Montpelier Energy Ordinance Development

PUBLIC MEETING

AUGUST 20, 2019 6:00 – 7:30 PM

Agenda

1. Welcome (Mayor Anne Watson)
2. Background
    a. Montpelier's Energy Goals
    b. Act M-7 (H.547)
3. Montpelier Energy Advisory Committee (Kate Stephenson)
    a. Strategies to get to net zero
4. Context (Richard Faesy)
    a. Benefits of Energy Information
    b. Energy Disclosure Policies in the U.S.
    c. Studies that Support Energy Information
5. Montpelier Energy Ordinance Development
    a. Montpelier's Charter Change Language
    b. Potential Ordinance Elements for Montpelier
6. Suggestions and Ideas
    a. Input from Participants
7. Summary and Next Steps

Welcome & Introductions

Background

- Review of Montpelier's energy goals
  - 2050
  - 2030
  - 2019-2020
- Act M-7 (H.547) Charter Change Legislation
  - Sec. 2. 24 App. V.S.A. chapter 5, § 301 is amended to read:
    - § 301. POWERS AND DUTIES OF CITY COUNCIL
    - (D) *Regulation and enforcement of energy efficiency disclosure requirements for existing and new commercial and residential properties at the time a property is listed for sale.*

Montpelier Energy Advisory Committee

KATE STEPHENSON

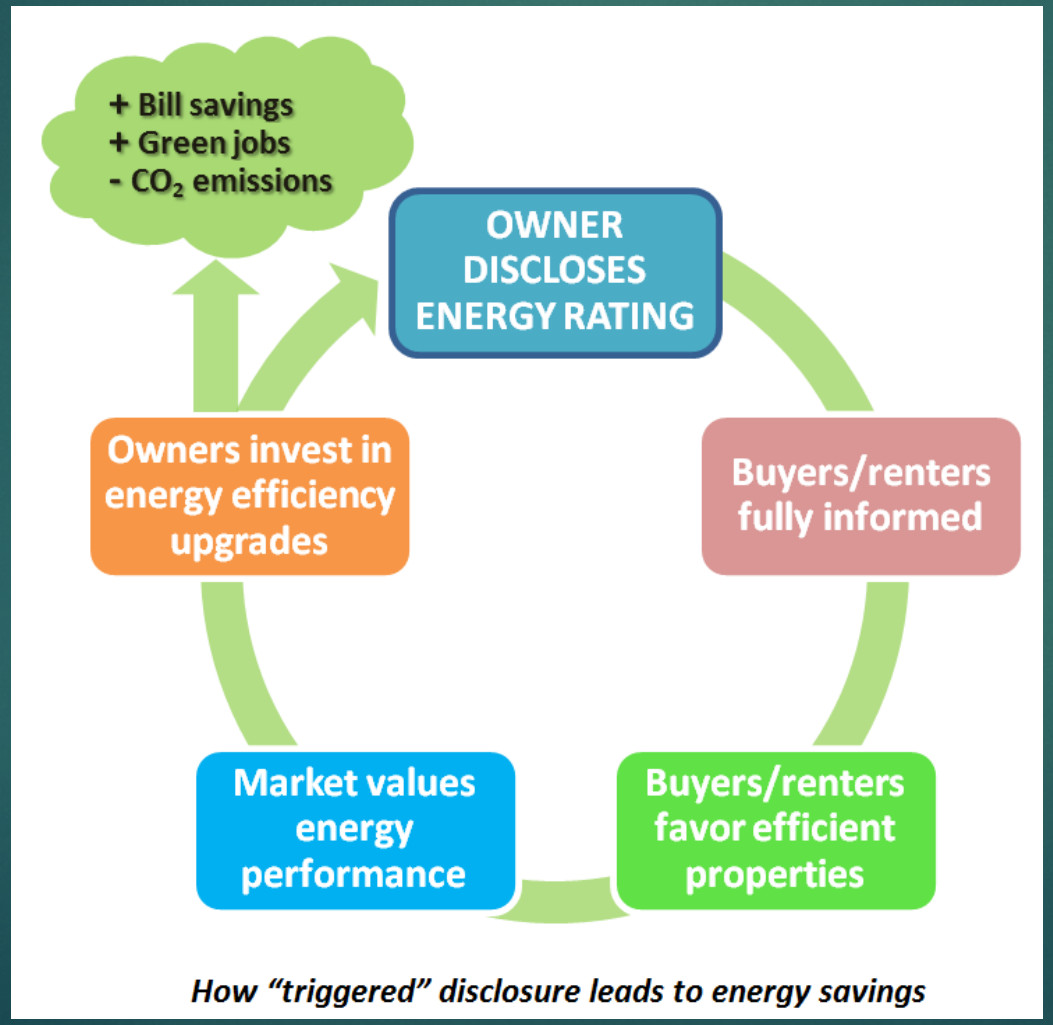
Montpelier's Net Zero Plan

- Plan overview
- The role of energy disclosure
- Start with residential, but address all buildings over time
- Resources to help home buyers and sellers

Energy Labeling & Disclosure Context

RICHARD FAESY, ENERGY FUTURES GROUP

How Energy Disclosure Supports Montpelier's Energy Goals



How "triggered" disclosure leads to energy savings

DUNSKY ENERGY CONSULTING, *Valuing Building Energy Efficiency through Disclosure and Upgrade Policies*. Northeast Energy Efficiency Partnerships (NEEP), November 2009.

Vermont's Energy Disclosure and Labeling History

1987
Energy Rated Homes of VT (HERS)

2011
Governor's Building Energy Disclosure Working Group

2011
Comprehensive Energy Plan

2012
Thermal Efficiency Taskforce

2013-2014
Act 89 – Residential & Commercial Working Groups

2015-2017 REVEAL
(Recognizing Efficiency Value through Energy Asset Labeling)
Residential Labeling Pilot Program

2016
Act 89 – Progress Report to Legislature

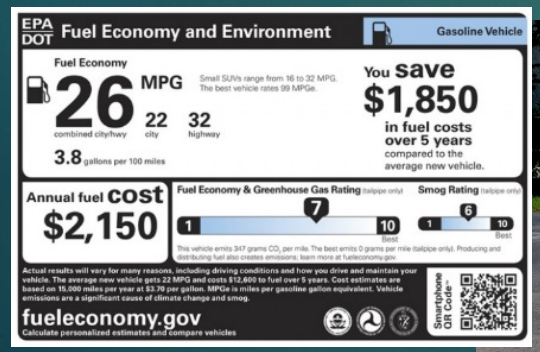
2017 & 2018
S.118
Disclosure & Benchmarking Legislation (never passed)

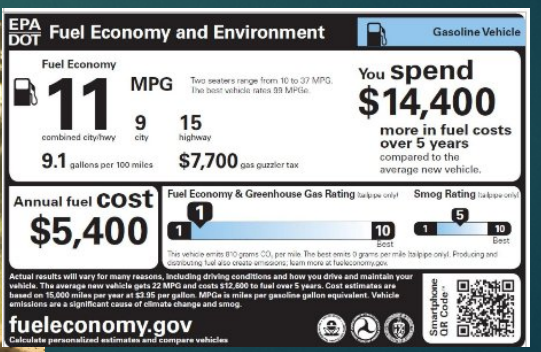
2019
Act M-7 Montpelier Charter Change & Act 62 Energy Labeling Working Groups

2019-2020
Montpelier Energy Disclosure Ordinance Development

Informed Consumers Make Better Decisions

- Studies have shown that homes that disclose energy costs sell for higher price and faster
- Energy costs are just one factor in a larger decision, but homebuyers like having energy information, as they do with cars
- Low scores or high energy costs do not necessarily “kill” a sale; they just indicate opportunity to reduce energy costs





Knowledge Is Power!

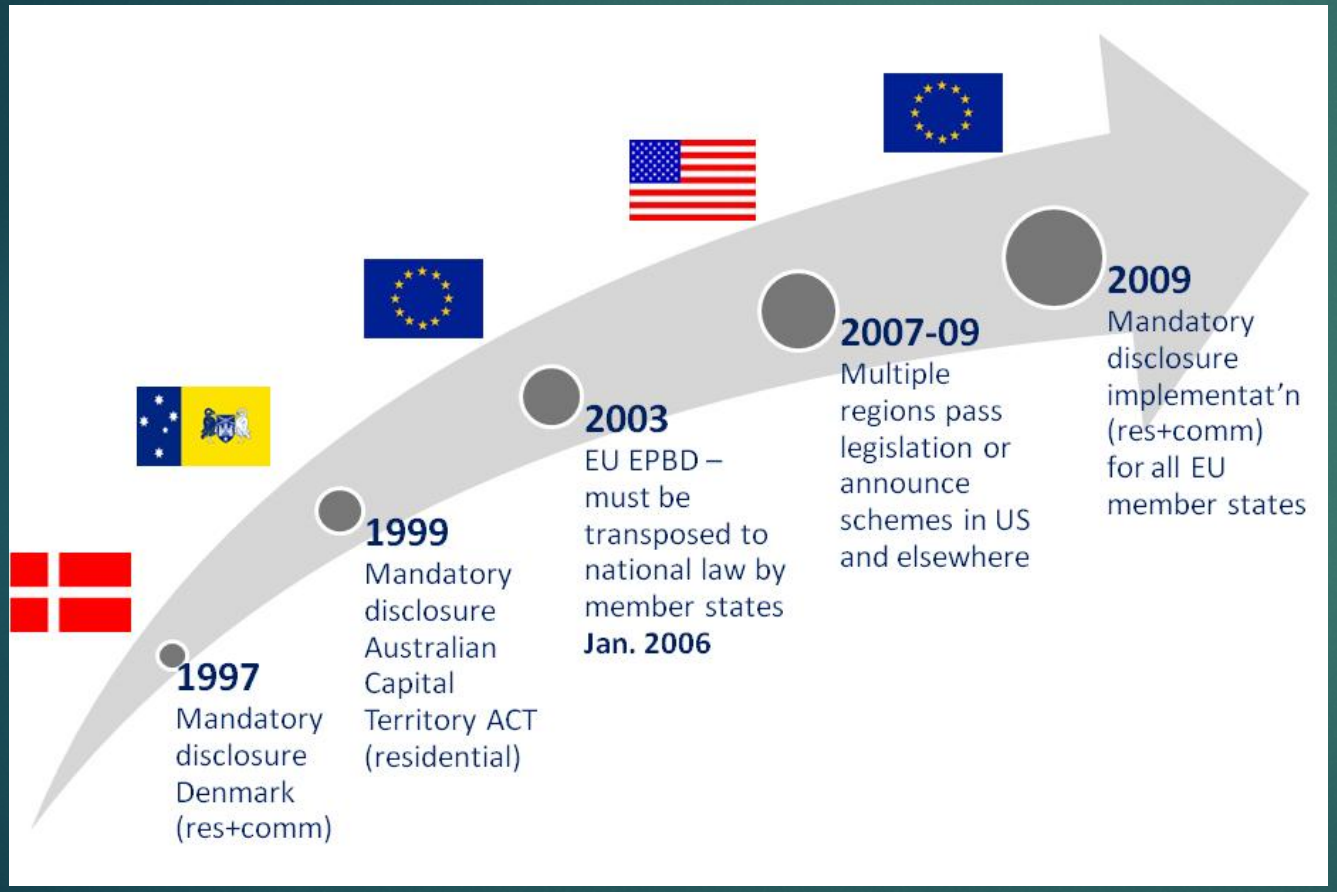
- Energy information with recommendations influences new home owners into making energy renovations

Assessments of Home Energy Ratings on Conversion Rates

Jurisdiction	Portion of Buyers Influenced by Rating / Disclosure Report Recommendations When Making Renovations
Austin, TX	12% in first year of program (ACEEE, 2011)
Australia (ACT)	15% (Energy Consult, 2006)
France	37% (ADEME, 2012)
Portugal	17.5% (ADENE, 2015)
The Netherlands	22% (Murphy, 2014)

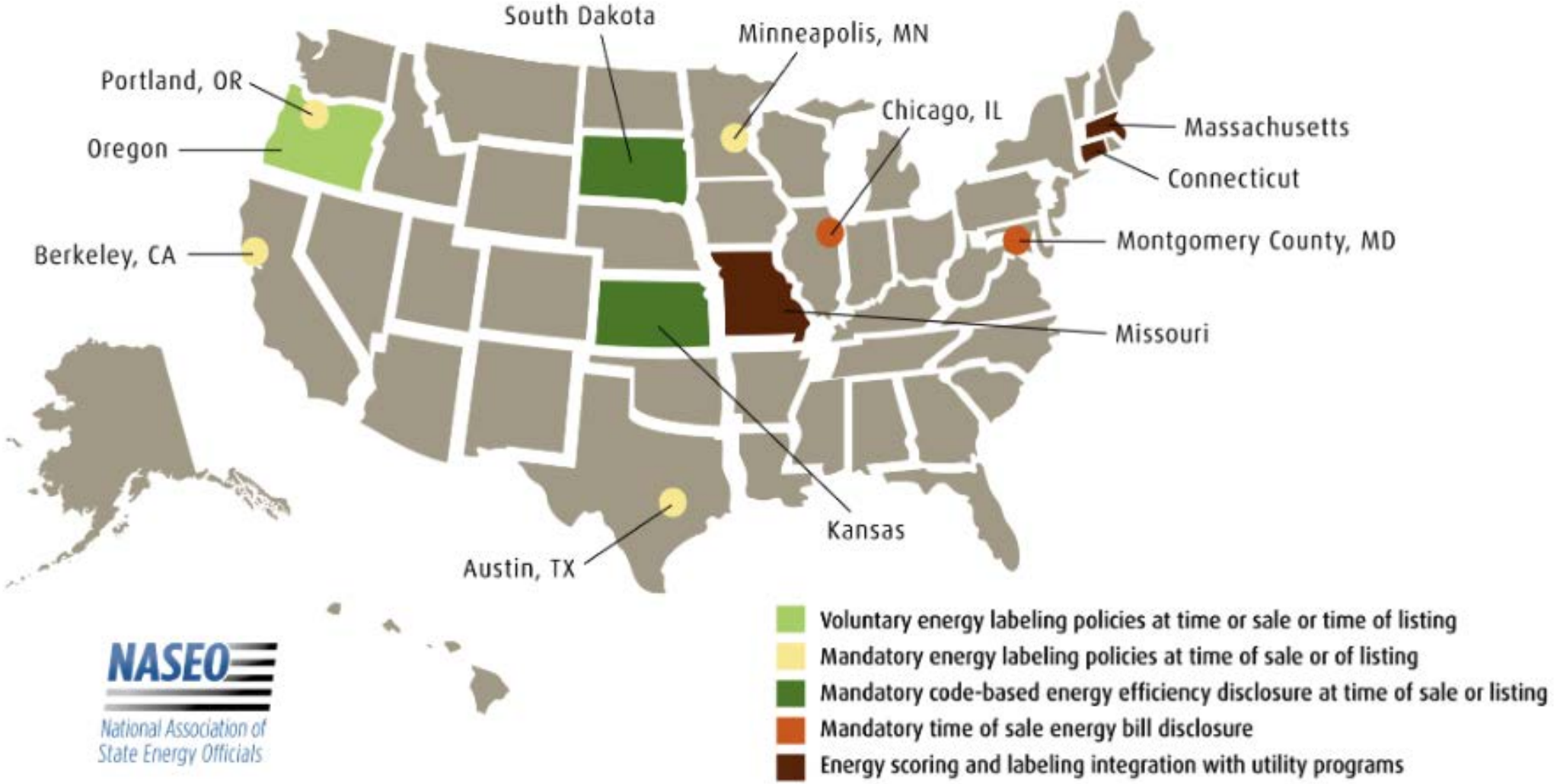
Source: Hill et al., 2016. Predicting Home Energy Rating and Disclosure Program Impacts for North American Jurisdictions. ACEEE Summer Study Paper.

Energy Disclosure Isn't A New Idea



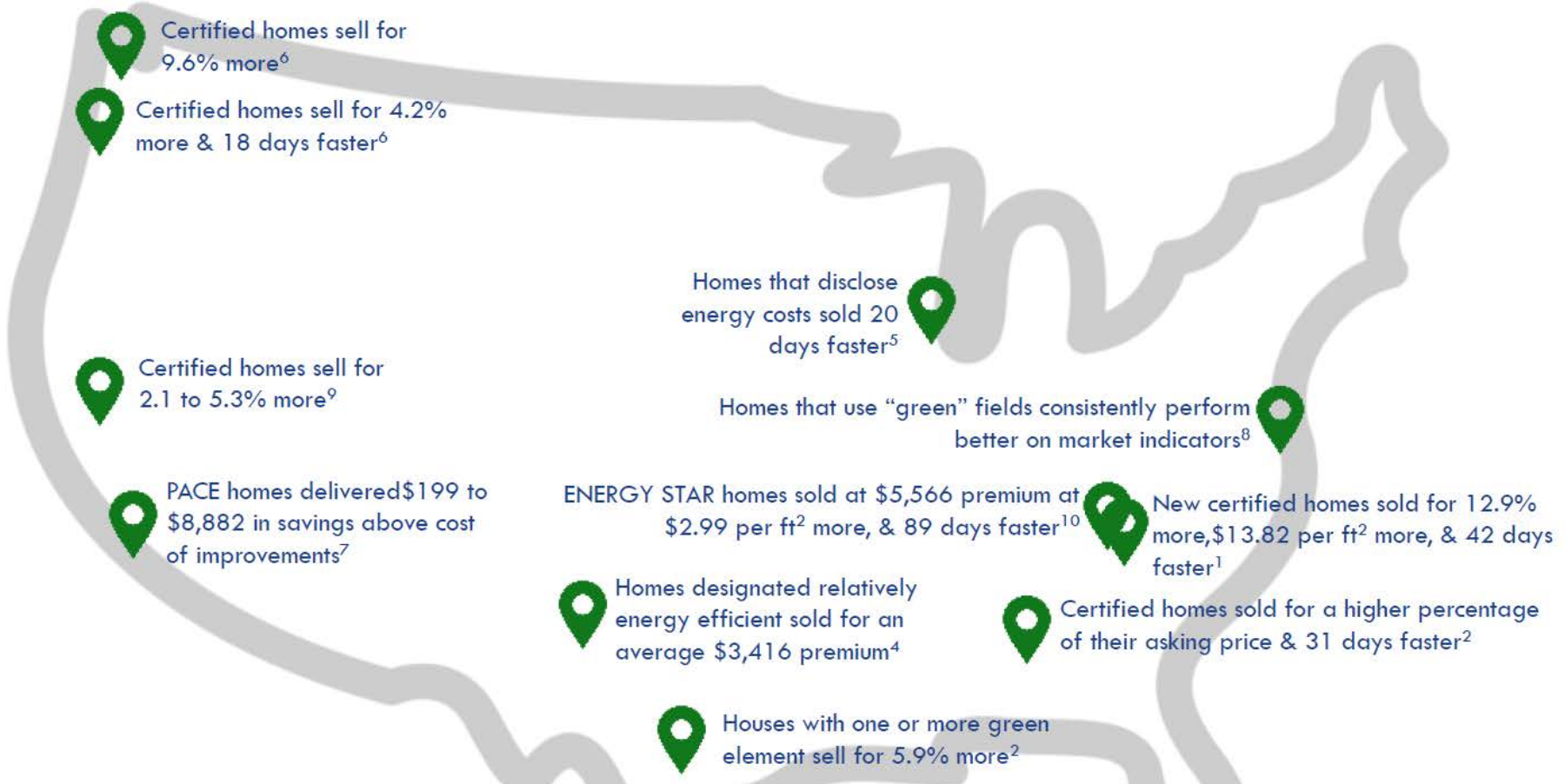
DUNSKY ENERGY CONSULTING, *Valuing Building Energy Efficiency through Disclosure and Upgrade Policies*. Northeast Energy Efficiency Partnerships (NEEP), November 2009.

Residential Energy Disclosure Policies in States and Cities



As of June 2019

Studies Nationwide Show Energy Efficient Homes Sell for More, Faster



Sources: [1]Argeris, 2010; [2]Cadena & Thomson, 2015; [3]Carson Matthews, 2009; [4]Corgel, Goebel, & Wade, 1982; [5]Elevate Energy, 2015; [6]Griffin, 2009; [7]Goodman & Zhu, 2016; [8]Institute for Market Transformation, 2015; [9]Kahn & Kok, 2013; [10]Pfleger et al., 2011.

Better Buildings

*Not all studies shown have been peer reviewed.

U.S. DEPARTMENT OF ENERGY

Benefits to Montpelier Buyers & Sellers

- Protects and rewards investments made in your home for energy efficiency and solar
- Helps the market to better value efficient homes with energy cost transparency
- Opportunities to roll energy improvement costs into the mortgage
- Consumer protection by helping buyers know what they are getting into

Montpelier Energy Disclosure Ordinance Development

RICHARD FAESY, ENERGY FUTURES GROUP

Act M-7 (H.547) of 2019

- § 301. POWERS AND DUTIES OF CITY COUNCIL
  - (D) *Regulation and enforcement of energy efficiency disclosure requirements for existing and new commercial and residential properties at the time a property is listed for sale.*

Options for Moving Forward

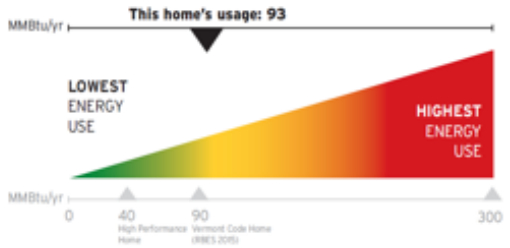
- Vermont Home Energy Profile
- Automated Energy Model
- Home Energy Score or energy audit, but cost and time
- Act 62 of 2019: The Residential Building Energy Labelling Working Group and the Commercial and Multiunit Building Energy Labeling Working Group
- Hearing from stakeholders and residents of Montpelier

VT HOME ENERGY PROFILE

THIS HOME'S EXPECTED ENERGY COST

$3,137

ANNUALLY



The Vermont Home Energy Profile is a report on three related components of home energy: usage, cost, and efficiency. The profile is based on this home's building features such as size, structure, insulation levels, and mechanical systems. Standardized assumptions are used for variable factors such as weather, occupancy, lights and appliance usage. **Energy usage and costs are estimates only.** See reverse side for details.

HOME ENERGY COSTS

Expected Annual Energy Costs

The breakdown of fuel usage is an estimate based on the fuels used in this home and average fuel costs

Propane	$1,578	631 gal @ $2.50 / gal
Electric	$1,559	10,396 kWh @ $0.15 / kWh

Source: *Populate with software tool and version*

HOME INFORMATION

LOCATION:
123 Main Street
Anytown, VT 05000

YEAR BUILT:
2005

CONDITIONED FLOOR AREA:
3,029 SQ.FT

REPORT INFORMATION

PROFILE ISSUE DATE:
6/10/15

PROFILE GENERATED BY:
John Doe
Sample A. Contracting

Brought to you by a collaboration of Vermont Residential Energy Labeling Stakeholders and HELIX | Where home energy performance data creates market value.

ACHIEVEMENTS

Completed Actions, Home Energy Certifications and Improvement Measures

✔ Generated a Vermont Home Energy Profile

Congratulations! You've taking the first step to understanding your home's energy use....

TAKE ACTION!

The following actions can help you save money on your energy costs for years to come

- ☐ Contact a certified energy professional to learn how to make your home more efficient and comfortable and what financial incentives are available.
- ☐ Ensure insulation levels meet Vermont Residential Building Energy Standards.
- ☐ Discover if unseen air leaks are contributing to heat loss and creating uncomfortable drafts in your home.
- ☐ Verify all appliances and mechanical equipment are ENERGY STAR® certified.

How do a Home's Features Impact Expected Energy Costs?

		LOW ENERGY USE *Efficiency Vermont Certified High Performance Home*	VERMONT ENERGY CODE *Vermont 2015 Residential Building Energy Standards (RBES)*	HIGH ENERGY USE *Typical Pre-Weatherized Existing Home*
Building Tightness		≤1 ACH50	3 ACH50	≥7 ACH50
Attic Insulation		≥R-60	R-49	≤R-19
Wall Insulation		≥R-25	R-25	≤R-3
Basement Wall Insulation		≥R-40	R-20 (cavity) or R-15 (continuous)	R-0 (uninsulated)
Windows & Glass Doors		Triple Pane Low-E, High Solar Gain	Double Pane (U-0.32) Low-E	Single Pane Clear
Heating System	gas	≥90 AFUE ENERGY STAR®	80 AFUE (Federal minimum)	≤70 AFUE
	electric	≥9 HSPF (NEEP cASHP specification)	8.2 HSPF (Federal minimum)	≤7 HSPF
Cooling System		>=15 SEER ENERGY STAR®	14 SEER (Federal minimum)	≤11 SEER
Hot Water Heater (50 gal)	gas	>=0.64 UEF ENERGY STAR®	0.56 UEF (Federal minimum)	≤0.55 UEF
	electric	>=2.0 UEF ENERGY STAR®	0.92 UEF (Federal minimum)	≤0.87 UEF
Appliances and Electronics		ENERGY STAR®	n/a	Conventional
Lighting		100% LED's/CFL's	>= 75% 'high efficacy'	Incandescent, Halogen
Solar PV present?		*Solar Photovoltaics (PV) generate electricity from the sun with zero emissions.*		

Mind Your R's and U's!

Becoming familiar with the efficiency values of the various components of a home will help you understand why the home uses energy the way it does. Energy features that contribute to a home's Expected Annual Energy Use and Costs are listed to the left.

Useful Energy Terms and Definitions

R-Value: Measures the resistance of heat flow through a material such as insulation. Higher R-Values mean more heat stays inside your home..

U-Value: The performance rating for windows. A lower U-Value indicates a better performing window and a more comfortable home.

Low-E: Low emissivity is a coating applied to windows that reflects heat back to its source to help your home stay more comfortable year round.

ACH50: Air changes per hour at 50 pascals. Lower values mean the home has fewer air leaks.

AFUE: Annual Fuel Utilization Efficiency defines the efficiency of fossil fuel furnaces and boilers. Higher is better.

HSPF: Heating Seasonal Performance Factor. Defines the efficiency of air source heat pumps in heating mode. Higher is better.

SEER: Seasonal Energy Efficiency Ratio. Defines the efficiency of central air conditioners and air source heat pumps in cooling mode. Higher is better.

UEF: Uniform Energy Factor measures water heaters performance. A higher rating is more energy efficient.

What are the components of the Vermont Home Energy Profile?

Expected Annual Energy Costs

When Energy Costs come from the *Automated Energy Model (AEM)*, publicly available information about a home such as its age, size, heating system type and fuel are used to provide an algorithm-based **estimate** of the home's likely annual energy costs.

When Energy Costs are *Third-Party Verified*, an energy professional has visited the home and generated an energy model-based cost **estimate** using detailed information about the home's actual energy features. In both cases, standard assumptions are used for variable factors such as weather and occupancy.

Average annual fuel prices are obtained from the U.S. Energy Information Administration (EIA) and the Vermont Public Service Department.

Expected Annual Energy Use

All sources of energy used in this home (electricity plus fuels such as oil, gas, propane and/or wood) are converted to a common unit of energy called MMBtu. MMBtu stands for one million British Thermal Units. A low MMBtu identifies a home as energy efficient with lower energy costs and a smaller carbon footprint.

1 MMBtu =
- 7 gal fuel oil
- 10 therms of natural gas
- 11 gal of propane
- 293 kWh of electricity
- .05 cords of wood

Take Action!

Information is power! The Vermont Home Energy Profile can inform the next steps to improve this home's energy efficiency.
If you have questions about how to interpret this Profile please contact Efficiency Vermont at 888-921-5990.

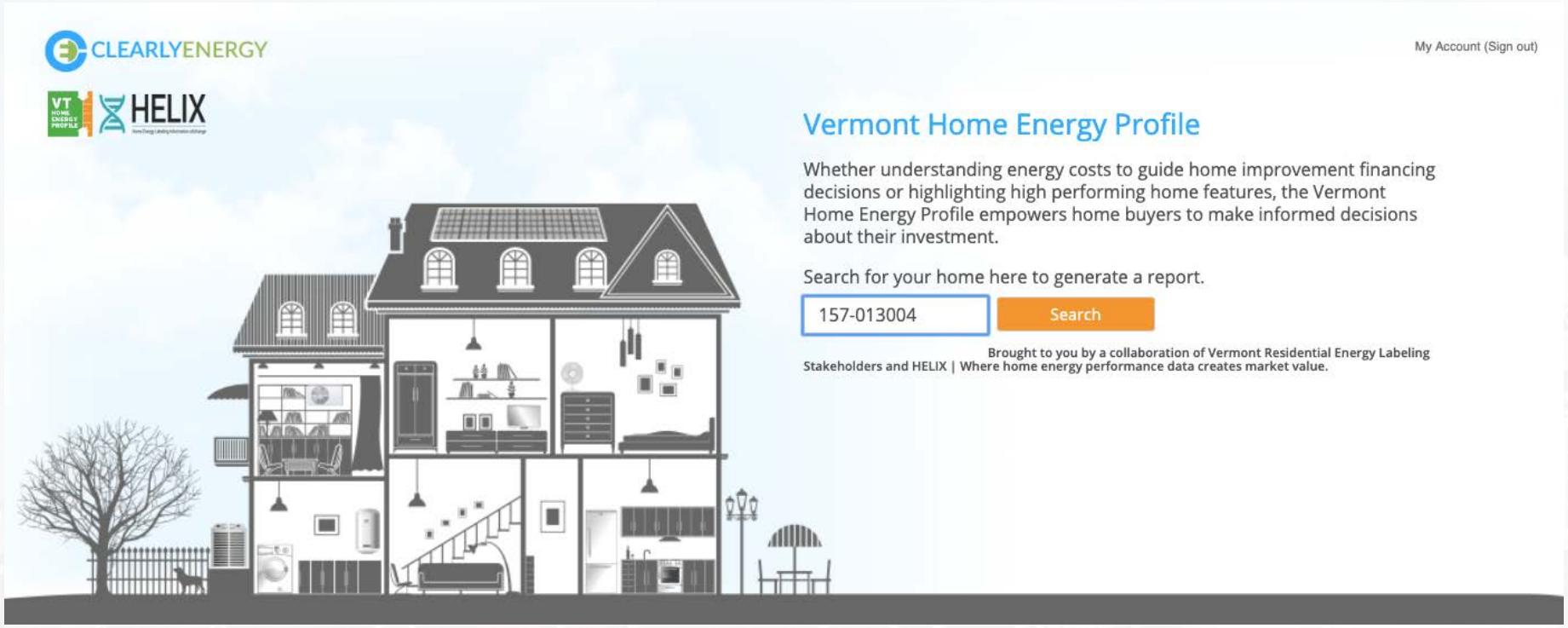
For energy saving tips, links to qualified contractors, financing, and rebates on energy saving equipment, contact:

Efficiency Vermont • 888-921-5990
www.efficiencyvermont.com
Vermont's Weatherization Program
www.dcf.vermont.gov/oeo/weatherization

Vermont Gas Systems • 802-863-4511
www.vermontgas.com
Burlington Electric Department • 802-865-7342
www.burlingtonelectric.com
Drive Electric Vermont
www.driveelectricvt.com
Go! Vermont
www.connectingcommuters.org
Renewable Energy Vermont
www.revermont.org

Vermont Profile Landing Page

Homes will be searchable by parcel ID, SPAN # or address

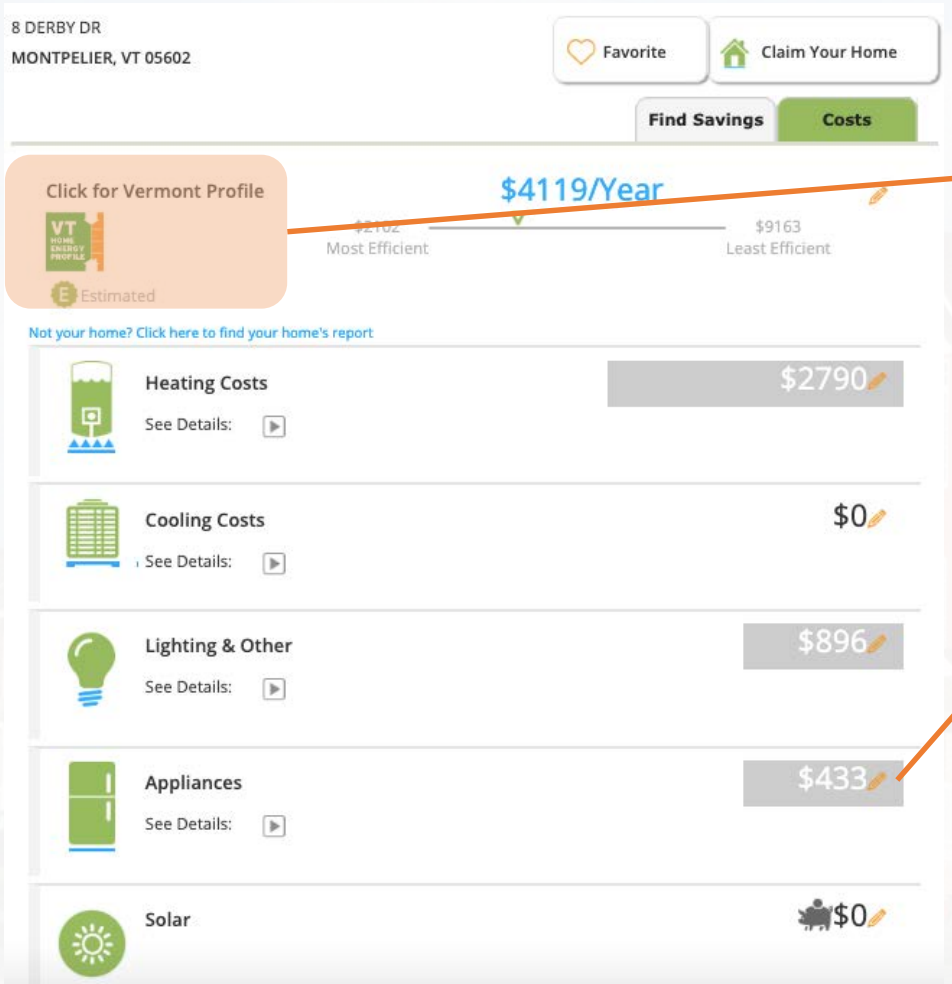


Check for address & data in HELIX

CE Landing - Address Search → Solar & Certifications → Home Energy Estimate

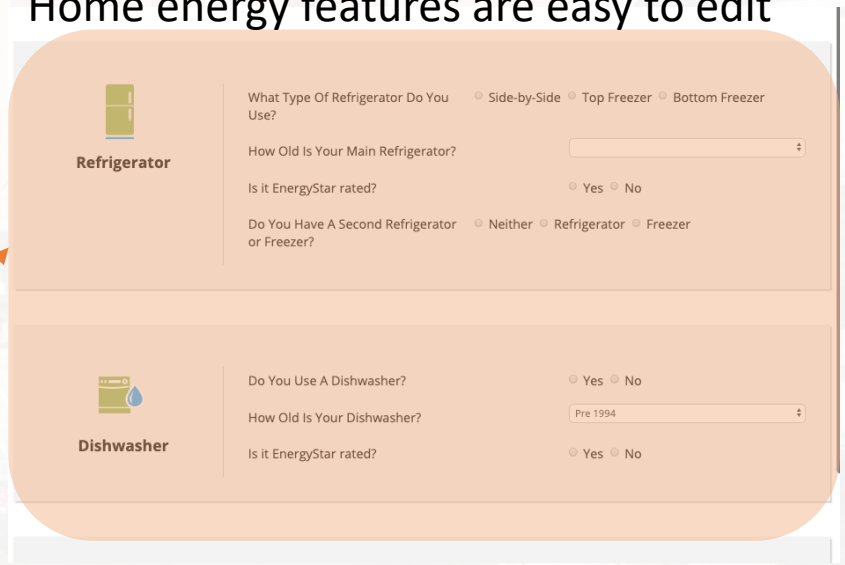
Home assessment data

Baseline Estimate Can be Refined by Homeowner or Representative

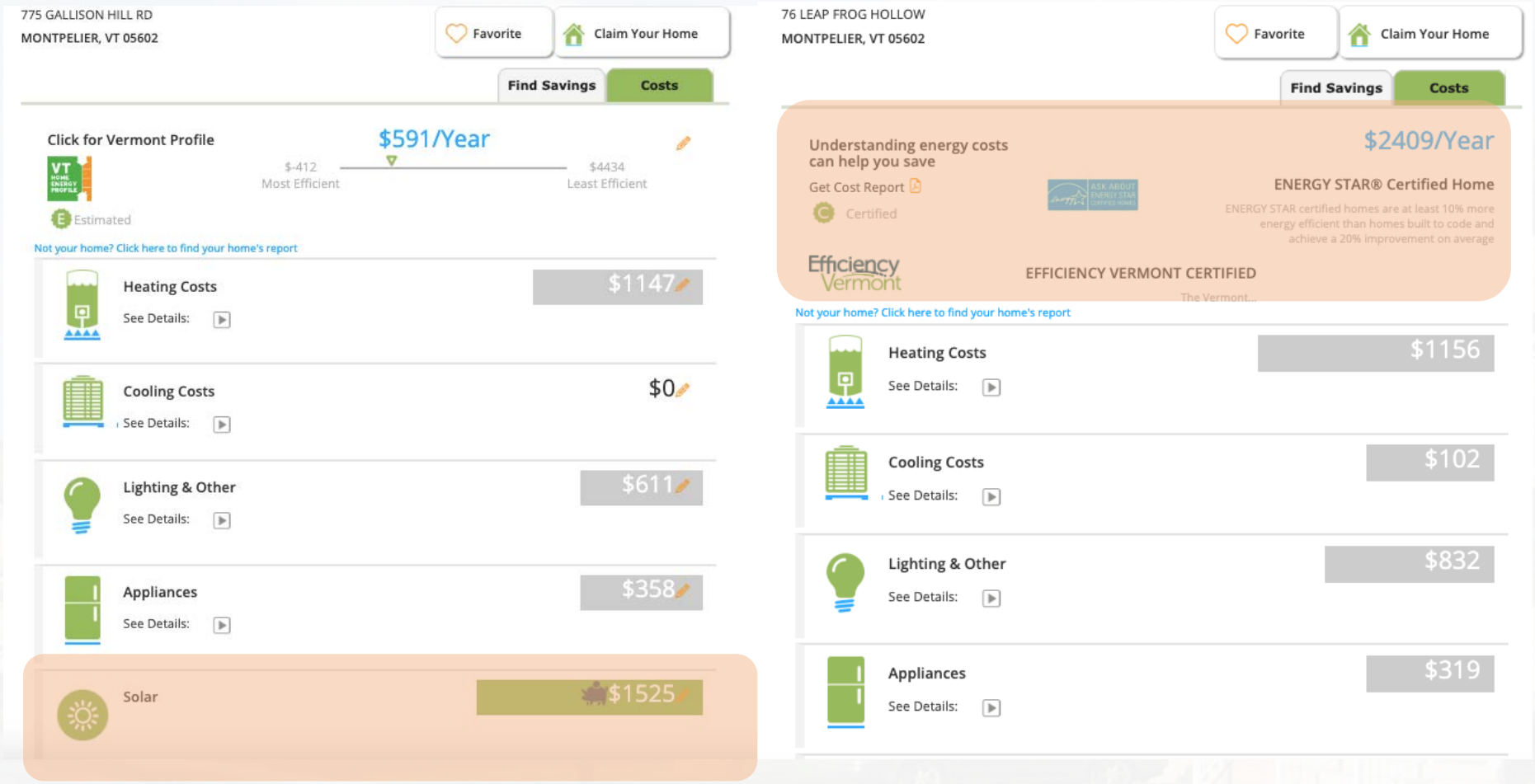


Vermont Home Energy Profile available for download and automatically populates HELIX/MLS

Home energy features are easy to edit

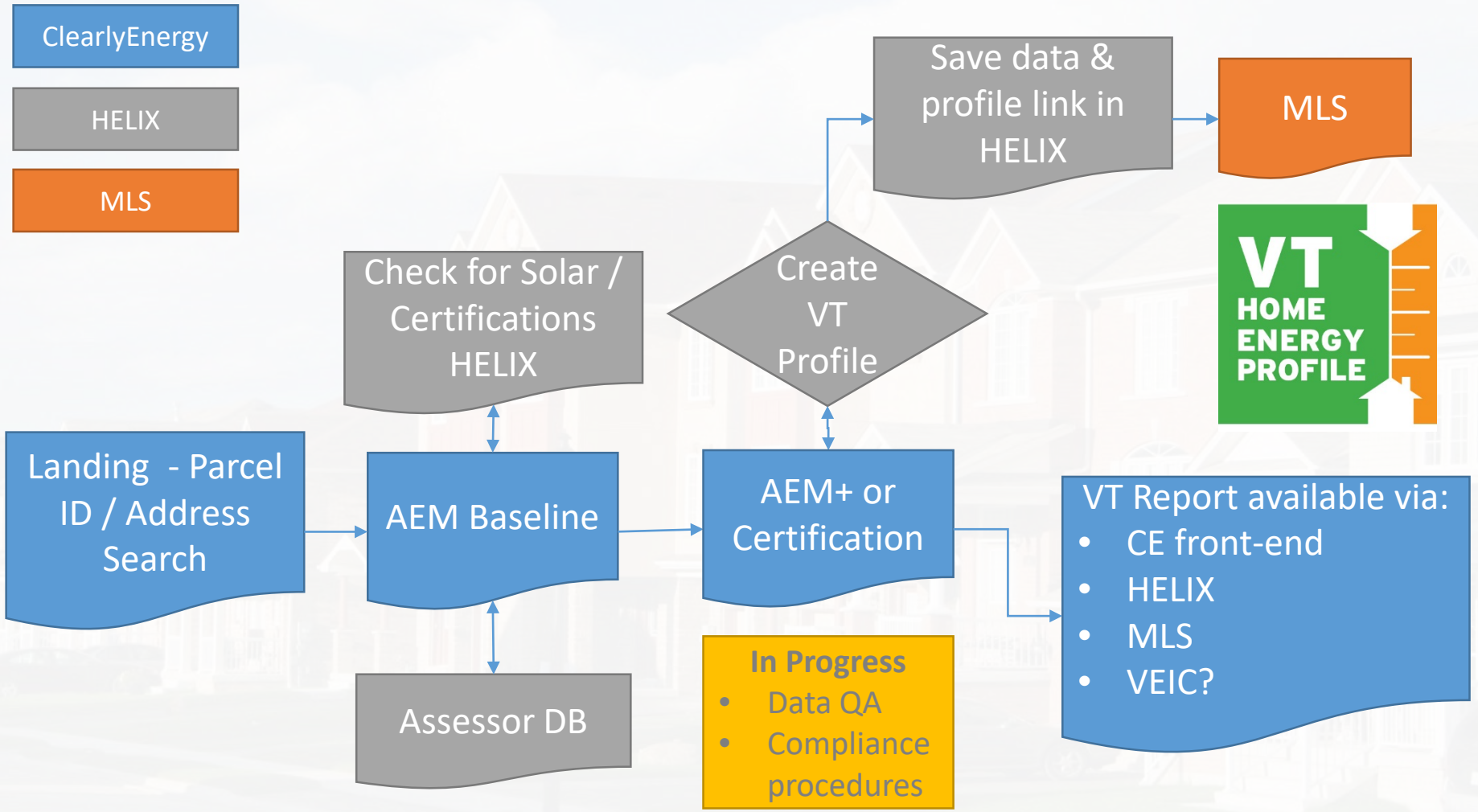


Solar and Home Certifications Are Automatically Credited



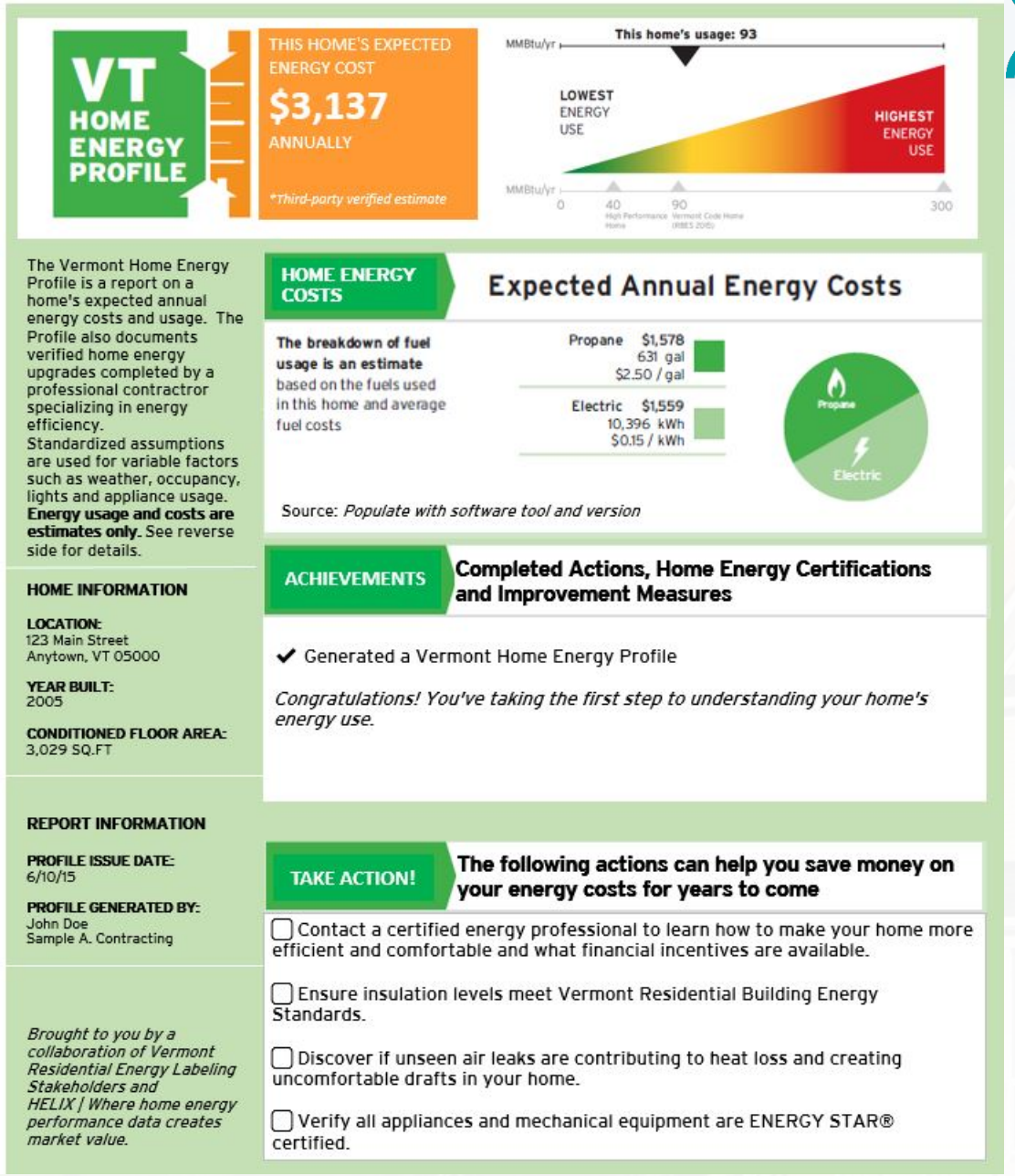
Application to Montpelier Ordinance

HELIX Serves Reference Data and Manages MLS Links



Vermont Home Energy Profile 2.0

- Maintain MMBtu total energy usage wedge in ‘Dashboard’
  - Update reference MMBtu based on Clearly Energy best/worst case scenarios
- Achievements
  - HELIX data where available or logic-based text dependent on user inputs
- Take Action!
  - Logic-based text dependent on Achievements
  - Generalized recommendations



HELIX
Home Energy Labeling Information eXchange

Discussion

FACILITATED BY MAYOR ANNE WATSON

Discussion Questions

- What *priorities* would you have in the implementation of an energy disclosure ordinance?
- What would make an ordinance *work effectively and efficiently* for home buyers and sellers?
- What would you *value* in the implementation of an energy disclosure ordinance?
- What potential *obstacles* could you see an energy disclosure ordinance facing? What suggestions would you have to work through those obstacles?
- Are there any *privacy issues* we need to consider?
- Ideas, suggestions, recommendations…

Next Steps…

- Draft ordinance language after considering public and Realtor comments
- Additional stakeholder discussions
- Second public meeting to review ordinance language
- City Council review

Thank you for coming!

Ordinance Elements (Draft)

Element	Potential Solution
Market Sector	• Start with single-family residential for sale • Plan for commercial, multifamily (4+ units) and rental properties in the future
Labeling Tool	• Vermont Home Energy Profile generated with Automated Energy Model (AEM) • Allow Realtors, sellers or building professionals to generate the Profile • Free (Efficiency Vermont subsidized) at this time
Trigger	• Time of home listing
Enforcement & Penalties	• Set fine as a percentage of home listing or sale price to encourage compliance • Enforce from beginning for consistency • Set penalty time at half of the past 3-year average days on market • Send warning notices well in advance of closing so sellers have time to take action and disclose Profile to prospective buyers • Develop a form to be co-signed by sellers and buyers at time-of-closing to ensure compliance
Exemptions	• Foreclosure sale, trustee's sale, deed-in-lieu of foreclosure sale
Database	• NEEP's HELIX database for tracking and reporting
Support & Training	• Efficiency Vermont • Northeast Energy Efficiency Partnerships (NEEP)