Economics and Energy Efficiency

ETO Spring Trade Ally Forum

April 8, 2026

Energy Trust of Oregon

OREGON DEPARTMENT OF ENERGY

Leading Oregon to a safe, equitable, clean, and sustainable energy future.

Our Mission

The Oregon Department of Energy helps Oregonians make informed decisions and maintain a resilient and affordable energy system. We advance solutions to shape an equitable clean energy transition, protect the environment and public health, and responsibly balance energy needs and impacts for current and future generations.

What We Do

On behalf of Oregonians across the state, the Oregon Department of Energy achieves its mission by providing:

- A Central Repository of Energy Data, Information, and Analysis
- A Venue for Problem-Solving Oregon's Energy Challenges
- Energy Education and Technical Assistance
- Regulation and Oversight
- Energy Programs and Activities

What is Energy Efficiency?

Energy Efficiency

Energy efficiency is the practice of using less energy to provide the same amount of useful output from a service (such as heating water, lighting, or cooling a fridge).

The Oregon Department of Energy coordinates with local partners, other states, and national experts to review the minimum state energy efficiency standards and evaluate opportunities to update existing standards or adopt new standards to promote energy conservation in Oregon, and achieve cost effectiveness for consumers.

Energy Efficiency Examples

Residential

Heat pumps, as opposed to gas furnaces, move heat rather than create it, and are becoming more popular in Oregon homes thanks to their efficient heating and cooling, lower energy use, and potential energy cost savings.

Commercial

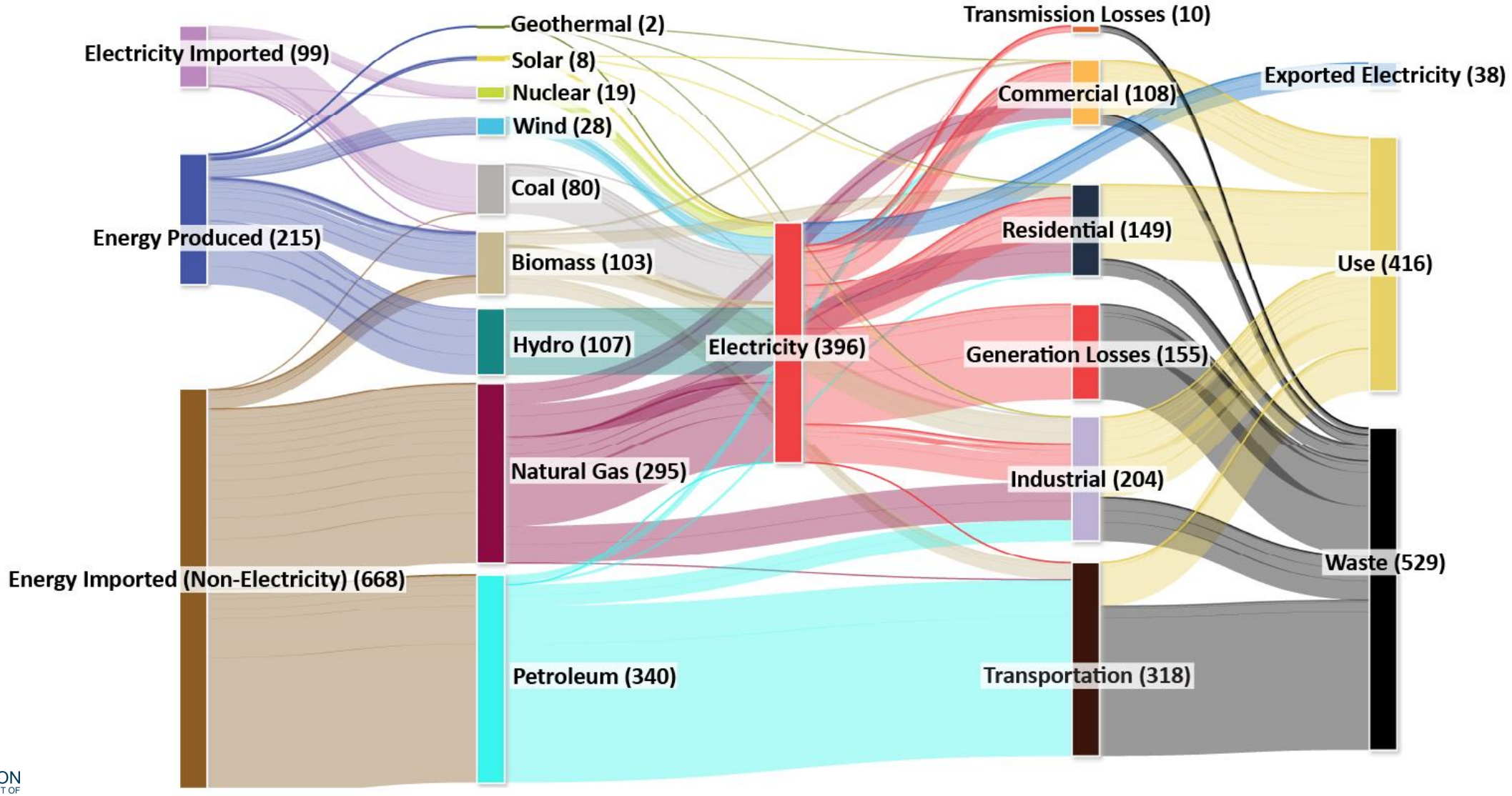
Energy management systems (EMS) can be programmed to accomplish control strategies such as optimal start/stop, air- and water-side economizing, chilled and heating water resets, night setback and setup, night purge, morning warm-up, hot and cold deck optimization, and lighting sweeps.

Industrial

Comprehensive Energy Audits include analyzing equipment performance, production processes, and building envelope characteristics. This meticulous approach uncovers hidden energy waste, leaky systems, and areas with inefficient energy use that can be improved and optimized.

Why is Energy Efficiency Important?

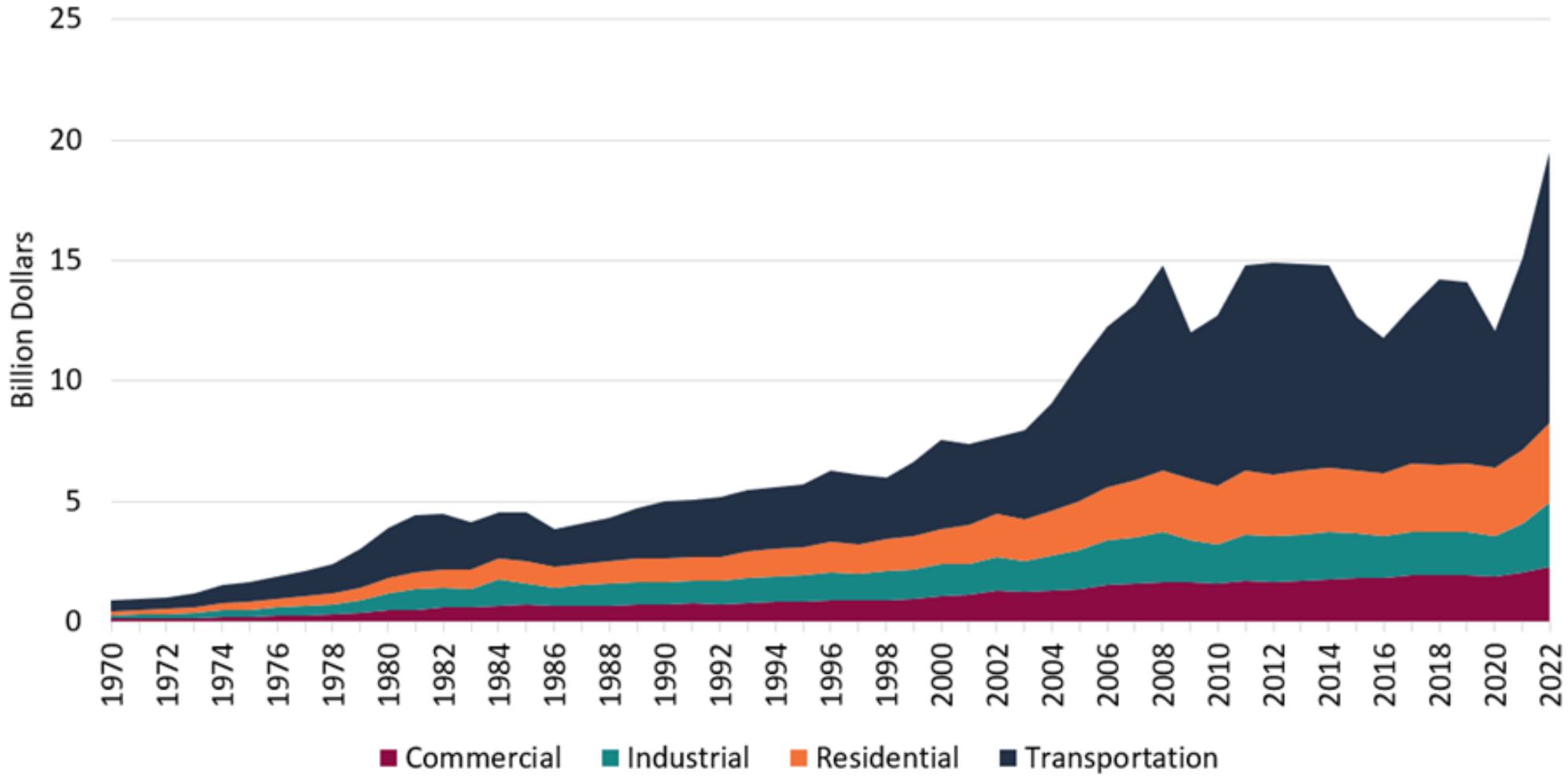
Oregon's Energy Flow



OREGON DEPARTMENT OF ENERGY

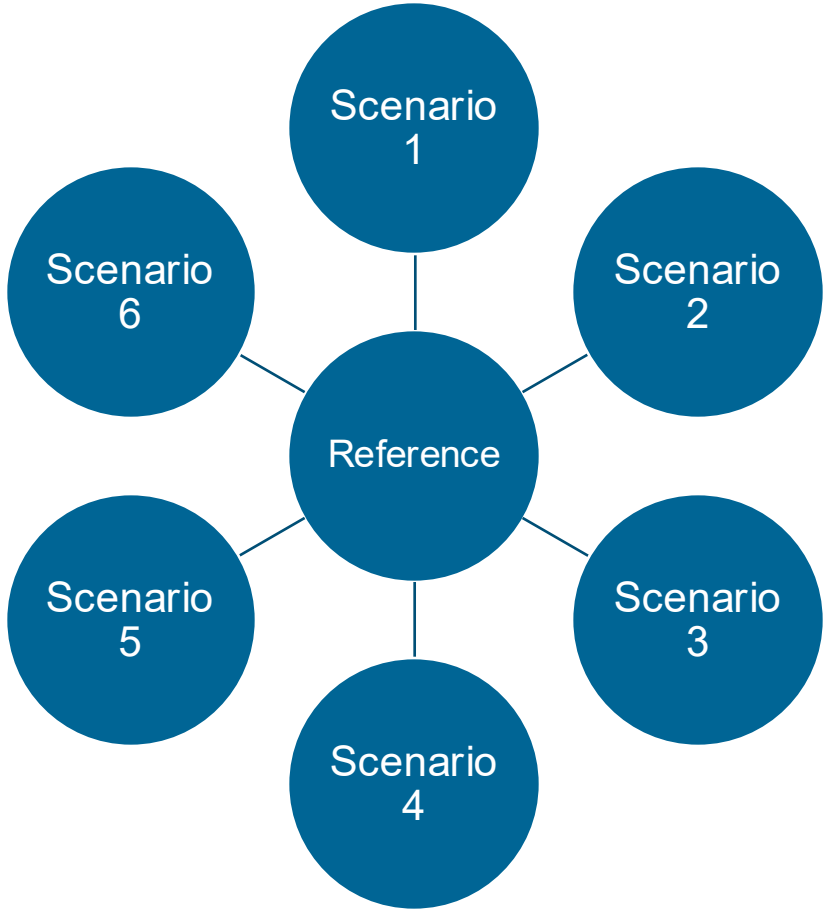
Numbers are in trillions of British thermal units (Btus)

Oregon's Total Energy Expenditures by Sector Over Time



OREGON DEPARTMENT OF ENERGY

Energy Efficiency Can Save Oregonians Money Economywide



The Oregon Energy Strategy modeled scenarios that represent different energy pathways the state could take to achieve its energy policy objectives by 2050.

Reference: Combination of a set of "aggressive but achievable" assumptions demonstrating alignment with state energy goals to 2050 & seeking least cost pathway

Scenario: What if energy efficiency and building electrification is delayed by 10 years?

OREGON DEPARTMENT OF ENERGY

Modeled Outcomes by 2050

22% lower energy demand by 2050

$17 billion increase in costs with delayed EE and BE

~5,500 net new energy-related buildings sector jobs by 2035

OREGON DEPARTMENT OF ENERGY

Oregon's Energy Vision

Energy Efficiency

Clean Electricity

Resilience

Electrification

Low-Carbon Fuels

OREGON DEPARTMENT OF ENERGY

Oregon Department of Energy Programs

Rural & Agricultural Energy Assessment Program

Energy Assessments help business save money & energy

Benefits of an energy assessment:

- Provides documentation of savings (required for USDA REAP application)
- Long-term planning to help prioritize investments of limited capital and time
- Lays groundwork for future renewable energy and resiliency investments by identifying projects with greatest savings

Eligible businesses include agricultural producers in all parts of the state and small businesses located in communities under 50,000 in population

OREGON DEPARTMENT OF ENERGY

Public Purpose Charge (SB 1149) Schools Program

SB 1149 Schools Program works with school districts that have K-12 facilities within PGE and Pacific Power to implement energy efficiency and fleet electrification projects.

- Eligible facilities are K-12 educational facilities in PGE or Pacific Power territory
- Eligible expenditures can include admin costs, audit costs, energy efficient project costs, fleet electrification project costs and commissioning costs
- SB 1149 funds go directly to eligible school districts but are considered a reimbursement after final cost documentation has been provided to ODOE
- Energy efficiency projects must have BTU energy savings
- SB 1149 reimbursement amounts are based on cost savings and EEM measure life
- ODOE works closely with Energy Trust to share project documentation to maximize funding to schools

Oregon Building Performance Standard

OR BPS Compliance Requirements

- **Tier 1 and Tier 2 Buildings**
  - **Find Energy Use Intensity Target (EUIt)**, based on building activity type, climate zone, occupancy
  - **Calculate Energy Use Intensity (EUI)**

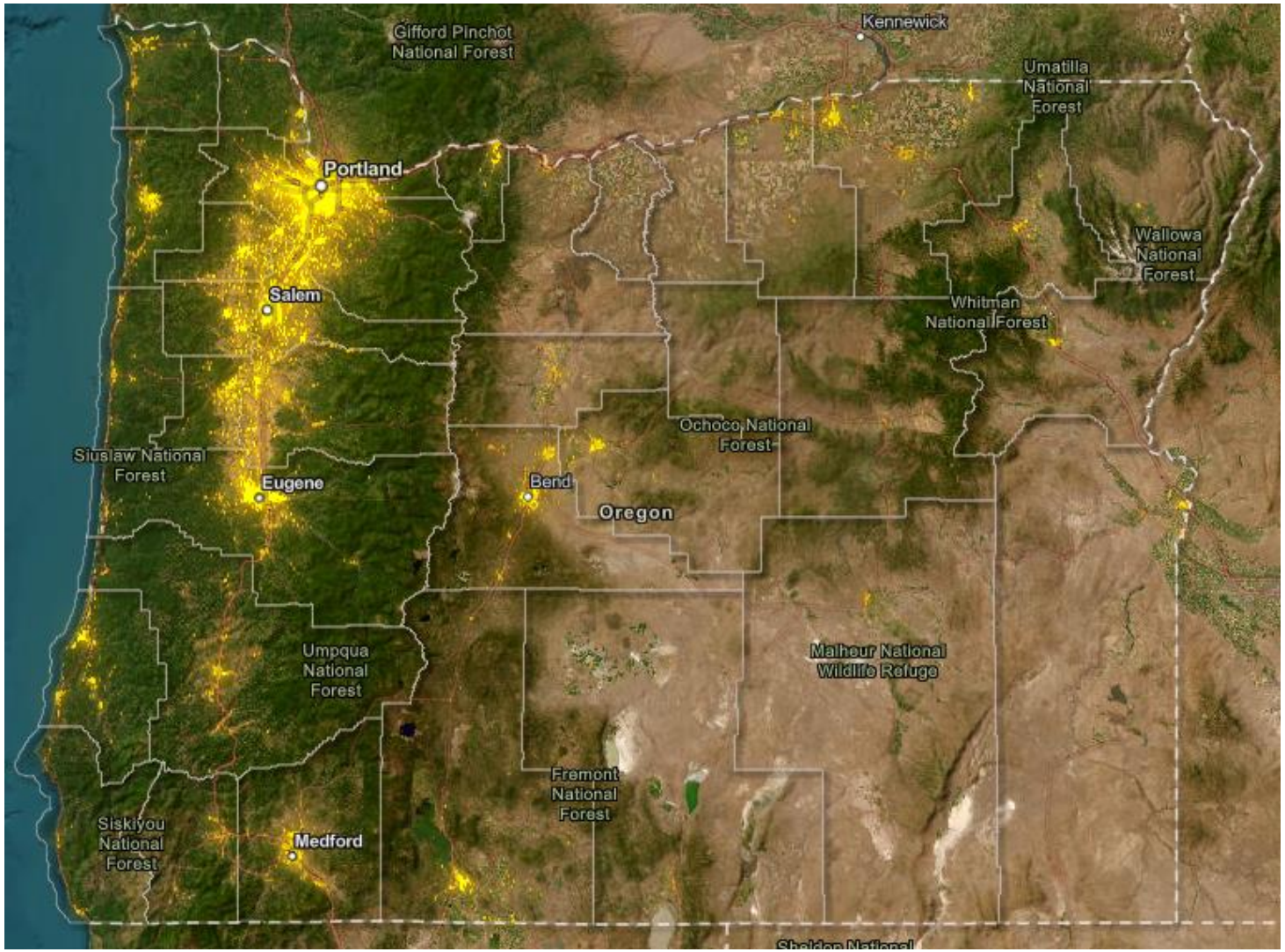
EUI = Net Building Energy Use ÷ Gross Floor Area

EUIt = predetermined EUI targets based on activity type

- **Only Tier 1 Buildings**
  - **If EUI > EUIt**
  - **Work to reduce energy use**
    - **Energy Audits, Life Cycle Cost Assessment by compliance date**
    - **Implement Cost-effective Energy Efficiency Measures (EEMs)**

OREGON DEPARTMENT OF ENERGY

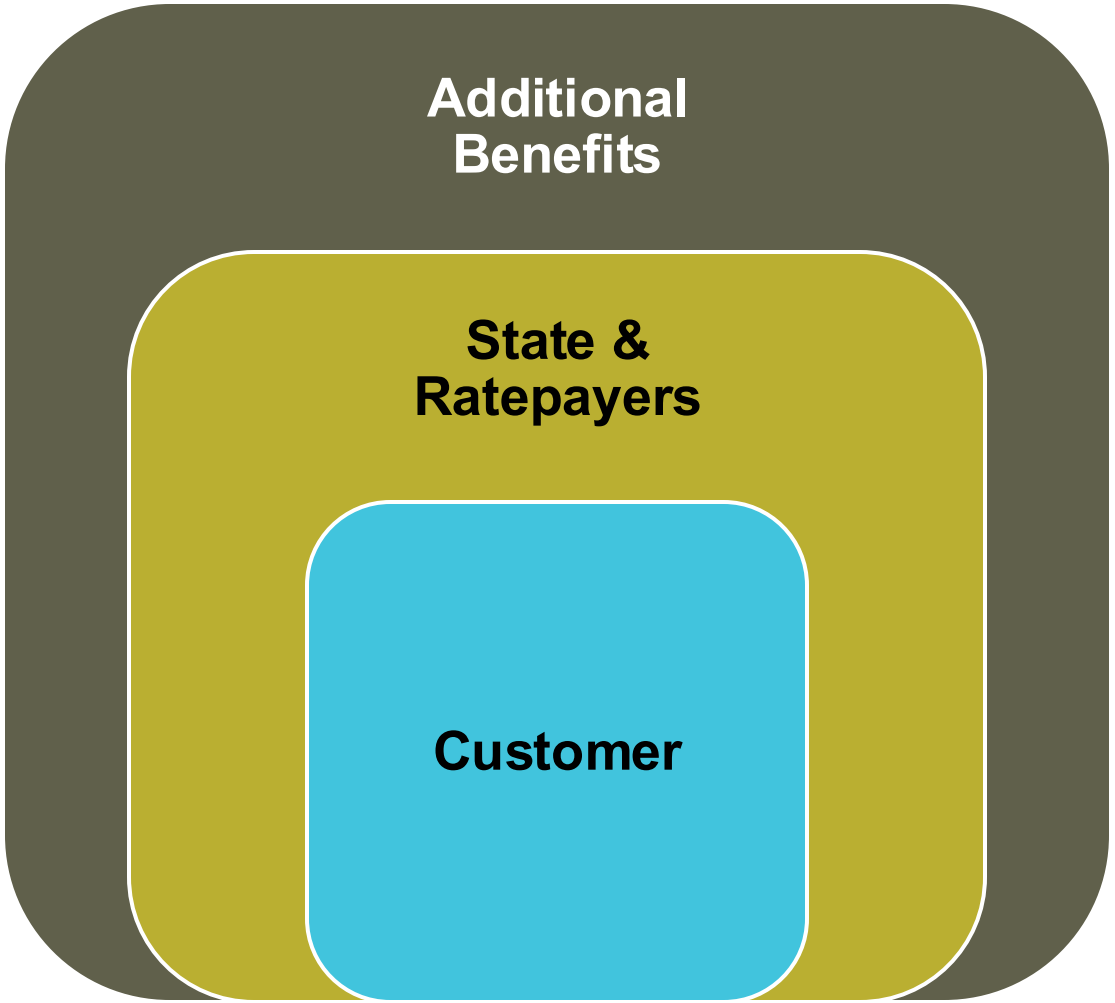
Oregon Building Performance Standard Map



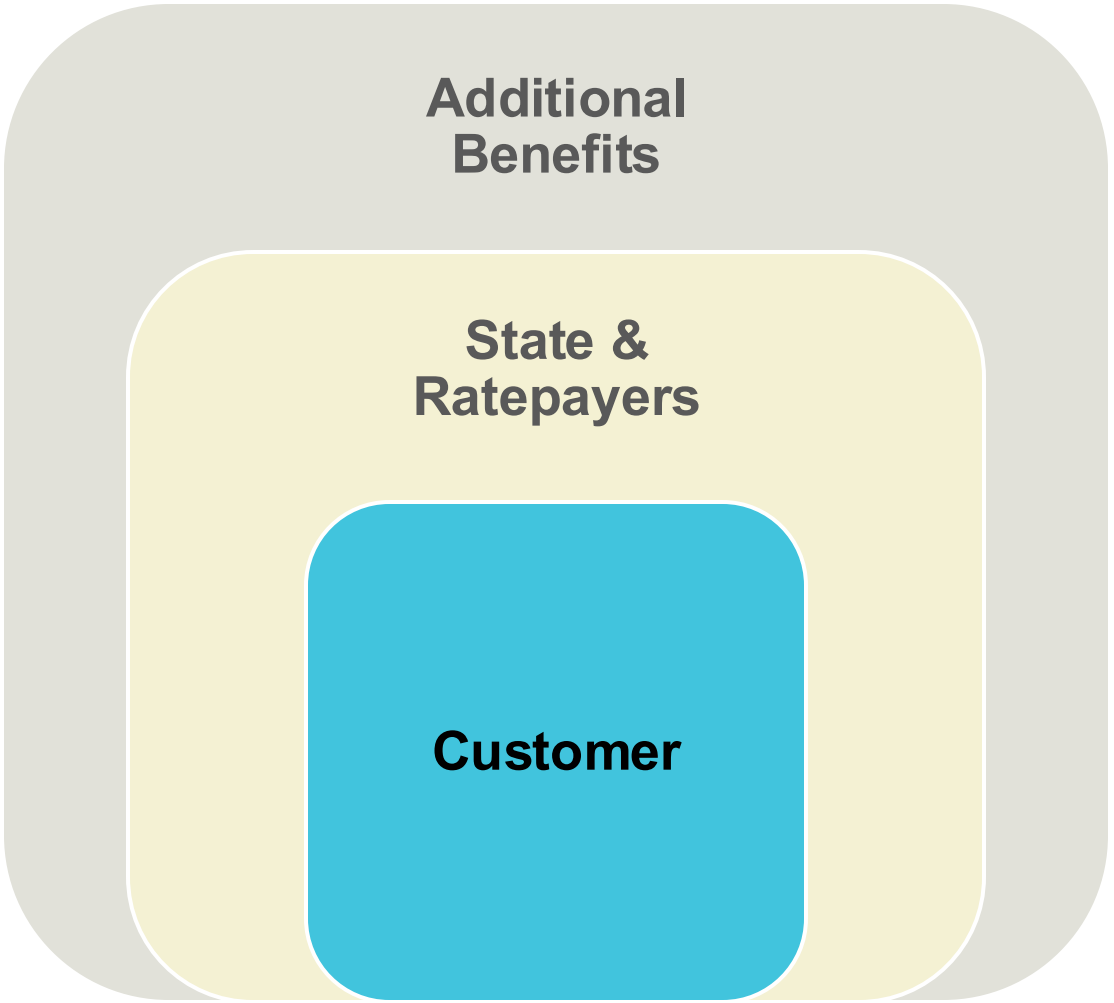
OREGON DEPARTMENT OF ENERGY

Benefits of Energy Efficiency

Benefits of Energy Efficiency Grow



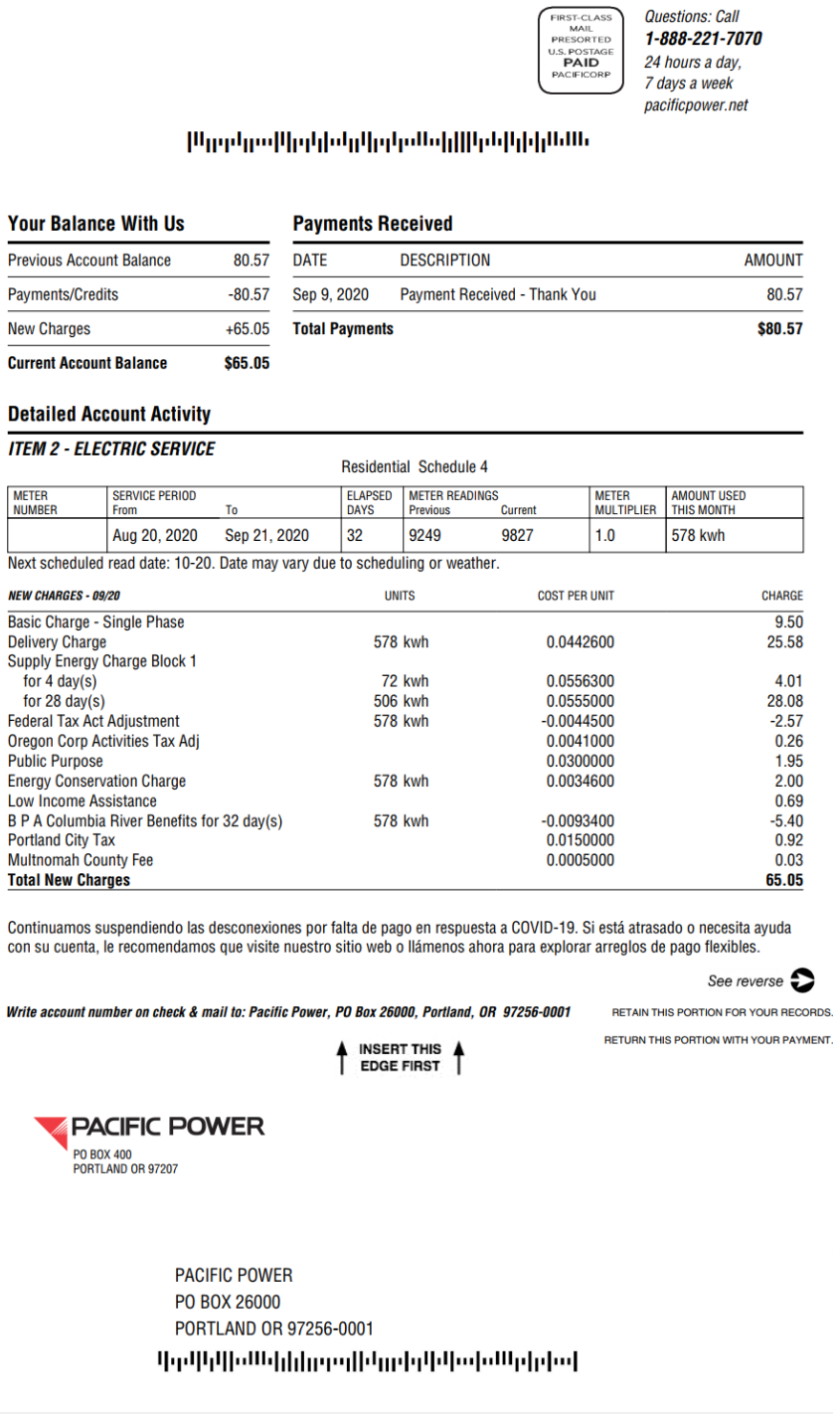
Benefits of Energy Efficiency Grow



How Does Energy Efficiency Save Customers Money?

Commercial Electric Bill Use Charges:

- Load Size Charge
- Demand Charge
- Supply Energy Charge



FIRST-CLASS MAIL PRESORTED U.S. POSTAGE PAID PACIFICORP

Questions: Call
1-888-221-7070
24 hours a day, 7 days a week
pacificpower.net

Your Balance With Us

Previous Account Balance	80.57
Payments/Credits	-80.57
New Charges	+65.05
Current Account Balance	**$65.05**

Payments Received

DATE	DESCRIPTION	AMOUNT
Sep 9, 2020	Payment Received - Thank You	80.57
Total Payments		**$80.57**

Detailed Account Activity

ITEM 2 - ELECTRIC SERVICE

Residential Schedule 4

METER NUMBER	SERVICE PERIOD From	To	ELAPSED DAYS	METER READINGS Previous	Current	METER MULTIPLIER	AMOUNT USED THIS MONTH
	Aug 20, 2020	Sep 21, 2020	32	9249	9827	1.0	578 kwh

Next scheduled read date: 10-20. Date may vary due to scheduling or weather.

NEW CHARGES - 09/20	UNITS	COST PER UNIT	CHARGE
Basic Charge - Single Phase			9.50
Delivery Charge	578 kwh	0.0442600	25.58
Supply Energy Charge Block 1			
for 4 day(s)	72 kwh	0.0556300	4.01
for 28 day(s)	506 kwh	0.0555000	28.08
Federal Tax Act Adjustment	578 kwh	-0.0044500	-2.57
Oregon Corp Activities Tax Adj		0.0041000	0.26
Public Purpose		0.0300000	1.95
Energy Conservation Charge	578 kwh	0.0034600	2.00
Low Income Assistance			0.69
B P A Columbia River Benefits for 32 day(s)	578 kwh	-0.0093400	-5.40
Portland City Tax		0.0150000	0.92
Multnomah County Fee		0.0005000	0.03
Total New Charges			**65.05**

Continuamos suspendiendo las desconexiones por falta de pago en respuesta a COVID-19. Si está atrasado o necesita ayuda con su cuenta, le recomendamos que visite nuestro sitio web o llámenos ahora para explorar arreglos de pago flexibles.

See reverse

Write account number on check & mail to: Pacific Power, PO Box 26000, Portland, OR 97256-0001

RETAIN THIS PORTION FOR YOUR RECORDS.

RETURN THIS PORTION WITH YOUR PAYMENT.

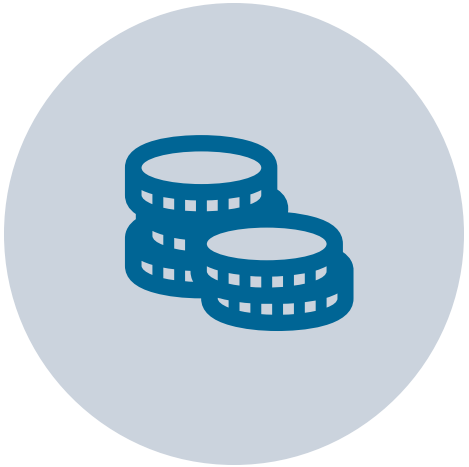
INSERT THIS EDGE FIRST

PACIFIC POWER
PO BOX 400
PORTLAND OR 97207

PACIFIC POWER
PO BOX 26000
PORTLAND OR 97256-0001

Metrics for Calculating Customer Savings:

Simple Payback



Net Present Value

Metrics for Calculating Customer Savings:

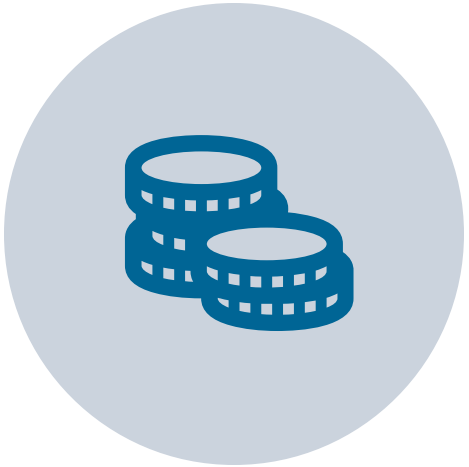
Simple Payback

$$\frac{\text{Upfront Cost}}{\text{Annual Energy Savings}}$$

Net Present Value

Metrics for Calculating Customer Savings:

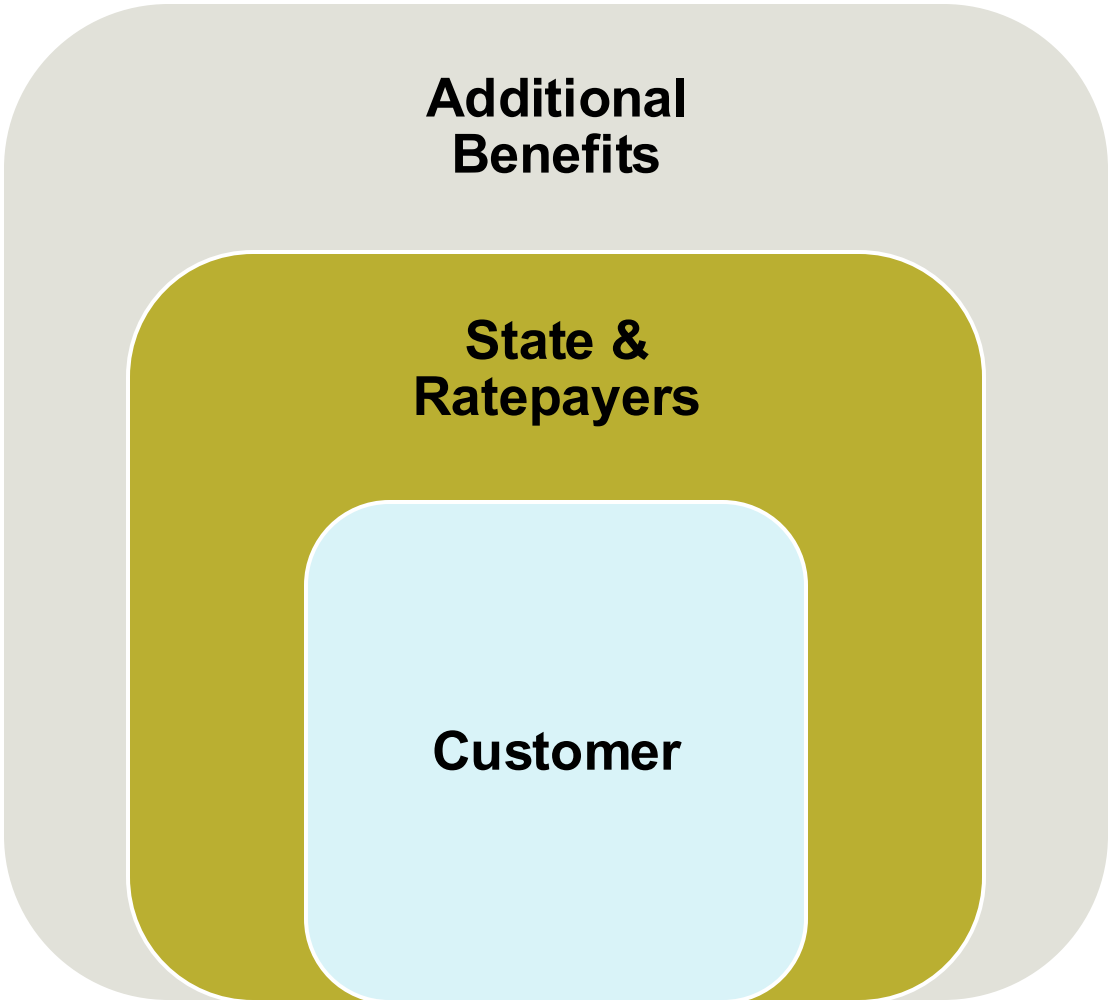
Simple Payback



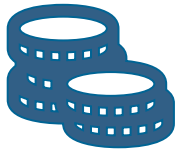
Net Present Value

Discounted Lifetime Energy Savings – Upfront Cost

Benefits of Energy Efficiency Grow



Energy Efficiency Can Save Ratepayers Money

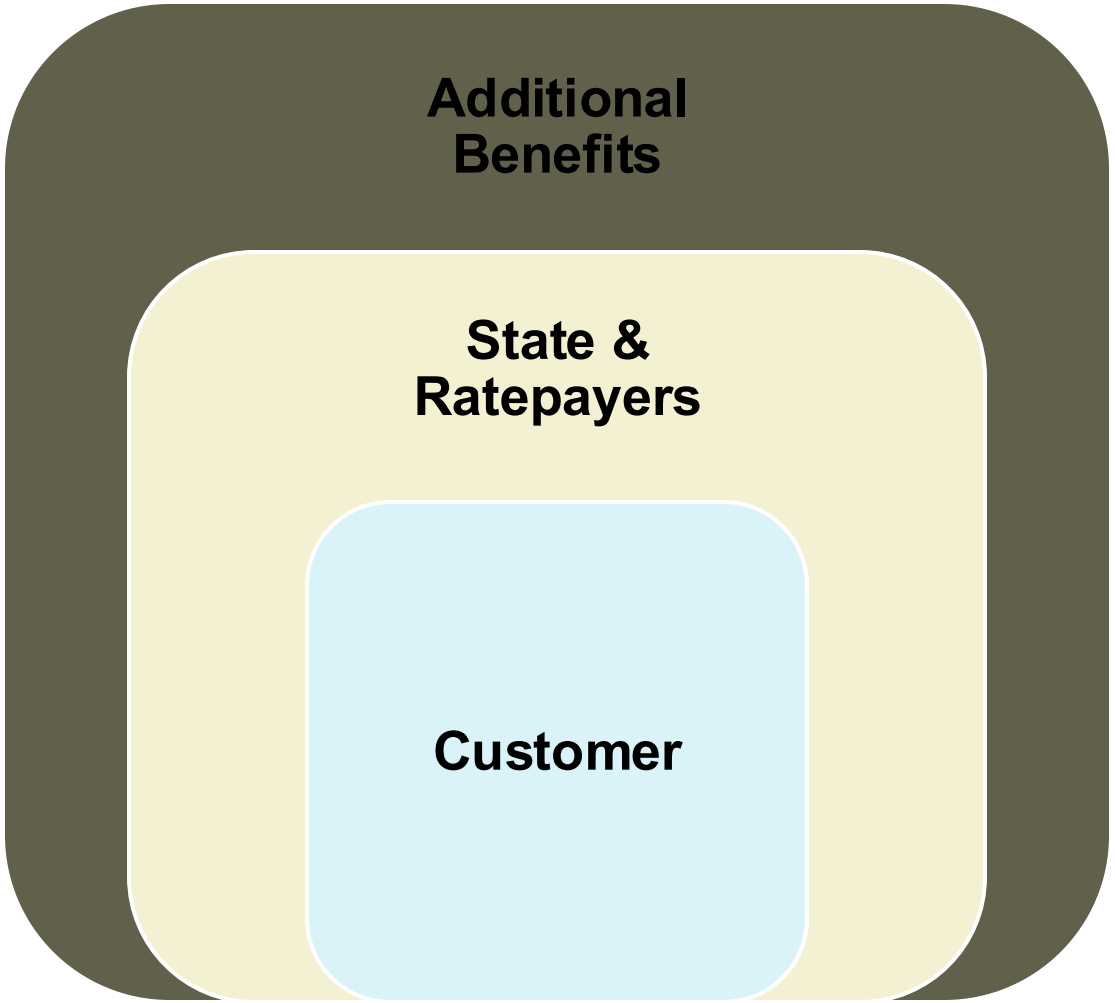


Utilities recover costs of investments through increases in utility rates

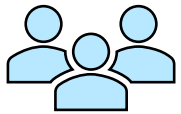
Energy efficiency can reduce the need for energy infrastructure investments

Reduced need for energy investments can reduce utility rates for all customers

Benefits of Energy Efficiency Grow

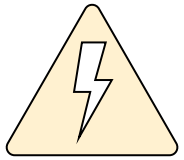


Energy Efficiency Provides Additional Benefits

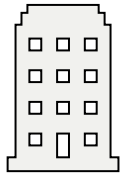


Jobs

Environmental Benefits



Resilience



Comfort

Uptake of Energy Efficiency

Is there an Energy Efficiency Gap?

Barrier	Example	Strategies to Overcome
Hidden Costs	Search Costs & Time Costs	NW Marketplace; HIPPO
Overestimated Savings	Optimistic Assumptions	Example Savings Info
Workmanship	Varied Experience & Training	ETO Trainings
Behavioral Anomalies	Limited Attention	EnergyStar; BPS
Landlord-Tenant	Renters Pay Utilities	New Contracts

Is there an Energy Efficiency Gap?

Barrier	Example	Strategies to Overcome
Hidden Costs	**Search Costs, Time Costs**	**NW Marketplace; HIPPO**
Overestimated Savings	Optimistic Assumptions	Example Savings Info
Workmanship	Varied Experience & Training	ETO Trainings
Behavioral Anomalies	Limited Attention	EnergyStar; BPS
Landlord-Tenant	Renters Pay Utilities	New Contracts

Is there an Energy Efficiency Gap?

Barrier	Example	Strategies to Overcome
Hidden Costs	Search Costs & Time Costs	NW Marketplace; HIPPO
Overestimated Savings	**Optimistic Assumptions**	**Example Savings Info**
Workmanship	Varied Experience & Training	ETO Trainings
Behavioral Anomalies	Limited Attention	EnergyStar; BPS
Landlord-Tenant	Renters Pay Utilities	New Contracts

Is there an Energy Efficiency Gap?

Barrier	Example	Strategies to Overcome
Hidden Costs	Search Costs & Time Costs	NW Marketplace; HIPPO
Overestimated Savings	Optimistic Assumptions	Example Savings Info
Workmanship	**Varied Experience & Training**	**ETO Trainings**
Behavioral Anomalies	Limited Attention	EnergyStar; BPS
Landlord-Tenant	Renters Pay Utilities	New Contracts

Is there an Energy Efficiency Gap?

Barrier	Example	Strategies to Overcome
Hidden Costs	Search Costs & Time Costs	NW Marketplace; HIPPO
Overestimated Savings	Optimistic Assumptions	Example Savings Info
Workmanship	Varied Experience & Training	ETO Trainings
Behavioral Anomalies	**Limited Attention**	**EnergyStar; BPS**
Landlord-Tenant	Renters Pay Utilities	New Contracts

Is there an Energy Efficiency Gap?

Barrier	Example	Strategies to Overcome
Hidden Costs	Search Costs & Time Costs	NW Marketplace; HIPPO
Overestimated Savings	Optimistic Assumptions	Example Savings Info
Workmanship	Varied Experience & Training	ETO Trainings
Behavioral Anomalies	Limited Attention	EnergyStar; BPS
Landlord-Tenant	**Renters Pay Utilities**	**New Contracts**

Future Research

- Do commercial and industrial consumers face the same barriers?
- Will these barriers change as technologies develop?

Thank you

Mary Kopriva, Economist
Oregon Department of Energy
mary.kopriva@energy.oregon.gov

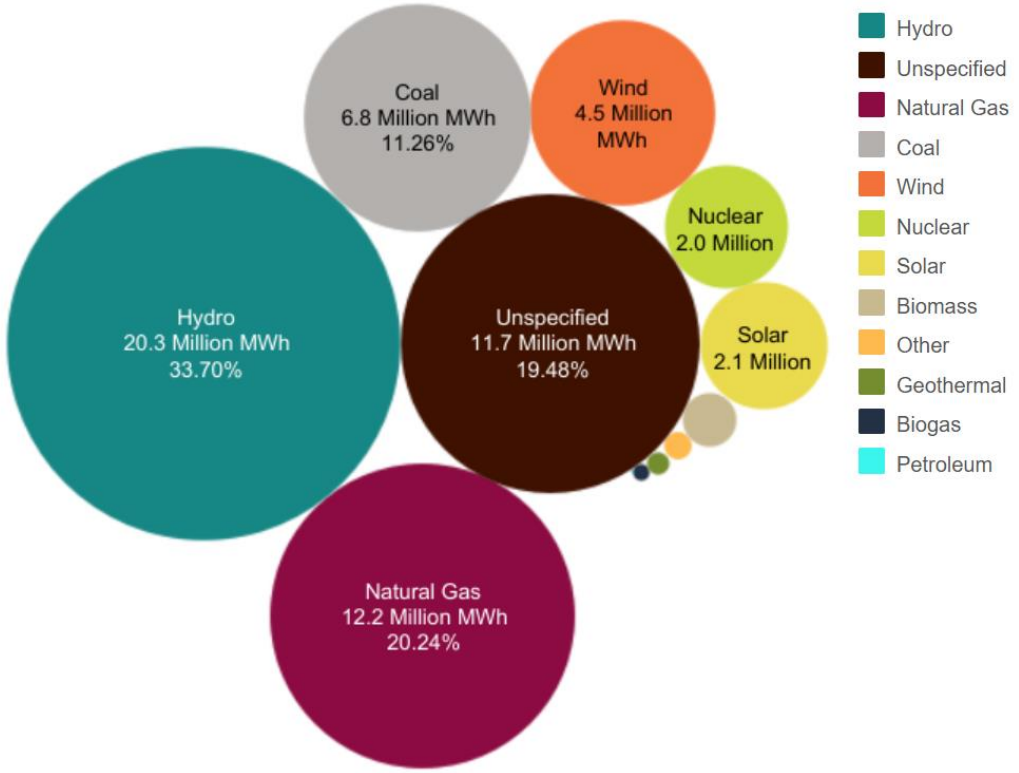
OREGON DEPARTMENT OF ENERGY

Slides that have been cut

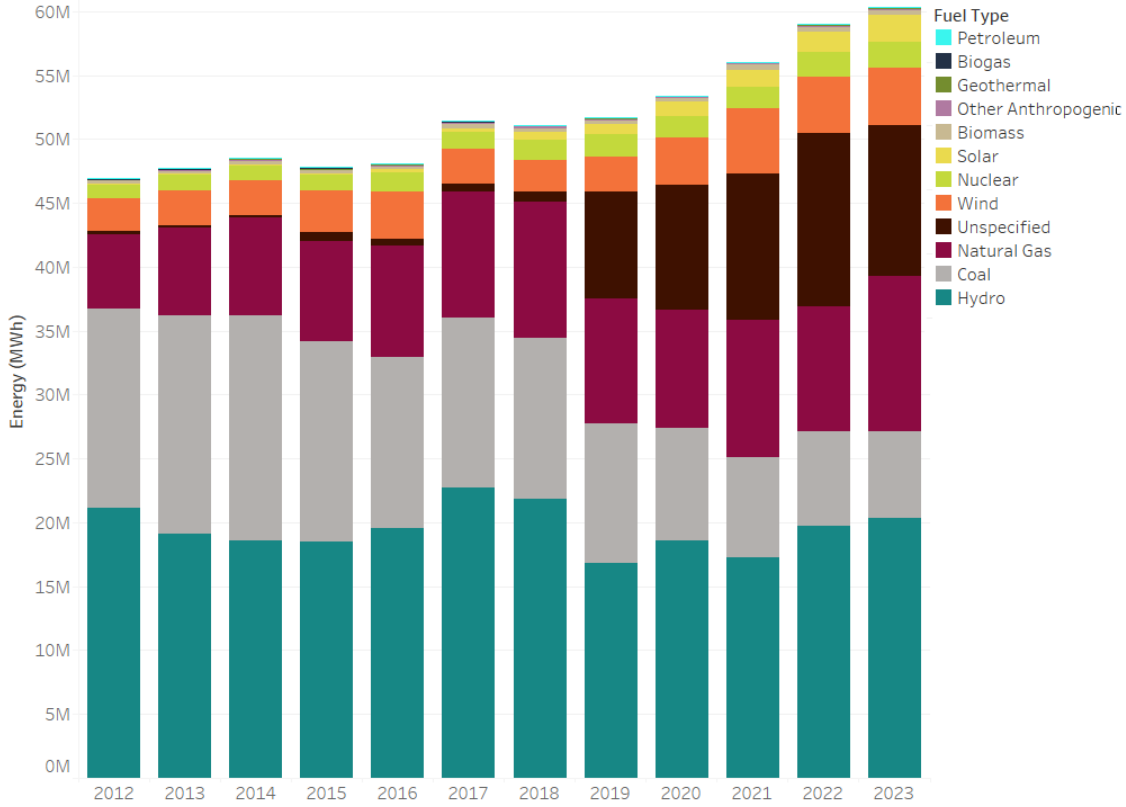
Energy Trust of Oregon

Sources of Electricity Oregonians Use

Resources Used to Generate Oregon's Electricity (2023)

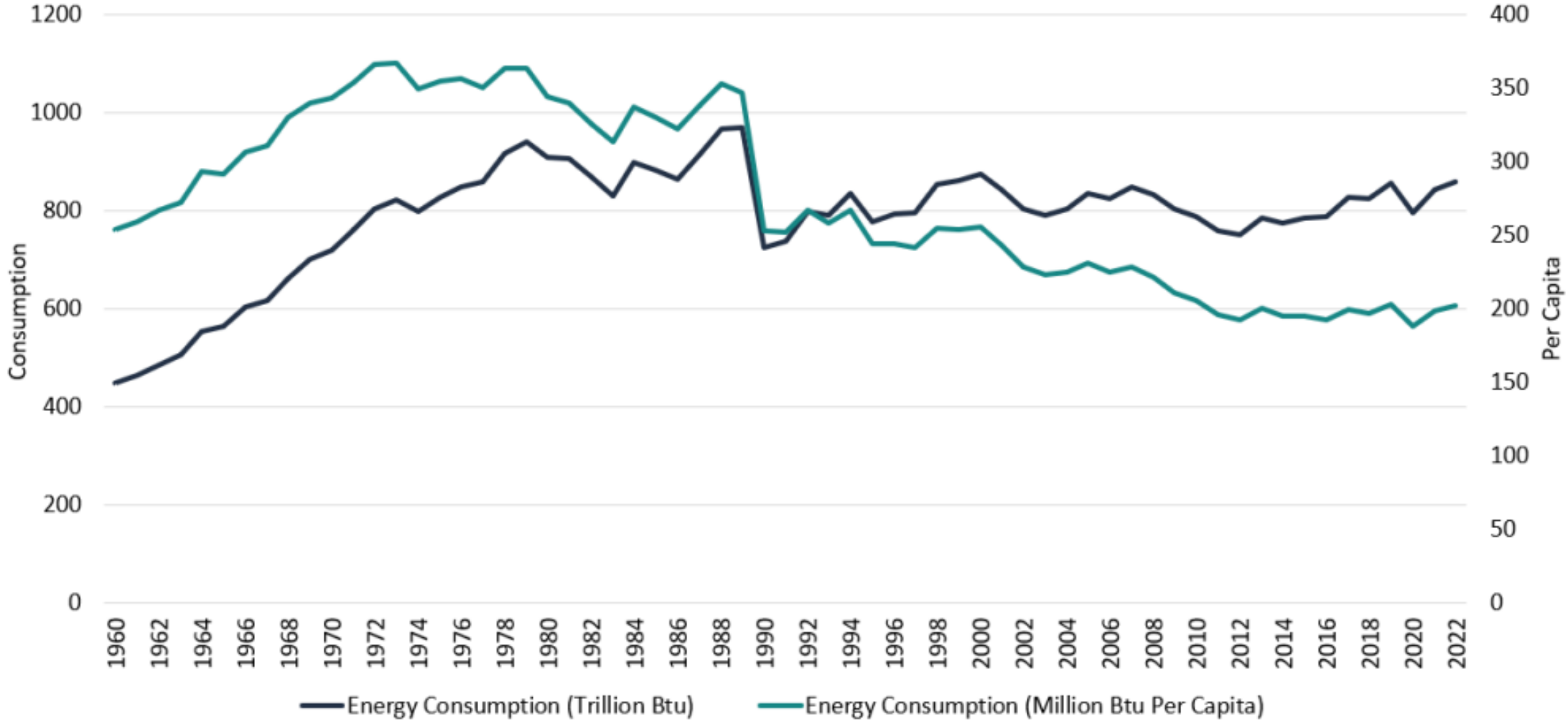


Resources Used to Generate Oregon's Electricity Over Time



Biennial Energy Report: Energy by the Numbers

Oregon's Total Energy Consumption and Per Capita Energy Consumption Over Time



Rural & Agricultural Energy Assistance Program

- What we offer
  - Energy assessments
  - Navigation and connection to technical and financial resources
  - Assistance with planning and prioritization of energy projects

Call to Action

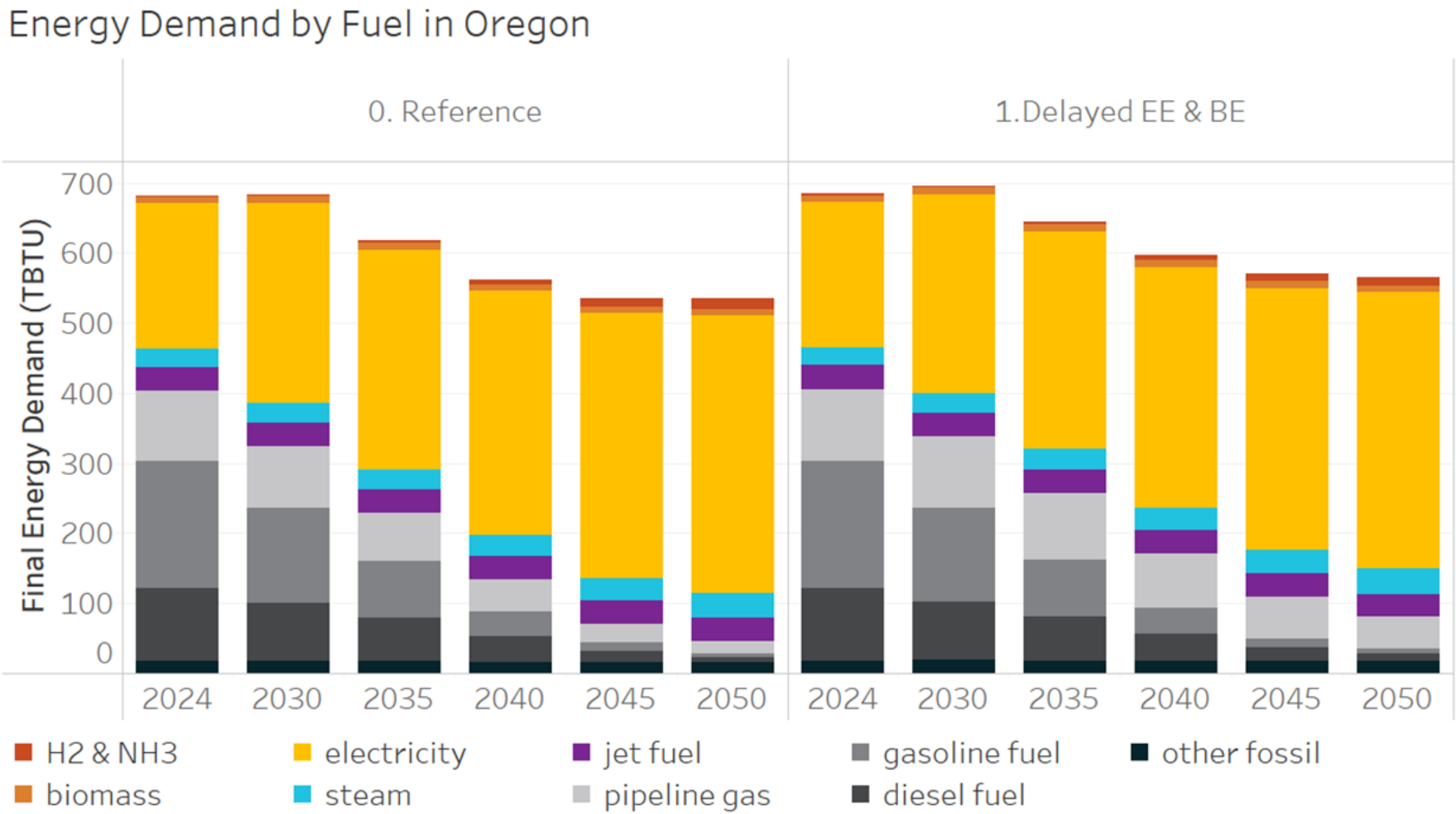
- Fill out the online interest form
- ODOE will schedule a phone call
- Explore the needs of your business with ODOE and partners, as applicable
- Agree on next steps
    - Energy assessment
    - Referral to partner programs
    - Recommendations for long-term planning, research

OREGON DEPARTMENT OF ENERGY

PLACEHOLDER: Energy Efficiency & Local Initiatives

Discussion of Local Initiatives

Impact of Delayed EE & BE on Economy-wide Energy Demand



Five Pathways to Guide Oregon

1. Energy Efficiency. Advance energy efficiency across buildings, industry, and transportation sectors, including by expanding access to and appeal of multimodal transportation options, to deliver the benefits of a more efficient energy system.

2. Clean Electricity. Secure reliable, affordable, and clean electricity by expanding the electricity system and incorporating load flexibility.

3. Electrification. Increase electrification of end uses across transportation, buildings, and industry, while safeguarding reliability, promoting affordability, and maximizing opportunities to use load flexibility as a resource.

4. Low-Carbon Fuels. Advance the use of low-carbon fuels in the hardest-to-electrify end uses and to maintain a reliable electric grid.

5. Resilience. Strengthen resilience across all levels of the energy system, including utilities, communities, and customers, enhancing Oregon's ability to adapt to climate change and mitigate other risks.

Implementation of each pathway must consider burdens and benefits to environmental justice communities and apply an equity lens to prevent further disproportionate impacts to historically and currently marginalized communities.

ENERGY EFFICIENCY POLICIES

- Deliver energy efficiency and conservation improvements in existing and new residential and small commercial buildings to align with state decarbonization goals. Prioritize programs to serve low- and moderate- income and energy burdened households.
- Evaluate, promote, and allocate funding to improve energy efficiency in large commercial and industrial sectors.
- Prioritize policies and increase support for programs that expand access to multimodal transportation options – including public transit, biking, and walking infrastructure – and promote development patterns that make it easier and more appealing for people to live, work, and access services without relying on a personal vehicle.

Oregon Energy Strategy

HB 3630: Develop a comprehensive, economy-wide, and statewide energy strategy that:

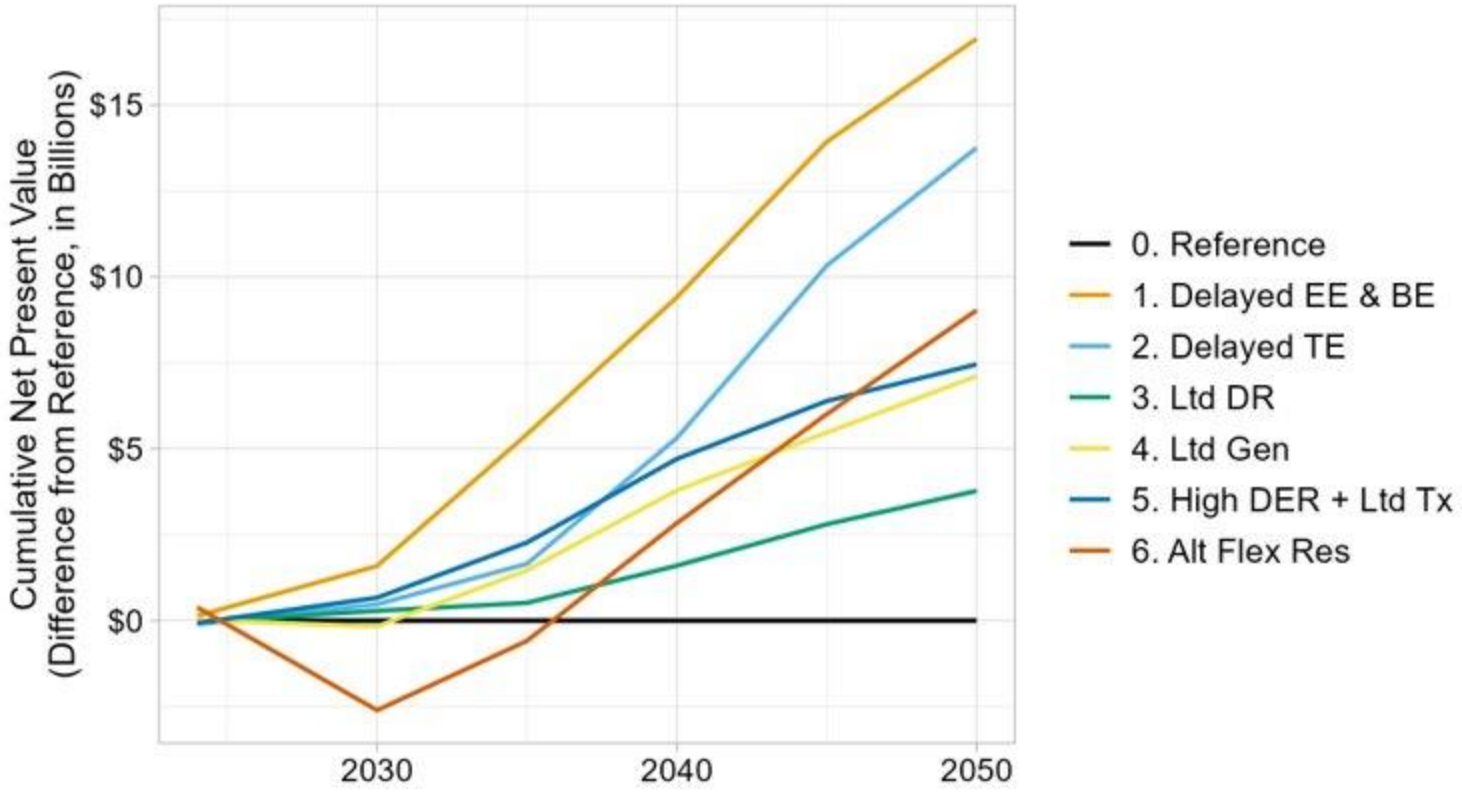
- Identifies pathways to achieve the state's energy policy objectives
- Recommends legislation or changes to policy
- Is developed through robust engagement

OREGON DEPARTMENT OF ENERGY
50 YEARS of SERVICE

Least-cost Pathway

The Reference Scenario from the model was the least-cost pathway to meet our energy and climate objectives.

Other pathways modeled cost more.



OREGON DEPARTMENT OF ENERGY

Energy Demand by Fuel in Oregon