About NEEP

Mission
Accelerate energy efficiency as an essential part of demand-side solutions that enable a sustainable regional energy system

Approach
Overcome barriers and transform markets via Collaboration, Education and Enterprise

Vision
Region embraces next generation energy efficiency as a core strategy to meet energy needs in a carbon-constrained world

One of six regional energy efficiency organizations (REEOs) funded by the US Department of Energy (US DOE) to link regions to US DOE guidance, products and programs
Empowered Consumers

EPA DOT Fuel Economy and Environment

Fuel Economy

26 MPG
combined city/hwy
22 city
32 highway
3.8 gallons per 100 miles

Small SUVs range from 16 to 22 MPG. The best vehicle rates 99 MPG.

You Save
$1,850
in fuel costs over 5 years compared to the average new vehicle.

Annual fuel cost
$2,150

Fuel Economy & Greenhouse Gas Rating (tailpipe only)
1
7
Best

This vehicle emits 347 grams CO₂ per mile. The best emits 0 grams per mile (tailpipe only). Producing and distributing fuel also create emissions; learn more at fueleconomy.gov.

Smog Rating (tailpipe only)
1
10
Best

fueleconomy.gov
Calculate personalized estimates and compare vehicles
Our Goal

Work with support from northeast energy efficiency and real estate industry stakeholders to better incorporate a home’s energy features into its transactional value by providing consistent, verified, voluntarily-provided home energy information to market actors where and when it is needed.
Our Goal
David St. Jean, U.S. DOE
From Market Confusion to Transformation: Home Energy Score & HELIX

Madeline Salzman
Home Energy Score
November 10, 2016
Why Do Homeowners & Buyers Care About Energy Efficiency?

Helps Reduce Costs:
- **U.S. Census**: On average, energy costs are higher than either property tax or insurance for U.S. homes at $2,506 per year

Smart Investment:
- **Remodeling Report**: Attic insulation achieves highest return on investment of all home improvement projects studied at 116.9%
  - Attic Insulation averaged the cheapest upgrade at $1,268

Improves Quality of Life:
- **NARI Report**: Energy improvements are good investments that bring financial relief and “joy”
  - Insulation Upgrade: 61% say greater desire to be home, 95% same or increased sense of enjoyment, and 66% major sense of accomplishment
Studies Nationwide Show Energy Efficient Homes Sell for More, Faster

- Certified homes sell for 9.6% more\(^5\)
- Certified homes sell for 4.2% more & 18 days faster\(^5\)
- Certified homes sell for 2.1 to 5.3% more\(^8\)
- PACE homes delivered $199 to $8,882 in savings above cost of improvements\(^6\)
- Homes that disclose energy costs sold 20 days faster\(^4\)
- Homes that use “green” fields consistently perform better on market indicators\(^7\)
- ENERGY STAR homes sold at $5,566 premium at $2.99 per ft\(^2\) more, & 89 days faster\(^9\)
- Homes designated relatively energy efficient sold for an average $3,416 premium\(^3\)
- Houses with one or more green element sell for 5.9% more\(^3\)
- Certified homes sold for a higher percentage of their asking price & 31 days faster\(^2\)

Sources: \(^1\)Cadena & Thomson, 2015; \(^2\)Carson Matthews, 2009; \(^3\)Corgel, Goebel, & Wade, 1982; \(^4\)Elevate Energy, 2015; \(^5\)Griffin, 2009; \(^6\)Goodman & Zhu, 2016; \(^7\)Institute for Market Transformation, 2015; \(^8\)Kahn & Kok, 2013; \(^9\)Pfleger et al., 2011.

*Not all studies shown have been peer reviewed.
The Research Says: Homebuyers Value Energy Efficiency

Studies Show a Sales Premium of:

- **2% to 9.6%** for designated energy efficient homes

- **$2.99 to $12.52 per square foot** for every dollar saved on annual electricity bills from efficiency investments
  - Sources: 2, 3, 7, 12, 15

- **$3,416 to $8,882** for designated energy efficient homes
  - Sources: 4, 8, 9, 12, 13, 14, 15

VS.

Designated energy efficient

Comparative home

*Not all studies shown have been peer reviewed.*
The Research Says: Homebuyers Value Energy Efficiency

Studies Show a Sales Premium of:

- 2% to 9.6% for designated energy efficient homes ², ³, ⁷, ¹²
- $2.99 to $12.52 per square foot for every dollar saved on annual electricity bills from efficiency investments ⁵, ¹⁰, ¹⁵
- $3,416 to $8,882 for designated energy efficient homes ¹, ², ⁶, ⁷, ¹¹, ¹², ¹³, ¹⁴, ¹⁵

SOLD 18 TO 89 DAYS FASTER ¹, ², ⁶, ⁷, ¹¹, ¹⁵

Designated energy efficient

VS.

Comparable home


*Not all studies shown have been peer reviewed.
Providing Energy Information Can Be A Good Step

**Elevate Energy, 2015**: Chicago Homes that Disclose Energy Costs Spend Less Time on Real Estate Market

- Homes that provide energy costs: median 43 days on market; 66% closing rate
- Homes that did not provide energy costs: median 63 days on market; 53% closing rate

Hill et al., 2016: In EU, Canada, Australia, homebuyers appreciate having more information rather than less; poor ratings don’t discourage home purchases, but do inform energy upgrades

- This helps them make the most informed decision possible, even if they will need to fix an energy feature of the home
- Analysis of European disclosure programs shows homebuyers do not use ratings to discourage home purchase, rather simply to inform sale (p. 11)
- 2013 EU Study: 2% - 6% appreciation in home value attributed to one-letter rating improvement

If it Doesn’t Impact Home Purchases, Why Do We Like Energy Information?

Knowledge is power!

- Energy information with recommendations influences new home owners into making energy renovations

Assessments of Home Energy Ratings on Conversion Rates

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Austin, TX</td>
<td>12% in first year of program (ACEEE, 2011)</td>
</tr>
<tr>
<td>Australia (ACT)</td>
<td>15% (Energy Consult, 2006)</td>
</tr>
<tr>
<td>France</td>
<td>37% (ADEME, 2012)</td>
</tr>
<tr>
<td>Portugal</td>
<td>17.5% (ADENE, 2015)</td>
</tr>
<tr>
<td>The Netherlands</td>
<td>22% (Murphy, 2014)</td>
</tr>
</tbody>
</table>

If People Want and Value Energy Data, Then Where is it?
Home Energy Score: Assets to Information

Home Energy Score is:

- A miles-per-gallon rating for homes
- Applicable to all U.S. single family and townhomes
- Created by DOE labs & third party verified
Home Energy Score: What It Means

The Score is more useful than looking at prior utility bills

- Assumes average weather for that location
- Controls for impacts due to occupant behavior by assuming “average” behavior for all homes

Score with Improvements:

- Reflects how the home will score if cost-effective efficiency improvements are made

Score of 1: High energy costs

- These homes are expected to use more energy each year than 85% of U.S. homes

Score of 5: Average energy costs

- Approximately 50 percent of homes in the U.S. use less energy

Score of 10: Low energy costs

- Homes expected to use less energy than 90% of U.S. homes; easier to keep living space comfortable
HELIX: From Scores to Impact

Home Energy Information Pipeline

Reliable Home Energy Data → Standardized Home Energy Data → Access to Home Energy Data → Use of Data in Home Listings → Consumer Awareness

Home Energy Information Pipeline Diagram

HELI

neep

MLS

MULTIPLE LISTING SERVICE®
Home Energy Score Highlights

More Data: 50,000 Scores!
- Accelerating data collection: upwards of 1,500 / month

More Compatibility: 7 Software tools use API for streamlined data entry
- Compatible with all major hardware

More Customizability: semi-customizable labels for easier messaging

More Updates: new website is easier to navigate and provides access to more resources
- v2016 of Sim Training is easier to navigate, faster to complete
- Next version of Scoring Tool will include solar PV

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

<table>
<thead>
<tr>
<th>Stakeholder Group</th>
<th>Value Proposition of Energy Efficiency &amp; Energy Information</th>
</tr>
</thead>
</table>
| Homeowners, buyers, renters        | ✓ Energy bill savings  
                                      | ✓ Home value  
                                      | ✓ Comfort and quality of life               |
| Real Estate                        | ✓ Faster sales for disclosure  
                                      | ✓ Sales premium for high performance         |
| Home Inspectors                    | ✓ Differentiation in marketplace  
                                      | ✓ Increase sales from additional service     |
| Lenders, Banks                     | ✓ Differentiation in marketplace  
                                      | ✓ Increased lending opportunities            |
| Appraisers                         | ✓ Differentiation in marketplace  
                                      | ✓ Minimize risk of inaccurate appraisals     |
| State & Local Governments          | ✓ Benchmark housing stock  
                                      | ✓ Achieve energy, climate goals             |
| Home Insurance Providers           | ✓ Mitigate and manage risk                                                               |
The Road Ahead

(aka, “What We Need From You”)
Showcase The Data

Maps and visuals help everyone understand data impact

- Show significant & growing uptake in the area
- Provide a map with homes as data points or frequency of homes in the region
- Show that data is reliable and standardized

**Example Maps:**

- All of Chicago’s 77 neighborhoods have at least one reporting property
- Chicago Energy Benchmarking includes properties of all ages, types, styles, and sizes across our city
- Reporting properties include offices, multi-family apartments and condos, libraries, schools, hospitals, hotels, and retail shops, among many other building sectors
Agents need resources to learn how to enter data fields correctly

- “0” HERS Rating = Perfect Score!
- “0” Home Energy Score = Nonsensical / Terrible Score!
- ENERGY STAR Appliances ≠ Home ENERGY STAR Certification

Use our “Energy Efficiency for Real Estate Professionals” resource on Home Energy Information Accelerator website
What Can You Do?

Tell Efficiency Program Managers: Standardize Your Data!
- Work collaboratively to follow DOE, ANSI, and other industry standards
- Data without standards doesn’t inform anyone

Tell Real Estate: Encourage all clients to get a Home Energy Score
- Improving energy efficiency of homes may qualify for financing & incentives
- If desired, list the Home Energy Score on the MLS. Fix it before you list it!
- Team up with home inspectors that offer the Home Energy Score

Tell Banks, Lenders: Include Energy Assets in Lending Practices
- Enables home energy data to be valued appropriately at time of sale
- Creates more demand for data acquisition

Tell MLS: Include “green fields”
- This will help standardize listing inputs and engage more real estate professionals
- Advocate for the MLS to achieve RESO’s Silver Certification, which includes green fields
Resources Informing This Presentation

- Capturing Energy Efficiency in Residential Real Estate Transactions: Steps that Energy Efficiency Programs Can Take
- *Home Energy Score for Real Estate Fact Sheet*
- National Association of REALTORS® 2015 Remodeling Impact Report
Thank You!

HomeEnergyScore@ee.doe.gov
Assessor@sra.com
www.HomeEnergyScore.gov
Scaling Up Energy Ratings Across the Region
CONNECTICUT
YOUR HOME'S ENERGY PERFORMANCE SCORE

Home MPG, a program within Mass Save®, provides you with your home's "miles per gallon" energy performance rating, called an "energy performance score" or EPS. By helping you better understand your home's energy use, Home MPG helps you make smart decisions about implementing improvements that make your home more energy efficient and reduce your energy costs.

**Your Home's ENERGY PERFORMANCE SCORE**

- **160**
  - Average score in MA
  - 130 Your Home's Current Score
  - 160 Your Home's Score After Recommended Improvements
  - 92 Your Home's Score After Recommended Improvements

**DOLLARS & SENSE**

- Estimated average energy savings: $1150 per year

**Your Home's CARBON FOOTPRINT**

- **11.1**
  - Carbon footprint after recommended improvements

PREPARED FOR
- Customer Name
- Customer Address
- City, State, Zip
- Phone
- Email
- Year Built: XXXX
- Sq Footage: XXXX
- Bedrooms: XXX
- Primary Heating Fuel: XXX

EPS Report Data:
- 1000/1000000
- Energy Specialist: XXX

The Commonwealth of Massachusetts

In the One Hundred and Eighty-Ninth General Court

(SENATE DOCKET, NO. 633 FILED ON 1/15/2015)

No. 1761

By Mr. Downing, a petition (accompanied by bill, Senate, No. 1761) of Benjamin B. Downing, Kevin G. Honan, Stephen Kulik, Chris Walsh and other members of the General Court for legislation relative to home energy efficiency. Telecommunications, Utilities and Energy.

An Act relative to home energy efficiency:

"Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

1. SECTION 1. (a) Notwithstanding any general or special law to the contrary, a seller or agent acting on behalf of the seller shall complete an energy assessment through the Mass Save program as provided by the department of energy resources prior to the time of listing the home for sale, provided that no additional fees shall be imposed or collected in connection with the home energy assessment. This section shall apply to a seller of a single-family residential dwelling or a multiple-family residential dwelling with fewer than 5 units, or a condominium.

2. (b) The seller or agent acting on behalf of the seller shall disclose to a buyer or prospective buyer information obtained from the energy assessment of the dwelling at the time of listing or prior to the signing of a contract to purchase, whichever comes first.

3. (c) This section shall not apply to sales of residential dwellings in the following circumstances: (1) a foreclosure or pre-foreclosure sale; (2) a deeded or trustee sale; (3) a
RHODE ISLAND

State of Rhode Island
Office of Energy Resources

nationalgrid
NEW HAMPSHIRE
Amend the bill by striking out the title and substituting the following:

‘Resolve, Regarding Building Energy Efficiency and Carbon Performance Ratings’

Amend the bill by striking out everything after the title and before the summary and inserting the following:

‘Emergency preamble. Whereas, acts and resolves of the Legislature do not become effective until 90 days after adjournment unless enacted as emergencies; and

Whereas, promoting renewable energy and energy efficiency are significant priorities of the federal American Recovery and Reinvestment Act of 2009; and

Whereas, significant funding from the federal American Recovery and Reinvestment Act of 2009 will be disbursed to the Public Utilities Commission as administrator of the United States Department of Energy State Energy Program in the immediate future for energy initiatives, including energy efficiency programs; and

Whereas, in the judgment of the Legislature, these facts create an emergency within the meaning of the Constitution of Maine and require the following legislation as immediately necessary for the preservation of the public peace, health and safety; now, therefore, be it

Sec. 1 Building energy efficiency and carbon performance rating system. Resolved: That the Public Utilities Commission, as administrator of the United States Department of Energy State Energy Program, in consultation with the stakeholder group convened pursuant to section 2, shall:

1. Develop or select a standardized rating system and reporting form for building energy efficiency and carbon performance;

2. Include the standardized rating system and reporting form in professional education and training programs sponsored by the Public Utilities Commission;

3. Encourage real estate professionals and other stakeholders to promote voluntary use of the standardized rating system and reporting form by residential and commercial property owners, including, but not limited to, voluntary disclosure of building ratings in the context of real estate transactions;

4. Encourage voluntary use of the standardized rating system and reporting form by large-scale property owners and managers, including the State, municipalities and other public and private entities; and

5. Develop a voluntary library or repository of ratings based on the standardized rating system and reporting form; and be it further
NEW YORK

Tompkins Residential Energy Score Program and Implementation Plan FIRST DRAFT 02-24-16

7. Training

To make ratings broadly available in the market, training will need to be made available on a recurring basis, and Raters will need to be recruited. Training on the specific program, including the local submission and labeling process, would also be necessary.

5.3.6. Creating MLS Data Connection

There are two key database applications that need to be connected - a data repository for the information described above and the Realtor Multiple Listing Service (MLS).

There are systems available and in development that would aid in this connection. The U.S. DOE announced on September 15, 2015 an award providing three years of funding to Northeast Energy Efficiency Partnerships (NEEP) to support the development of HELIX, or the Home Energy Labeling Information Exchange in an effort to “expedite the creation of large-scale home energy labeling policies and programs that support the market valuation of energy efficiency in homes by making U.S. DOE Home Energy Score (HES) data accessible to local Multiple Listing Services (MLS) and other market interests”. (Northeast Energy Efficiency Partnerships, 2015)

Figure 6: The Home Energy Labeling Information Exchange (HELIX) can facilitate the delivery of the score from the program database to the multiple listing service.

The DOE has also created an open source database application for managing information related to energy scores on buildings known as The Standard Energy Efficiency Database Platform, or SEED. This was created to support the management of benchmarking mandates for large cities but is now being adapted for use with residential ratings.

One key capability of this database is to manage energy data for large numbers of buildings. SEED has the capability to collect information from property assessment and other existing databases and match this information up with energy ratings submitted by qualified Raters (Figure 7).

Figure 7: SEED Platform Concept of Operations
Home Performance Score is a tool to assess the energy consumption of a home. The better—a low HPS identifies a home as energy efficient with lower energy costs.

**Estimated Monthly Energy Costs**

**$1,337**

5-year savings potential: **$1,337**

Estimated average energy costs per month: Electric $189, Natural gas $13

**LOCATION:**

555 Magnolia Street
Little Rock, AR 72202

**YEAR BUILT:** 2002

**SIZE (SQ. FT.):** 2,210

**SCORE ISSUE DATE:** July 15, 2015

**ABOUT THE SCORE**

The Arkansas Home Energy Score is a rating system developed by the US Department of Energy for Arkansas. The score reflects the energy efficiency of a home based on the home’s structure and heating, cooling, and hot water systems. The information on this score card shows energy use and costs that are estimates only. Actual usage and costs may vary and are based on many factors such as weather and occupant behavior. See reverse side for technical information and details.

**TOP ENERGY SAVINGS OPPORTUNITIES:**

- **Attic Insulation Upgrade**
  - Insulate to R-38

- **Duct Sealing**
  - Seal ducts to reduce air leakage

- **Heat Pump Upgrade**
  - Add high efficiency heat pump (16 SEER)

**POTENTIAL ANNUAL SAVINGS**

**$2,500**

After recommended improvements.

**TO FIND OUT HOW YOU CAN EASILY IMPROVE YOUR HOME'S ENERGY EFFICIENCY**

CALL (800) 555-1212 OR VISIT WWW.ARKANSASENERGY.ORG
BUT HOW DO WE GET THIS INFO INTO THE MARKET?
RESO’s Data Dictionary & MLS Green Fields

HELIX Summit
November 10, 2016

Jeremy Crawford
Executive Director
Real Estate Standards Organization
Real Estate Standards Organization

- RESO = Standards for Real Estate
  - Non-Profit Organization
  - Membership based organization with member categories for MLSs, Technology Vendors, Brokers and Associations
  - RESO’s work product are Technical Data Standards
  - RESO Standards are Free to use and open to the public
  - Standards are created through Volunteer based Committees & Workgroups

- Multiple Listing Services adopt RESO standards including the RESO Data Dictionary and the RESO Web API
Green Multiple Listing Service Initiative
Connecting Energy Data to Property Listings

**Verified Green Data**

- Tax Data
- MLS Operators

- 2.4 Million Records

Agents

Brokerages

Aggregators

- Coldwell Banker
- Century 21
- Keller Williams
- Realtor.com
- trulia
- Zillow
- Homes.com
The RESO Data Dictionary

- RESO Data Dictionary Servers as a “Rosetta Stone” for defining real estate fields
- RESO Data Dictionary globalizes most common fields with standard names, data types and definitions

- Fostering Technology Innovation, the RESO Data Dictionary Benefits Everyone
- RESO DD Wiki: [Http://ddwiki.reso.org](Http://ddwiki.reso.org)
Home Energy Fields & Data Dictionary Field Levels

- MLS Home Energy field adoption paves the way for MLS Data Integration between Listings and Energy Data
- RESO Data Dictionary provides data mapping between MLSs and the Building Energy Data Exchange Specification

- Silver level designated fields include standardization of Green Fields
- MLSs must be in compliance by adopting the Data Dictionary's Silver level designated fields by January 1st, 2018 per NAR MLS Policy Mandates 7.90
- Over 275 MLSs have already certified on Silver or higher!
Home Energy Field & Lookup Values Examples

- Performance Group
  - GreenMarketing Group
    - GreenEnergyEfficient Field
    - GreenEnergyGeneration Field
    - GreenIndoorAirQuality Field
    - GreenLocation Field
    - GreenSustainability Field
    - GreenWaterConservation Field
    - WalkScore Field
  - GreenVerification Group
    - GreenBuildingVerificationType Field
    - GreenVerification[Type]Body Field
    - GreenVerification[Type]Metric Field
    - GreenVerification[Type]Rating Field
    - GreenVerification[Type]Source Field
    - GreenVerification[Type]Status Field
    - GreenVerification[Type]URL Field
    - GreenVerification[Type]Version Field
    - GreenVerification[Type]Year Field
  - G - Lookup Fields
    - GreenBuildingVerificationType Lookups
    - GreenEnergyEfficient Lookups
    - GreenEnergyGeneration Lookups
      - Solar
      - Wind
    - GreenIndoorAirQuality Lookups
    - GreenSustainability Lookups
    - GreenVerificationSource Lookups
    - GreenWaterConservation Lookups
**GreenBuildingVerificationType Field**

Created by RESO DD Workgroup on Jun 13, 2016

**Field Name (Standard Name)**: GreenBuildingVerificationType

**Definition (May contain rules that must be observed)**

The name of the verification or certification awarded to a new or pre-existing residential or commercial structure. For example: LEED, Energy Star, ICC-700. In cases where more than one certification have been awarded, leverage multiple iterations of the green verification fields via the repeating element method.

**Group**: Property Resource, Structure Group, Performance Group, GreenVerification Group

**Simple Data Type**: String List, Multi

**Suggested Maximum Length**: 1024

**Synonym(s)**: GreenBuildingCertification, GreenBuildingVerification, GreenBuildingRating

**Field (Element) Status**: Active

**BEDES?**:  

**Certification Level**: Silver

**RecordID**: 100334

**Lookup Status**: Open with Enumerations

**Lookup**: GreenBuildingVerificationType Lookups

**Sug. Max Precision?**:  

**Repeating Element**: Yes

**Property Types**: RESI, RLSE, RING, MOBI, FARM, COMS, COML

**Payloads**: IDX

**Status Change Date**: Jun 21 2016

**Revised Date**: Oct 18 2015

**Added in Version**:  

> Click here to expand...
Zero Energy Ready Home

Created by RESO DD Workgroup on Jun 13, 2016

**Lookup Value**
Zero Energy Ready Home

**From Lookup Field**
GreenBuildingVerificationType_Lookups

**Definition (May contain conditions that must apply)**

DOE Zero Energy Ready Home is a set of optional construction practices and technologies (above minimum code and ENERGY STAR Certified Home requirements) that builders can follow to ensure high-performance homes so energy efficient all or most annual energy consumption can be offset with renewable energy. Guidelines are outlined in the "DOE Zero Energy Ready Home National Program Requirements."

**Synonym(s)**
BEDES: Assessment Program = "ENERGY STAR Certified Homes"

**References**
RESI, RLSE, RINC, MOBI, FARM, COMS, COML

**Lookup Status**
Active

**Lookup Field ID**
347000

**LookupID**
347012

**Lookup Status Change Date**
Jun 21 2016

**Revised Date**
Sep 17 2015

**Added in Version**
1.5.0
Jeremy Crawford
Jeremy@reso.org
m: 858.775.2368
Info@reso.org
o: 919.459.6097
Right now:

- Home Energy Data? ☑
- MLS standardization? ☑
- Accessible? ✗
2018: Info homebuyers/sellers want *where* they need it, *when* they need it.
HELIX
Home Energy Labeling Information eXchange

- Database development and implementation
  - serving New England and New York
- Real estate community outreach, training
  - transparent stakeholder engagement
- Functionality beyond DOE HES

HELIX Coming in 2018
Agenda

Opening: Everything you need to know about HELIX

Real Estate Track OR Technical Track

Governance and Privacy

Lunch

Breakout 1: Connecting the Region

Breakout 2: Bringing it Home

Closing: Building a Solution Together
Real Estate Track: What Value Will HELIX Bring to the Real Estate Industry?

HELIX Summit
Nov. 10, 2016
Who’s in the Room?

- Real Estate Brokers/Agents/Realtors
- Appraisers
- MLS Staffers
- Energy Efficiency Implementers
- Utility Program Administrators
- Non-Profits
- Others?
The Issue

Some Things are Visible
The Issue

...Others are not
The High Performance Housing Market is Growing

• In 2015, 10% of newly constructed homes were ENERGY STAR certified - EPA

• U.S. homes built in 2000 or later use an average of 21% less energy on space heating than older homes - EIA

• The number of “zero energy homes” is expected to grow from 750 in 2015 to nearly 27,000 in 2025 – Navigant
Market Transformation

Customers want home energy information:

• NAHB survey:
  – Home buyers want energy efficiency information. 91% indicated that an Energy-Star rating for a home is “Desirable” or “Essential/Must Have”

  – Home buyers are willing to pay more upfront for lower utility costs. On average, they will pay an additional $10,732 up front to save $1,000 per year on utilities.
How to Make it Visible?

Provide the information to home buyers!
MAKING THE INVISIBLE VISIBLE:
What Value Will HELIX Bring to the Real Estate Industry?

Jeffrey Gephart
Vermontwise Energy Services, Inc.
Rochester, Vermont
Much of what makes a home highly energy efficient is invisible.
We use diagnostic tools to make home performance visible.
We go where few dare tread to understand and measure home performance and inspect building features.
How do we make energy efficiency visible to real estate professionals?
I’m not sure that’s what they mean by “now reduce the wine.”

There’s a recipe for engaging the real estate market.

Jeffrey Gephart, Vermontwise Energy Services, Inc.
Unlocking the Value of an Energy Efficient Home

A Blueprint to Make Energy Efficiency Improvements Visible in the Real Estate Market

August 2013

CNT Energy
National Home Performance Council

Visible Value Blueprint


Jeffrey Gephart, Vermontwise Energy Services, Inc.
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 and more **automated transfer of data**.

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

Jeffrey Gephart, Vermontwise Energy Services, Inc.
1. **Document** energy efficiency features and improvements using consistent, standardized methods.

   Efficiency program sponsors, implementers, and participating contractors all document energy efficiency features.

   It’s been done for years with new construction, HERS Index, ENERGY STAR® Homes, etc.,

   New methods to document energy performance for existing home are now in use (e.g., U.S. DOE Home Energy Score and other local means).
2. **Disclose inventories** of energy efficient homes to track supply.

High performance new home percentage of all new homes, 2000 to 2012.

There is inventory

Vermont & New Hampshire spooning since 1791

Jeffrey Gephart, Vermontwise Energy Services, Inc.
New Construction Cert. 2000-2016:
• ENERGY STAR® Homes
• USGBC - LEED for Homes
• National Green Building Standard™

Jeffrey Gephart, Vermontwise Energy Services, Inc.
Existing Home Cert.: 2011 - 2016
• U.S. DOE Home Energy Score

# of U.S. DOE Home Energy Scores by County Ranging From:

1 ➔ 4,008
3. Capitalize on existing [and/or create] high-quality continuing education & designation training.
3. Capitalize on existing [or create] high-quality continuing education & designation training.

March 28, 2017
Radisson Hotel, Nashua, NH
In partnership with Green Alliance
3. Capitalize on existing (and/or create) high-quality continuing education & designation training.

Facilitate (market, underwrite, and incentivize), more of the Appraisal Institute’s Valuation of Sustainable Buildings Professional Development Program courses to gain more Registry listings of competent appraisers.

www.appraisalinstitute.org/education/education-resources/green-building-resources/
### Valuation of Sustainable Buildings Professional Registry

#### Current Vermont Residential Registry Listings

<table>
<thead>
<tr>
<th>Name</th>
<th>Company</th>
<th>City, State</th>
<th>Accepts Fee Assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charles M. Andrews, SRA</td>
<td>CMA Appraisals, Inc.</td>
<td>Montpelier, VT</td>
<td>Yes</td>
</tr>
<tr>
<td>Edward J. Friihau, MAI</td>
<td>Friihau Appraisal Associates</td>
<td>Montpelier, VT</td>
<td>Yes</td>
</tr>
<tr>
<td>Michael W Gammal, MAI</td>
<td>Gammal Real Estate Services, P.C.</td>
<td>Essex Junction, VT</td>
<td>Yes</td>
</tr>
<tr>
<td>Michael F. Keller, MAI *</td>
<td>Keller &amp; Associates, Inc.</td>
<td>Burlington, VT</td>
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<tr>
<td>Amy C. McClellan, SRA</td>
<td>Milne-Allen Appraisal Company</td>
<td>Sugar Hill, NH</td>
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<tr>
<td>Sean A. Sargeant, MAI, SRA</td>
<td>Sargeant Appraisal Service</td>
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<td>George C. Sargeant, SRA</td>
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<tr>
<td>Sylvia P. Rogers</td>
<td>Sylvia Rogers Real Estate Appraiser</td>
<td>White River Junction, VT</td>
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<td>Robert B. Taylor</td>
<td>Bruce A Taylor Appraiser</td>
<td>Fairlee, VT</td>
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<td>Charles Stott Woods *</td>
<td>Record Appraisal Service</td>
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<td>John T. Waldo</td>
<td>Montpelier, VT</td>
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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.

**RESO Approved 3rd party verified green fields now in the NH/VT statewide MLS**

| Green Building Verification (program) |
| Green Verification Body (sponsor) |
| Green Year Verified |
| Green Verification Rating (level achieved) |
| Green Verification Status (proposed or official) |
| Green Verification Metric (efficiency score) |
| Green Verification URL (web address for details) |

Jeffrey Gephart, Vermontwise Energy Services, Inc.
5. Ensure that the data about home energy efficiency improvements are incorporated into the appraisal process.

Why?

Improved comfort and affordability are not always enough motivation. Some homeowners want to, “get our money back when we sell the home.”
5. Ensure that the data about home energy efficiency improvements are incorporated into the appraisal process.

Provide Data

• **PV Value** (U.S. DOE Sandia National Lab developed online photovoltaic system production & value calculation tool - www.pvvalue.com/)


• Appraisal Institute’s **Residential Green and Energy Efficient Addendum** www.appraisalinstitute.org/assets/1/7/Interactive820.04-ResidentialGreenandEnergyEffecientAddendum.pdf
6. Develop standards and **IT solutions** that allow quicker and more **automated transfer of data**.
7. Work with partner **financial institutions** to ensure selection of qualified appraisers.

**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

Explains possible solutions:
• How to prepare a loan applicant for the mortgage application and appraisal
• What a loan applicant needs to do when seeking the mortgage

[Appraiser Value and Energy Efficiency: Getting it Right](http://bcap-energy.org/appraised-value-and-energy-efficiency-getting-it-right/)
Appraised Value and Energy Efficiency: Getting it Right - Letter Templates

FOR BUYERS:
ASSURING A COMPETENT APPRAISER FOR YOUR NEW HOME

Congratulations on choosing an energy efficient, high-performing home!
Your new home was built to higher energy efficiency standards that will improve your quality of life. Your home will be more comfortable to live in and have lower monthly energy bills than other newer homes on the market. 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. 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 improves indoor comfort

What You Need To Know Regarding the Loan/Appraisal Process
As part of the typical loan process, lenders randomly assign an appraiser to determine the appraised value of a new home. However, yours is not a typical new home — it is a high-performing building with unique features. Fannie Mae, Freddie Mac and FHA guidelines require appraisers to be competent in the property type they are appraising. If you do not clearly identify the property as a special property type requiring a competent appraiser trained in energy-efficient, high-performance homes, a typical appraiser will be assigned, and these features may not be taken into account, which will put your appraisal at risk of not being competently appraised.

What You Need To Do
Provide your lender with three things provided to you by your builder:

FOR LENDERS
Dear lender,
The new home located at: _____________________________ is a special property type. It is an energy efficient, high-performing home that meets the stringent energy efficiency requirements of the code checked below:


A copy of the Green and Energy Efficient Addendum form, and the HERS report (if available) should be included with the appraisal engagement letter. 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. As a high-performing, energy efficient home, it requires an appraiser that is competent to assess the value of the green and/or energy efficiency features in the local real estate market.

You can access a list of qualified appraisers 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: http://www.myappraisalinstitute.org/education/course_descrb/Default.aspx?prgrm_nbr=826&key_type=CO

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

Jeffrey Gephart, Vermontwise Energy Services, Inc.
7. Work with partner **financial institutions** to ensure selection of qualified appraisers.

**Course on Valuating Solar Promoted by VT Green Home Alliance**

The Vermont Green Home Alliance is promoting a course to aid lenders, appraisers and others in the [Residential & Commercial Valuation of Solar](#) (read more or register via the link). It is one of three courses required for a listing on the Appraisal Institute’s [Valuation of Sustainable Buildings Professional Registry](#) (appraisers do not need to be Appraisal Institute members to be Registry listed). Participation in the April 28th, 29th course in Concord, NH provides 15 continuing education credits in Vermont and New Hampshire.

In an effort to help lenders, builders and others prepare for increasing levels of high performance new home construction and energy efficiency, the Vermont Green Home Alliance is also distributing [Appraised Value and Energy Efficiency: Getting It Right](#). Developed by the Appraisal Institute and Building Codes Assistance Project (and endorsed by the National Association of Home Builders), this short piece explains to real estate professionals and lenders why the appraisal of high performance homes is a complex appraisal assignment and, for architects, builders, and home performance contractors, how to proactively prepare customers for loan applications and appraisals.

AVCU is a member of the Vermont Green Home Alliance, which is an alliance of collaborating trade organizations and businesses working to educate real estate professionals and related persons about energy issues and to share accurate energy efficiency and green building information with the real estate market.

**Association of Vermont Credit Unions** promoting the Appraisal Institute’s **Residential and Commercial Valuation of Solar** course and **Appraised Value and Energy Efficiency: Getting It Right**.

Jeffrey Gephart, Vermontwise Energy Services, Inc.
What Value Will HELIX Bring to the Real Estate Industry?

Auto-population of energy efficiency data from HELIX into the MLS enables:

• Quick and accurate transfer of data from energy efficiency service providers to the MLS
• Less time spent entering listings
• Reduced liability due to increased accuracy of information
• Not over marketing or under listing a property
• Broader view of market for appraisers and Realtors®
• More rationale decision making by buyers and sellers

Jeffrey Gephart, Vermontwise Energy Services, Inc.
That’s how we make the invisible visible

Thank you

Jeff Gephart
Vermontwise Energy Services, Inc.
Rochester, VT
802.767.4501 - vtwise@together.net
Real Estate Track: What Value Will HELIX Bring to the Real Estate Industry?

Craig Foley
What is the potential value that HELIX brings to the table?

Let's take a look at current reporting of HPH
What is the potential value that HELIX brings to the table?

Let's take a look at current reporting of HPH:

- **Poll: Energy Efficiency is America’s No. 1 Housing Concern, Jan 2015**

- “the No. 1 unmet housing concern, which the Demand Institute that carried out the poll defined as the “satisfaction gap” between what respondents actually have and what they said was important, was not as easily expected: energy efficiency.”

- “Based on these numbers, energy efficiency was the housing concern with the largest gap between the rates of importance and satisfaction – beating out consumer needs and wants for updated kitchens, storage space, safe neighborhoods, affordability, landlord responsiveness and more.”
What is the potential value that HELIX brings to the table?

EE used in remarks

- 2011: 300
- 2012: 400
- 2013: 500
- 2014: 800
- 2015: 900
What is the potential value that HELIX brings to the table?

Let's take a look at current reporting of HPH.

- Evidence under-reporting of green data
  - 2014 report on HPH marketplace under-reporting green certified condos and sf homes

- Evidence of potential green-washing (probably unintentional)
  - 2015 HERS Index Score added as a data field in MLS PIN
  - How is the field being used?
What is the potential value that HELIX brings to the table?

What’s the value add?

To the consumer looking for the HPH product

To the appraiser searching for valid HPH comps

To listing agents listing HPH

To MLSs
For home buyers, they will be able to learn more about the energy efficiency features of homes, including features such as completing Home Performance with Energy Star, certification to LEED for Homes or the actual Home Energy Score achieved, for example.
The elephant in the room?

Is this too much for the RE industry to handle?
The elephant in the room?

Will the addition of these data points threaten to make the real estate transaction even more complicated?

Will the data be reliable and easy for MLSs to access?

Will the data jeopardize homeowner privacy?

Fears that home energy data could stigmatize low performing buildings?

Will a home energy score disproportionately affect low-income homeowners?
Discussion
Break
Technical Track:
The Data Must Flow, but how?

HELIX Summit
Nov. 10, 2016
HELIX Summit

Technical Track: The Data Must Flow, but how?

November 10, 2016

Leslie Badger,
Vermont Energy Investment Corporation
The Challenge

Data Sources

- State Energy Program
  - Data Source A
- State Energy Program
  - Data Source B
- State Energy Program
  - Data Source C
- State Energy Program
  - Data Source D
- State Energy Program
  - Data Source E
- State Energy Program
  - Data Source F
- State Energy Program
  - Data Source G

Aggregation Platform

HELIX

SEED (TBD)

Data Recipients

- MLS / Real Estate
  - Portal A
- MLS / Real Estate
  - Portal B
- MLS / Real Estate
  - Portal C
- MLS / Real Estate
  - Portal D

Direct User Access
The Challenge, cont’d…

State Energy Program
Data Source A

State Energy Program
Data Source B

State Energy Program
Data Source C

State Energy Program
Data Source D

State Energy Program
Data Source E

State Energy Program
Data Source F

State Energy Program
Data Source G

State A

Program A

Program B

Program C

Program D

HELIX Summit – Technical Track: The Data Must Flow, but how?
The Challenge, cont’d....

HELIx Summit – Technical Track: The Data Must Flow, but how?
The Challenge, cont’d…

HELIX Summit – Technical Track: The Data Must Flow, but how?

SEED (TBD)
HELIX Survey

- Survey of HELIX states to better understand data sources
- Focus on RESO Data Dictionary structure
- Silver Certification Green Fields (implementation Jan 1, 2018)
  1. Third-Party Verification Fields
  2. Marketing/Green Search Field
  3. Specific Technical Fields (documentation uploads)*
- Feedback from six HELIX states
- All states had some level of data corresponding to RESO Silver fields
HELIK Survey – Third Party Verified

• Program specific enumerations
  1. Green Verification Program
  2. Green Verification Body
  3. Green Verification Rating
  4. Green Verification Metric

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<tr>
<td>Green MLS Implementation Guide</td>
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<td>MLS Green Addendum*</td>
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RESO Data Dictionary

- Third Party Verified Fields
  1. Nine fields implemented as a group
  2. Four fields with specific enumerations
  3. Part of RESO Silver Certification

- Green Marketing/Search Fields
  1. Six fields implemented as a group with specific enumerations
  2. Non-verified data
  3. Part of RESO Silver Certification

- Specific/Technical Fields
  1. Documentation Fields only
  2. Not part of RESO Silver Certification
Example MLS Implementation
MRIS

Third Party Verified Fields
Example MLS Implementation

MRIS

Green Search/Marketing Fields
Example MLS Implementation
IRES

Green Field Search
Discussion

• What Specific/Technical Fields
  1. Diagnostic testing (e.g. Blower door)
  2. Estimated annual energy costs
  3. Estimated annual energy use
  4. Local reference values

• Do these fields need to be Specific/Technical or can they fall under Third Party Verified?
  1. e.g. Local Program associated metrics
HELIX
Technical Options

Ahson Wardak
ahson@a3pstrategies.com
Restating the Goal

1. Build an application [HELIX] to help stakeholders in New England bring together disparate data about residential home energy performance into a common database.

2. Make aggregated data available to stakeholders through a machine-readable interface [API, etc.].
Constraints

1. Build budget
2. Operations & maintenance budget
3. Governance framework
Assumptions?

- Build on top of SEED
- Other options will cost more
- HELIX responsible for data transactions
Methodology & Options

- Analyze several options
  - Through interviews, conversations, etc.
  - Pros, Cons, Estimated Costs
- Invest in SEED
- Build around SEED
- Build through SEED
- Custom build
Option 1: Invest in SEED

• Pros: previous expertise, partner with government and industry
• Cons: coordination risks, speed
• Costs: $$$
Option 2: Build around SEED

- Pros: less dependent on SEED, focus on APIs, build on wider expertise in home energy
- Cons: unproven solution
- Costs: $$$
Option 3: Build through SEED

• Pros: lean/agile approach, built on previous expertise,

• Cons: lack of expertise, execution risk, cost uncertainty

• Costs: $$$
Option 4: Build custom

- Pros: low-cost, builds in a buffer
- Cons: cultural barrier in translating requirements, lack of context
- Costs: $
Conclusion

- Learn more
- Question assumptions
- Wait and see
Discussion
Break
Governance and Privacy: "Who Owns the Data?," "How to determine who can access what data when?," and other open questions
NEEP-HELIX Summit
Privacy and Governance

Vermont Law School
Institute for Energy and the Environment
November 10, 2016
Task 4.1 Privacy

- Identify different home energy scores, labels, and ratings that may be included in the HELIX database
  - Home Energy Score (HES)
  - Home Energy Rating System (HERS)
  - ENERGY STAR Certified Homes
  - LEED for Homes
  - Passive House
  - NGBS, others also
  - under consideration
# Types of Home Ratings

## Asset Ratings
- Rating the building ‘as built’
- Grading the building and not the people
- Grading the building’s theoretical energy consumption
- Buildings “DNA”
- E.q: HES, HERS, Energy Star Certified Homes, LEED for Homes, Passive House
- Privacy concerns: LOW

## Operational Ratings
- Rating the building “as used”
- Grading the building’s real performance, using metered energy use data
- Grading the building’s actual energy consumption
- Report Card/Grade
- E.q: ENERGY STAR Portfolio Manager
- Privacy concerns: HIGH
Home Energy Ratings, Labels and Scores

- HES, HERS, ENERGY STAR Certified Homes, LEED for Homes, Passive House are ASSET RATINGS
- Gather standardized energy usage data that is not dependent on the customer behavior
- Data Gathered:
  - building’s envelope energy systems, square footage and energy systems
  - information about the house itself and the occupant/s such as: location (address, city, state, zip), year built, name of the occupant/s
Governing Rules

- The contracts concluded between the Parties
- The Parties must abide and/or guide their action by:
  - the contractual obligations stipulated in the Contracts
  - mandatory standards or specific non-binding standards or guidelines

PROVIDED THAT THESE are not in violation of the applicable law; if they are in violation, state law shall govern
Relationship Between Four Parties
Home Energy Score

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<th>Assessor</th>
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<tbody>
<tr>
<td>Program Partner</td>
<td>DOE</td>
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Rating
**Parties Involved**

- **HES**: DOE at the federal level, the Partners at the state level and the Assessors that are directly linked with the Customers

- **HERS**: RESNET at the national level, the Providers at the state level and the Home Energy Raters that perform the assessment for the Customers

- **Energy Star Certified Homes**: the federal government and public sector organizations, such as the EPA, state and local Partners (i.e. builders, raters and other sponsoring organizations), Home Energy Raters, and Customers
Contractual Obligations

- DOE Home Energy Score (HES)
  - DOE concludes Partnership Agreement with the Partner
  - Partner submits Partnership Implementation Plan to DOE
  - Partners have in place Code of Ethics and/or Standards of Practice and/or Client Bill of Rights and/or Rating Program policies and Procedures
  - Assessors have to respect the Code of Ethics and/or Standards of practice and/or Client Bill of Rights and/or Rating Program policies and Procedures
  - Assessors offer the HES to the Customers
  - Assessors conclude Home Inspection Agreement with Customers
Federal and State Laws

- Rating/label/score laws
  - lack of federal guidance
  - no consistency at the state level regarding what is currently being offered by each state and how they are offered to consumers

- Residential Disclosure Laws
  - widely used for commercial and multifamily buildings
  - not as common for residential single-family buildings
Federal and State Laws

Privacy Laws

• No laws dealing particularly with privacy and consent issues related to rating/label/score systems

• Laws of general applicability: release of information, the right to privacy, the use of public records, freedom of information acts, management of energy and/or environmental data
Key Takeaways

- Laws and regulations are more protective of data that includes actual energy use data.

- State privacy laws and the right to privacy of each citizen are centered around the identification of personally identifiable information/personal privacy: the name and address of a citizen do not qualify unless combined with information such as SSN, driver’s license no, etc.

- Potential privacy concerns: customer name and address.
Key Takeaways

- Contractual relationships govern unless they violate state laws
Next Steps

- Verify existence of data sharing clauses in third-party data access agreements

- Obtaining customer consent
  - Past and future customers
Task 4.2 Business Models

- Ownership
- Governance
- Management
- Hosting
- Copyright
Ownership and Governance

- For-Profit Corporation vs Non-Profit Organization
  - For-Profit Corporation
    - Corporation
    - LLC
    - Public Private Partnership
    - B Corp
Ownership and Governance Issues in Forming a Corporation

Incorporation Location

Stakeholders into Shareholders

Who are the owners?

Corporations provide shares and rights to their shareholders

Vote

Dividends

Proceeds of dissolution

Right to transfer shares

Right to inspect corporate records
Ownership and Governance

- Non-Profit Organizations
  - 501(c)(3) - Charitable Organizations
  - 501(c)(4) - Social Welfare Organizations
  - 501(c)(6) - Business League
501(c)(6) Business League

- Common Business Interest
- Membership Support
- Business Structure and Inurement
- Improvement of Business Conditions
- Not Engaging in Regular Business of a Kind Ordinarily Carried on for Profit
- Case-by-Case Analysis
Governance

- Multi-state non-profit organizations
  - Regional representation - RGGI
  - No requirement for regional representation - ISO-NE

- Conflict of Interest
  - State laws for public officials

- Membership rights
  - Voting or non-voting
Management

- Risk Management
  - Internal and External Threats
    - Internal Threats - Controlling access of authorized users
      - Database structure
        - Isolated data sets, restricted access, and access logs
        - Contractual arrangements for database users and third-party vendors
          - Apportioning liability
    - External Threats - Protecting from outside intrusion
      - Best Management Practices
      - Cyber Liability Insurance
Database Hosting

- Security Breach Notification Laws
  - Exist in each HELIX state
    - Similar construction
    - Focus on private or personal information
  - Impose notification requirements on organizations managing personal or private data
  - Integrate notification protocols into management practices
Intellectual Property

- Three types of intellectual property
  - Copyright
  - Trademark
  - Patent
Copyright

- Copyright
- Database copyright
- Copyright licensing
Next Steps

- Select business model
- Define stakeholder participation in governance
  - Rules for board of directors
  - Rules for management team
- Develop strong contractual relationships
  - Data access
Privacy Questions

- Will we need to obtain a signed data release from every customer in order to post energy data in HELIX/MLS, or can we envision a way forward without this step?
- Are there distinctions between “asset” and “operational” data that could determine what data is made public and what isn’t?
- Are there instances we might envision where we wouldn’t need to obtain customer consent for data sharing?
- Do we need a single regional (or national) policy on data sharing, or might a state-by-state approach be preferable?
Based on Efficiency Vermont’s “Home Energy Rating Information Release”, but modified for wider use

The enrollee hereby authorizes _______ to release the following energy asset information for the purpose of assisting real estate appraisers and realtors in the development of accurate home appraisals: the physical address of the rated property; the score/rating; whether the home has received an energy performance certification (e.g., labeled as ENERGY STAR®, LEED for Homes, National Green Building Standard, Passive House, etc.); and the date that the criteria was met.

Requests by enrollees to withhold such release will be honored, providing such notification is received prior to completion of energy documentation. For all enrolled properties, energy asset information and associated project documentation will be available to subsequent owners of the property upon request.

Include any other additional data fields?
- Estimated annual energy use and cost
- All data fields noted in RESO Data Dictionary
Governance Questions

- Does a 501(c)(6) make the most sense as HELIX ownership structure?
- How should we set up HELIX governance to avoid potential conflicts of interest?
- What should a board of directors and advisory council look like?
- What type of organization should manage HELIX?
- Where should HELIX be incorporated?
- How do we ensure data protection, risk management, intellectual property protection and licensing?
In the modern real estate marketplace, buyers and renters can sort and filter listings of potential buildings for myriad characteristics. However, energy efficiency and other energy features are rarely among these. The value of energy efficiency in homes, offices, and other buildings has historically not been effectively communicated between the property owner, real estate broker, appraiser, lender, and buyer due in large part to a lack of consistent tools to facilitate this exchange. In recent years, though, considerable advances have been made to streamline this process, enable accurate valuation of building energy efficiency in real estate transactions, and make energy efficiency visible.

Green Real Estate Resources:

NEEP supports this "greening" of the real estate market by providing resources for on-the-ground real estate professionals tailored to the needs of the Northeast and Mid-Atlantic residential and commercial real estate markets.

- Real Estate Professionals Checklist
- Renter's Guide: Creating Lower Cost, Energy Efficient Apartments and Homes
THANK YOU!

Carolyn, Kevin, Charlie
and the rest of the HELIX Team

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P: 781.860.9177
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