

# Home Energy Score

A Regional Approach to  
**R**esidential **E**nergy **A**ssessment & **D**isclosure

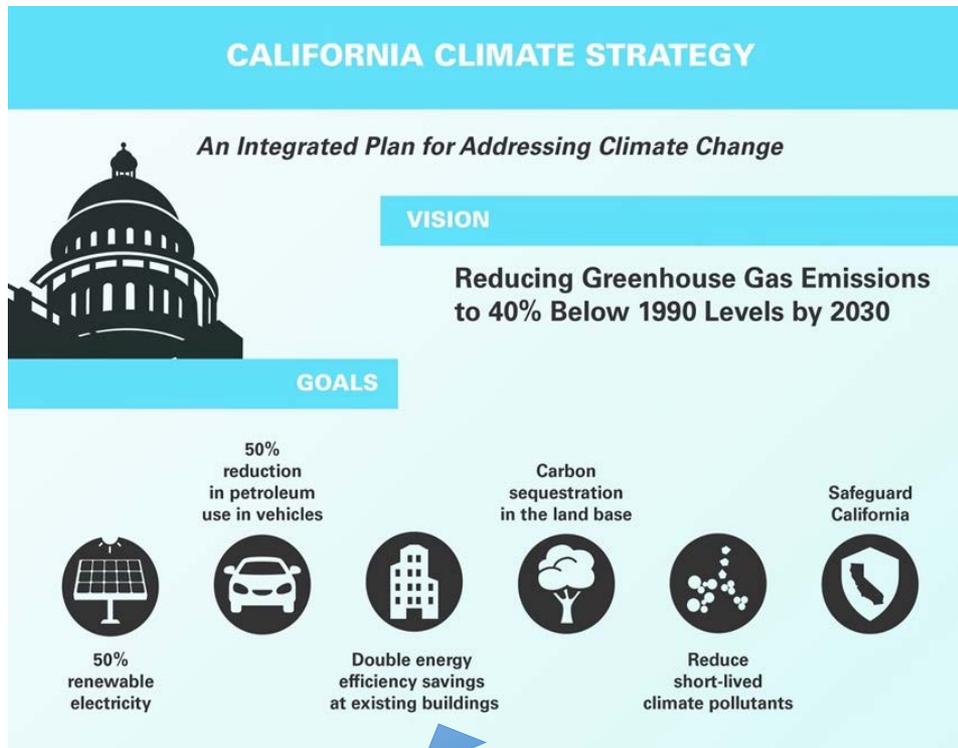


**BAY  
AREA** Regional  
Energy  
Network

# AGENDA

- The Residential Sector
- Policy Options
- Home Energy Score
- BESO
- BayREN Regional Support
- From READ to Retrofit
- Q&A

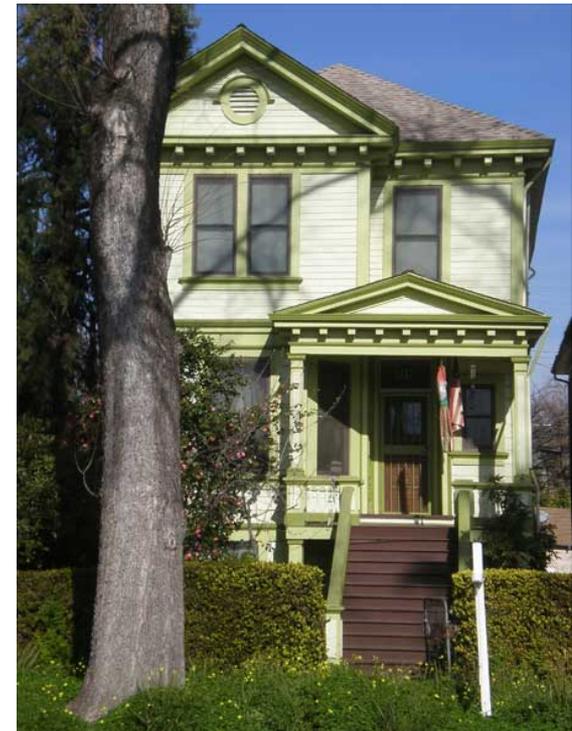
# Climate Policy Context



- AB 32
- CA Energy Efficiency Strategic Plan
- AB 758
- AB 802
- Local Climate Action Plans

# The Residential Sector

- CA residential sector produces 18% of total GHGs
- 9 million single-family homes in California
- 2/3 of California's residential buildings built before 1982



## Regional Policy Framework

Model ordinance & supporting tools:

- Create a consistent playing field for all stakeholders
- Reduce administrative burdens and costs for jurisdictions
- Result in more cost-effective GHG reductions than a city-by-city approach
- Maintain flexibility for cities to tailor the policy to meet their customized local needs



## Local Policy Options

- Promote voluntary programs
- Mandate energy assessment and disclosure
- Require upgrades and building improvements
- Combination of the above



# Voluntary Programs

Positive drivers to encourage efficiency improvements:

- Incentives, in the form of tax credits and/or rebates
- Innovative financing such as on-bill programs and Property Assessed Clean Energy (PACE) programs



# Mandatory Policy

## Residential Energy Conservation Ordinance (RECO)

Requires energy upgrades to existing homes

Challenges:

- Expensive to administer and enforce
- High cost of compliance for homeowners
- Political opposition from real estate community

# RECO: Prescriptive vs Performance

Type of RECO	PROS	CONS
<p>PRESCRIPTIVE</p> 	<p>Clear list of efficiency measures</p> <p>Well-defined pathway for compliance</p>	<p>Lags behind advances in technology and Energy Code.</p> <p>“One size fits all” misses opportunities for customized upgrades</p>
<p>PERFORMANCE</p> 	<p>Flexibility for customized efficiency measures</p> <p>Integrated approach aligns with whole-house incentive programs</p>	<p>High cost of compliance for homeowners</p> <p>Costly to track, verify, and enforce program compliance</p>

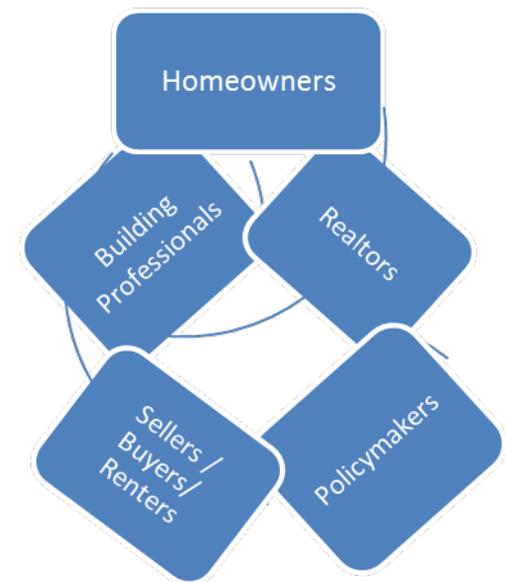
## READ

A new generation of policy alternatives

**R**esidential  
**E**nergy  
**A**ssessment and  
**D**isclosure

## Residential Energy Assessment & Disclosure READ Stakeholders

- Homeowners / sellers
- Prospective home buyers / renters
- Realtors
- Policymakers
- Building Professionals



# Why READ?

- Improves energy literacy
- Empowers consumers
- Drives investment in energy upgrades
- Increases market transparency by creating a clear rating system

## Ratings: Operational vs Asset

Type of Rating	BENEFIT	ISSUE
OPERATIONAL	<ul style="list-style-type: none"><li>• Measures occupant behavior</li><li>• Easy access to data</li></ul>	<ul style="list-style-type: none"><li>• Does not reflect building features</li></ul>
ASSET	<ul style="list-style-type: none"><li>• Describes building attributes</li><li>• Improves asset value</li></ul>	<ul style="list-style-type: none"><li>• Not calibrated to actual use</li></ul>

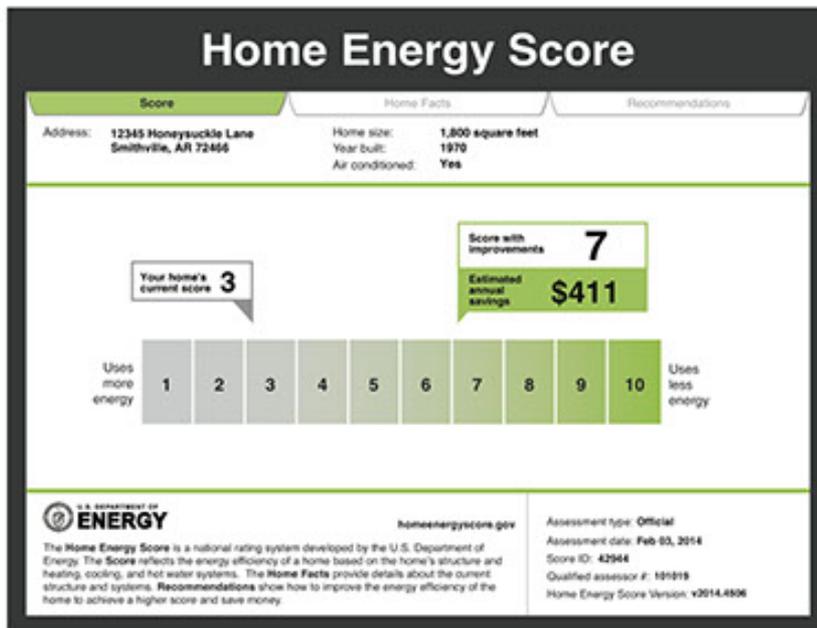


Like miles-per-gallon ratings on automobiles, or nutritional labels on food, an Asset Rating gives consumers the tools to make informed choices

<b>Nutrition Facts</b>	
Serving Size 172 g	
Amount Per Serving	
Calories 200	Calories from Fat 8
% Daily Value*	
Total Fat 1g	1%
Saturated Fat 0g	1%
Trans Fat	
Cholesterol 0mg	0%
Sodium 7mg	0%
Total Carbohydrate 35g	12%
Dietary Fiber 11g	45%
Sugars 6g	
Protein 13g	
Vitamin A 1%	Vitamin C 1%
Calcium 4%	Iron 24%

\*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

# Home Energy Score: A “MPG” for Homes



Score includes

- Scale of 1 to 10
- Home Facts
- Recommendations

# Why Home Energy Score?

- Affordable, reliable, simple and action-oriented
- Standardized label to understand a home's efficiency and compare it to similar homes.

Some things are easier to compare than others



Nice countertop



Nice attic insulation

# 40 Data Points Collected

- No specialized equipment needed (blower door, infrared camera, etc.)
- Significant overlap with a Home Inspection Report
- Low-cost service
  - Takes approximately 1 hour if done as a stand-alone assessment

## Assessment Checklist

### General Info:

- Year
- # of bedrooms
- Blower door test?
- Professionally air sealed?
- Window specs?

### Outside

- House Orientation
- # of stories
- Roof: Predominant exterior finish
  - Color
- Walls: Same type on all sides?
  - Construction type
  - Exterior finish
- Windows: Same on all sides?
  - Panes
  - Frame
  - Glazing

### Inside

- Attic
  - Roof Construction
  - Insulation type & amount
  - Air sealed?
  - Air handler present? Type and year
  - Ducts?: Insulated? Sealed?

- Upper Floor
  - Square feet
  - Ceiling Height
  - Skylights?
  - Windows
- Main Floor
  - Square feet
  - Ceiling Height
  - Skylights?
  - Windows
  - Walls & insulation
- Crawlspace - insulation type & amount
  - Ducts?: Insulated? Sealed?
- Basement – Conditioned?
  - Square feet
  - Ceiling Height
  - Windows
  - Walls & insulation
- HVAC Equipment
  - Type?
  - Year or SN?
- Water Heater
  - Type?
  - Year or SN?

Notes:

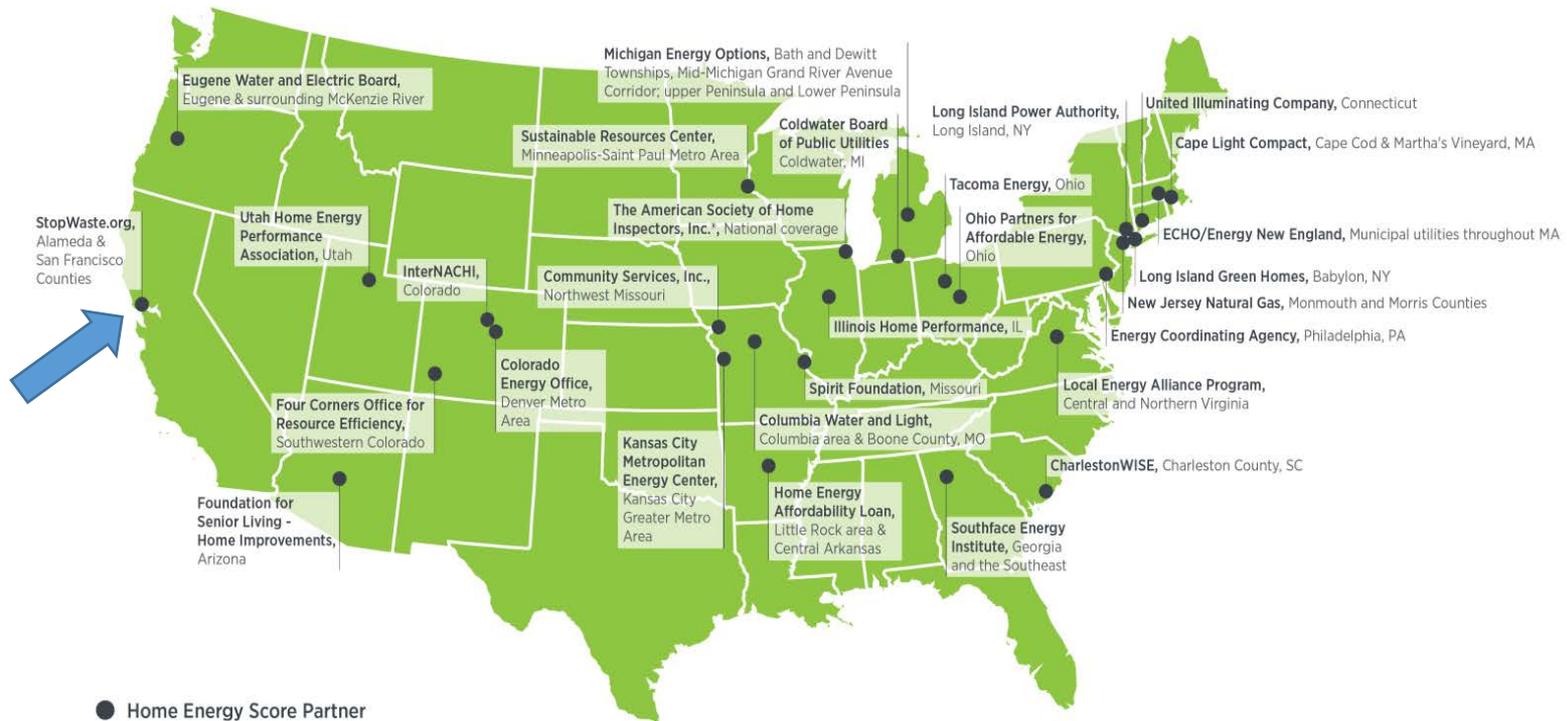
# Assessor Eligibility & Requirements

- **Candidate must work under an official DOE Partner**
- Hold a current DOE recognized credential:

<b>Organization</b>	<b>Minimum Accepted Credential</b>
American Society of Home Inspectors (ASHI)	<i>ASHI Inspector or Certified Inspector</i>
Building Performance Institute (BPI)	<i>Building Science Principles Certificate of Knowledge</i>
BuildItGreen	<i>Certified Green Building Professional (CGBP) or Green Point Rater (GPR)</i>
CalCERTS	<i>Rater</i>
California Real Estate Inspection Association (CREIA)	<i>Certified Home Inspector</i>
GreenHome Institute	<i>Certified Green Home Professional</i>
International Association of Certified Home Inspectors (InterNACHI)	<i>Home Energy Inspector</i>
National Association of Home Inspectors (NAHI)	<i>Certified Real Estate Inspector</i>
National Association of the Remodeling Industry (NARI)	<i>Green Certified Professional, Certified Remodeler, or Master Certified Remodeler</i>
Residential Energy Services Network (RESNET)	<i>HERS Rater</i>

# Home Energy Score Partners

<http://www.homescoreca.org>



# Building Energy Saving Ordinance (BESO)

Requires Home Energy Scores for single family homes at time-of-sale

- Energy Assessment prior to sale
- Deferrals to buyers
- Exemptions



# Trigger events for mandatory policy

- Point of sale
- Time of rental inspection/permit
- Building Permit for major renovation
- Date certain



## Case Study: Rental RECO



Boulder City Council adopted a SmartRegs ordinance in 2010 that require all rental housing, about half of Boulder's housing stock, to meet a basic energy efficiency standard by January 2019.

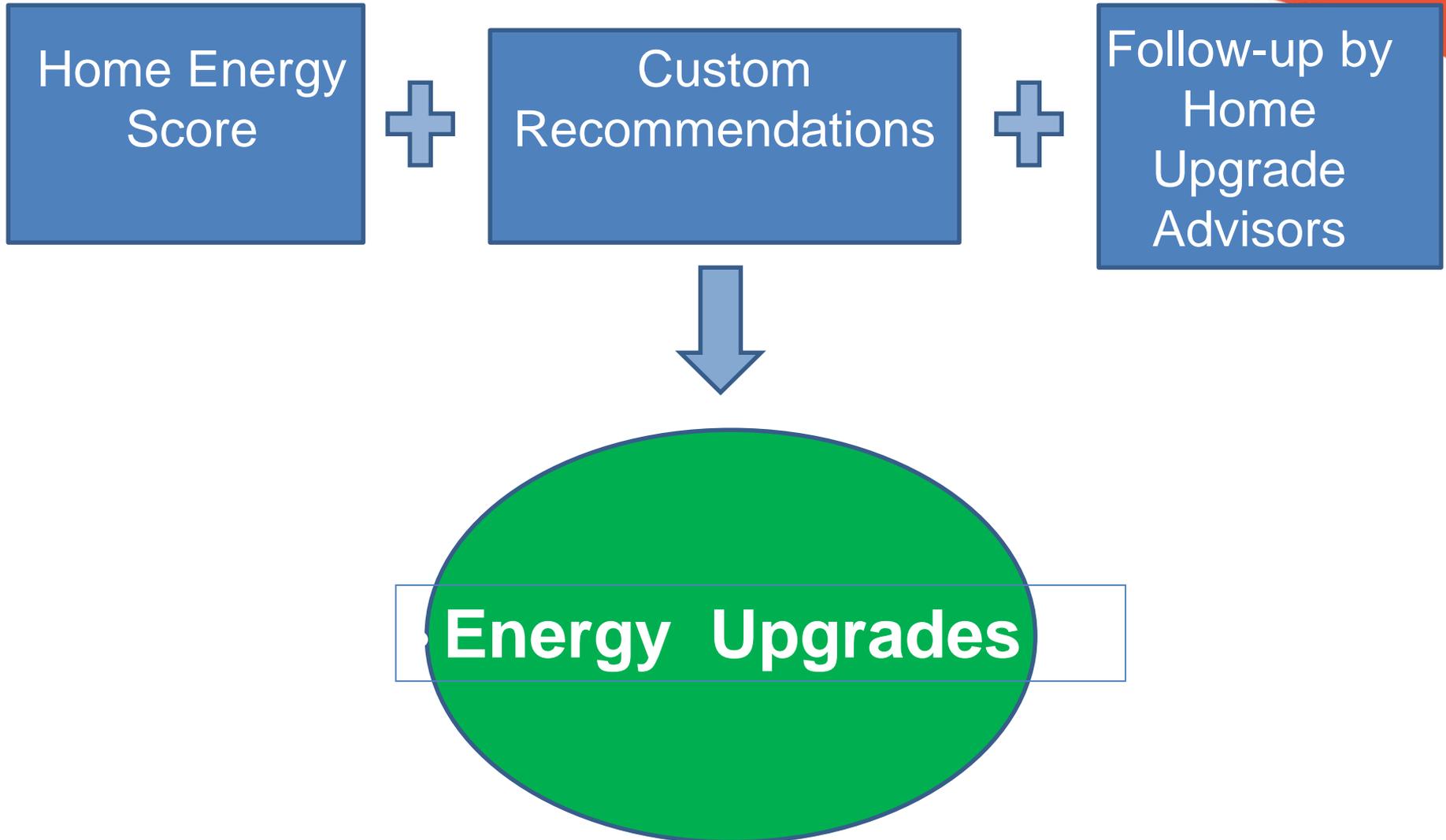
# Bay Area Home Energy Score Activity Snapshot

- 9 assessors enrolled, more in pipeline
- Mix of contractors and home inspectors
- 166 scores issued, mostly by home inspectors
- Most of the home scores occurred in Berkeley, where mandated at time-of-sale.
- Homes have also been scored in Solano and Napa Counties.
- Average score of 5
- Average cost of score \$220
- Mix of add-on assessment to standard home inspection and stand-alone HES assessment

## Lessons Learned

- Home Energy Scores generate leads for home upgrades
- **Recommendations are key link**
- More fine-tuning of national tool needed for California
- Large homes tend to score lower
- Streamlined data entry could reduce cost
- Contractors and home inspectors are interested in adding HES to their business
- Realtors are skeptical in anticipation of local mandates

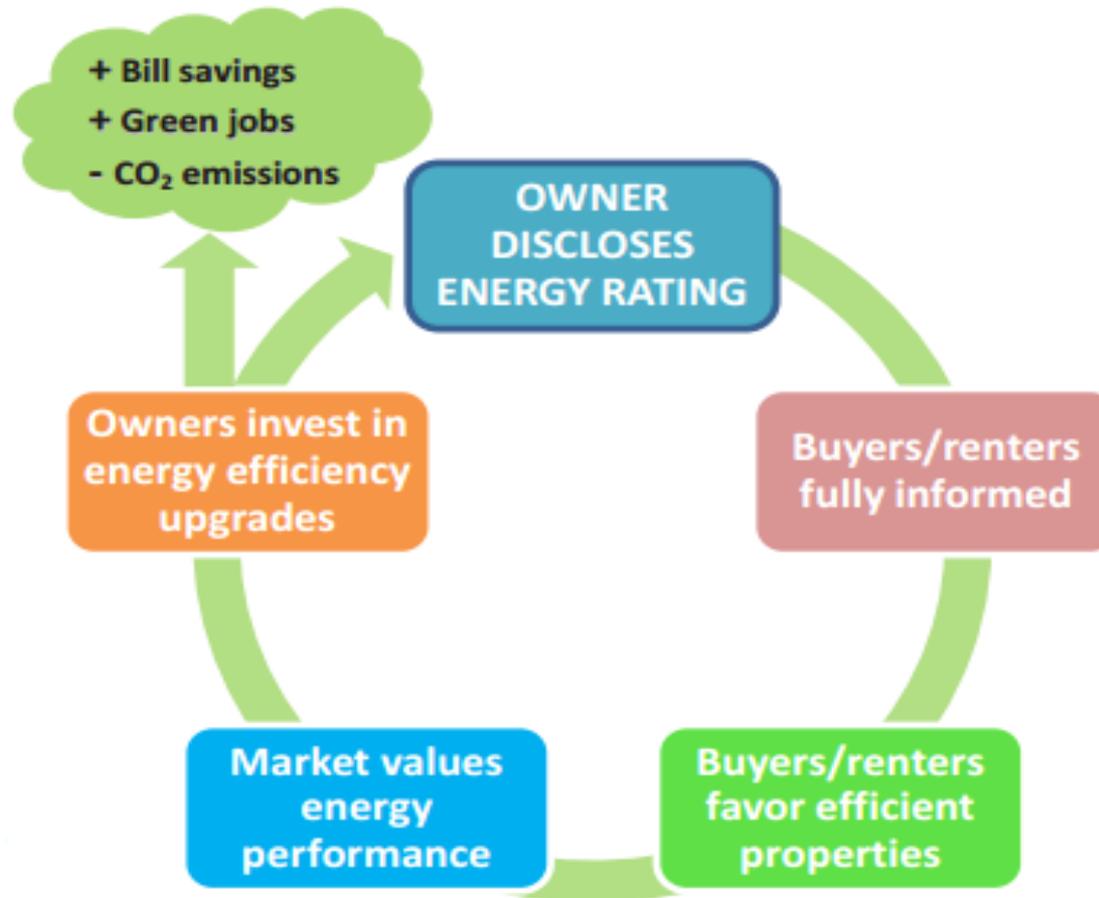




# 2016 Activities

Policy assistance	<ul style="list-style-type: none"><li>• Presentations for local governments</li><li>• Model ordinance language</li><li>• Coordination with CEC and DOE on technical issues</li><li>• Data protocols for SEED platform</li></ul>
Workforce development	<ul style="list-style-type: none"><li>• Targeted recruitment</li><li>• HES assessor mentoring in 9 county Bay Area</li><li>• Quality assurance on scores and recommendations</li><li>• Regional rebates for Assessors</li></ul>
Home Upgrade Integration	<ul style="list-style-type: none"><li>• Custom Recommendation Form</li><li>• Coordination with Home Upgrade Advisors</li><li>• Referrals to rebates, incentives and financing</li><li>• Consumer and real estate education</li><li>• Statewide green real estate working group</li></ul>

# From READ to Retrofit



*How "triggered" disclosure leads to energy savings*

## Questions?



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