Northwest **Power** and **Conservation** Council

December 8, 2020

MEMORANDUM

TO: **Council Members**

FROM: **Leann Bleakney, energy policy analyst**
Oregon office

SUBJECT: **Presentation by the Oregon Dept. of Energy**

BACKGROUND:

Presenter: Alan Zelenka, Division Administrator, Planning and Innovation Division
Adam Schultz, Senior Policy Analyst, Planning and Innovation Division
Oregon Dept. of Energy

Summary: Messrs. Zelenka and Schultz will appear before the Council to describe the department's Biennial Energy Report, referred to as the BER. This is the second time staff has appeared. In 2018, Messrs. Zelenka and Schultz described to the power committee the report and its comprehensive review of energy resources, policies, trends, and forecasts, and what they mean for the state of Oregon.

Relevance: The mission of the Oregon Department of Energy is to help Oregonians make informed decisions and maintain a resilient and affordable energy system. The department advances 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.

Workplan:

Background: The BER can be found on the department's web site at:
https://energyinfo.oregon.gov/ber

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OREGON DEPARTMENT OF ENERGY

2020 Biennial Energy Report

Alan Zelenka & Adam Schultz

December 16, 2020

OREGON DEPARTMENT OF ENERGY

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

Our Mission

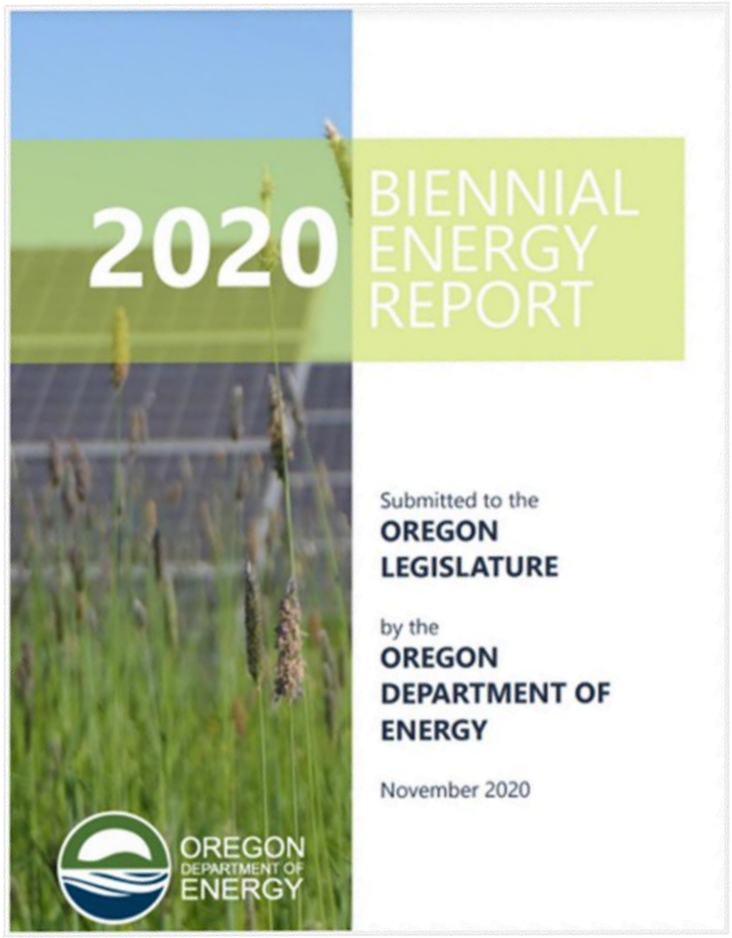
The Oregon Department of Energy helps Oregonians make informed decisions and maintain a resilient and affordable energy system. We advance solutions to shape an equitable clean energy transition, protect the environment and public health, and responsibly balance energy needs and impacts for current and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

2020 BIENNIAL ENERGY REPORT



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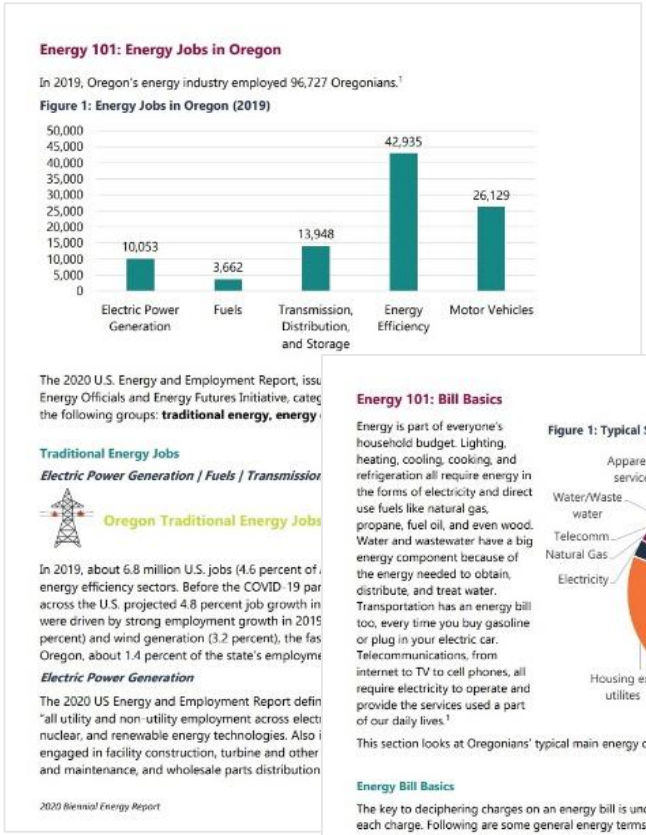


Energy 101: Energy Jobs in Oregon

In 2019, Oregon's energy industry employed 96,727 Oregonians.[1]

Figure 1: Energy Jobs in Oregon (2019)

The 2020 U.S. Energy and Employment Report, issu
Energy Officials and Energy Futures Initiative, categ
the following groups: **traditional energy, energy**

Traditional Energy Jobs

Electric Power Generation | Fuels | Transmissio

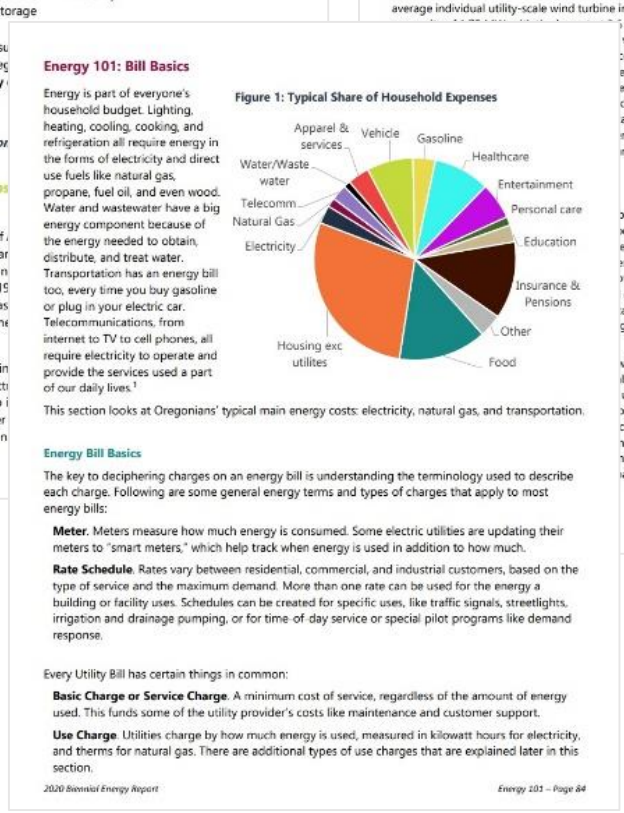
Oregon Traditional Energy Jobs

In 2019, about 6.8 million U.S. jobs (4.6 percent of
energy efficiency sectors. Before the COVID-19 par
across the U.S. projected 4.8 percent job growth in
were driven by strong employment growth in 2019
percent) and wind generation (3.2 percent), the fas
Oregon, about 1.4 percent of the state's employme

Electric Power Generation

The 2020 US Energy and Employment Report defin
"all utility and non-utility employment across electr
nuclear, and renewable energy technologies. Also i
engaged in facility construction, turbine and other
and maintenance, and wholesale parts distribution

2020 Biennial Energy Report



Energy 101: Bill Basics

Energy is part of everyone's household budget. Lighting, heating, cooling, cooking, and refrigeration all require energy in the forms of electricity and direct use fuels like natural gas, propane, fuel oil, and even wood. Water and wastewater have a big energy component because of the energy needed to obtain, distribute, and treat water. Transportation has an energy bill too, every time you buy gasoline or plug in your electric car. Telecommunications, from internet to TV to cell phones, all require electricity to operate and provide the services used a part of our daily lives.[1]

Figure 1: Typical Share of Household Expenses

This section looks at Oregonians' typical main energy costs: electricity, natural gas, and transportation.

Energy Bill Basics

The key to deciphering charges on an energy bill is understanding the terminology used to describe each charge. Following are some general energy terms and types of charges that apply to most energy bills:

Meter. Meters measure how much energy is consumed. Some electric utilities are updating their meters to "smart meters," which help track when energy is used in addition to how much.

Rate Schedule. Rates vary between residential, commercial, and industrial customers, based on the type of service and the maximum demand. More than one rate can be used for the energy a building or facility uses. Schedules can be created for specific uses, like traffic signals, streetlights, irrigation and drainage pumping, or for time-of-day service or special pilot programs like demand response.

Every Utility Bill has certain things in common:

Basic Charge or Service Charge. A minimum cost of service, regardless of the amount of energy used. This funds some of the utility provider's costs like maintenance and customer support.

Use Charge. Utilities charge by how much energy is used, measured in kilowatt hours for electricity, and therms for natural gas. There are additional types of use charges that are explained later in this section.

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Resource Review: Wind Power

- Total MW Capacity in Oregon: 3,415 MW
- Facilities in Oregon (1.65 to 290 MW): 46 (3 under construction)
- Total Generation (2018): 7,447,442 MWh
- Total Consumption (2018): 2,396,878 MWh
- Total Exports (2018): 5,050,564 MWh

Wind turbine blades capture the wind's motion and transform that mechanical energy into electricity.[1] The average individual utility-scale wind turbine in Oregon has

Figure 1: Horizontal-axis Wind Turbine[6]

MW.[2] While wind turbines coast where constant.[3] ers where d-bottom an take r waters are nd Scotland.[5]

on-emitting power. Wind ectricity rgy wn substantially since construction of the state's first generation, Oregon is ninth nationally in terms of overall ates in the Western Electricity Coordinating Council,[8] generation projects are large, utility-scale projects

wind farms and four state jurisdictional facilities under 894 MW, with an additional 550 MW of wind projects upgrading turbines at many older facilities, a process r partial upgrades that can either increase maximum ciency allowing turbines to generate more electricity per has approved repowering of four facilities to date.[13] The nts to increase turbine generation efficiency, but do not acity.[14]

Technology & Resource Reviews – Page 15

Agenda

- BER Sections Overview:
  - Energy By the Numbers
  - Energy History Timeline
  - Energy 101
  - Resource and Technology Reviews
  - Policy Briefs
- Coming Soon!
- Q&A

Energy by the Numbers

Oregon's overall and sector-based energy use, energy production and generation, and energy expenditures.

Data and metrics track how Oregon produces, purchases, and uses various types of energy.

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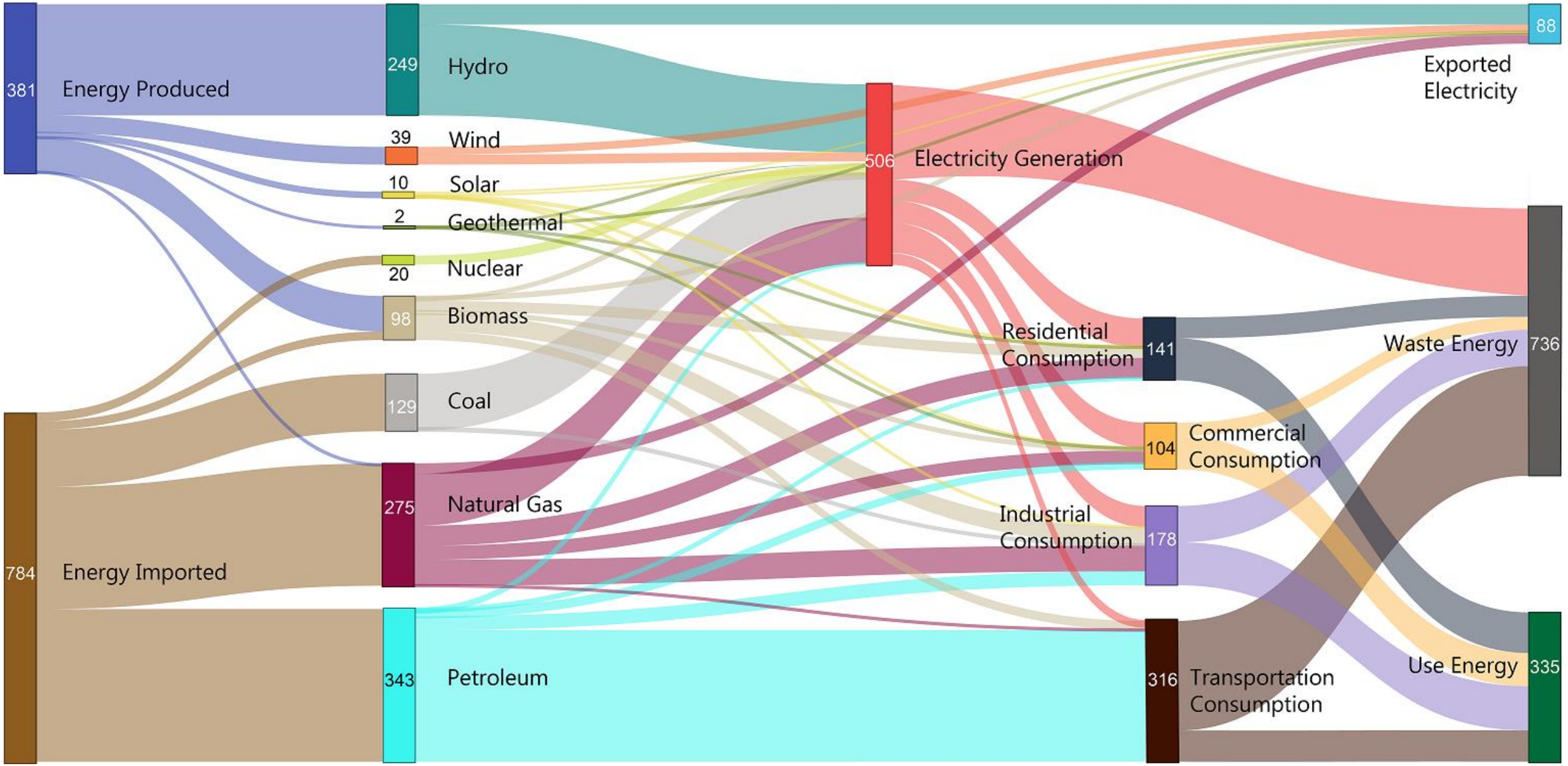
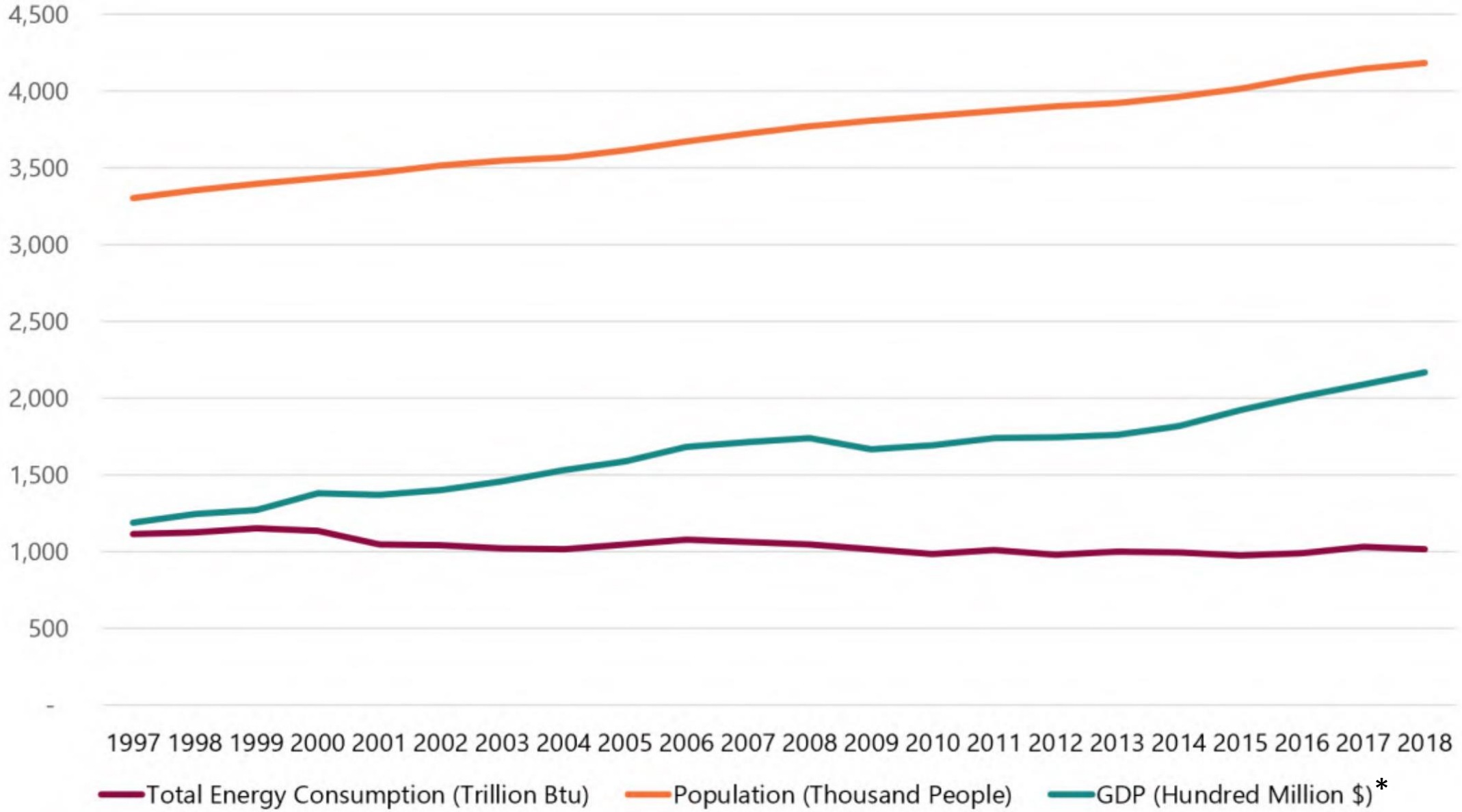
OREGON DEPARTMENT OF ENERGY

Oregon's Energy Flow



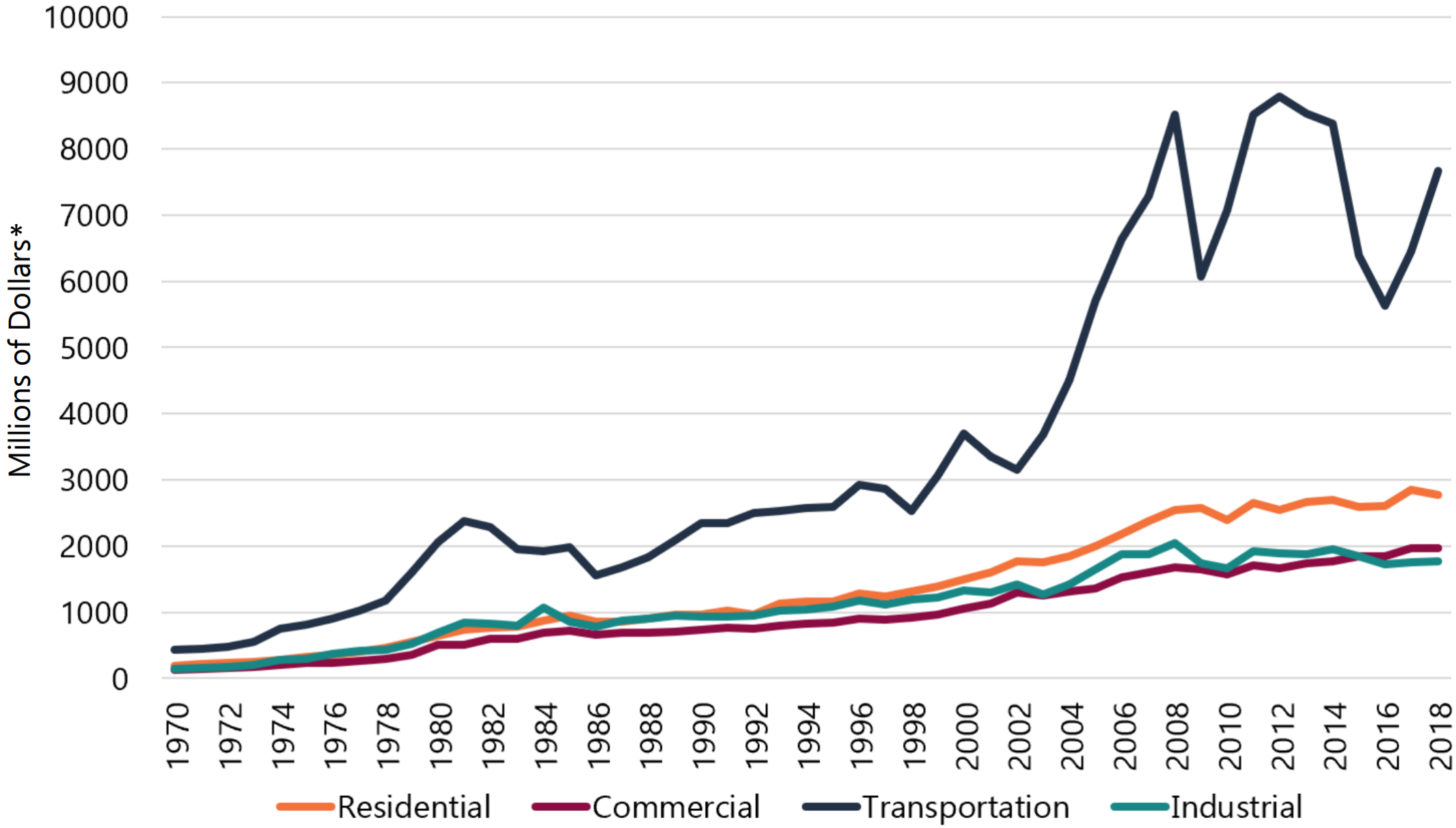
Numbers are in trillions of British thermal units (Btus)

Oregon's GDP, Population, and Energy Consumption by Year



*Not adjusted for inflation.

Oregon's Total Energy Expenditures by Sector Over Time



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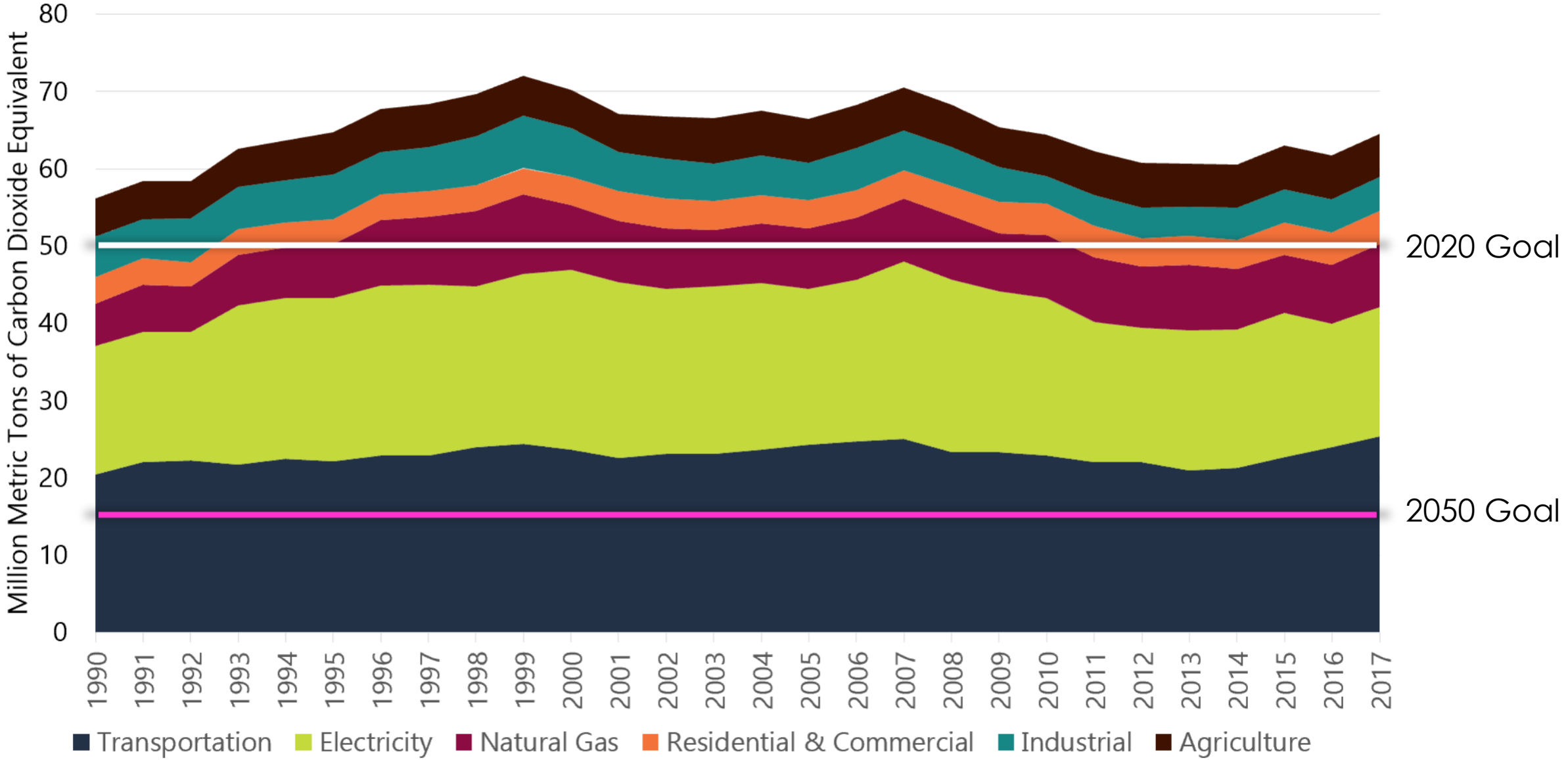
*Not adjusted for inflation.

Oregon Greenhouse Gas Emissions by Source Over Time



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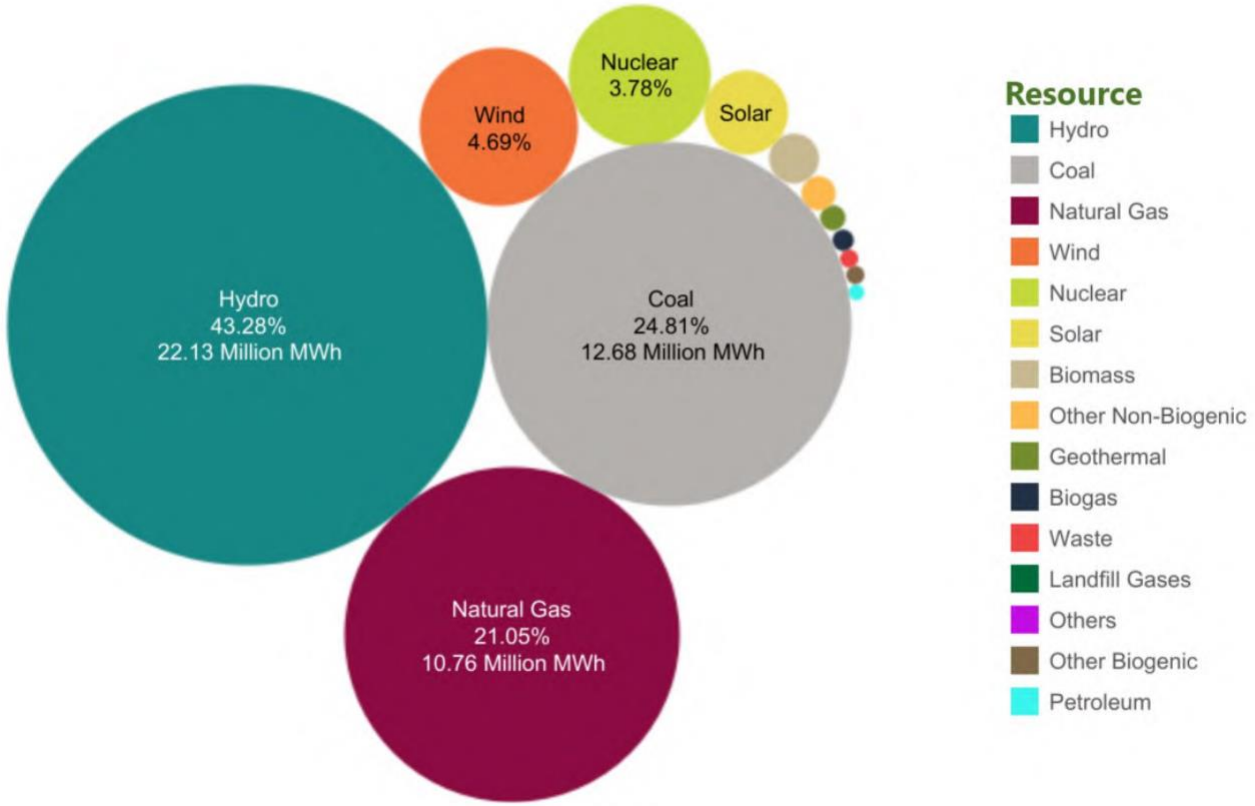
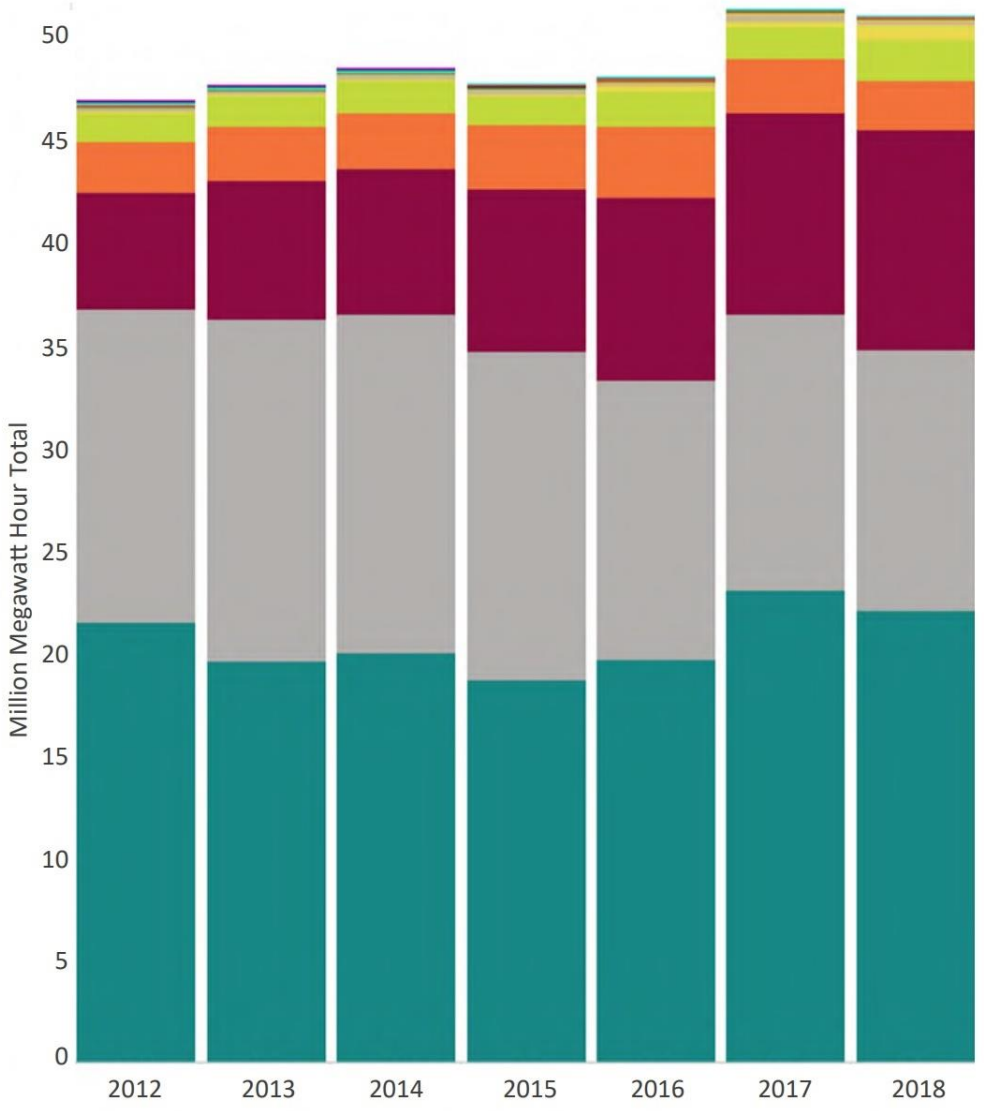
Resources Used to Generate Oregon's Electricity

Based on 2018 data, this chart shows the energy resources used to generate the electricity that is sold to Oregon's utility customers.



Oregon's Electricity Mix Over Time



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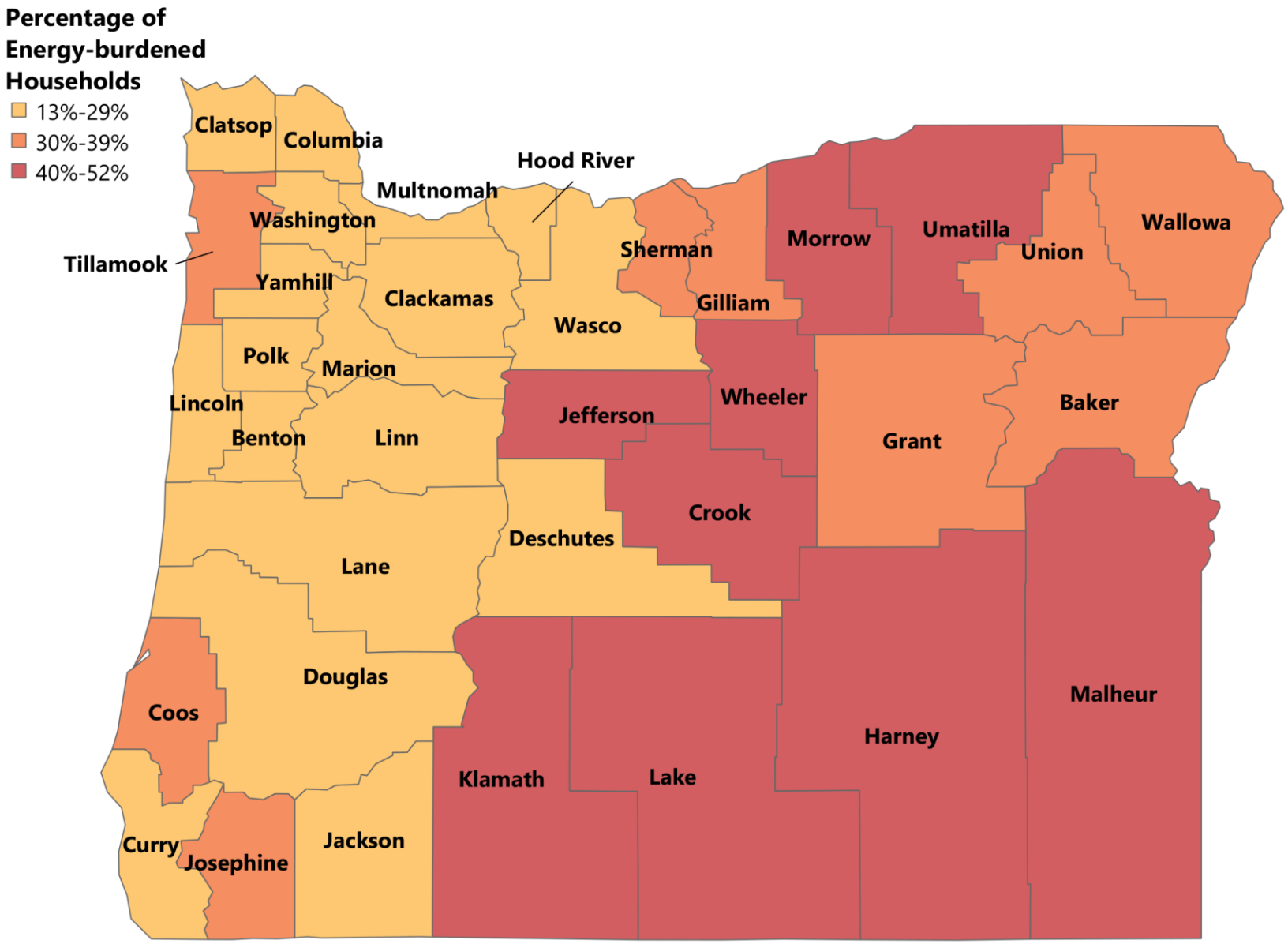
Percentage of Oregon Households Considered Energy Burdened and Earning 200 Percent or Below Federal Poverty Level by County



History Timeline

The timeline of Oregon's energy history is meant to serve as a useful reference for readers as they review sections of the Energy Report, especially for energy data over time.

Event

Energy policies enacted at state and federal levels

18,000 to 15,000 years ago – During the last ice age, the Missoula Floods, possibly the largest discharges of water in the history of the earth, shape the Columbia River Gorge and the Willamette Valley.[1]

Missoula Flood Paths, courtesy of Washington Geological Survey.

16,500 years ago – Archeological remains and artifacts – the oldest radiocarbon dated evidence of humans in North America – are found where Cooper's Ferry, ID, now stands. This region is also known to the Nez Perce Tribe as the site of an ancient village named Nip.[2]

Over 6,000 years ago – Archeological evidence shows Northwest Indians fishing for salmon at Kettle Falls on the upper Columbia River.[3]

1700 – On January 26th, a magnitude 8+ earthquake occurs along the Cascadia Subduction Zone, causing a tsunami that floods coastal communities in Oregon. Knowledge of these events appears in Tribal oral history. This is the most recent Cascadia earthquake, which have happened about 234 years apart on average over the last 10,000 years.[4]

1855 – U.S. Government signs Treaty of Wasco, Columbia River, Oregon Territory with the Taih, Wyam, Tenino, & Dock-Spus Bands of the Walla-Walla and the Dalles, Ki-Gal-Twal-La, and the Dog River Bands of the Wasco who are forcibly removed to reservations.[5] The Treaty of 1855 reserved and guaranteed the right to continue to take fish on both their reservations and at all "usual and accustomed fishing places." This Treaty continues to provide legal foundation for securing and furthering fishing rights for contemporary members of the Confederated Tribes of the Umatilla Indian Reservation, the Confederated Tribes of the Warm Springs Reservation of Oregon, the Confederated Tribes and Bands of the Yakama Nation, and the Nez Perce Tribe.[6]

OREGON DEPARTMENT OF ENERGY

1937 – Congress passes the Bonneville Project Act and creates a temporary agency, the Bonneville Power Project, to market and transmit power from federal hydropower projects and "give preference and priority" to public bodies and cooperatives. Construction of Bonneville Dam is completed in 1938.[25] The Bonneville Power Project is renamed the Bonneville Power Administration in 1940.[26]

1940 – First aluminum smelter in the northwest, owned by the Aluminum Company of America (Alcoa) near Vancouver, WA becomes operational. Attracted by an abundance of low-cost electricity, more than a dozen aluminum plants across the northwest support the production of warplanes for World War II. Aluminum smelters buy electricity directly from Bonneville, becoming known as direct service industries or DSIs.[27]

1941 – Grand Coulee Dam, the largest concrete structure ever built at the time, begins operation. It is estimated that electricity from this dam provides enough power to produce the aluminum in about one-third of the planes built during World War II.[28] The construction inundates an important, historic fishing ground at Kettle Falls under Lake Roosevelt in Washington state. The three-day gathering before the falls are flooded is called the Ceremony of Tears. A First Salmon Ceremony, to call salmon back, continues to be held at Kettle Falls even though construction of the dam ended migration of salmon.[29]

Left- Colville women, Ceremony of Tears, 1939, courtesy of UW Special Collections. Above- Modern day salmon ceremony at Kettle Falls, courtesy of The Nelson Daily.

2017 – With the passage of the Keep Oregon Moving Act (HB 2017), Oregon adopts an Electric Vehicle Rebate program that includes a "Charge Ahead" component for low-income participants.[117] Oregon Governor Kate Brown issues Executive Orders 17-20[118] and 17-21[119] to reduce greenhouse gas emissions by accelerating energy efficiency in Oregon's built environment and accelerating zero emission vehicle adoption.

GO ELECTRIC OREGON

2017 – The first utility-scale solar PV project larger than 50 MW in Oregon, the 56 MW Gala Solar project in Crook County, begins commercial operation. Just one year later, the Boardman Solar Project, with a capacity of 75 MW, receives a site certificate from EFSC. The project has not yet begun construction.[120]

2019 – Oregon legislature passes HB 2618 creating ODOE's Solar + Storage Rebate Program. The program issues rebates for solar electric systems and paired solar and solar storage systems. At least 25 percent of available rebate dollars are set aside for low- or moderate-income residential customers and low-income service providers.[121]

2019 – For the first time since 1952, U.S. domestic production of primary energy surpasses consumption and the country exports more energy than it imports.[122]

2020 – Oregon Governor Kate Brown issues Executive Order 20-04 Directing State Agencies to Take Actions to Reduce and Regulate Greenhouse Gas Emissions.[123]

2020 – Oregon has 31,977 registered electric vehicles as of July 1.[124]

2020 – The Boardman Coal Plant, Oregon's only coal power plant, closes on October 15.[125]

2020 – Construction underway on multiple large utility-scale wind and solar energy projects, including the Wheatridge Renewable Energy Facilities in Morrow County, the Montague Wind and Solar Projects in Gilliam County, and the Golden Hills Wind Facility in Sherman County.[126]

Energy 101

This section is intended to help the reader understand the first part of the energy story: how energy is produced, used, and transformed.

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OREGON DEPARTMENT OF ENERGY

Resource Adequacy

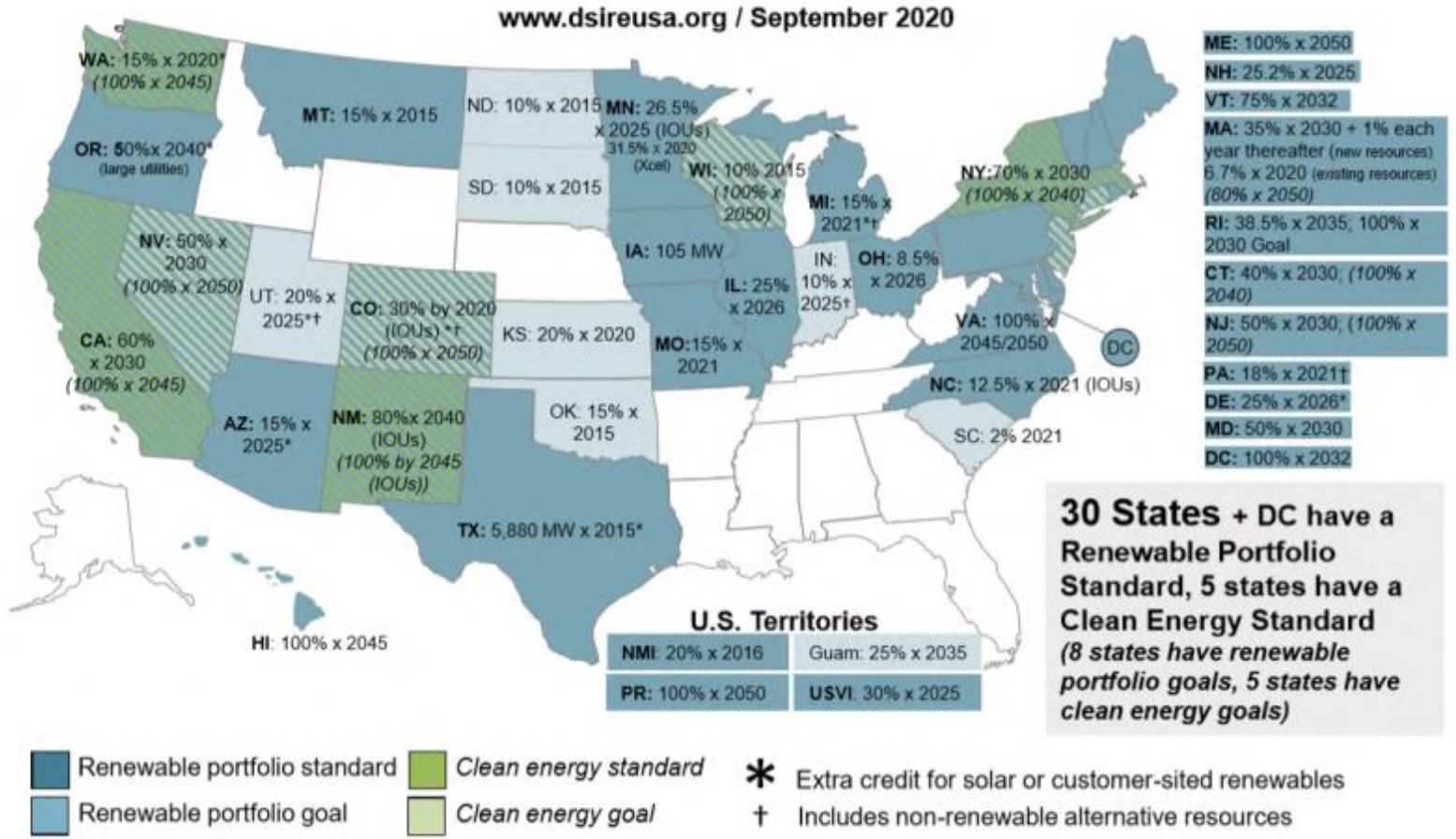
Table 1: Power System Reliability Over Different Timescales [5]

Short-term *(< 1 minute)*	**System Stability**	Short-term reliability (e.g., frequency response) focused on grid stability over very short time intervals
Medium-term *(Hourly or Daily)*	**System Balancing**	Medium-term reliability focused on managing imbalances on the system like those that occur between a day-ahead forecast and real-time conditions
Long-term *(1 to 5 years)*	**Resource Adequacy**	Long-term reliability focused on seasonal or year-to-year mismatches between supply-and-demand

- **What is Resource Adequacy?**
- **Why is it important?**
- **Who evaluates it?**
- **Who ensures an adequate power system?**

Clean Energy Standards

Figure 1: Renewable and Clean Energy Standards in the United States



Note: Virginia and Maine 100% RPS programs have unclear guidelines about qualifying resources and may be considered 100% clean energy standards.

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Energy Facility Siting & Permitting

New energy projects in Oregon are typically proposed and developed by utilities or independent developers. The federal government also owns and operates large scale energy projects in Oregon. For example, the Bonneville Power Administration, a federal government agency, owns and operates much of the high-voltage electric transmission system in Oregon and other neighboring states; and the U.S. Army Corps of Engineers and U.S. Bureau of Reclamation own and operate hydroelectric dams on the Columbia River. The state of Oregon regulates the siting of certain energy projects, but does not own or operate energy projects.

Siting vs. Permitting

Siting: refers to the location, or site, of proposed energy facilities, and typically refers to the process by which those locations are selected.

Permitting: refers to the process for a facility to obtain permits that demonstrate compliance with laws and regulations to construct and operate an energy facility.

Renewable energy project primary permitting jurisdictional thresholds

Renewable Energy Project Type	Primary Permitting Authority					
	County	County with HB 2329	EFSC[19]	Oregon Water Resources Commission	Oregon Department of State Lands	Federal Government
Solar Photovoltaic[20] ***High Value Farmland***	< = 100 acres	> 100 acres & < = 160 acres	> 160 acres	N/A	N/A	N/A
Arable Farmland	< = 100 acres	> 100 acres & < = 1,280 acres	> 1,280 acres (2 sq. miles)	N/A	N/A	N/A
Other Land	< = 320 acres	> 320 acres & < = 1,920 acres	> 1,920 acres (3 sq. miles)	N/A	N/A	N/A
Onshore Wind	N/A	< = 150 MW	> 150 MW	N/A	N/A	N/A
Geothermal	N/A	< = 55.5 MW	> 55.5 MW	N/A	N/A	N/A
Biomass	< 6 BBTU/day	N/A	> 6 BBTU/day	N/A	N/A	N/A
Offshore (wind and wave)	N/A	N/A	N/A	N/A	< = 3 Miles Offshore[21]	> 3 Miles & < = 200 Offshore (Bureau of Ocean Energy Management)
Battery Storage	All projects	N/A	N/A[22]	N/A	N/A	N/A
Hydroelectric	N/A	N/A	N/A	Projects in waters of the state[23]	N/A	Projects in waters of the US (FERC)
Pumped Hydroelectric	N/A	N/A	N/A	Certain projects	N/A	All projects (FERC)

Codes & Standards

Codes and standards deliver energy efficiency at low cost. In 2019, 30 percent of the cumulative energy savings in the Pacific Northwest came from codes and standards. Additionally, from 2000-2018, 11 percent of regional savings came from market transformation efforts by the Northwest Energy Efficiency Alliance (NEEA) – work that directly leads to updates of codes and standards.

Figure 1: Status of State Energy Code Adoption for Residential Buildings[10]

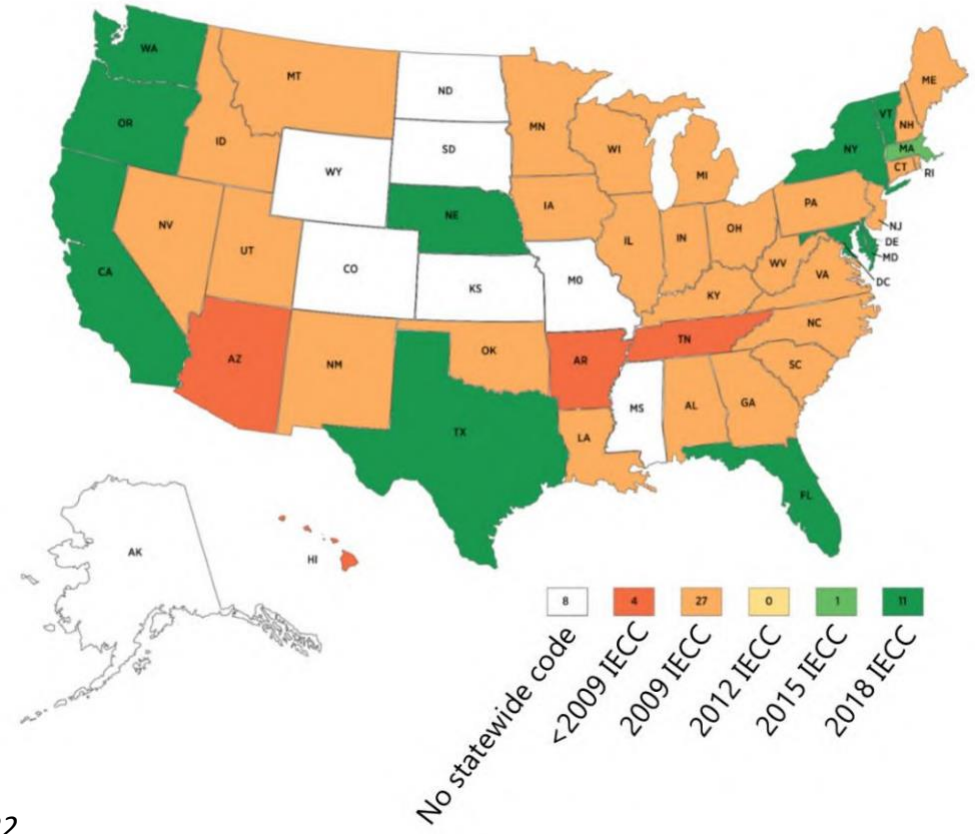
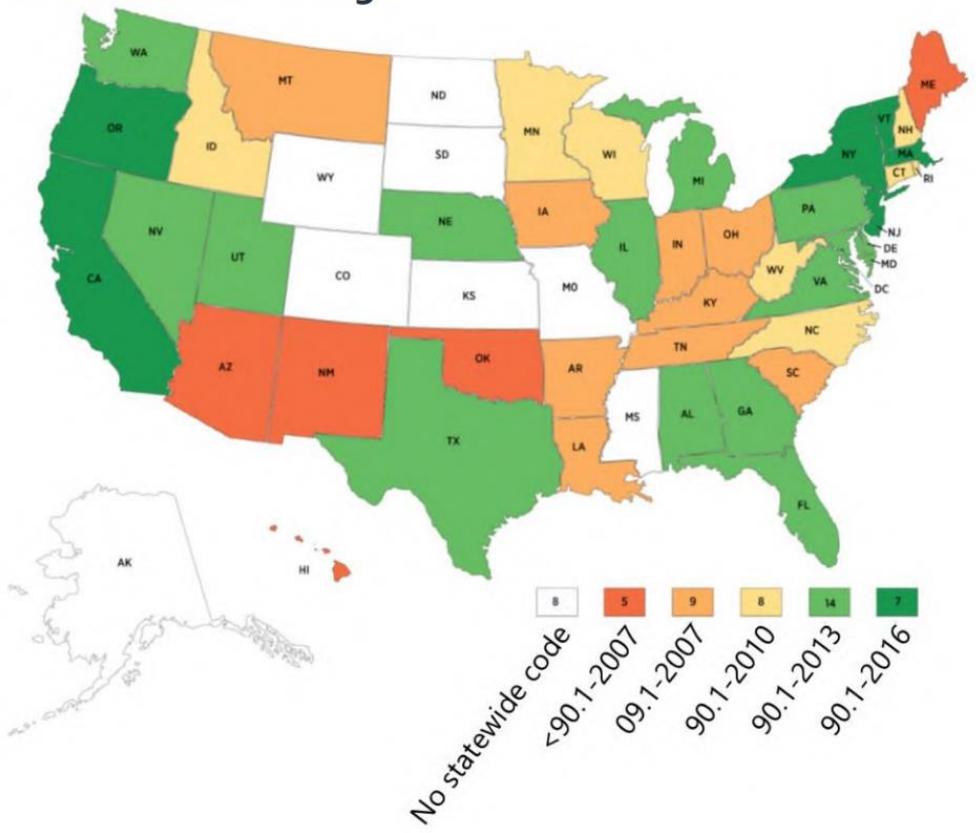


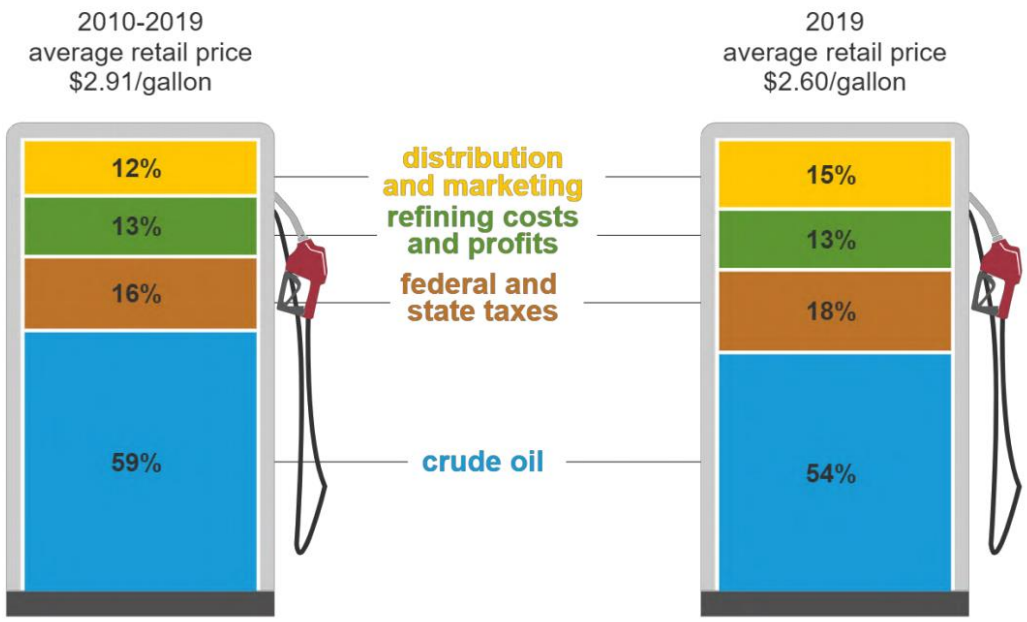
Figure 2: Status of State Energy Code Adoption for Commercial Buildings[10]

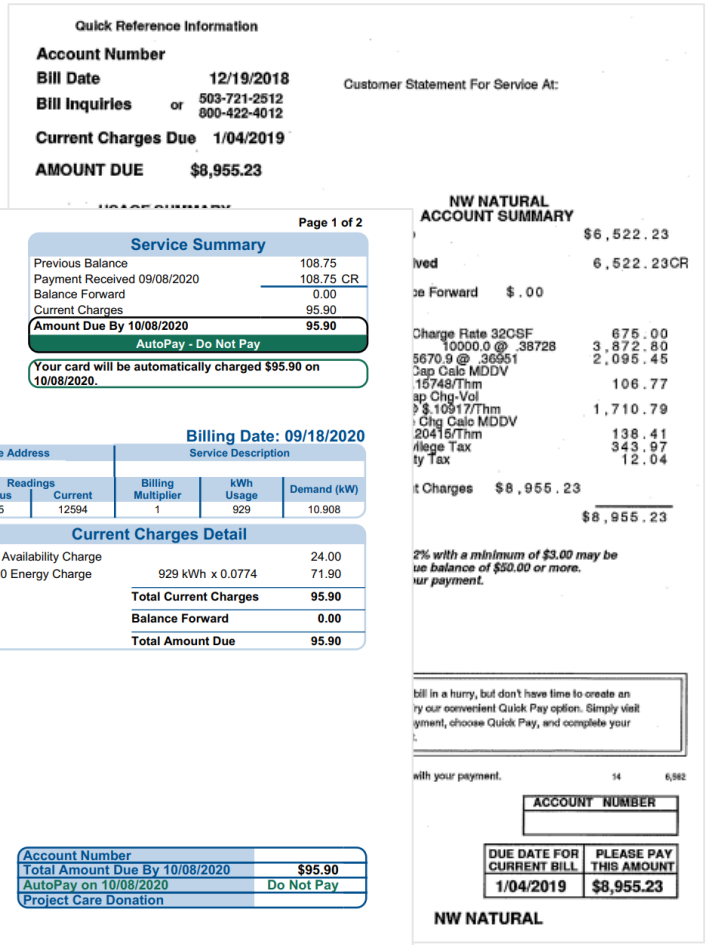


Energy Bill Basics

Includes definitions, sample bills, and more.

Figure 7: What We Pay for Per Gallon of Retail Regular Grade Gasoline[6]




Quick Reference Information
Account Number
Bill Date 12/19/2018
Bill Inquiries or 503-721-2512 800-422-4012
Current Charges Due 1/04/2019
AMOUNT DUE $8,955.23
Customer Statement For Service At:

CENTRAL LINCOLN
A COMMUNITY-OWNED ELECTRIC UTILITY
PO BOX 1126 • Newport, OR 97365-0090
Questions? Contact us at 541-265-3211 or toll-free at 1-877-265-3211. Visit us online at www.clpud.org.

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Service Summary

Previous Balance	108.75
Payment Received 09/08/2020	108.75 CR
Balance Forward	0.00
Current Charges	95.90
Amount Due By 10/08/2020	95.90

AutoPay - Do Not Pay
Your card will be automatically charged $95.90 on 10/08/2020.

Account Number:
Billing Date: 09/18/2020

Service Type	Service Address	Service Description
Schedule 100 - Residential		

Meter Number	Services From	Services To	Days	Readings Previous	Readings Current	Billing Multiplier	kWh Usage	Demand (kW)
	08/10/20	09/10/20	31	11665	12594	1	929	10.908

Kilowatt (kWh) Usage History

BILLING PERIOD	Sep 2019	Sep 2020
Avg Daily kWh	30	30

Current Charges Detail

Service Availability Charge		24.00
Rate 100 Energy Charge	929 kWh x 0.0774	71.90
Total Current Charges		95.90
Balance Forward		0.00
Total Amount Due		95.90

Below are your phone numbers currently on file. If there are any changes, please include the updated information on the payment stub.
Home Phone:
Cell Phone:

KEEP
SEND
Account Name:
Mailing Address:
Phone Number:

Account Number	
Total Amount Due By 10/08/2020	$95.90
AutoPay on 10/08/2020	Do Not Pay
Project Care Donation	

Check here and complete reverse side for changes to your personal information (address, phone, email, etc.)

To comply with industry standards, card payments need to be processed by phone, or online with SmartHub.
• CLPUD SmartHub gives you account access 24/7
• Pay your bill online at www.clpud.org via SmartHub
• CLPUD Pay-By-Phone toll-free number: 844-239-0076

Central Lincoln People's Utility District
PO BOX 1126
NEWPORT OR 97365-0090

NW NATURAL ACCOUNT SUMMARY
$6,522.23
ived 6,522.23CR
e Forward $.00
Charge Rate 32CSF 675.00
10000.0 @ .38728 3,872.80
5670.9 @ .36951 2,095.45
Cap Calc MDDV
.15748/Thm 106.77
ap Chg-Vol
$.10917/Thm 1,710.79
Chg Calc MDDV
.20415/Thm 138.41
/ilege Tax 343.97
ty Tax 12.04
t Charges $8,955.23
$8,955.23
2% with a minimum of $3.00 may be ue balance of $50.00 or more. ur payment.
bill in a hurry, but don't have time to create an y our convenient Quick Pay option. Simply visit yment, choose Quick Pay, and complete your
with your payment.
ACCOUNT NUMBER
DUE DATE FOR CURRENT BILL: 1/04/2019
PLEASE PAY THIS AMOUNT: $8,955.23
NW NATURAL

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Resource & Technology Reviews

The reviews in this section cover the spectrum of traditional to innovative – and demonstrate the breadth of technology that is integral to the production and management of our energy system.

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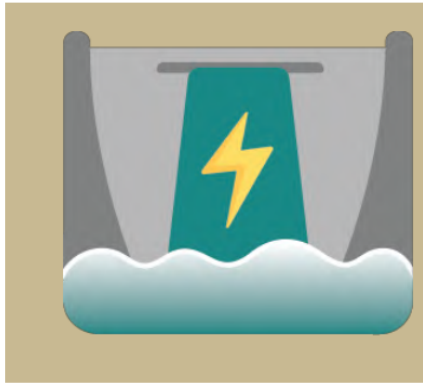
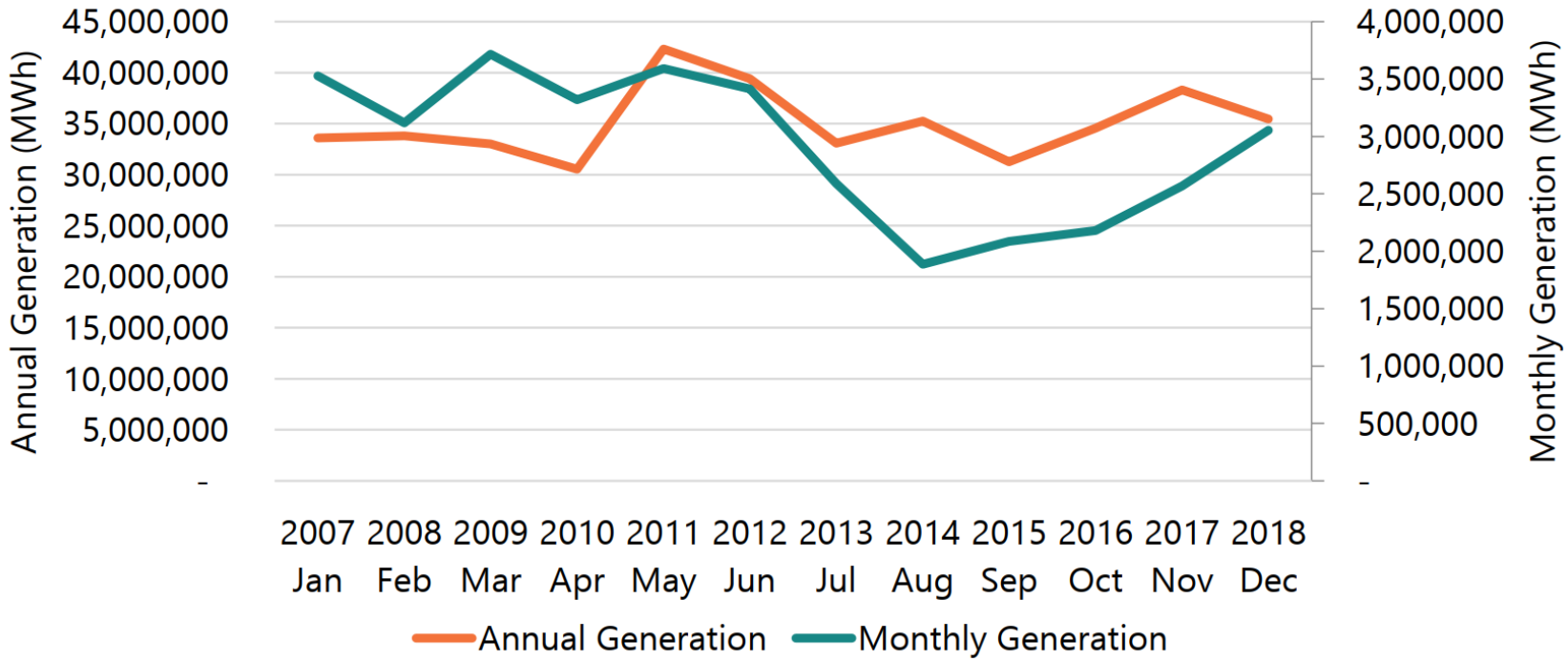
Hydropower



- Total Capacity in Oregon (2019): 8,303 MW
- Facilities in Oregon (0.03 to 2,160 MW) 94*
- Total Generation (2018): 35,442,773 MWh
- Total Consumption (2018): 22,125,769 MWh
- Total Exports (2018): 13,317,004 MWh

**Seven hydropower facilities cross state borders.*

Figure 2: Oregon Annual and Monthly Average Hydropower Generation by Year



In 2018, hydropower accounted for 55.3% of electric generation in Oregon and 43.3% of consumption after accounting for exports.

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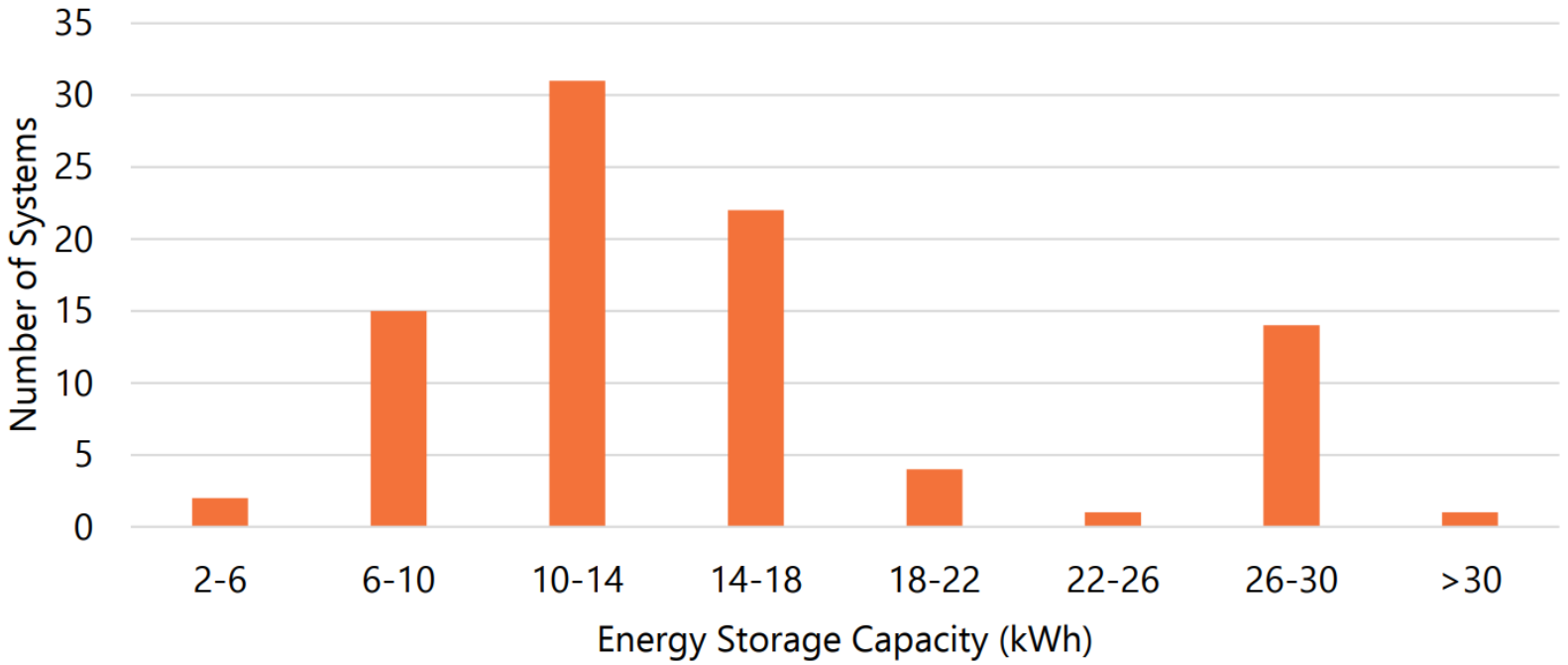
Residential Energy Storage

- Peak Power Capacity in Oregon: 670 kW
- Facilities in Oregon: 291
- Maximum Stored Energy in Oregon: 1,440 kWh
- Range of Sizes: 2.4 to 46 kWh

Figure 1: Range of Residential Battery Sizes in Oregon (2018-2020)



As of September 2020, the Oregon Department of Energy's Oregon Solar + Storage Rebate Program has provided rebates for 11 residential battery systems paired with solar.

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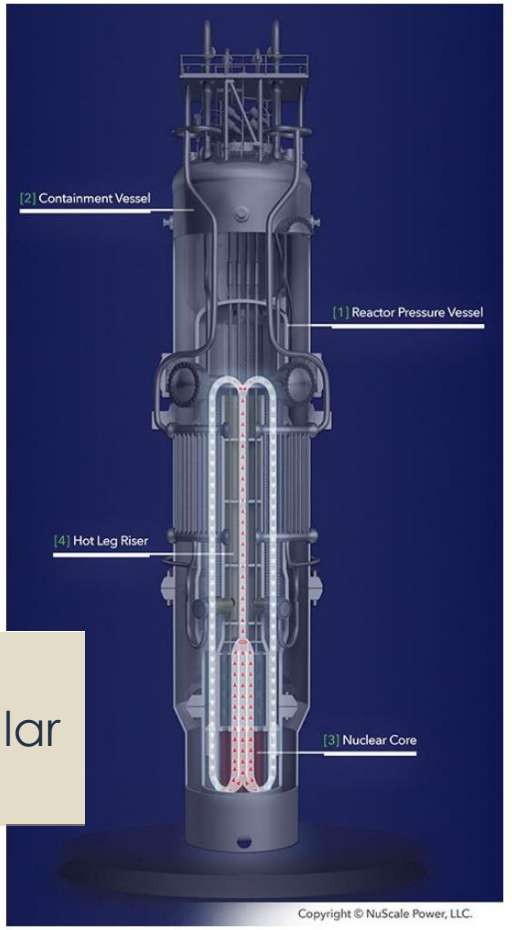
Small Modular Reactors

- Total Capacity and Facilities in Oregon: 0
- Range of Potential Sizes: 60 – 250 MW per module

Oregon-based NuScale developed the first modular reactor to receive design approval by the U.S. Nuclear Regulatory Commission.

While there are small, traditional nuclear reactors operating in the world, there are no new-generation SMRs yet in operation. The International Atomic Energy Agency reports that of the 50 or more designs being pursued, there are "four SMRs in advanced stages of construction in Argentina, China and Russia, and several existing and newcomer nuclear energy countries are conducting SMR research and development."

Oregon has statutory barriers to siting nuclear power plants in the state. One barrier: Oregon voters would have to approve any nuclear facility.



Design Illustration of NuScale Power Modular Reactor

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Power-to-Gas

- Established technology in Europe; emerging in the U.S.
- NW Natural and Eugene Water & Electric Board are evaluating an 8.5 MW project opportunity in Oregon.
- Douglas County PUD in Washington is planning a 5 MW facility
- Utah's ACES project expects to have 10 GWh of H2 storage capacity

Most of the hydrogen produced in the world today is derived from steam reformation of fossil-based natural gas. Not only is PtG is an emerging alternative to the reformation of natural gas to produce hydrogen, but numerous potential end uses for hydrogen are emerging in the power and transportation sectors.

Figure 2: Green, Blue, and Grey Hydrogen Explained[9]

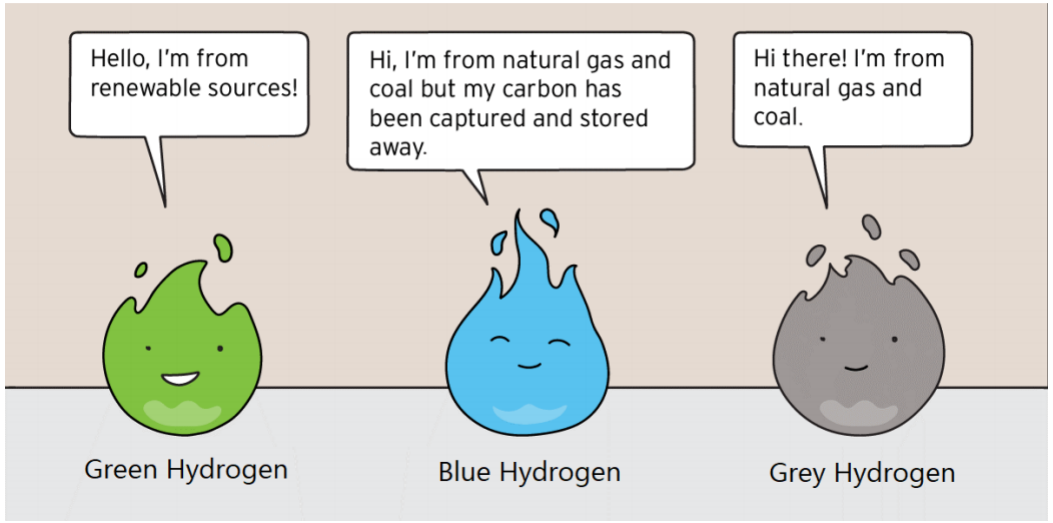
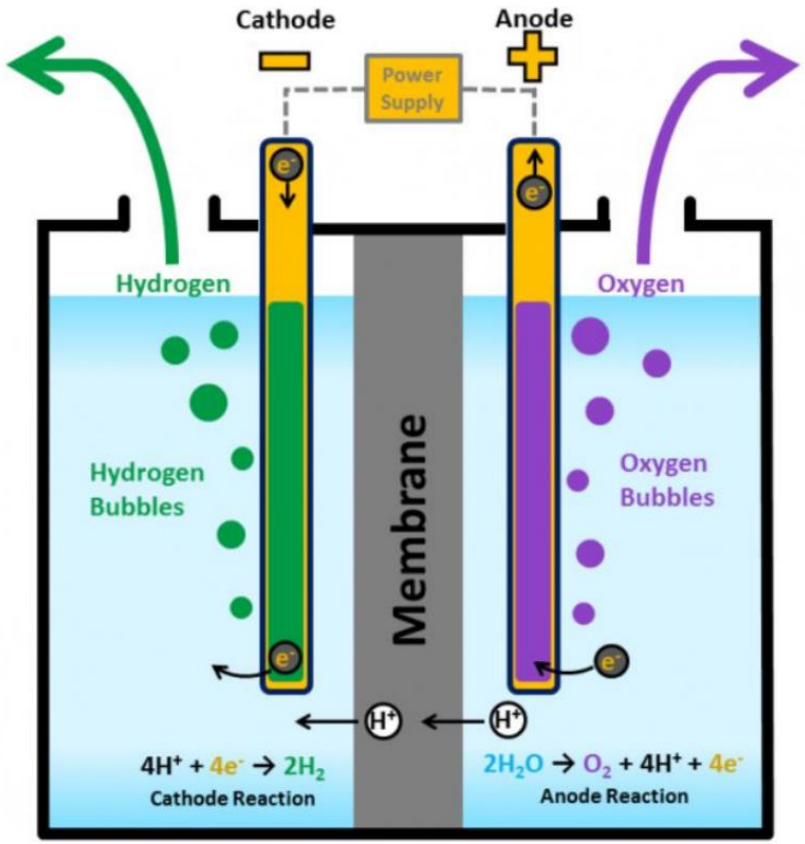


Figure 1: Electrolyzer Illustration



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This section provides deeper-dive insights on emerging energy trends, opportunities, and barriers in the energy sector.

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OREGON DEPARTMENT OF ENERGY

Climate Update

In 2020, Oregon established new GHG reduction goals:

- By 2035, achieve GHG levels that are 45 percent below 1990 levels
- By 2050, achieve GHG levels that are 80 percent below 1990 levels

Sector & Contribution to State Emissions	Policy	Mechanism to Reduce Emissions	Key Goals or Actions to Reduce Emissions
Transportation (39%)	EO 20-04	Promote zero-emission vehicles	Support transportation electrification and analyze infrastructure needs, especially for rural areas.
			Statewide plan for procuring state agency zero-emission vehicles.
		Advance clean fuel standard & credits	By 2030 and 2035, reduce the carbon intensity of transportation fuel by 20% and 25%, respectively, below 2015 levels. Advance methods to generate/aggregate utilities' clean fuel credits.
		Regulate allowable GHG emissions	Cap and reduce GHG emissions from transportation fuels, including gasoline and diesel.
		Assist local governments	Provide financial and technical assistance to metropolitan planning areas to align transportation and land use plans with state GHG goals.
	SB 1044	Promote zero-emission vehicles	Collect, analyze, and report on zero-emission vehicles data; and make recommendations if state is not meeting sales targets.
			Allow school districts located in PGE and Pacific Power service territories to use public purpose charge funds for fleet audits, electric vehicles and charging stations. By 2025/2029, zero-emission vehicles to make up at least 25%/100% of all new state-owned or leased light-duty vehicles.
	HB 2007	Phase out older, emissions-intensive trucks	In Portland metropolitan area only, by 2023, all diesel-powered medium- and heavy-duty trucks must run on engines from 1997 or newer. By 2029, all medium-/heavy-duty trucks must run on an engine from 2010/2007 or newer.
	HB 2001	Adjust land-use requirements	Allow for denser housing options to help reduce vehicle miles traveled.

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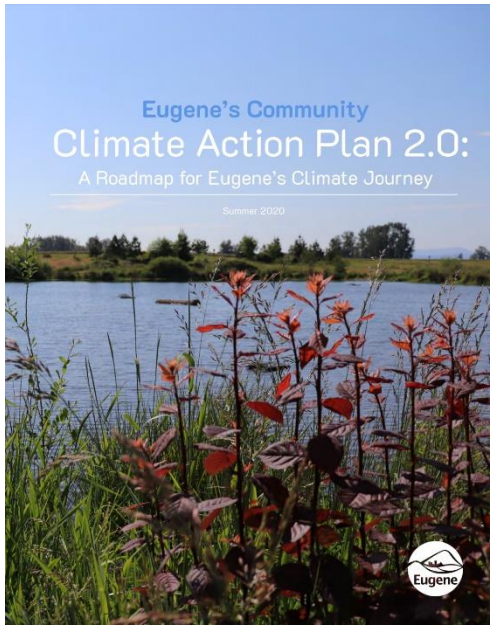
Climate Update



Overview of counties and cities in Oregon taking location climate action.

Table 2: Jurisdictions in Oregon Taking Climate Change Actions

		Climate Mitigation								Climate Adaptation			
✓ = completed/ included ↪ = in progress	GHG Mitigation Goal	GHG Inventory	Focus Areas							Focus Areas			
			Transportation & Land Use	Renewable Energy	Buildings	Materials Management	Carbon Sequestration	Equity		Vulnerability Assessment	Adaptation/Resilience Strategies	Natural Hazard Mitigation*	Equity
CITIES													
Portland 58,59,60,61	Reduce GHG emissions by 80% of 1990 levels by 2050 (community-wide)	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
Eugene 62,63,64	Reduce fossil fuel use by 50% of 2010 levels by 2030; Reduce GHG emissions by 7.6% annually (community-wide)	✓	✓	✓	✓	✓		✓		✓	✓	✓	✓
Salem 65,66,67	↪	✓										✓	
Gresham 68,69	Achieve 100% renewable energy by 2030 (scale not stated/set)	↪								✓	✓		

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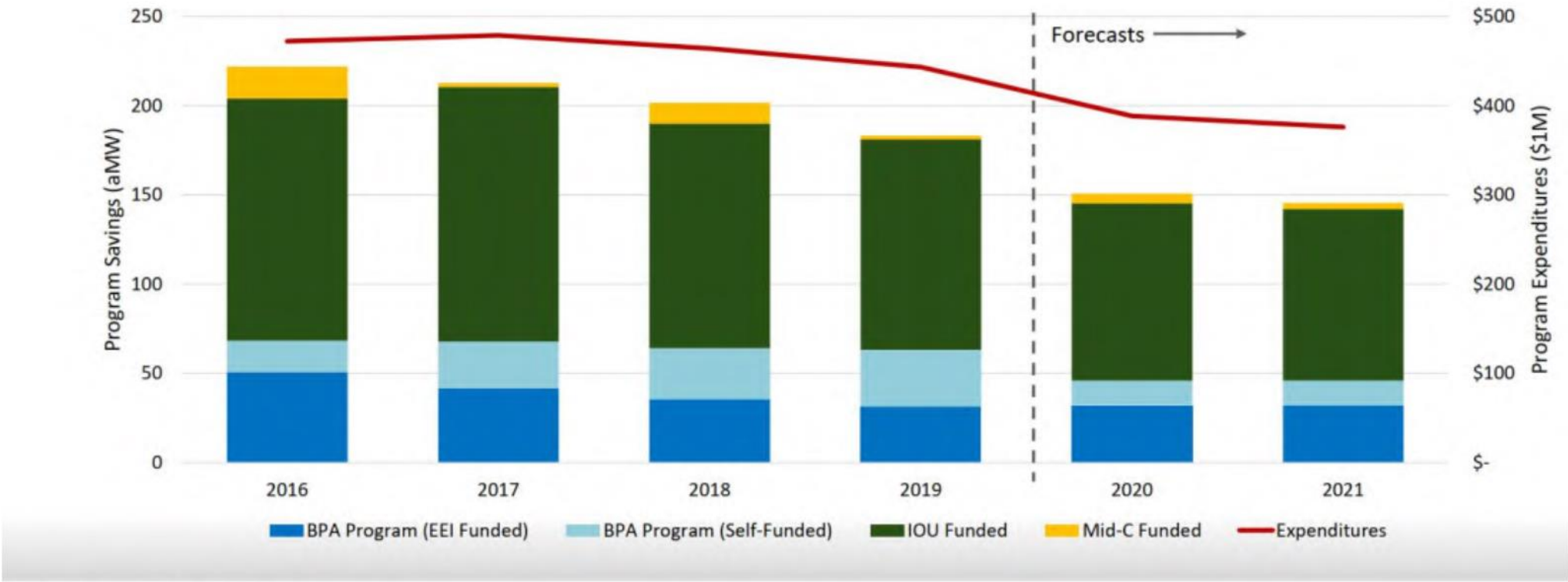
Energy Efficiency Policy Update

Oregon has landed among the top 10 most energy efficient states for 13 years in a row, according to ACEEE. In 2019, Oregon ranked ninth.

Figure 1: Annual Program Savings and Expenditures, Including Forecasts (NWPCC)

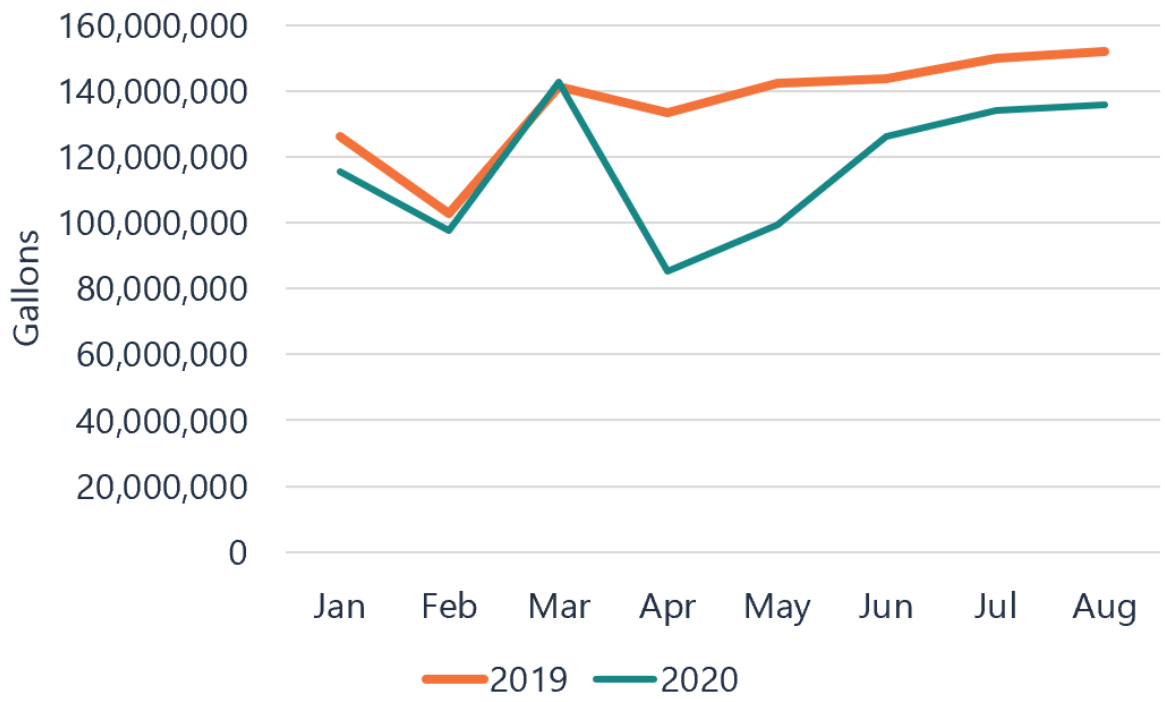


Northwest Power and Conservation Council

COVID-19 and Energy

The COVID-19 pandemic has affected the energy sector in many ways, both around the world and in Oregon. Because of COVID-19 we saw energy consumption behavior change quickly. For example, the U.S. Energy Information Administration (EIA) reported that total national energy consumption in April 2020 was 14 percent lower than in April 2019, the lowest monthly energy consumption since 1989 and the largest year-over-year decrease since EIA began tracking this data in 1973.

Figure 2: Oregon Gasoline Consumption (2019 Compared to 2020 January – August)[14]



Some Oregon utilities have taken action in the wake of the COVID-19 outbreak:

- Waiving fees for disconnections and reconnections.
- Waiving the accrual and collection of late payment fees, interest, and penalties.
- Increasing the duration and flexibility for payment arrangements to pay off past due balances.
- Creating new relief funds offering bill credits to customers who have lost income due to the pandemic.
- Assisting business customers in applying for federal COVID-19 aid.
- Relaxing eligibility conditions for equal payment plans.
- Refunding security deposits or applying them to utility bills.
- Easing paperwork requirements to qualify for energy assistance programs and medical certification.

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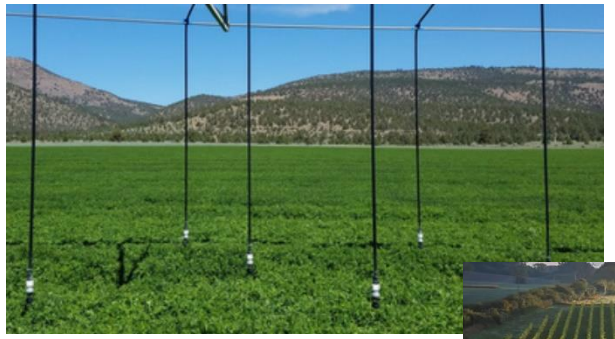
Agriculture and Energy

Oregon is well-known for its agricultural diversity – and this diversity of crops, livestock, soils, climates, and production methods is reflected in how Oregon farms use energy. Oregon farmers and ranchers use energy for many purposes: to power tractors and other farm equipment in the field, to chill milk and freshly-picked produce, to provide heat and light for greenhouses, to mechanically control weeds, to pump water, and to run equipment like hop dryers, seed cleaners, and mint oil distilleries.

Table 1: Oregon Farm Bureau Survey

Top 5 Uses of Electricity	Top 3 Uses of Natural Gas	Top 3 Uses of Propane
Irrigation	Greenhouses	Forklifts
Seed Cleaning	Dryers (hops, onions)	Greenhouses
Greenhouses	Shop/Farm	Shop/Farm
Shop/Farm		
Cold Storage		

For several rural consumer-owned utilities, farms are the primary customer base – and the seasonal dynamics of supplying energy to farms drives utility operations.



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Equity & Renewable Energy

Oregon has been a leader in development of renewable energy for many years. Customer-owned or on-site renewables can provide individual financial benefits, societal benefits associated with clean energy production, and economic development associated with jobs to install systems. However, access and benefits of on-site renewable energy systems have not been enjoyed by all Oregonians.

Figure 1: Annual Count and Average Cost of PV installations in the Residential Energy Tax Credit Program

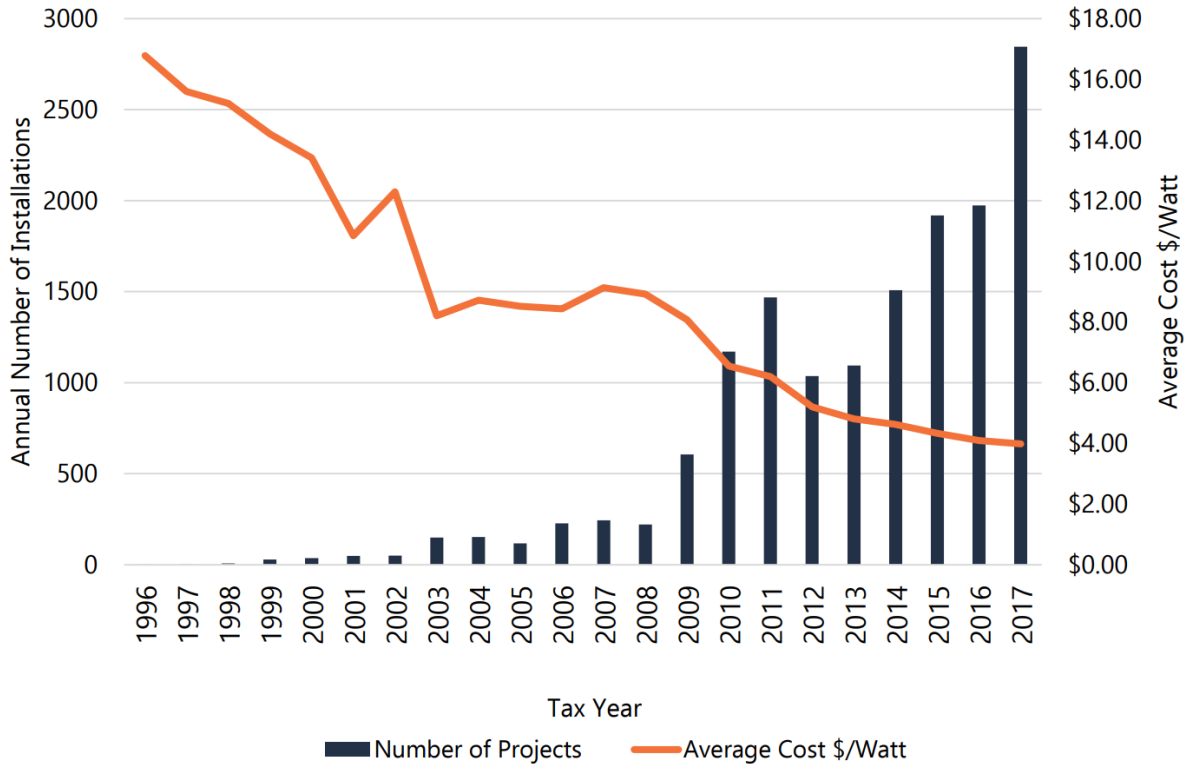

Table 2: Race Distribution of 2010 RETC Census Blocks

	2010 Oregon Population Race Distribution	2010 RETC Block Group Race Distribution
White	78.46%	84.76%
Hispanic	11.75%	6.40%
Asian	3.64%	3.29%
Two or More Races	2.87%	2.76%
Black	1.70%	1.61%
American Indian and Alaska Native	1.14%	0.81%
Hawaiian / Other Pacific Islander	0.33%	0.22%
Other	0.14%	0.16%

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COMING SOON

Web-Friendly Version

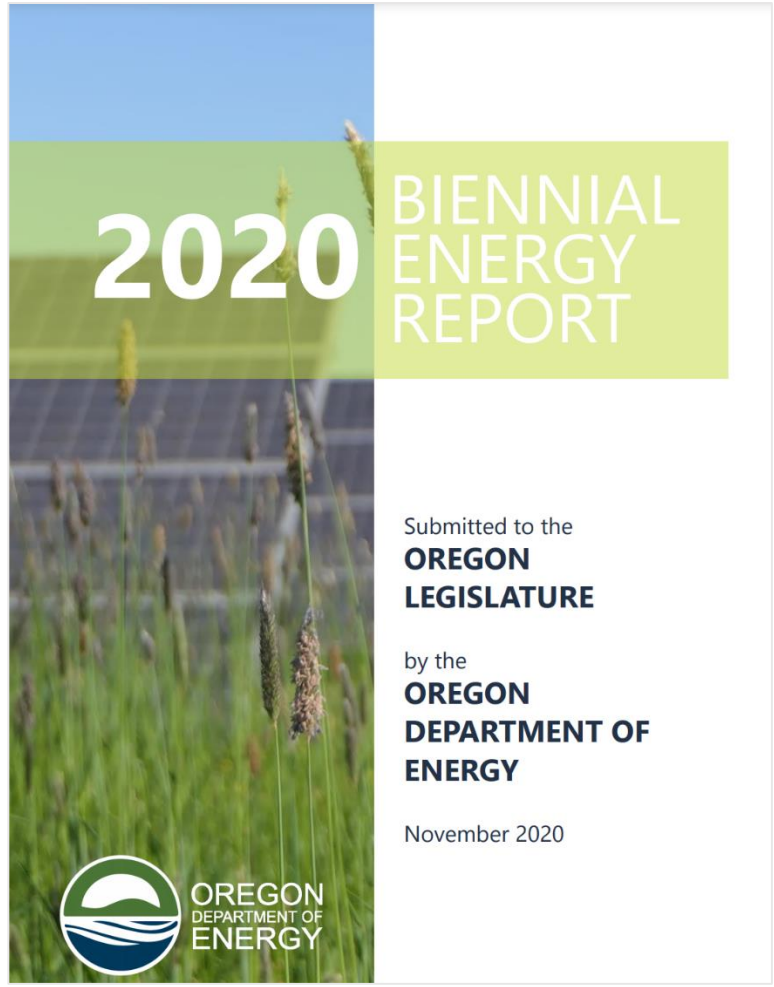
In addition to PDFs of the report, ODOE will have a web-friendly version with report highlights.

2021 Road Show

We'll kick off a virtual "road show" in 2021 with a series of ODOE-hosted webinars that offer deeper-dives into the report. ODOE staff are also available to attend community and organization meetings to present.

Convening Conversations

The report will serve as a starting point to hear from Oregonians about what they want the state's energy future to look like – and how we'll get there.



https://energyinfo.oregon.gov/ber

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