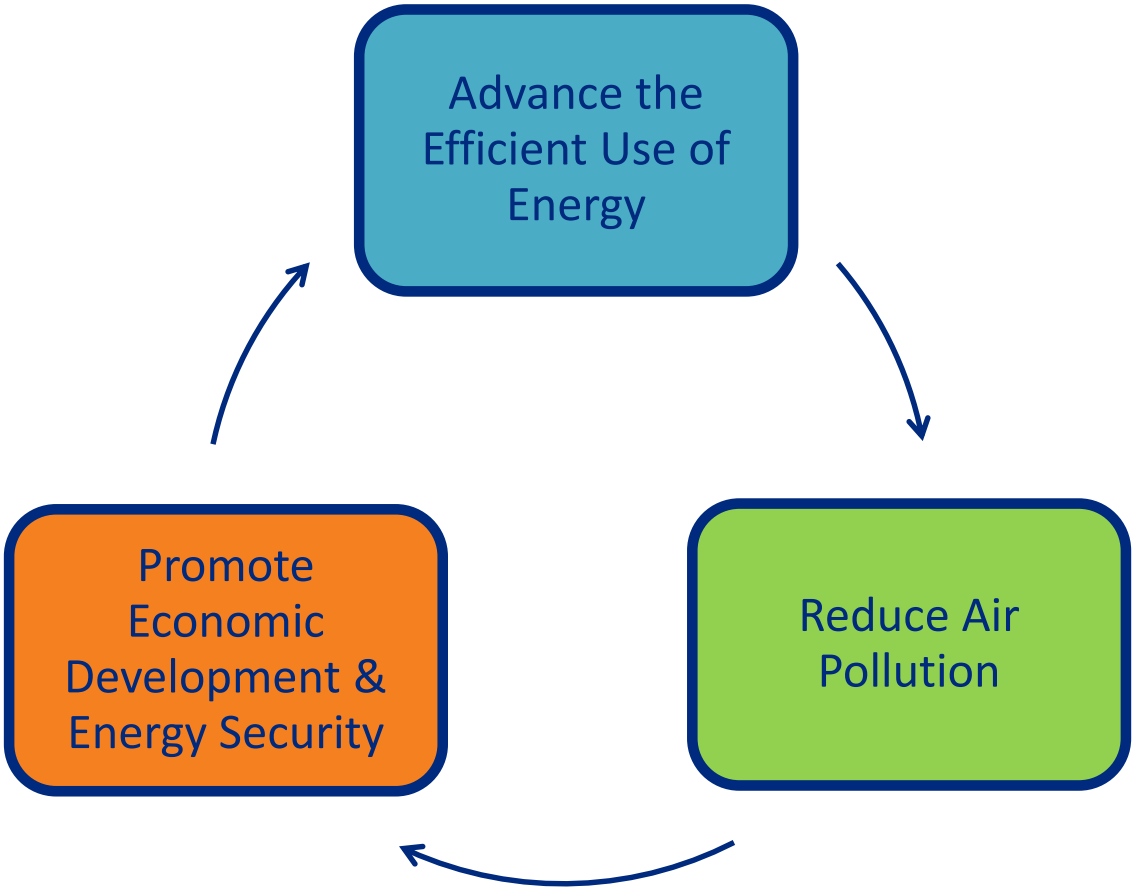
CONNECTICUT GREEN BANK SM

UI SCG CNG

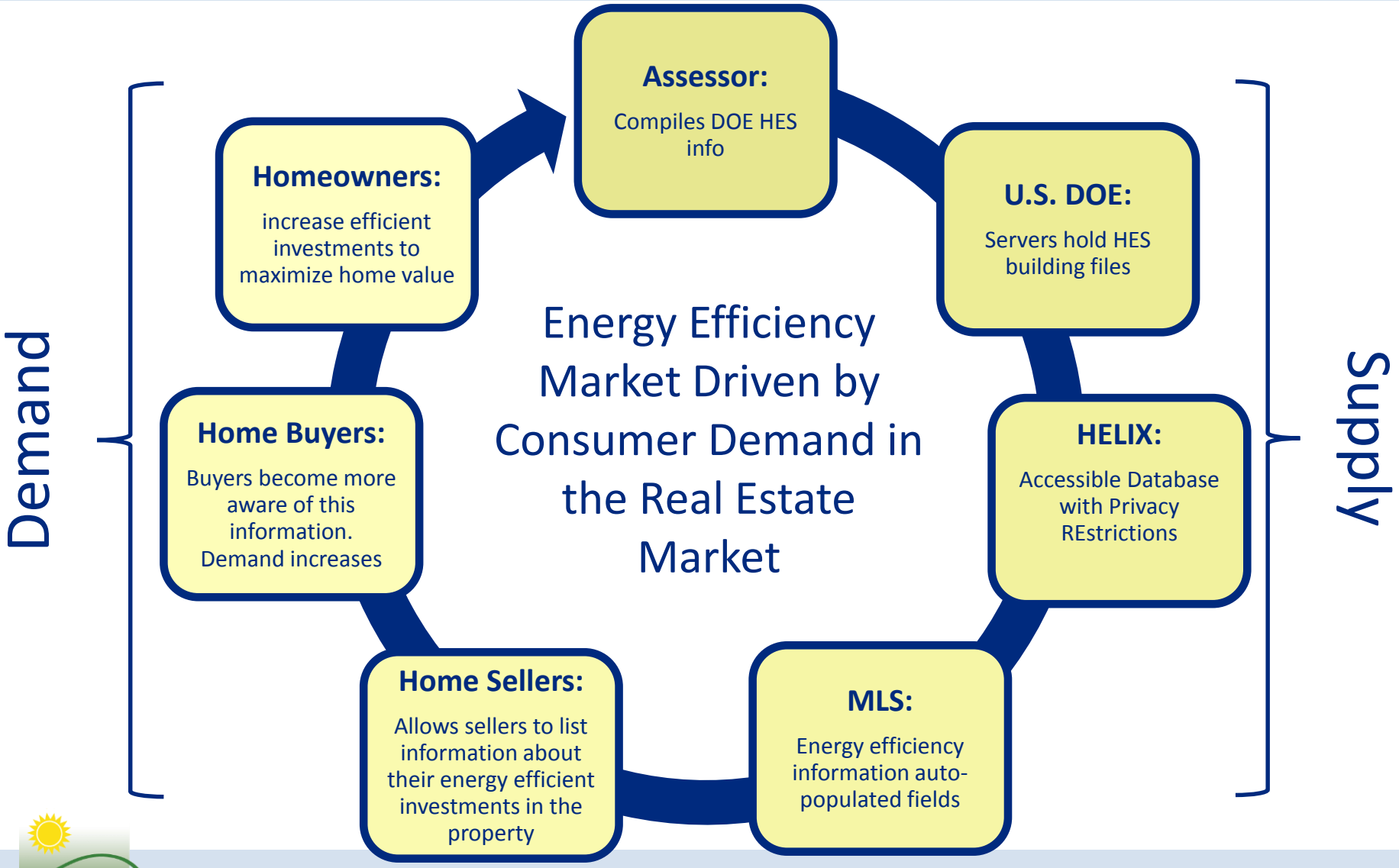
Empowering you to make smart energy choices

EVERSOURCE

Energy Efficiency Fund Mission



Future State Vision

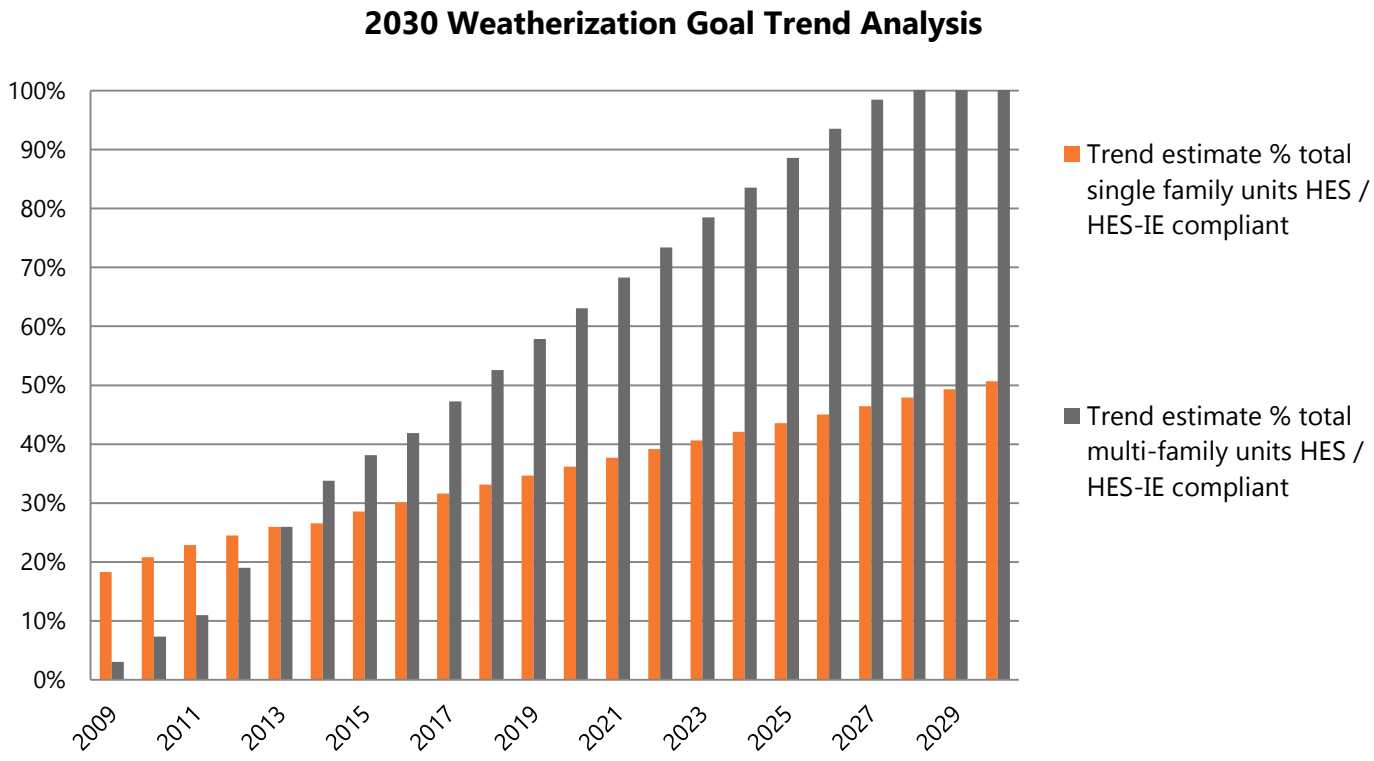


Current State

Fast Facts

- 70% built before 1980
- 44% oil heated
- 80% single family

Statutory goal of weatherizing **80%** of all homes by 2030



Energize Connecticut: Home Energy Solutions (HES)

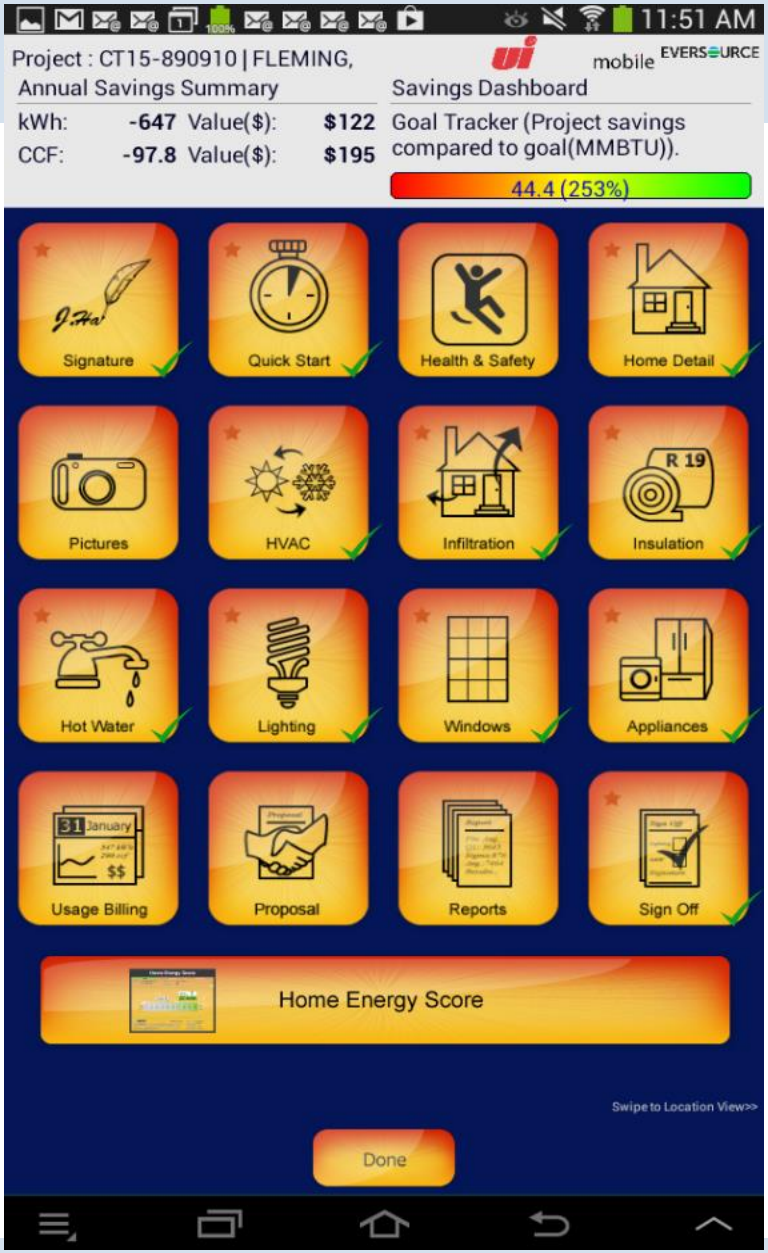
- Connecticut's HPwES program offering direct-install energy efficiency products and services for single family (1-4 units) homes
- Comprehensive energy assessment for a low customer co-pay
- BPI certified technician:
  - Addresses all energy-saving opportunities
  - Generates Home Energy Score
  - Qualifies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

Home Energy Score Integration

- Connecticut was first statewide implementer in April 2015
  - Over 25,000 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 Home Energy Score
- Collects customer signature on release electronically
- Models savings based on usage
- E-mails comprehensive report to customer while onsite, including Home Energy Score report with recommendations



Engagement with Solar & Green Bank

- 2017 Coffee and… matchmaking events hosted by utilities and Green Bank
  - Designed to integrate energy efficiency and solar
  - Promoted Home Energy Score to solar and home improvement contractors
- Home Energy Score report is now the preferred proof of energy audit required to access Green Bank financing and incentives

Engagement with the Real Estate Industry

- Currently in preliminary stages of collaboration with
  - MLS
  - Local realtor association
- Key topics during discussions
  - Connecticut is not mandating scores (voluntary)
  - Quality assurance and consistency
  - Data sharing
  - Educating the industry

Next Steps: HELIX Beta Testing

- Connecticut utilities are exploring participating in HELIX beta testing
  - Protection of customer data is primary concern
- Short term action items include:
  - Modifying the HES customer release to obtain customer authorization to share Home Energy Score data with third parties
  - Identifying how information will be shared with HELIX (automated versus manual data transfer)
  - Designating HELIX access

Next Steps: Further Industry Engagement

- Further integrate with the MLS
- Local realtor outreach
  - Continue to engage as many as possible
- Strategize appraiser engagement
- Continue labeling homes as HES assessments are completed

Meg Garabrant

Meg is the Director of Marketing & Communications for the NEREN® MLS serving all of NH and VT with listings and members also in MA and ME, and the ability for members and listings in RI and CT. Meg oversees third party integrations, product, and member training & education. She is responsible for ensuring RESO field compliance and she has been greening the MLS since 2008. Meg is Chair of the CMLS Green Section Council.

HELIX Project – Why MLS Involvement

- Training/Education/Awareness – over 10,000 users
- Data Standards / Technical Implementation
- Data Distribution
  - IDX (Member websites)
  - NEREN.com - Public-facing website – search listings
  - Third party websites (as directed)
- Resource repository
- Auto-Population (PV in place already)
- Measure Impact
- Improve

Data Standards

RESO develops, promotes and maintains, through an open process, voluntary electronic commerce standards for the real estate industry.

Listing Input Forms

Green Mktg & 3rd Party Ver.

Green Energy Efficient:

Appliances	Exposure/Shade	Insulation	Thermostat
Constructions	HVAC	Lighting	Water heater
Doors	Incentives	Roof	Windows

NEREN Residential Listing Input Form

*Denotes Required/Conditionally Required field

Green Energy Generation: Solar / Wind

Green Indoor Air Quality: Contaminant Control / Integrated Pest Management / Moisture Control / Ventilation

Green H2O (Water) Sustainability:

Conserving Methods	Recyclable Materials	Renewable Materials
Onsite Recycling Center	Regionally-Sourced Materials	Salvaged Materials

Green H2O (Water) Conservation:

Gray Water System	Low-Flow Fixtures	Water-Smart Landscaping
Green Infrastructure	Water Recycling	

Green Verification Program (3 sets, if needed):

Blower Door Test	Indoor airPLUS	Passive House (PHIUS+)
ENERGY STAR Certified Homes	LEED for Homes	Residential New Construction Svcs
EnerPhit	NGBS New Construction	Vermont Home Energy Profile
HERS	NGBS Small Project Remodel	WaterSense
Home Energy Score	NGBS Whole-Home Remodel	Zero Energy Ready Home (DOE Challenge Home)
Home Performance with ENERGY STAR	OTHER	

Listing Input Forms

Power Production

Power Production Type (2 sets, if needed): Photovoltaics (Solar) / Wind Mount Location: Ground / Roof

Mount Type: Fixed Rack / Pole / Tracker Power Production Size: _____

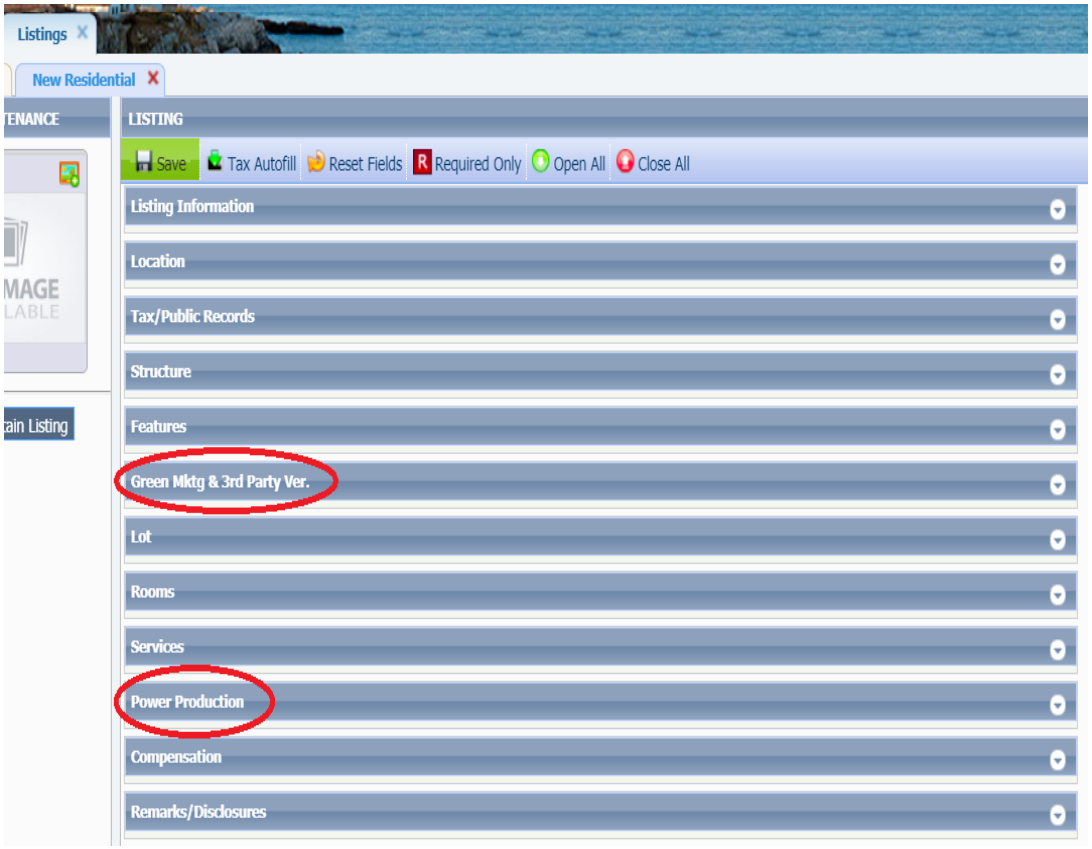
Power Production Annual: _____ Power Production Annual Status: Actual / Estimated / Partially Estimated

Power Production Year Install: _____

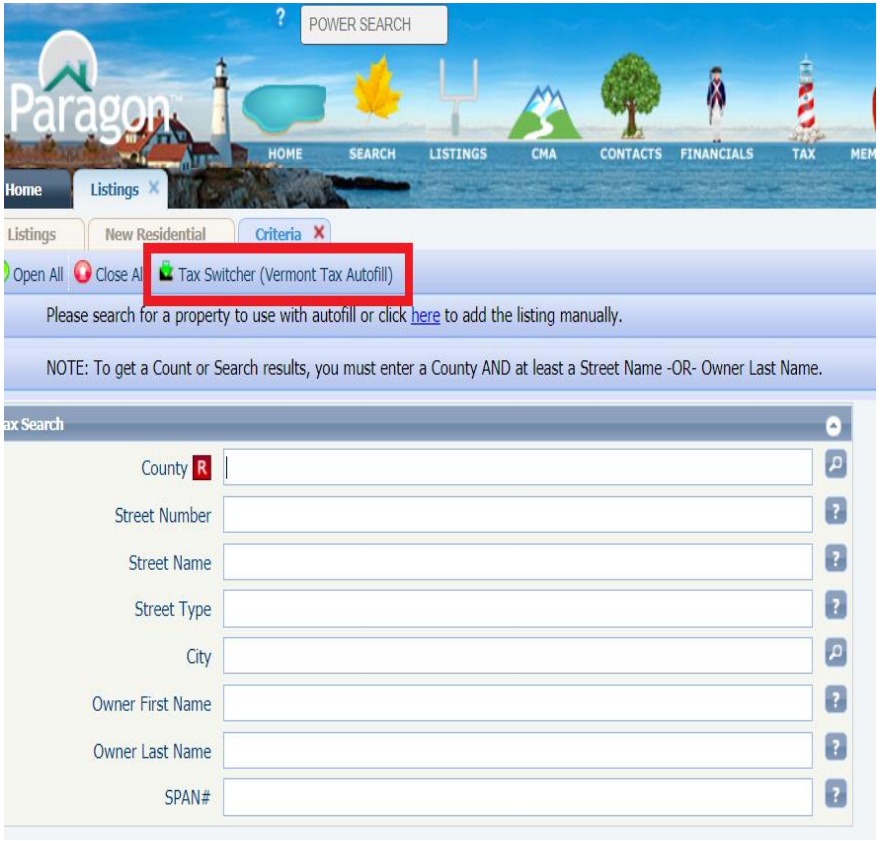
Power Production Verification Source:

Administrator	Contractor / Installer	Program Sponsor	See Remarks
Assessor	Other	Program Verifier	
Builder	Owner	Public Records	

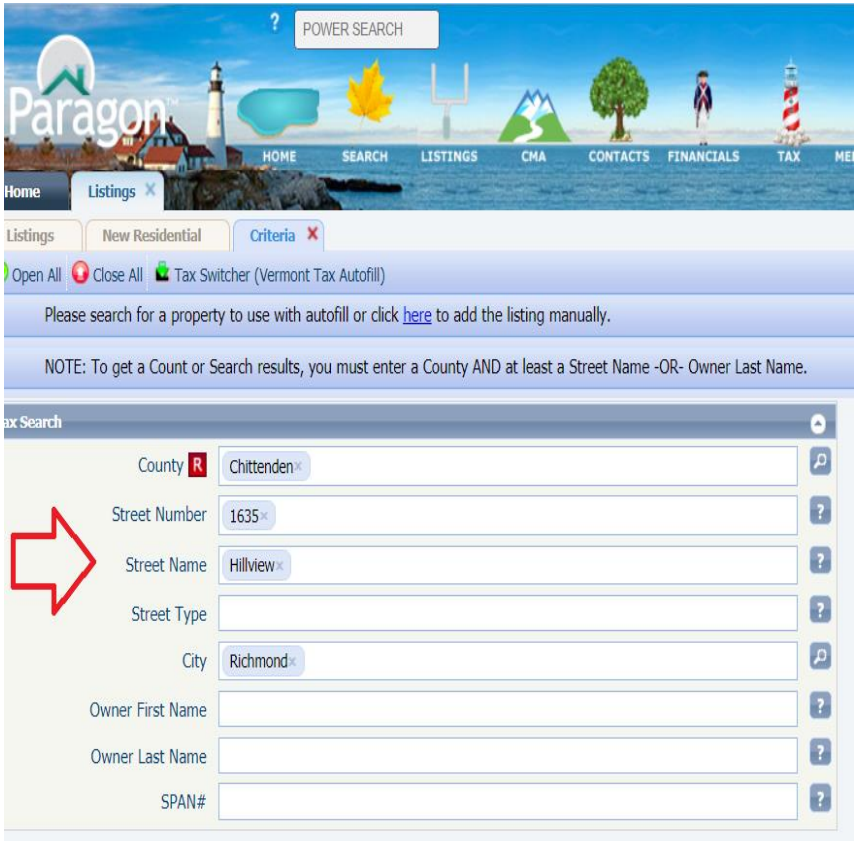
Listing Input



VT PV Auto-Population Pilot



VT PV Auto-Population Pilot



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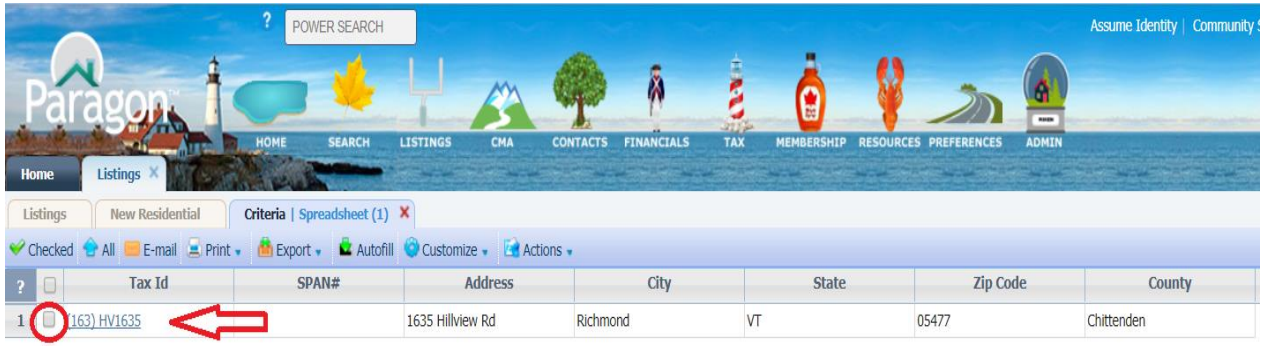
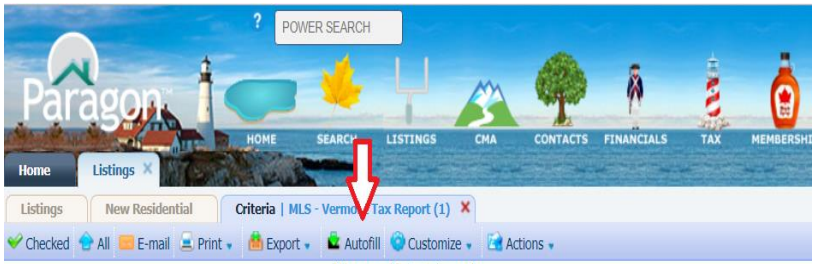


VT PV Auto-Population Pilot



Vermont Tax Report

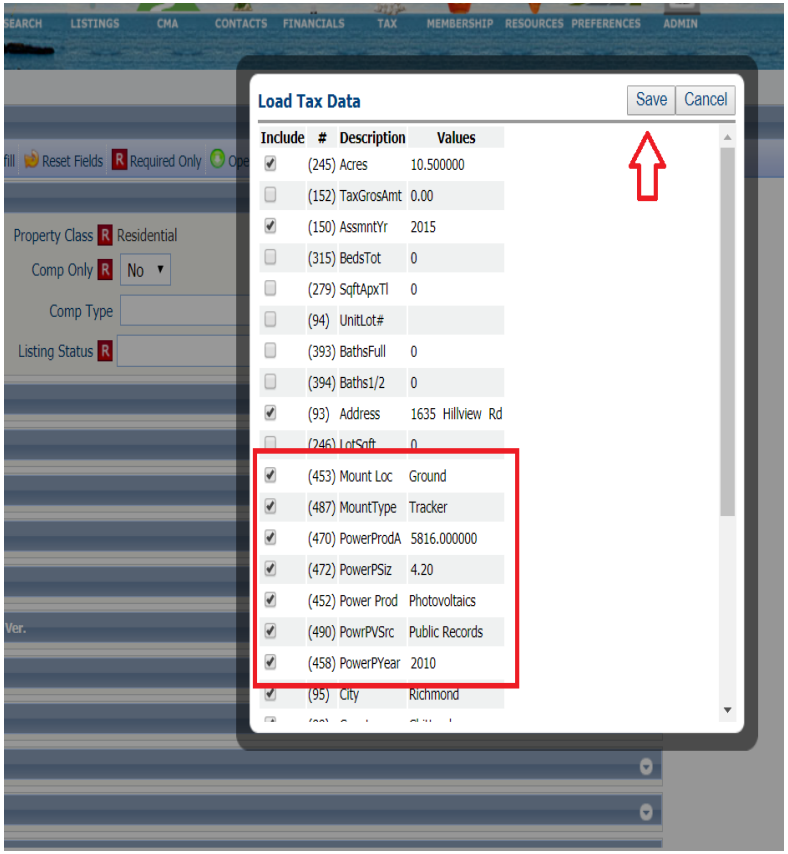
Tax & Legal Info			
Tax Id	(163) HV1635	Annual Tax	0
Tax Year	0	Total Assessment	409600
Assessment Year	2015	Legal Description	DWEL
Zoning			

Address Info			
Address	1635 Hillview Rd	Condo Unit #	
City	Richmond	State	VT
Zip Code	05477	Zip Plus 4	9156
County	Chittenden	Subdivision	

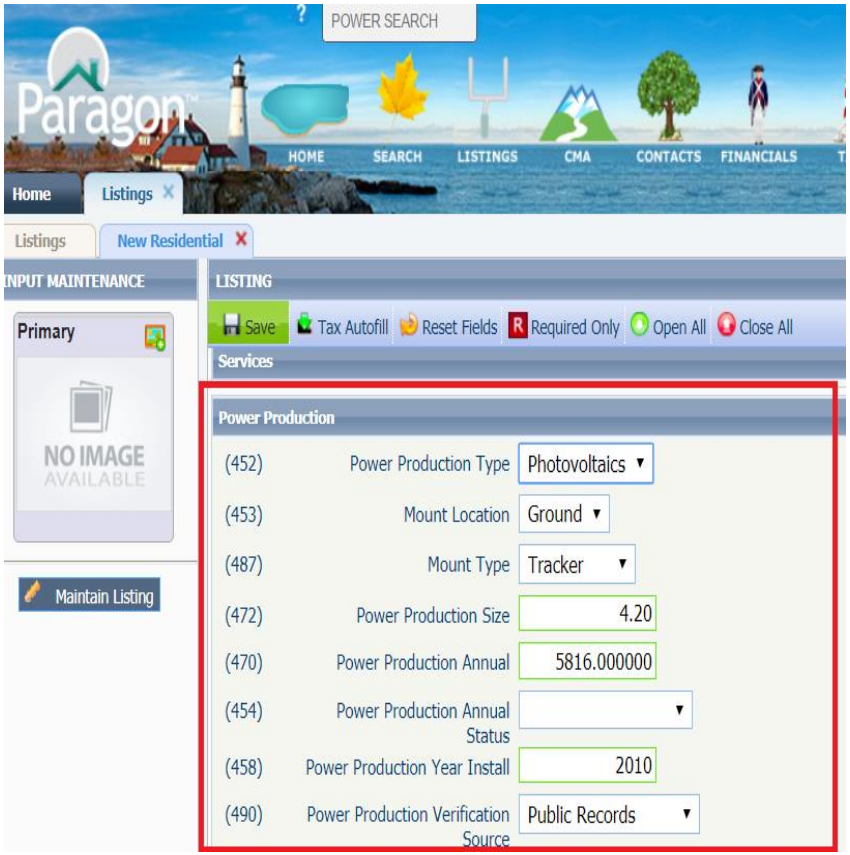
Property Characteristics			
Full Baths		Half Baths	
Baths		Bedrooms	
Fireplaces		Stories	
Building SqFt	0	Year Built	0
Lot Size		Lot SqFt	457380
Acreage	10.50	Number of Buildings	0
Number of Units			

Power Production			
Mount Location	Ground	Mount Type	Tracker
Power Production Size	4.20	Power Production Annual	5816
Power Production Year	2010	Power Production	Public Records
Install		Verification Source	
Power Production Type	Photovoltaics		

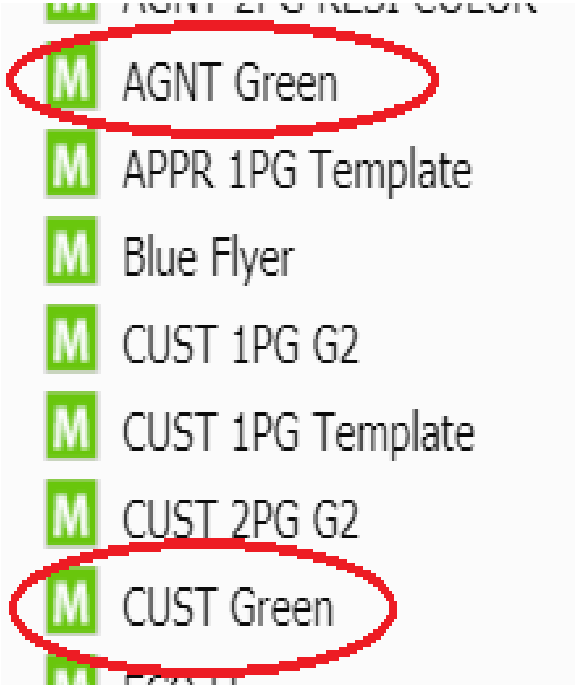
VT PV Auto-Population Pilot



VT PV Auto-Population Pilot



Property Reports



- Custom Search
- Custom Spreadsheet Results

Property Reports

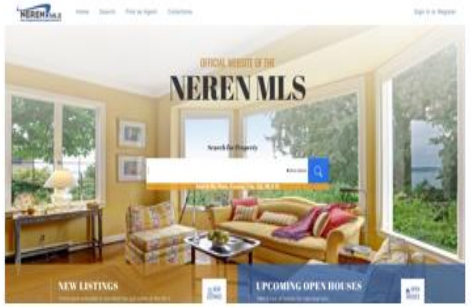
Green Verification Progrm OTHER
Green Verification Body Passive House Institute Quality Approved
Green Verification Status Preliminary
Green Verification Year 2016
Green Verification Rating Vermont High Performance Home
Green Verification Metric 9999Z
Green Verification Source Contractor/Installer
Green Verification New Construction No
Green Verification URL http://01234567890123456789012345678 9green.com
Green Verificatn Progrm 2 LEED for Homes
Green Verificatn Body 2 DOE
Green Verificatn Status 2 Official
Green Verificatn Year 2 2017
Green Verificatn Rating 2 Certified
Green Verificatn Metric 2 9999Z
Green Verification Source 2 Program Sponsor
Green Verificatn NewCon 2 Yes
Green Verificatn URL 2 http://01234567890123456789012345678 9green.com
Green Verificatn Progrm 3 ENERGY STAR Certified Homes
Green Verificatn Body 3 EPA
Green Verificatn Status 3 Preliminary
Green Verificatn Year 3 2015
Green Verificatn Rating 3 Vermont High Performance Home
Green Verificatn Metric 3 9999Z
Green Verification Source 3 See Remarks
Green Verificatn NewCon 3 No
Green Verificatn URL 3 http://01234567890123456789012345678 9green.com

Power Production Type Photovoltaics
Mount Location Roof
Mount Type Fixed Rack
Power Production Size 123.560000
Power Production Annual 123.560000
Power Production Annual Status Partially Estimated
Power Production Year Install 2000
Power Production Verification Source Builder
Power Production Type 2 Wind
Mount Location 2 Ground
Mount Type 2 Pole
Power Production Size 2 123.56
Power Production Annual 2 123.560000
Power Production Annual Status 2 Estimated
Power Production Year Install 2 2010
Power Production Verification Source 2 Contractor/Installer

Green Energy Efficient Exposure/Shade, HVAC, Incentives
Green Energy Generation Solar, Wind
Green Indoor Air Quality Contaminant Control, Moisture Control
Green H2O Sustainability Recyclable Materials, Regionally-Sourced Materi, Salvaged Materials
Green H2O Conservation Green Infrastructure, Low-Flow Fixtures, Water Recycling

ROW - Parcel Access Yes
ROW - Length 1500
ROW - Width 75
ROW to other Parcel Unknown

Data Distribution Channels



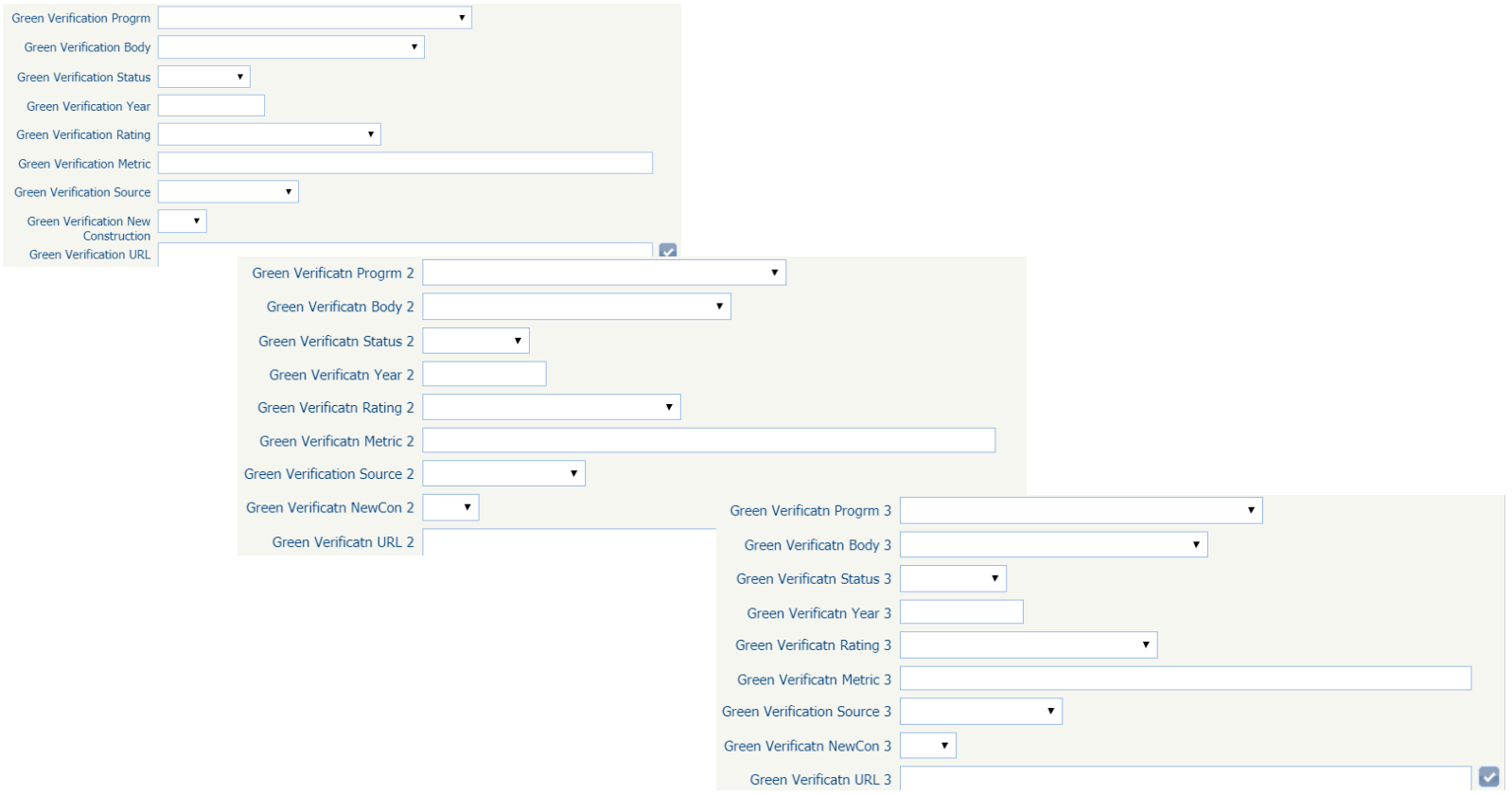
Intra-Office

IDX

VOW

Specialty Feeds

Third Party Verification Data Sets



NEREN® MLS – Next Steps

Evaluate & Improve	Green Verification Programs	Power Production Data onto CRS Property Reports
Power Production Data searchable in CRS	NH, MA, ME, RI, CT PV Data	HELIX Data Auto-Population?

nationalgrid

HERE WITH YOU. HERE FOR YOU.

R.I. Home Energy Score Pilot

Kevin Rose

HELIX Virtual Summit

November 15, 2017

- Pilot Basics
- Drivers
- Challenges/Lessons Learned
- Discussion

Pilot Basics

- Launching now

- 150 homes
- Incorporated into our Home Performance program
- Thanks to RI OER for convening Working Group

Drivers

nationalgrid

- **Short**-term: does HES increase retrofit conversion rate?
- **Mid**-term: does HES generate repeat customers?
- **Long**-term: does HES nudge market towards efficiency?
- Related: energy code compliance

ENERGY CODE
Technical Support

Challenges / Lessons Learned

nationalgrid

- Rescoring of homes post-retrofit
- Customer Consent Agreement
  - Opt-in: goal was to make this short and sweet
  - When/how should we provide this to customer?
- DOE and NEEP will work with you

Questions?

Kevin Rose

Sr. Program Manager, Mass./R.I. Codes & Standards

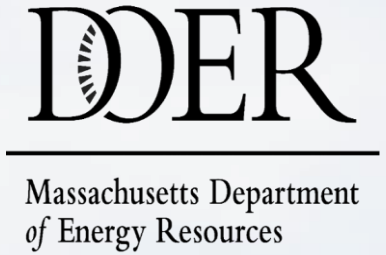
National Grid

Kevin.Rose@nationalgrid.com

Questions?


A3P STRATEGIES
Accelerating Procurement, Product, and Performance


CLEARLYENERGY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State Energy Officials


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