

earth
advantage.

Turning Home Performance into Value:

Development of the Portland Home Energy Score Program

David Heslam - Executive Director

Earth Advantage - Portland, Oregon

Earth Advantage is Generously Supported by the Following:



Portland General Electric



Earth Advantage Core Areas of Focus



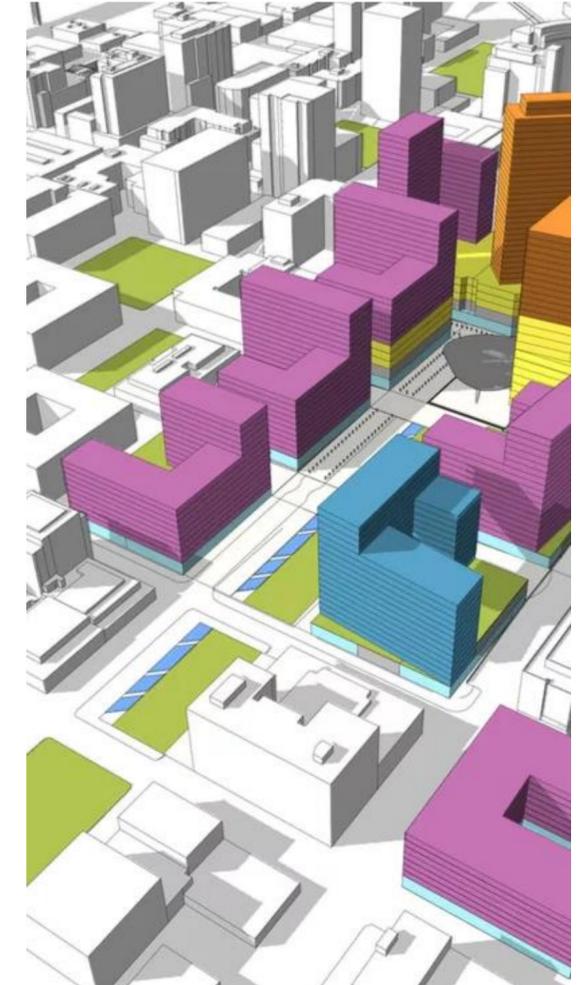
Building Certifications

- Single and Multifamily
- Passive House
- LEED for Homes
- Earth Advantage
- Energy Star
- Zero Energy



Professional Training

- REALTORS™
- Appraisers
- Lenders
- Builders
- Architects

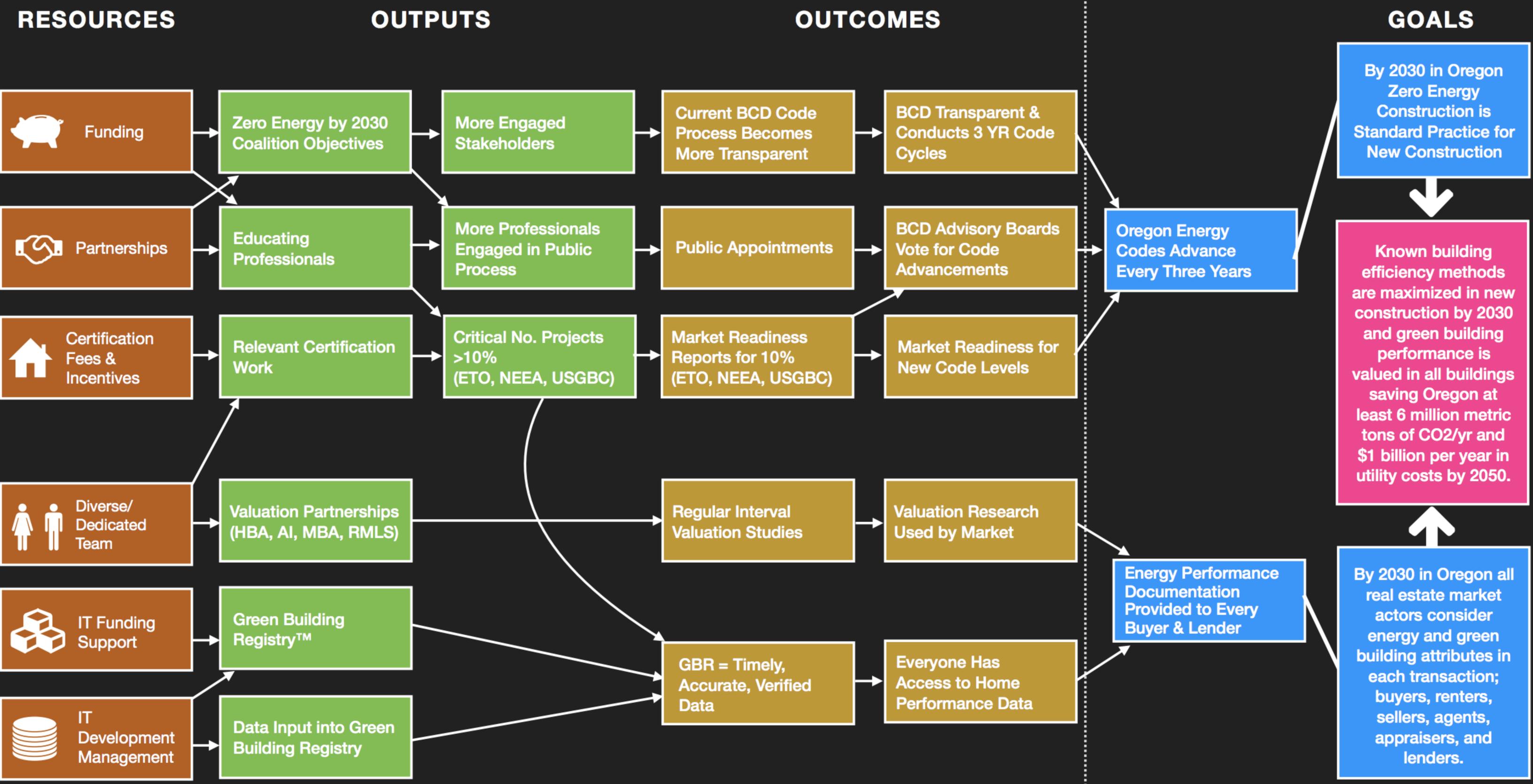


Policy Consultation and Research

- Energy Scoring
- Code Development
- Green Home Valuation
- Zero Energy x 2030
- Local Gov. Assistance

Strategic Outcomes Pathway

Accountability Line



WHERE IS OREGON? The Mid-West Coast?

Shift in Manufacturing Jobs

1998 12% in Oregon, 15% in Great Lakes

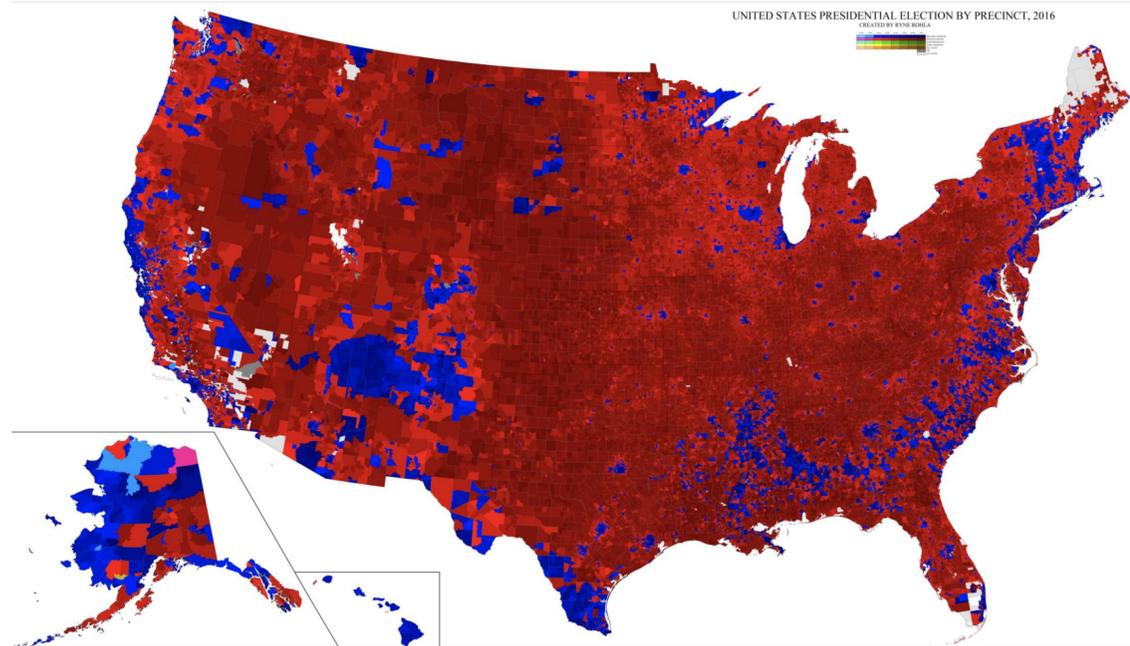
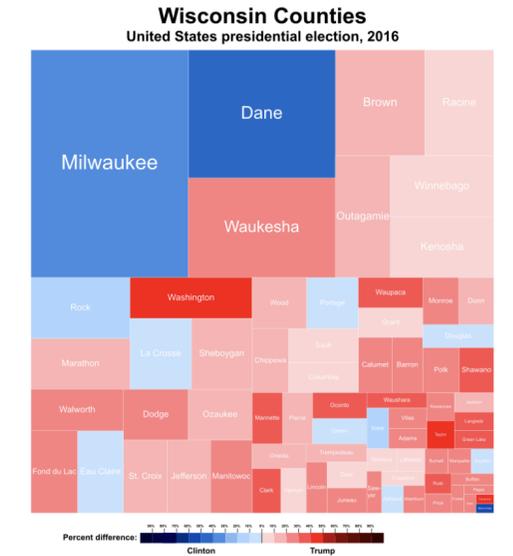
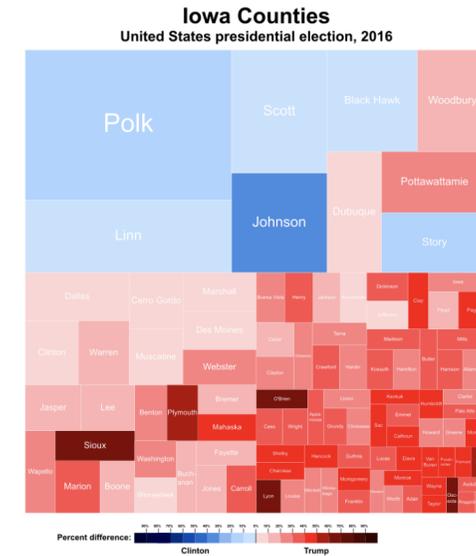
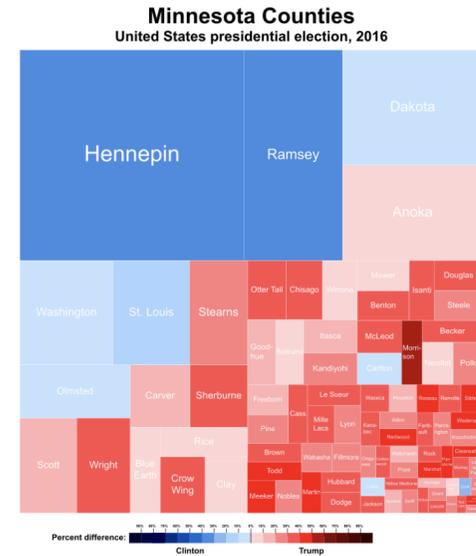
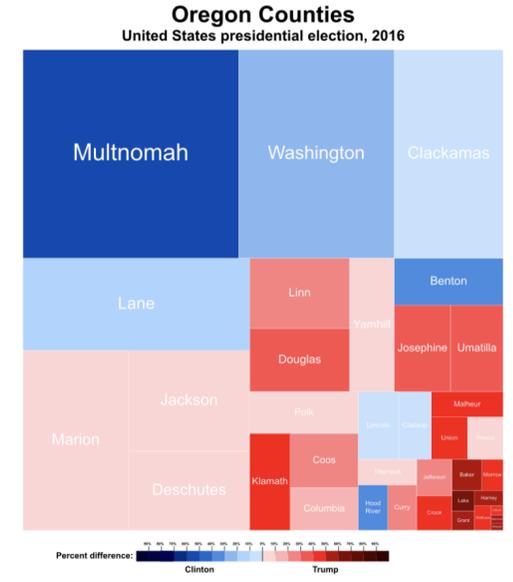
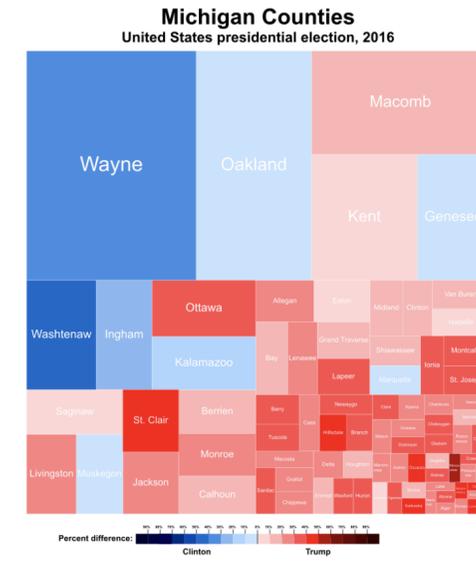
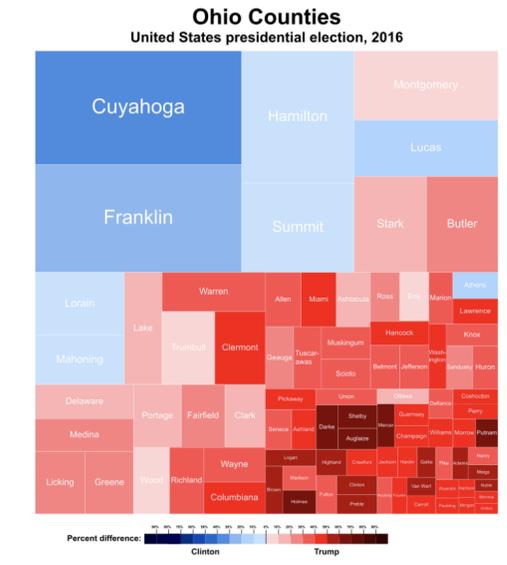
2016 9% in Oregon, 11% in Great Lakes

Urban/Rural Divide

2010 81% Urban in Oregon

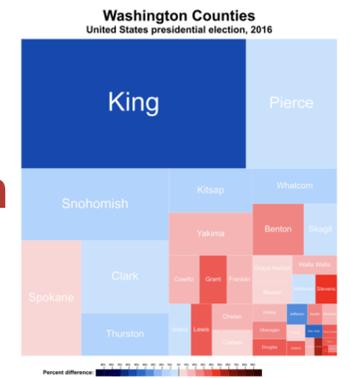
2010 76% Urban in Midwest

2010 90% Urban in the West

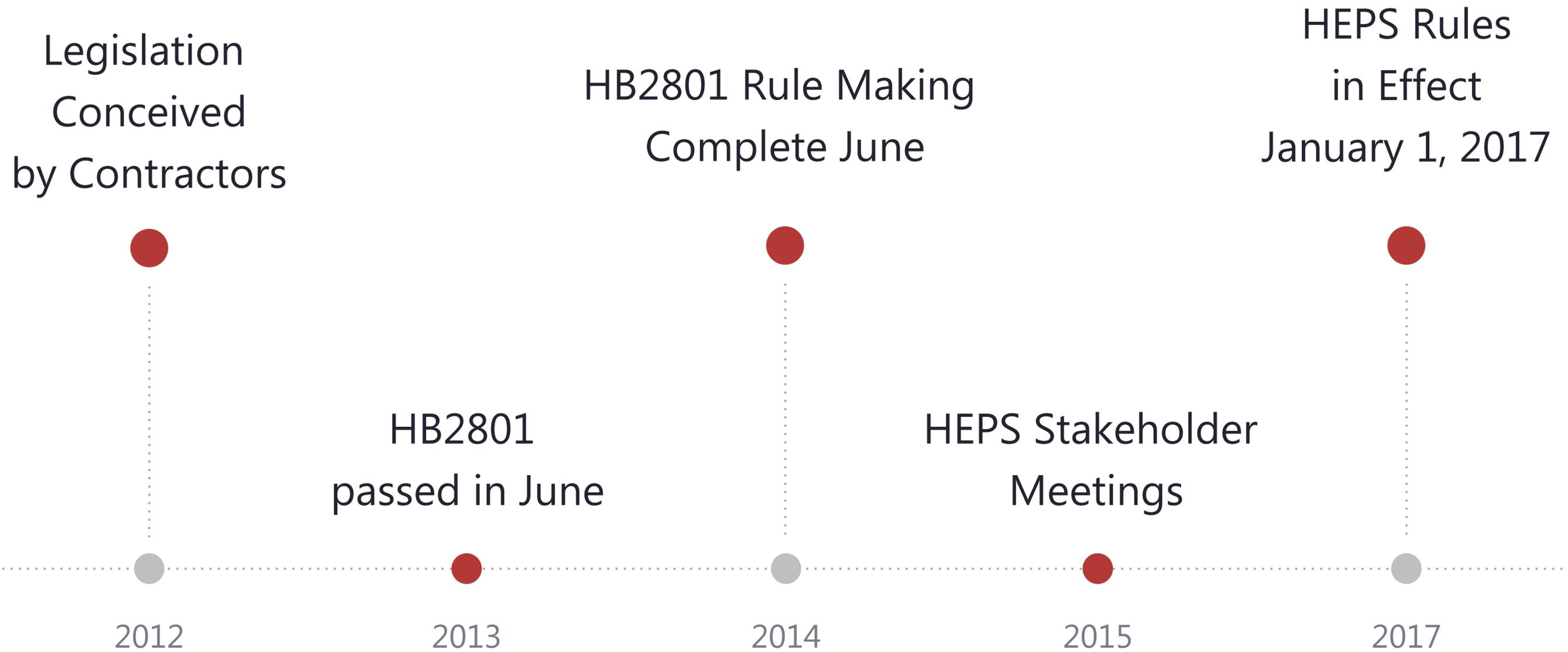


**Oregon is not
northern
California**

**or southern
Washington**



Oregon State Policy Timeline for Home Scoring



Home Scoring Legislation Proponents



Contractors/Builders



REALTORS

Stakeholders

- Utilities
- Trade Associations (Builders, REALTORStm)
- Contractor Licensing Board
- Oregon Department of Energy
- Contractor training organizations
- Green building organizations
- Environmental organizations



State Policy Outcomes

Who?

New contractor endorsement required and minimum qualifications for energy assessors

What?

Minimum data must be provided on any Oregon approved energy label

How?

Oregon Department of Energy must approve any energy labeling system





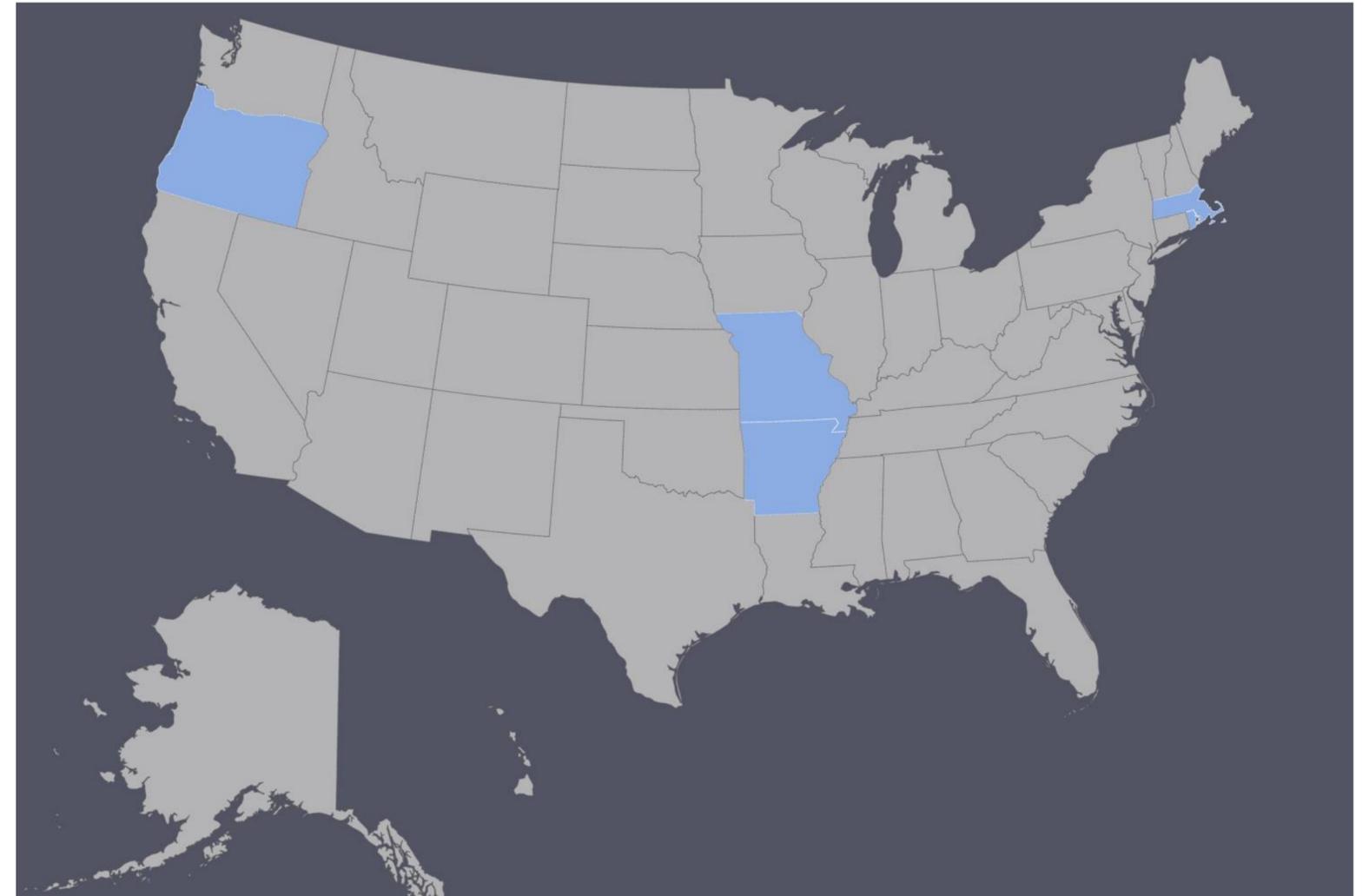
Related Outcomes

- City of Portland leveraged state law to pass local ordinance
- Local MLS preparing to auto-populate home data
- Consistent calculation of energy use and cost using Home Energy Score tool

EMPRESS Project Funded by DOE

5 States Making Recommendations on Home Energy Label Practices

- Harmonize HERS and DOE's Home Energy Score
 - Technically
 - Modeling tools
 - Reporting Format
 - What information to display
- Policy Tool Kits
 - Disclosure
 - Piloting
- NASEO is a key partner





City of Portland Home Energy Score Policy

The Portland Policy

As of January 1, 2018 it requires sellers of single-family homes to incorporate the following practices prior to listing a home for sale in the City of Portland:

- Obtain a home energy score from a licensed home energy assessor.
- Provide a copy of the home energy performance report to all licensed real estate agents working on the seller's behalf.
- Include the home energy score and the attached home energy performance report in any real estate listings.

Better Buildings
U.S. DEPARTMENT OF ENERGY

Home Energy Score

This home's current score: **3**
Estimated Current Annual Energy Cost: **\$1,660**

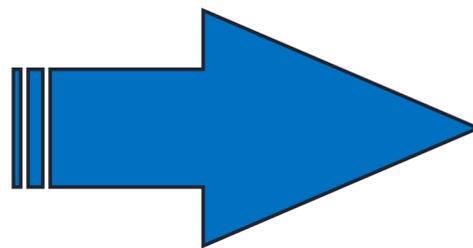
Score with improvements: **7**
Potential Annual Energy Cost: **\$1,249**

Uses more energy: 1 2 3 4 5 6 7 8 9 10 Uses less energy

U.S. DEPARTMENT OF ENERGY

The Department of Energy's **Home Energy Score** assesses the energy efficiency of a home based on its structure, heating & cooling and hot water systems.
Learn more at homeenergyscore.gov

OFFICIAL ASSESSMENT ID#1234567



City of Portland HOME ENERGY SCORE

U.S. DEPARTMENT OF ENERGY

THIS HOME'S SCORE: **3** OUT OF 10

THIS HOME'S ESTIMATED ENERGY COSTS: **\$1,720** PER YEAR

Better Buildings Home Energy Score

LOCATION: 2054 N Emerson St, Portland, OR 97217
YEAR BUILT: 1909
HEATED FLOOR AREA: 1,800 sq.ft.
NUMBER OF BEDROOMS: 3

Higher energy use: 1 2 **3** 4 5 6 7 8 9 10 Lower energy use

SCORE TODAY

Official Assessment | ID# 143603

The Home Energy Score is a national rating system developed by the U.S. Department of Energy. The Score, reflects the average energy efficiency of a home based upon the home's structure and heating, cooling and hot water systems. The average score is a 5. Learn more at HomeEnergyScore.gov.

ASSESSMENT

ASSESSMENT DATE: 09/29/2017
SCORE EXPIRATION DATE: 09/29/2025
ASSESSOR: David Heslam PDX
PHONE: 503-123-4567
EMAIL: dheslam@earthadvantage.org
CCB LICENSE #: A-123456

HOW MUCH ENERGY IS THIS HOME LIKELY TO USE?

Electric: 6,837 kWh/yr. \$779
Natural Gas: 863 therms/yr. \$941
Other: _____ gal/yr. \$0

TOTAL ENERGY COSTS PER YEAR \$1,720

THIS HOME'S CARBON FOOTPRINT:

35 tons/year WORSE

7 This Home

0 tons/year BEST

What should my home's carbon footprint be? Between now and 2030, Portlanders should reduce carbon pollution per household to 3 metric tons per year to reach our climate goals.

Flip over to learn how to improve this score and use less energy!

- Actual energy use and costs may vary based on occupant behavior and other factors.
- Estimated energy costs were calculated based on current utility prices (\$0.11/kwh for electricity; \$1.09/therm for natural gas; \$2.58/gal for heating oil; \$2.21/gal for propane).
- Carbon footprint is based only on estimated home energy use. Carbon emissions are estimated based on utility- and fuel-specific emissions factors provided by the OR Department of Energy.
- After two years, energy prices and carbon emissions factors are subject to change.
- This report meets Oregon's Home Energy Performance Score Standard and complies with Portland City Code Chapter 17.108.

Keys to policy Passing in 2016:

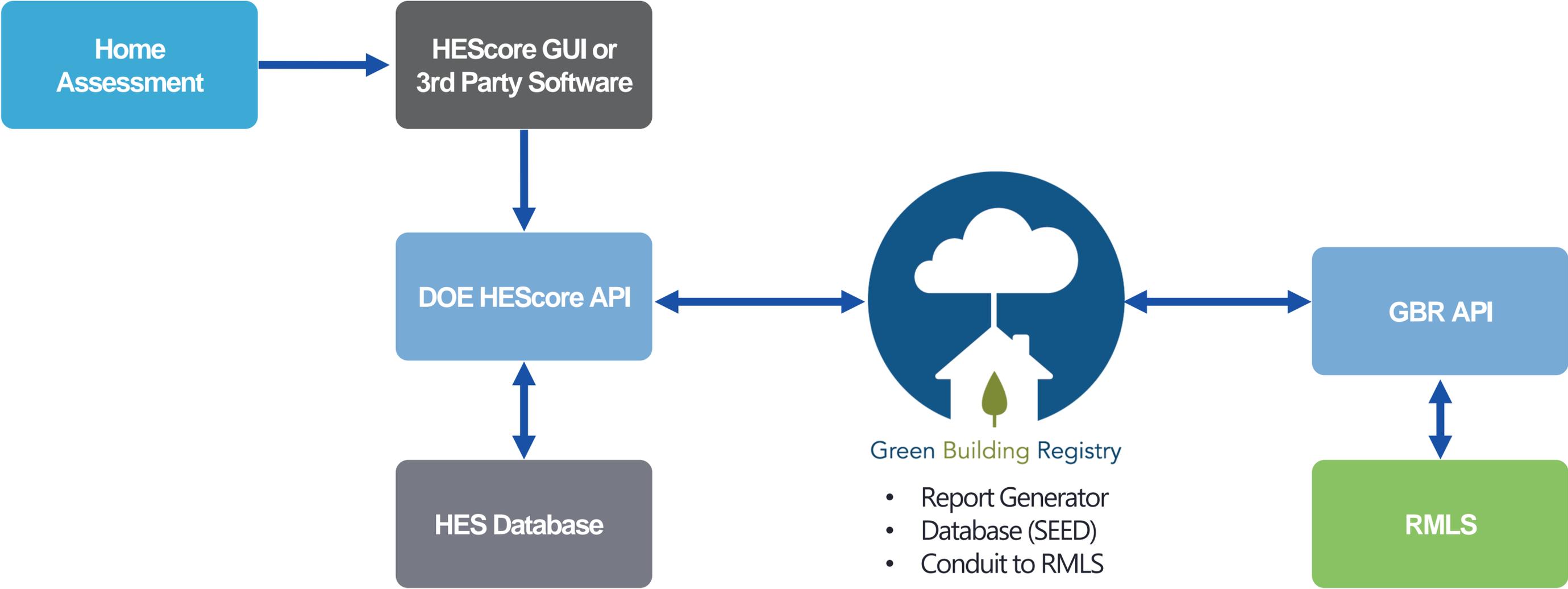
1. **Mandatory home energy scoring concept was inserted into city's climate plan in mid 2000's. Modeled on Europe.**
2. **Key bureau leadership/staff advocated for policy.**
3. **Mayor decided to champion the policy.**
4. **6+ years of voluntary program experience.**
5. **State-level scoring rules provided "regulatory cover" for the city.**
6. **The Home Performance industry led effective "Right to Know" campaign.**



The Role of Earth Advantage in the Portland Home Energy Scoring Program

- Assessor Management
- Quality Assurance
- Auto-Populate Listings (GBR)
- Professional Training

Data Flow Overview: Portland Home Energy Score Program



Green Building Registry

Verified residential data on green attributes, certifications, and energy scores



Compliant

Data is converted to RESO data dictionary formats with address matching and access to source PDFs. Stored in DOE's Standard Energy Efficiency Data (SEED) Platform® to ensure consistency and durability



Verified

Verified data is pulled from Home Energy Score Database, green certification organizations and other programs if source agrees data can be shared



Timely

Uses DOE's HES API to pull data in real time. Provides data to MLS through GBR API in real time. Other data batch loaded.

Professional Training (Building on 10 years of engagement)

Introductory Training on the Portland Policy

- Home Builders
- Real Estate Agents/Brokers
- Appraisers
- Lenders

2017 RESIDENTIAL ENERGY CODE CHANGE IN OREGON

First major update since 2011

- NEEA estimates a 9% improvement over 2011 code.
- The Oregon options tables remain as a requirement, although a points system may be considered in the future.
- Performance testing still not required, but remains an option.
- Solar no longer an option.
- It set the stage for the Governor's Executive Order on Energy Efficiency.

2017 OREGON RESIDENTIAL SPECIALTY CODE

Based on the 2015 International Residential Code®

STATE OF OREGON
1859

ICC
INTERNATIONAL CODE COUNCIL

Zero Energy Homes and Buildings
A Pathway to Saving Money for Oregonians

By putting Oregon building codes onto a pathway to zero energy homes and buildings, Oregon can make major strides to increase energy efficiency, reduce greenhouse gas emissions, and save Oregon home and building owners and renters money.

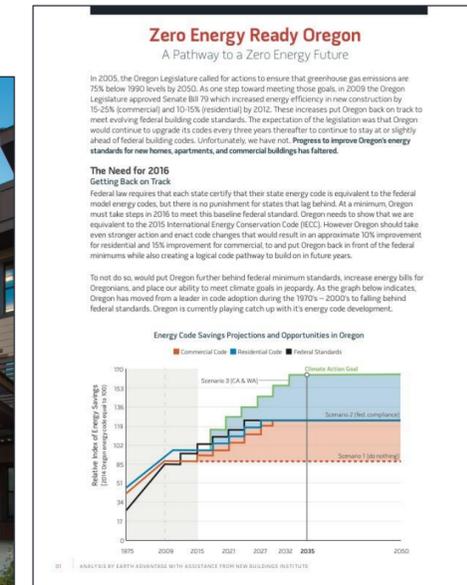
A pathway to zero energy building involves decreasing energy use in new buildings in Oregon by 65% over the next 15 years. This is in accord with the Architecture 2030 pathway.¹

This pathway is established practice that has been proven effective in other states of Washington and California already are on it. Oregon's cities also are getting it. Portland and Eugene already have committed to achieving net zero homes and buildings in their climate action plans. The mayors of Springfield, Milwaukie and Hillsboro also expressed support for net zero building codes. And in a 2015 poll, by a margin of 24 percent, Oregonians overwhelmingly supported moving toward net zero buildings. The Oregon Legislature also embraced the zero building (Architecture 2030) path when it passed a bill requiring DCS to consider (but not necessarily to achieve) Architecture 2030's pathway whenever it updates building codes.²

Several low income development projects already have been built in Oregon to examples are the Iron Horse in Prineville and Orchards at Orenco Station in Hillsboro. These projects have proven that net zero buildings provide better quality living environments and money for low income renters.³ Dozens of homes also have been built to net zero.

PASSIVE HOUSE & AFFORDABLE HOUSING
THE DEVELOPMENT OF ORCHARDS AT ORENCO

REACH
Residential Energy Assessment Center



Cost Analysis of Potential Energy Code Improvements

November 22, 2016
Prepared by Earth Advantage

12/1/2016

Local and national papers on market readiness and impact

GOVERNOR BROWN'S EXECUTIVE ORDER ON NOVEMBER 6, 2017

Setting Goals for the next 7 years:



Residential:

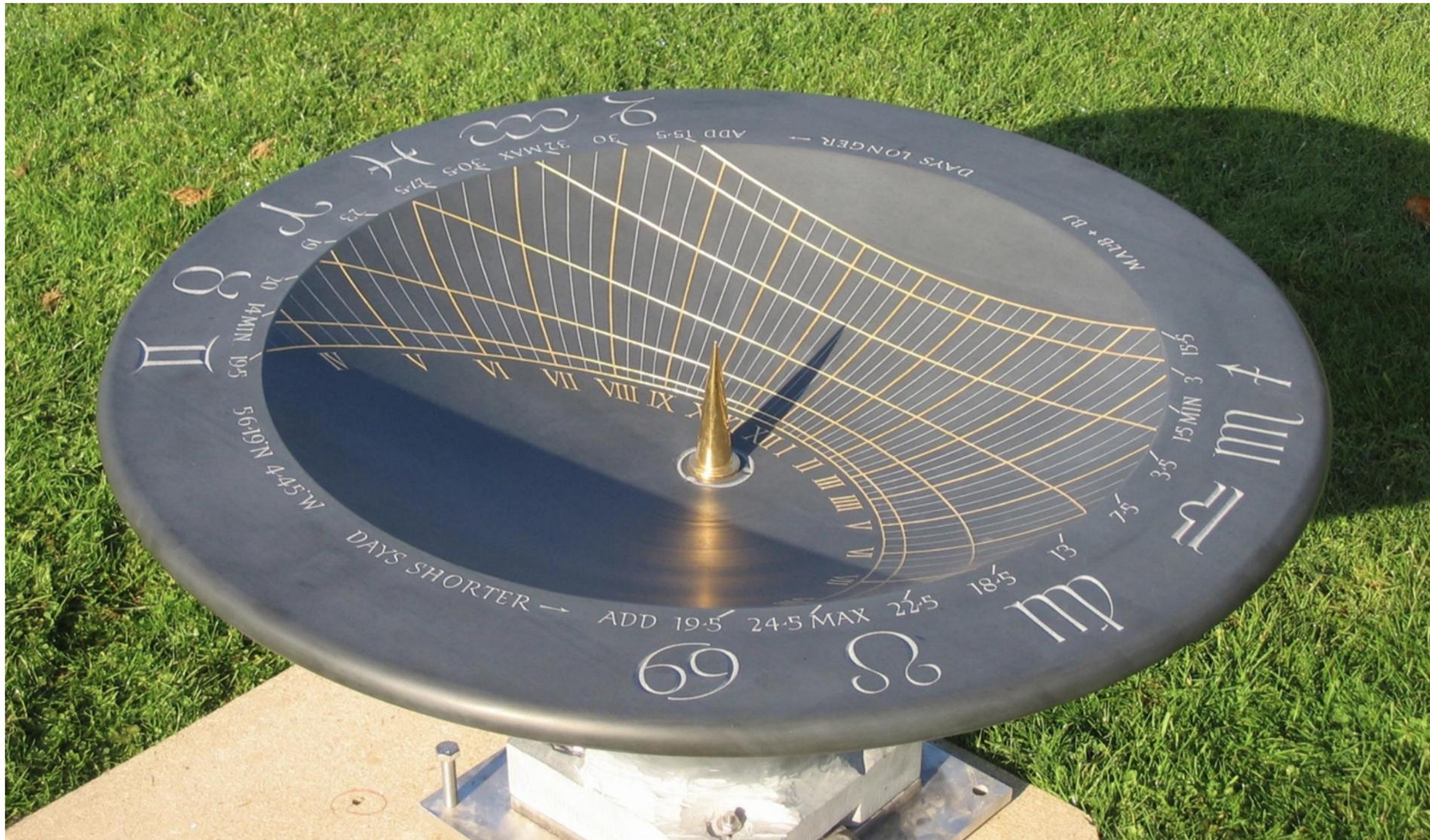
- Energy code to reach equivalent performance to DOE Zero Energy Ready by 2023
- Solar ready by 2020
- Electric vehicle ready by 2022
- Water efficient fixtures by 2020

Commercial:

- Energy code to exceed ASHRAE 90.1 and equal performance of prescriptive measures in ASHRAE 189.1 by 2022
- Solar ready by 2022
- Electric vehicle ready by 2022
- Water efficient fixtures by 2020
- On-site water reuse by 2025

EXECUTIVE ORDER PROCESS

Time and Space Required



- The working group had broad representation of parties:
 - HBA, Trades & Labor
 - Environmental groups
 - Agencies
- Group meetings spanned 6 months, allowing attendees to confer with stakeholders between meetings.
- The Governor set the ground rules
 - Deadline
 - High level goals
- Compromise came in the form of a cost analysis method to be developed by a multi-agency working group.

Thank You!



Questions?

David Heslam

dheslam@earthadvantage.org

earthadvantage.org