Energy by the Numbers

Energy by the Numbers focuses on the metrics and data available to track how Oregon produces, purchases, and uses various types of energy.

This section includes energy use data on electricity, transportation energy, and direct use fuels by resource and by sector. Where possible, data showing how Oregon's energy system has changed over time have been included to provide context and history. We also discuss energy production — where and what kind of energy Oregon produces, where and how we generate electricity, and what direct use and transportation fuels are produced in state.

Readers will find data on what Oregon spends on energy, how some Oregonians experience energy burden, and what the energy industry gives back to Oregon in terms of jobs. The section also demonstrates how energy efficiency continues to serve as an important resource for Oregon. It concludes with highlights on the four end use sectors: residential, commercial, industrial, and transportation, including energy use, expenditures, and greenhouse gas emissions – and how each sector uses energy to provide goods and services.

Key Energy Indicators

The Oregon Department of Energy's Strategic Plan includes an initiative to develop Key Energy Indicators that will help the state monitor and assess Oregon's energy landscape, progress on energy-related goals, and general status of Oregon's energy systems. KEIs can indicate progress toward energy-related statutory and administrative targets and goals as well as non-energy goals, such as job creation and economic development. Look for this special symbol in this section to see some of the data points we expect to include as key indicators for energy in Oregon.

Over the next two years, ODOE will be assessing current KEIs against the findings of new policy guidance in Oregon, such as the Oregon Energy Strategy, to identify what additional KEIs could help provide insight into Oregon's energy and climate objectives. We will share the new KEIs and how they inform our progress as a state in the 2028 report.



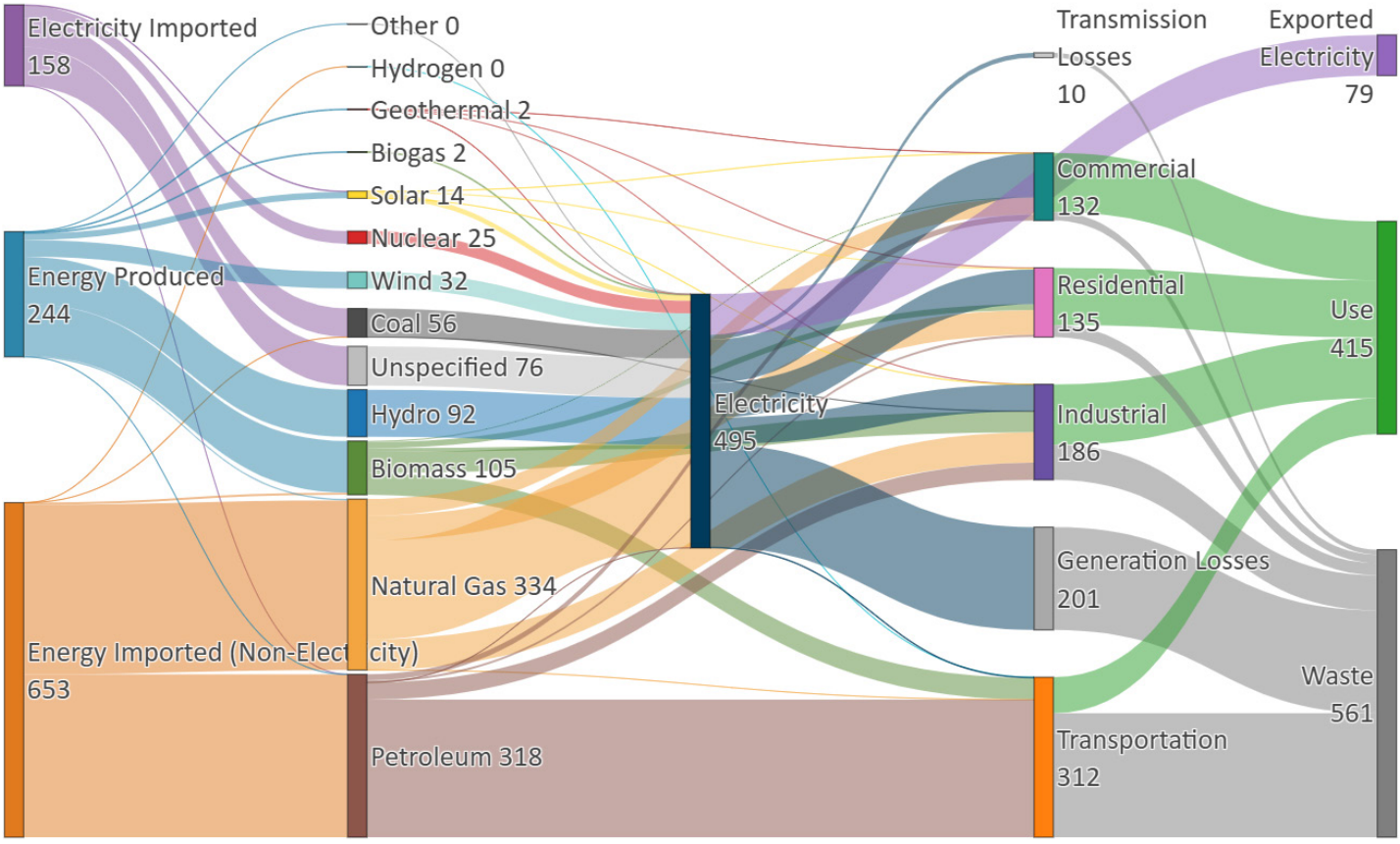
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Understanding Oregon's Energy Story[1] [2]

Oregon's energy story has evolved over time to include new technologies, to address changes in the availability of different generation resources, and to meet state energy goals. The Pacific Northwest has a long history of using hydropower resources, but 20 years ago, solar- and wind-generated energy was scarce.

Today, Oregon's energy resources are more diverse. In the chart below, start at the left to see imported energy and energy produced in Oregon. **The numbers represent trillions of Btu of energy.** The energy lines flow through to show the different types of resources we use – including the energy produced in Oregon and what is imported as direct fuels or electricity – and how that energy is ultimately used in Oregon's energy story. The energy we produce and import helps meet various needs, from vehicles and industry to heating, cooling, lighting, and supporting electronics in homes and businesses. Some energy ultimately goes unused due to system inefficiencies, and some is exported to other states.



Numbers represent trillions of Btu of energy

Btu: A **British Thermal Unit** is a measurement of the heat content of fuels or energy sources. Btu offers a common unit of measurement that can be used to count and compare different energy sources or fuels. Fuels are converted from physical units of measurement, such as weight or volume, into a single metric of Btu to more easily compare data and show changes over time.



The chart provides a macro level look at the energy Oregonians produce, import, consume, and export. **Energy Produced** includes forms of energy that Oregon produces in-state, such as hydroelectric, wind, and biomass energy. **Electricity Imports** include electricity that is generated in other states and brought in for use in Oregon. **Energy (non-electricity) Imports** includes other forms of energy brought into the state for various uses, such as gas to power transportation and fuels to heat Oregon homes.

The flow to **Waste Energy** includes all the energy that is not harnessed, from the point of extraction to the point of use. This amounts to 57 percent of the energy produced (561 trillion Btu).[i] Waste energy is lost as heat during combustion, electricity generation, transmission losses, and while being used for industrial processes and at homes and businesses, along with other factors.[ii]

Between 2022 and 2024, the residential and commercial sectors experienced shifts in energy consumption. **Residential** sector energy consumption decreased from 145 to 135 trillion Btu (a decrease of about 7 percent), while **commercial** sector energy consumption increased at the highest rate from 106 to 132 trillion Btu (a nearly 25 percent increase), likely an expression of data center growth in the state. Meanwhile, **industrial** sector energy consumption decreased from 201 to 186 trillion Btu, a decrease of about 7 percent. **Transportation** energy consumption decreased from 317 trillion Btu in 2022 to 314 trillion Btu in 2024, a 1 percent decrease.[1] [3]

Changes in previously published Biennial Energy Report data:

This report relies on data from the U.S. Energy Information Administration. Periodically, the EIA revises energy use and production estimates, which can result in discrepancies when compared to previously published data. The EIA updated their methodology for calculating waste energy for renewable electricity generation resources, like solar and wind. They also regularly update estimated values for energy consumption as new information is available. These changes in methodology are typical for the complexity of data collection and analysis that occur when developing the EIA data. While these updates might only affect one or two values, the changes have a cascading effect on all calculations, meaning that some values reported in the 2024 report differ slightly from referenced data in this report. For example, in the previous paragraph, the 2022 values referenced for the residential, commercial, industrial, and transportation sectors differ by about 2-3 trillion Btu compared to data in the previous report. Changes do not fundamentally affect the efficacy of the information presented in this report. More information on how the data is analyzed for this report is available in the About the Data section.

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i Calculation does not include energy that is exported from Oregon.

ii Electrical system losses for various generation sources are estimated using methods that match with those used by the United States Energy Information Administration.[1]

Energy Sources Used in Oregon



Solar.
Photovoltaic technology converts energy radiating from the sun into electricity. Solar systems are located on homes, businesses, and large utility-scale arrays. From 2014 to 2024, solar generation in Oregon increased from 118,075 megawatt-hours to 2.16 million MWh (an 18-fold increase).[4,5]



Nuclear.
Generation of electricity from a nuclear reactor where thermal energy is released from the fission of nuclear fuel. Oregon's nuclear power comes from the Columbia Generating Station in Washington State, and the electricity is marketed by the Bonneville Power Administration.



Hydropower.
Electricity generation from the flow of water through dams or pipes. Oregon has 91 hydropower facilities of varying sizes, including four federal facilities on the Columbia River that span the Oregon and Washington border, and two facilities that span the Oregon and Idaho border.[4]



Wind.
Generation of electricity by the force of wind turning turbines. As of 2024, Oregon has 48 operating facilities in the state with a total capacity of 3,863 MW, with one 200 MW facility under construction.[4]



Geothermal.
Energy extracted from hot water or steam from natural underground sources can be used for water/space heating or the generation of electricity. Oregon has two geothermal electricity generation facilities with a capacity of 35.03 MW.[4]



Natural gas.
Fossil fuel extracted from beneath the earth's surface. Oregon has a single natural gas field located in Mist. Oregon imports most of the natural gas it consumes for electricity and as a direct fuel. There are 13 utility scale natural gas electricity generation facilities in Oregon with a combined capacity of 4,353 MW.[4] Natural gas is also used directly for residential, commercial, industrial, and transportation uses.



Coal.
Combustible rock burned to support industrial processes and create electricity. Oregon's last coal-fired power plant, the 575-MW Boardman facility, closed in October 2020 and was demolished in September 2022.[6,7] The state imports coal-generated electricity from neighboring states.



Biomass.
Includes renewable biogas and biofuels derived from the energy of plants and animals. Wood and wood waste is Oregon's greatest source of biomass, which is used for space heating, cooking, electricity generation, and transportation. Oregon has 14 utility-scale biomass and 47 biogas operating facilities converting waste products to electricity.[4] Oregon produces some renewable natural gas, a biogas that has been purified to be a substitute for fossil natural gas, often to meet specifications required for injection into a natural gas distribution pipeline. Oregon also produces plant-derived ethanol fuel and biodiesel from used cooking oil to be used as transportation fuels.



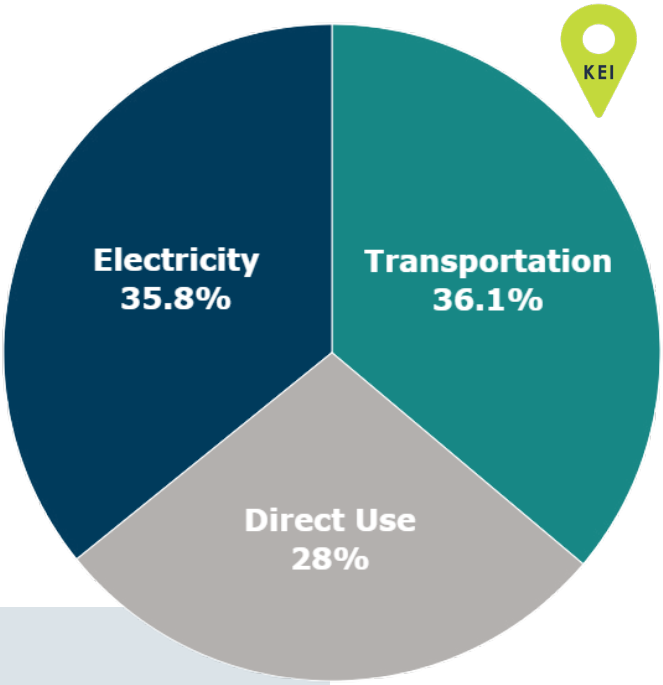
Petroleum.
Fossil fuel extracted from beneath the earth's crust. It includes gasoline, diesel, heating oil, lubricants, and other fuels used for space heating, industrial equipment, and transportation. Oregon imports the petroleum that it uses.

Energy Use in Oregon

Consumption by Source[1]

Oregon relies on energy from a variety of resources. We import energy such as gasoline, natural gas, propane, and other fuels. We use electricity from in- and out-of-state sources — including hydropower, natural gas, coal, nuclear, wind, and other renewable resources.[2] The energy use totals (in trillion Btu) in the pie chart to the right are source energy totals reflecting the primary energy required to meet demand in Oregon.

For this introduction to Oregon's energy use, the report separates energy into three main types:



35.8%

of Oregon's 2024 energy consumption[2]

Electricity: This is where most people begin when thinking about energy—the critical resource that powers our day-to-day lives. The electricity Oregonians use comes from facilities across the western United States including Oregon. This percentage also accounts for the energy in fuels that come from out of state, such as natural gas, but generate electricity in-state, as well as the energy losses associated with electricity generation.

28.0%

of Oregon's 2024 energy consumption[3]

Direct Use Fuels: This category includes fuel oil and natural gas used to heat homes and commercial spaces, fuels used for other residential purposes, such as gas stoves, solar thermal heating, and fuels used directly in industrial processes.

36.1%

of Oregon's 2024 energy consumption[4]

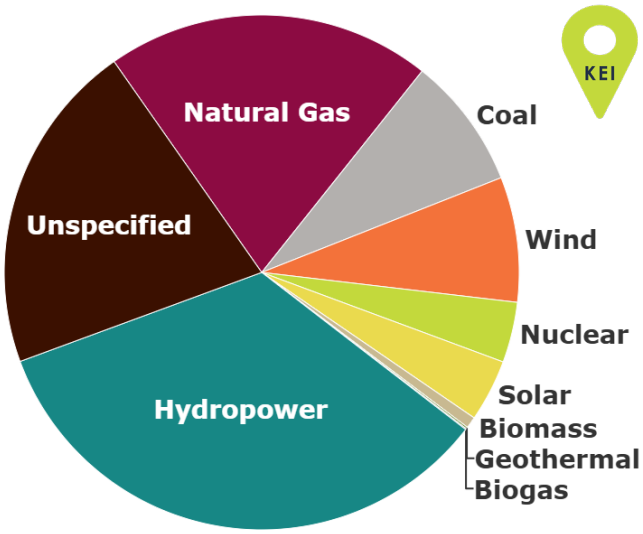
Transportation Fuels:

This includes personal, passenger, and commercial vehicles (on and off the roads), plus airplanes, boats, barges, ships, and trains. Nearly all transportation-related sources of energy are imported from out of state for in-state use.

Electricity

35.8% of Oregon's 2024 energy consumption[5]

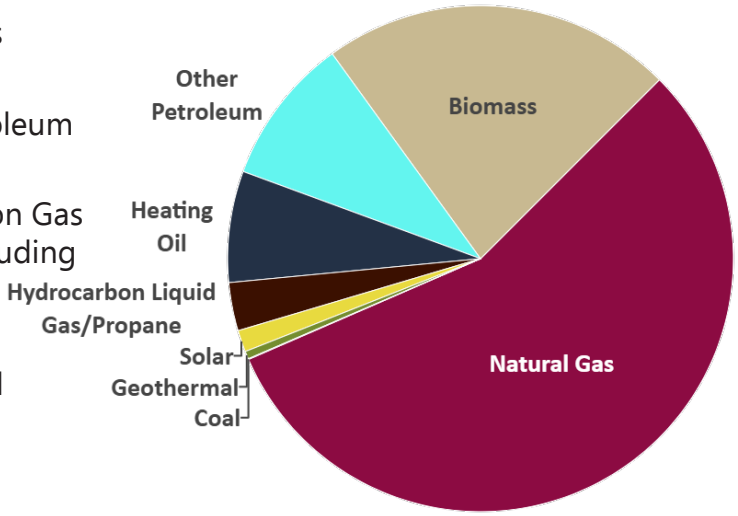
33.9%	Hydropower
20.9%	Unspecified
20.5%	Natural Gas
8.3%	Coal
7.9%	Wind
3.9%	Solar
3.8%	Nuclear
0.7%	Biomass
0.1%	Geothermal
0.06%	Biogas



Direct Use Fuels

28.0% of Oregon's 2024 energy consumption[3]

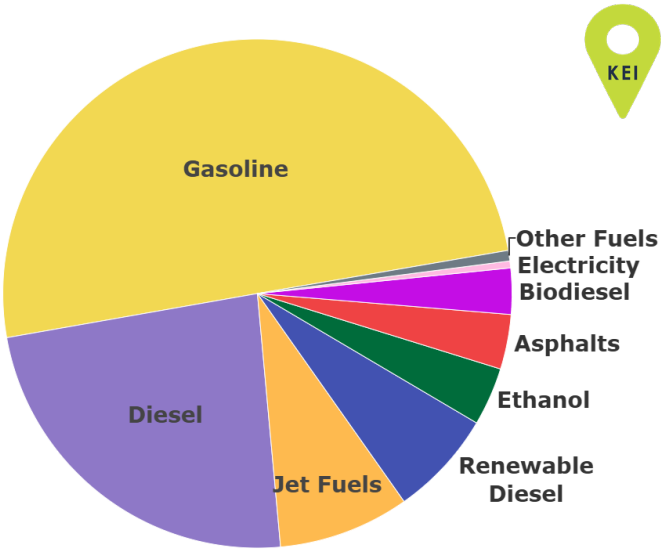
56.0%	Natural Gas
22.5%	Biomass
9.4%	Other Petroleum
7.1%	Heating Oil
3.1%	Hydrocarbon Gas Liquids Including Propane
1.4%	Solar
0.5%	Geothermal
0.04%	Coal



Transportation Fuels[6]

36.1% of Oregon's 2024 energy consumption[4]

50.1%	Gasoline
23.7%	Diesel
8.4%	Jet Fuel
6.7%	Renewable Diesel
3.7%	Ethanol
3.5%	Asphalt/Road Oil
2.9%	Biodiesel
0.4%	Electricity
0.7%	Other Fuels



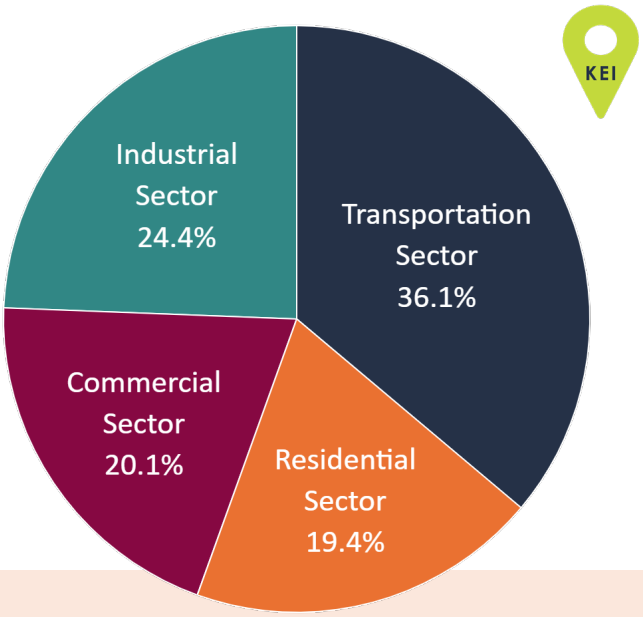
Note to readers: Fuel percentages are rounded to the nearest tenth and not all are listed.

Energy Use in Oregon

Consumption by Sector[3 4]

Energy consumption is also tracked by how it is used among four main end-use sectors: Residential, Commercial, Transportation, and Industrial.

In Oregon in 2024, those four sectors combined consumed 893.6 trillion Btu of energy,[3,4] including each sector's respective share of electrical system losses, as discussed earlier in Understanding Oregon's Energy Story.



19.4%
of Oregon's 2024 energy consumption[3]

Residential:

This category includes single family, multi-family, and manufactured homes for Oregonians. Energy is used for lighting, heating and cooling living spaces, cooking, and operating appliances. Electricity is the most used energy resource in homes – with heat pumps, electric furnaces, and electric resistance heaters as examples of primary electric heat options.

20.1%
of Oregon's 2024 energy consumption[3]

Commercial:

This category includes businesses that provide goods and services, government and office buildings, grocery stores, shopping malls, and data centers. Energy is used to heat and cool spaces, power equipment, and illuminate facilities. It used to be Oregon's smallest energy-consuming sector but has grown by about a third, primarily due to the expansion of data centers in Oregon.

24.4%
of Oregon's 2024 energy consumption[3]

Industrial:

This category includes facilities used to produce, process, and manufacture products – including agriculture, fishing, forestry, manufacturing equipment (including chip manufacturing), mining, and energy production. Energy powers industrial equipment and machinery to manufacture products. This sector has seen contractions in aluminum, forestry, and manufacturing, and expansions in technology manufacturing. The change in use happened along with improvements in efficiency of industrial facilities and equipment.

36.1%
of Oregon's 2024 energy consumption[4]

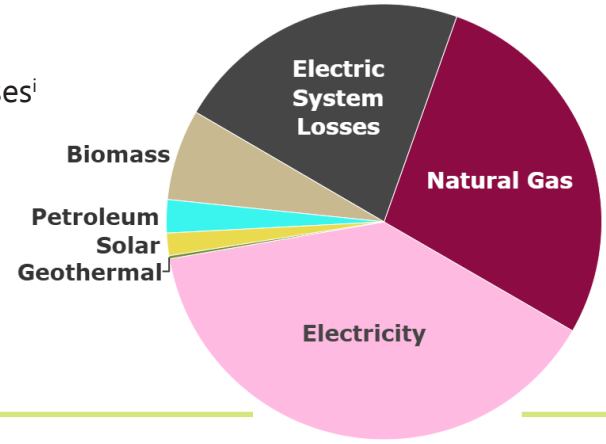
Transportation:

Personal cars, fleets, shipments, airline travel, and more make up Oregon's transportation energy use. Petroleum is the most used resource and the largest contributor of greenhouse gas emissions in Oregon. Alternative fuels like electricity and biofuels are a growing part of this sector.

Residential[7]

19.4% of Oregon's 2024 energy consumption

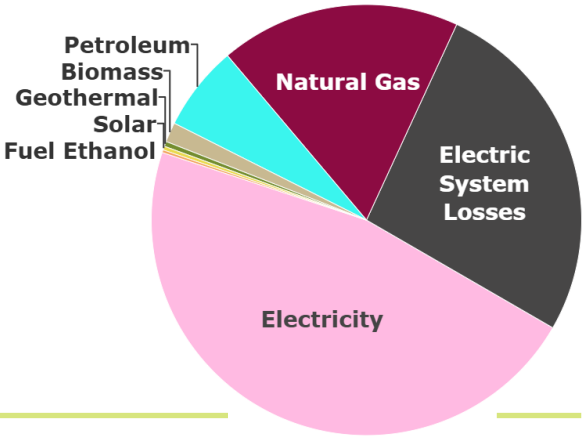
22.0%	Electrical System Losses[i]
38.9%	Electricity
27.9%	Natural Gas
6.8%	Biomass
2.5%	Petroleum
1.7%	Solar
0.2%	Geothermal



Commercial

20.1% of Oregon's 2024 energy consumption

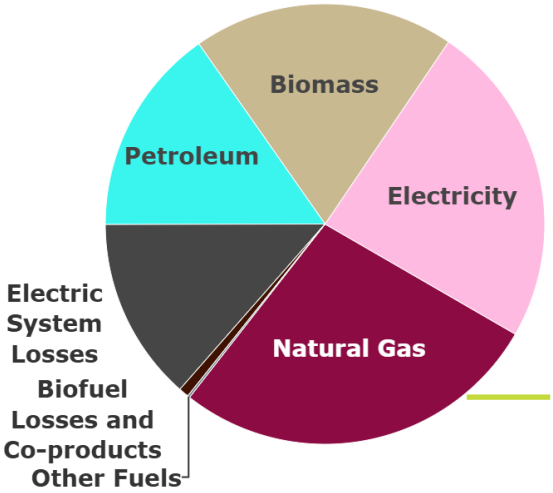
46.7%	Electricity
26.4%	Electrical System Losses
18.1%	Natural Gas
6.4%	Petroleum
1.5%	Biomass
0.4%	Geothermal
0.3%	Solar
0.2%	Fuel Ethanol



Industrial

24.4% of Oregon's 2024 energy consumption

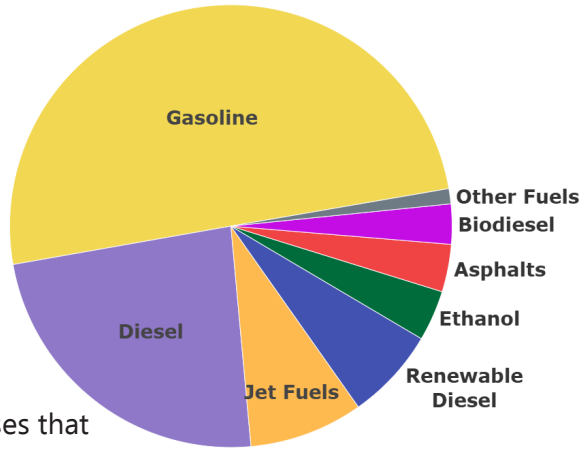
27.2%	Natural Gas
23.8%	Electricity
19.2%	Biomass
15.3%	Petroleum
13.5%	Electrical System Losses
0.1%	Geothermal
0.05%	Coal
0.04%	Solar



Transportation Fuels

36.1% of Oregon's 2024 energy consumption[4]

50.1%	Gasoline
23.7%	Diesel
8.4%	Jet Fuel
3.7%	Ethanol
3.5%	Asphalt/Road Oil
2.9%	Biodiesel
0.5%	Lubricants
0.4%	Electricity
0.2%	Bio-CNG
0.1%	Aviation Gas



i Electricity generation and transmission result in energy losses that are estimated and included in EIA consumption data.

Energy Use in Oregon

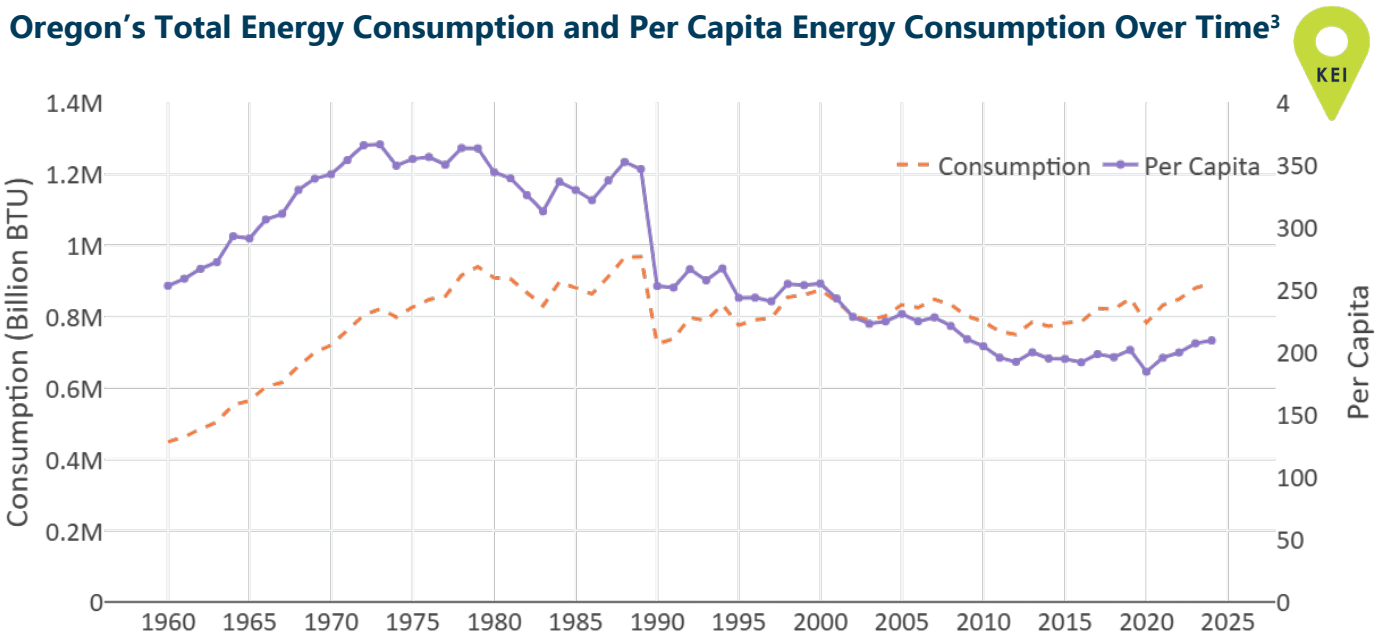
Oregon's Energy Consumption Over Time

13th

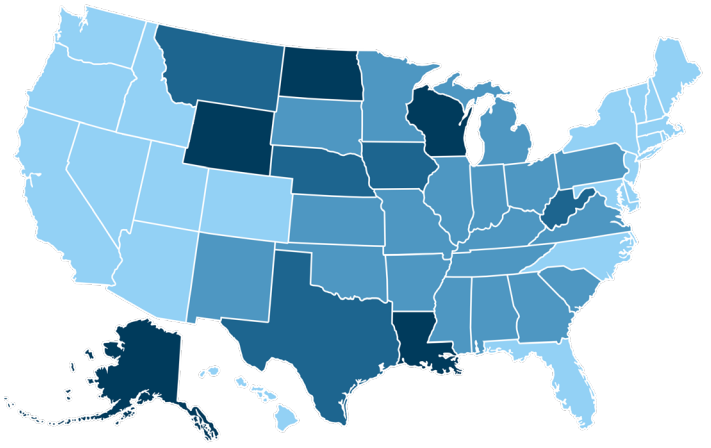
Oregon's rank for lowest per capita energy use among states in 2024[3]

Oregon saw an overall trend of increased energy use for almost four decades — an average of 3.6 percent growth per year from 1960 to 1999.[3] During that time, the state shifted from a reliance on fuel oil and wood to an increased use of natural gas and electricity in homes and businesses. Oregon reached its highest energy consumption for both stationary and transportation uses in 1999. Since then, total energy use decreased (see line graph below) until about 2013, when consumption began trending generally upward with a brief downward spike from 2020-2021 during the COVID-19 pandemic. Although energy consumption per capita does not directly correlate with overall energy use, it provides insight into energy efficiency trends. Even as Oregon's population and economy grow, the amount of energy consumption per capita has remained relatively flat because of energy efficiency savings.[3]

Oregon's Total Energy Consumption and Per Capita Energy Consumption Over Time[3]



U.S. Per Capita Consumption (2024)[3]



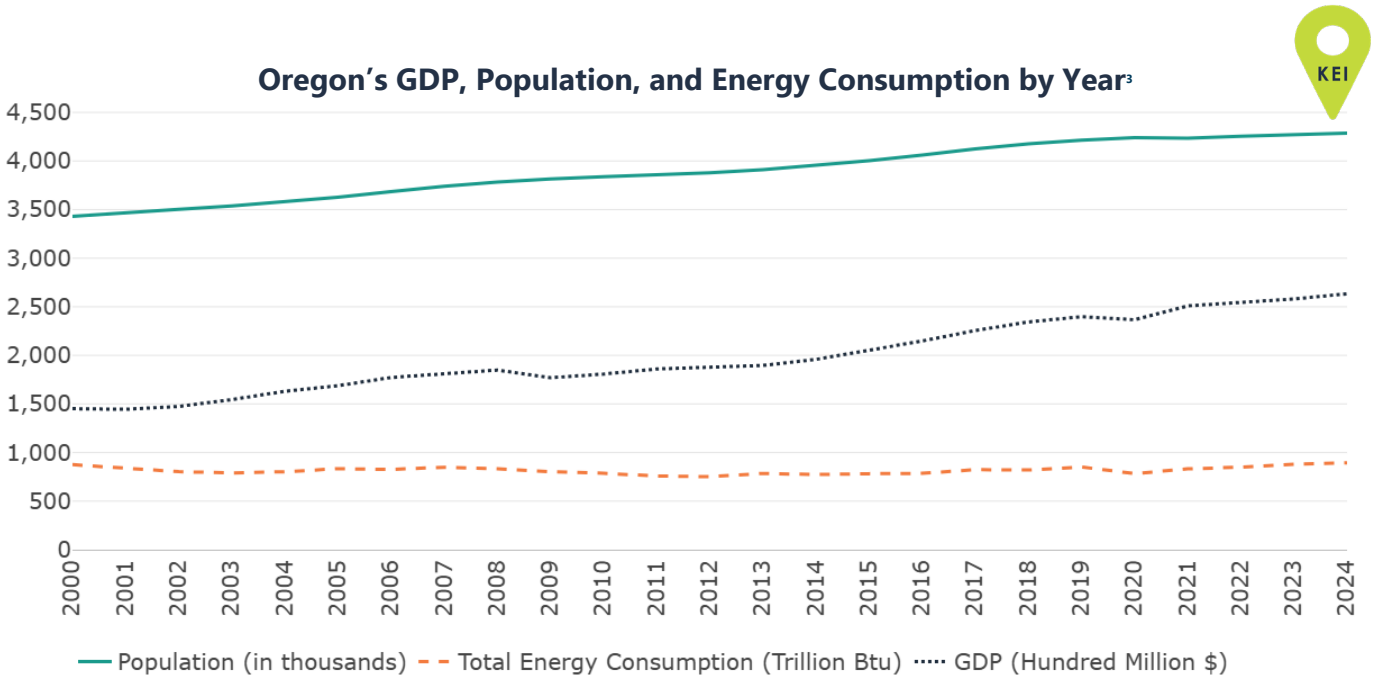
- ≤ 250 Million Btu
- 250 to <400 Million Btu
- 400 to <600 Million Btu
- ≥ 600 Million Btu

Energy Efficiency

While energy efficiency is not "consumed" like other resources, it can be considered the second largest resource available in Oregon after hydropower. Efforts to increase energy efficiency effectively reduce overall energy consumption, eliminate waste, and reduce the need to build more energy generation facilities or import fuels, providing the same energy services for less energy use and expense. Historically, Oregon has consistently met increased demand for electricity by implementing energy efficiency strategies. The Oregon Energy Strategy identifies energy efficiency as a critical pathway for meeting the state's energy and climate objectives.

Energy Consumption and Economic and Population Growth

Energy efficiency and changes in our economy have led to decreases in Oregon's total and per capita energy use over time. Oregon's emphasis on energy efficiency has helped reduce both total and per capita energy use despite an increasing population and a growing economy, thereby avoiding the need to build new electricity generation plants to match the growth – though the region has seen some generating facilities closed and new ones come on board during this time. The graph below shows that since about 2000, economic growth (measured by gross domestic product or GDP) does not directly correlate with increases in energy consumption. In fact, as the economy and our population have grown, our energy consumption has stayed relatively flat with a slight decline until the most recent years. Recently, there has been an increase in energy consumption, which in 2023 exceeded Oregon's 2000 energy consumption level, mainly due to increases in electricity generation to meet growing demand.[3]



This displays all three data sets on the same axis; refer to the legend each to find the scale and units for each. This chart shows overall trends of population, energy consumption, and GDP in comparison to each other. The chart is not adjusted for inflation.

Consumption & Use

In the energy sector, *consumption* typically describes the amount of energy used. *Use* sometimes has the same meaning, but is often specifically applied when talking about the purpose of energy. For example, a home's annual electricity *consumption* goes toward a variety of *uses* like lighting, heating, and appliances. Or a furnace is *used* for heating but *consumes* electricity and natural gas. For this report, consumption and use are included in a wide variety of ways and sometimes interchangeably.

Electricity Use

Resources Used for Oregon's Electricity Mix

In 2024, Oregon used 62.4 million megawatt hours of electricity from in-state and out-of-state sources. Hydropower, natural gas, and a mix of resources purchased on wholesale electricity markets referred to as unspecified power make up the bulk of Oregon's electricity resources. The combination of resources supplying electricity to Oregon is commonly called the electricity resource mix. The share of each resource in the mix is constantly changing and evolving.

Renewable energy makes up an increasingly larger share of Oregon's mix each year. In 2021, the Oregon Legislature passed House Bill 2021, requiring Oregon's largest electric utilities, Portland General Electric and Pacific Power, to reduce greenhouse gas emissions to 80 percent below baseline emissions levels[i] by 2030, 90 percent below by 2035, and 100 percent by 2040.[1] The largest sources of electricity are labeled below; the other resources not listed in the bubble chart are each under 2 percent.[2]

8.3%

Percentage of Oregon's 2024 electricity mix that came from coal.[2]

2040

Year by which Oregon's two largest utilities and Electricity Service Suppliers will need to reduce emissions for electricity sold in the state by 100 percent below baseline emissions levels.[1]

Change in Methodology

In 2024, in response to feedback from utilities and after consultation with other state agencies and stakeholders, ODOE changed the way it calculates the Electricity Resource Mix, which is the data source for this section on Electricity Use. Instead of doing a detailed, complex analysis of the specific resources that make up the "unspecified" market purchases by utilities (a calculation only used by ODOE to develop the ERM), ODOE now uses the same data reported in the Oregon Department of Environmental Quality's Greenhouse Gas Emissions Reporting program. The change was necessary because ODOE determined the limited data and assumptions used to produce the unspecified mix in the past could no longer support a viable methodology.

While DEQ's program provides emissions factors for the resources Oregon's utilities use to meet load, they do not assess or report the resources and emissions from utility purchases or sales in real-time[ii] and day-ahead markets. Instead, DEQ assesses GHG emissions from all these market purchases using the default rate that California calculates and uses to estimate "unspecified" electricity emissions.[iii] It is based on the average emissions from a natural gas combined cycle power plant.[5] [6] ODOE's previous analysis showed that unspecified market purchases included diverse resources available across the western U.S., such as hydro, coal, and natural gas. Since resources contributing to market purchases are now combined into the less specific "market purchases" category, the total amounts of individual resources may appear lower than in previous years. However, as utilities in states with clean electricity standards work to achieve their targets, and market purchases are used more and more, more transparency in the resources and emissions that make up these purchases may be needed.

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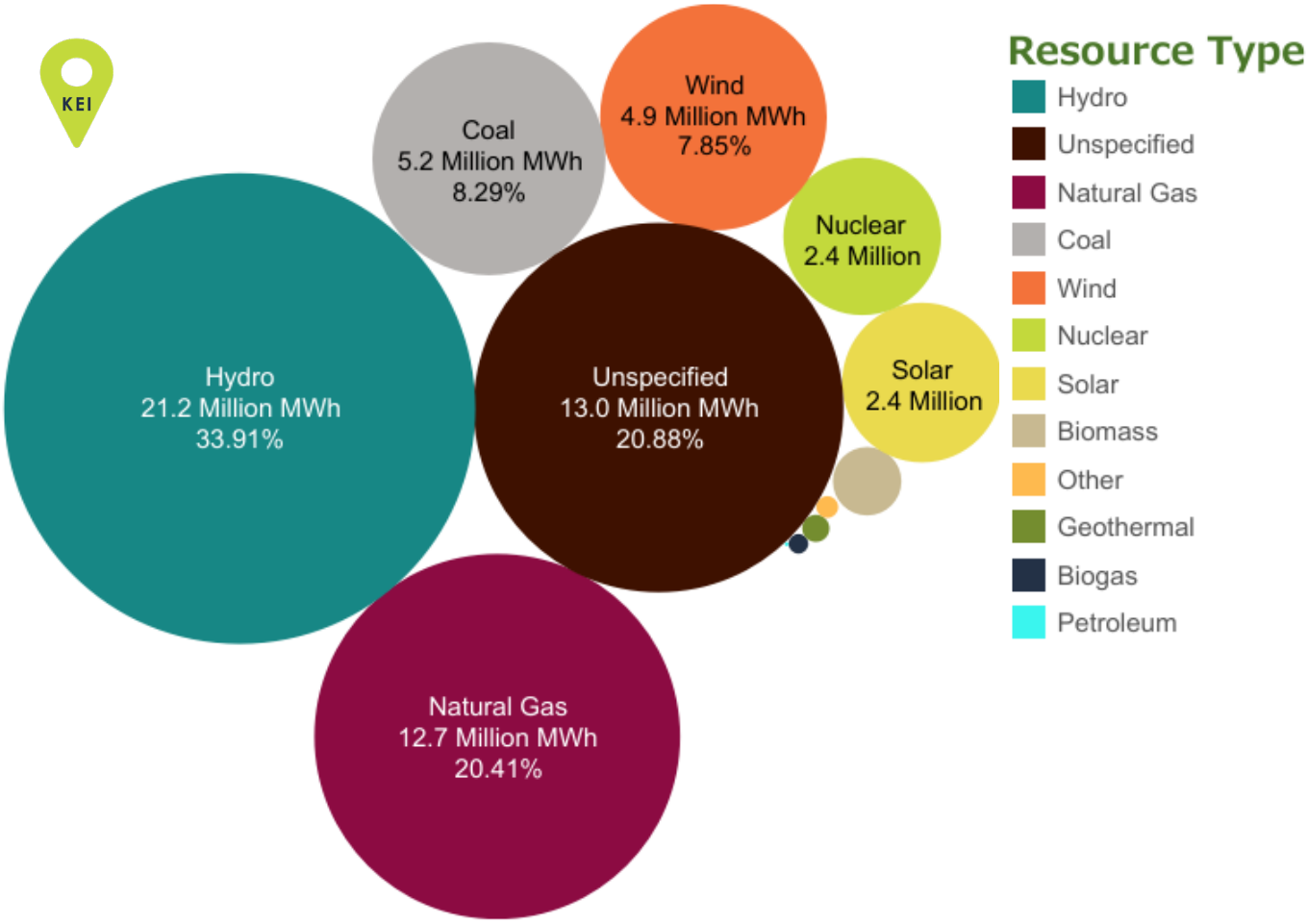
i Baseline emissions is the average of emissions from 2012-2014.

ii Real-time markets support electricity sales for multiple utilities to balance fluctuations in supply and demand within the current hour.[3]

iii The DEQ Greenhouse Gas Emissions Inventory program refers to market purchases as "unspecified emissions," and assigned an emissions rate of 0.428 metric tons of carbon dioxide equivalent per megawatt-hour.[4]

Resources Used to Generate Oregon's Electricity[2]

Based on 2024 data, this chart shows the energy resources used to generate the electricity that is sold to Oregon's utility customers.



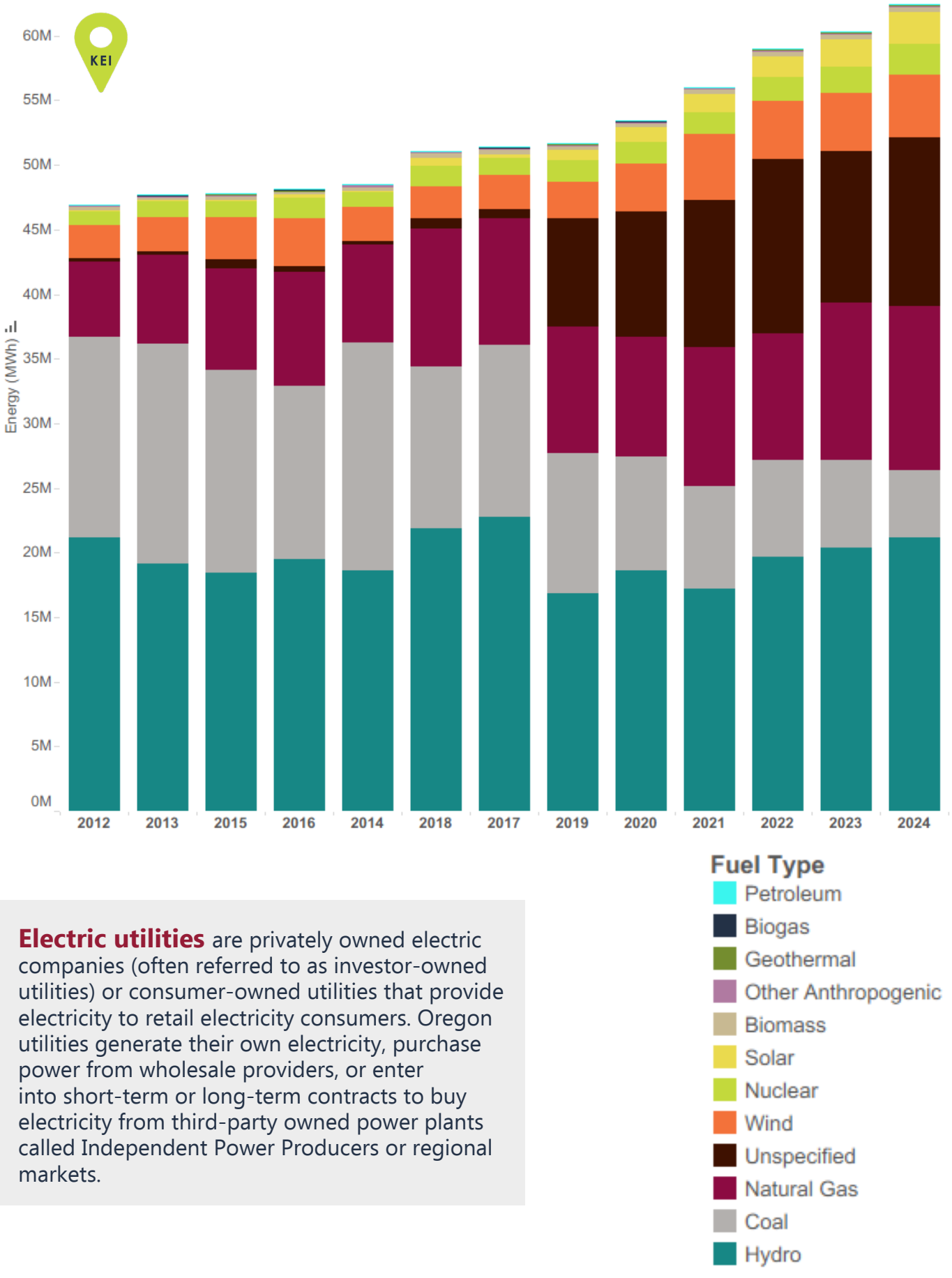
Oregon's electricity resource mix displays the proportion that each resource (solar, wind, hydropower, etc.) contributes to the total amount of electricity that Oregonians consume each year. The chart on the following page presents Oregon's mix from 2012 to 2024 and shows two notable trends: First, total annual electricity consumption has increased from 47 to 62 million megawatt hours between 2012 to 2024, driven by factors like economic and population growth and increased customer demand. Second, the percentage that each resource contributes to total electricity for consumption changes year-to-year. Although the methodology for calculating the resource mix changed between 2021 and 2024 to include a bulk category for unspecified market purchases, some trends are still evident in the data. Hydro is still a predominant resource for the region. Coal continues to decline as plants are shuttered, and natural gas, wind, and solar are increasingly a larger proportion of the mix.[iv]

Fluctuations in the sources of electricity consumed in Oregon are the result of several factors, including the regional nature of energy markets, resource availability, market dynamics and utility contracts, public policy, and other factors.

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iv Note that changes to the methodology that occurred in 2024 make this comparative analysis more complicated. The addition of the Unspecified category does not attribute use to a particular resource, though this portion is likely made up of the most abundant resources in the region Hydro, Natural Gas and Coal.

Oregon's Electricity Mix Over Time (2012-2024)[1]



Electric utilities are privately owned electric companies (often referred to as investor-owned utilities) or consumer-owned utilities that provide electricity to retail electricity consumers. Oregon utilities generate their own electricity, purchase power from wholesale providers, or enter into short-term or long-term contracts to buy electricity from third-party owned power plants called Independent Power Producers or regional markets.



Hydropower availability drives year-to-year fluctuations in Oregon's electricity resource mix. Oregon and the Pacific Northwest are rich in hydropower, which is consistently a low-cost resource. Utilities typically dispatch the lowest cost generating resources like hydro, wind, and solar. These types of resources are used first when they are available, and then, if unmet customer demand remains, utilities will look to other types of sources, such as natural gas power plants, to meet additional demand. It is worth noting that the availability of renewable resources — such as wind, solar, and hydropower — also varies over the course of a day, from season-to-season, and year-to-year based on natural cycles, weather patterns, and changing climate conditions.

Utilities also meet customer demand through real-time supplemental purchases from regional markets. These real-time purchases typically come from resources that the utility does not own or for which it does not have any prior contractual arrangement. This electricity is considered "unspecified," signifying that the purchasing utility does not have a right to designate the electricity as coming from a particular resource, such as solar or wind, often because they have sold the renewable energy certificates, or RECs.

Learn more about Oregon's Electricity Resource Mix

The Oregon Department of Energy updates the state's electricity resource mix each year. On the agency's website, find the statewide mix, a map of generation facilities, electricity mixes by utility, greenhouse gas emissions, and more.

www.tinyurl.com/OregonERM

SCAN OR CLICK

Electricity Imports and Exports

Oregon is fortunate to have an abundance of renewable energy resources and is one of the leading producers of renewable energy in the country.[7] This abundance is one of the reasons Oregon can export significant amounts of the renewable electricity it generates — particularly from hydropower.

Oregon imports all the petroleum and coal, and nearly all the natural gas fuel used to generate electricity at in-state facilities. Oregon does not have any coal mines and only extracts small amounts of natural gas at one facility in Oregon.[8]

Oregon also imports electricity from all over the western U.S.; this imported electricity comes from various resources.[8]

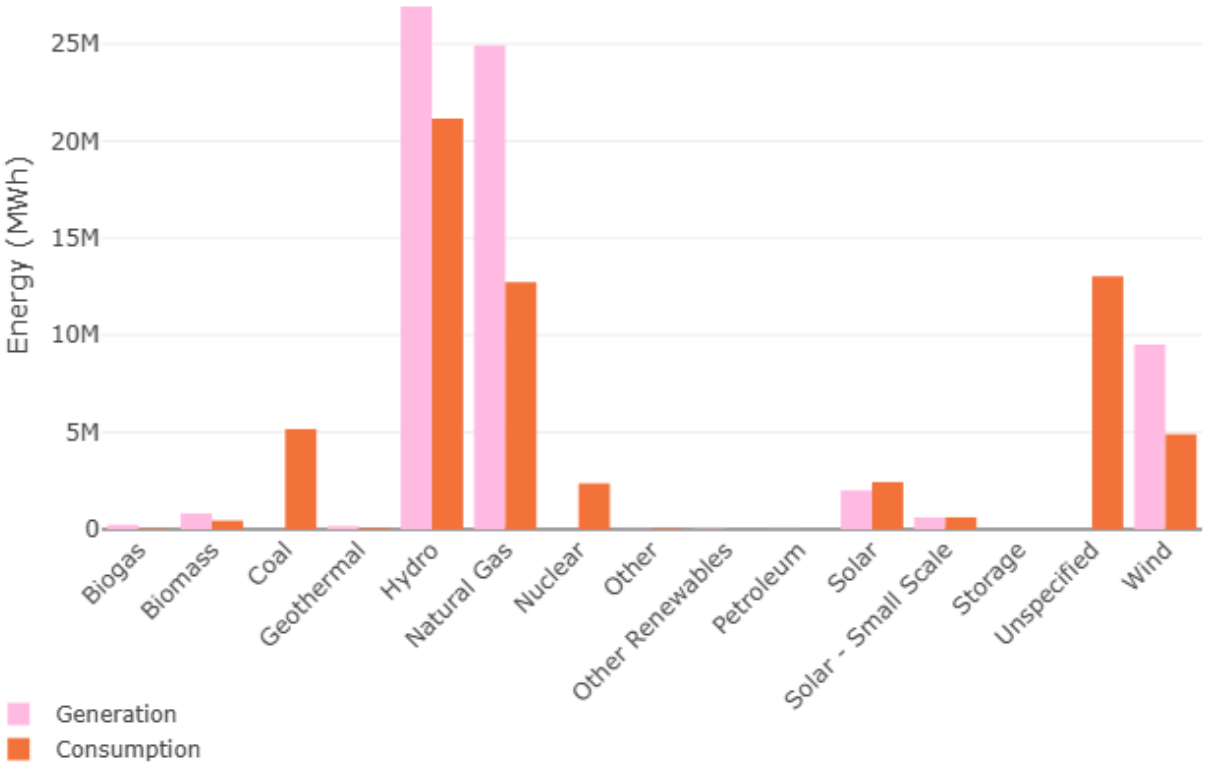
Oregon 2024 Exports (as a percentage of electricity generated in Oregon)

- 48.5% of wind generation[9]
- 21.4% of hydroelectric generation[9]

Oregon 2024 Imports (as a percentage of electricity consumed in Oregon)

- 100% of coal electricity[9]
- 100% of nuclear electricity[9]
- 17.8% of solar electricity[9]

Oregon's Electricity Generation and Consumption (2024)[10] [11]

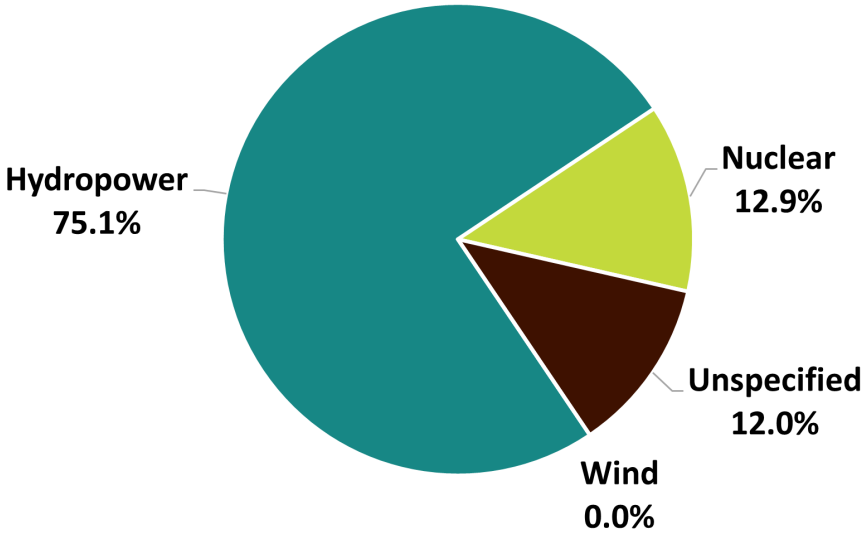


Megawatt (MW): One million watts of electricity capacity — the equivalent of 1,340 horsepower, or enough power to simultaneously illuminate more than 100,000 standard 60-watt-equivalent LED lightbulbs. **Megawatt Hour (MWh):** A unit of measurement for energy output that represents the amount of energy supplied continuously by 1 MW of capacity for one hour. **Average Megawatt (aMW):** Represents 1 MW of energy delivered continuously 24 hours/day for one year, or 8,760 MWh.

Bonneville Power Administration

Consumer-owned utilities in Oregon purchase most of their electricity from the Bonneville Power Administration, a federal agency that markets wholesale electric power from 31 federal hydroelectric facilities in the Northwest, a non-federal nuclear power plant, and several other small non-federal power plants. The dams generating the hydroelectric power are operated by the U.S. Army Corps of Engineers and the Bureau of Reclamation, while the nuclear facility is operated by Energy Northwest. BPA provides about 29 percent of the electricity used in Oregon.[2]

Bonneville Power Administration 2024[2]



Market Purchases

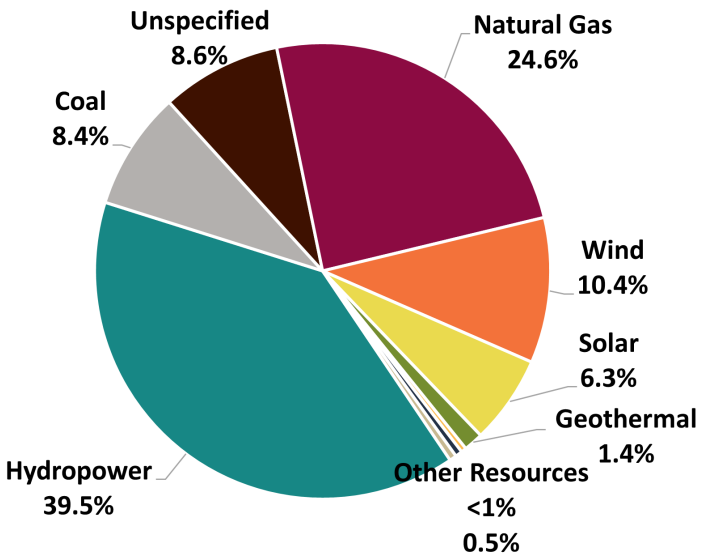
Oregon generation facilities sell electricity to Oregon utilities and the regional power market. Oregon electric utilities own facilities that generate power, but they also purchase power from the regional market to meet customer demand. Some market purchases can be tied to specific resources, but in most cases the specific generation resource is not known. In Oregon, these unspecified purchases accounted for 13 million megawatt-hours in 2024.[2]



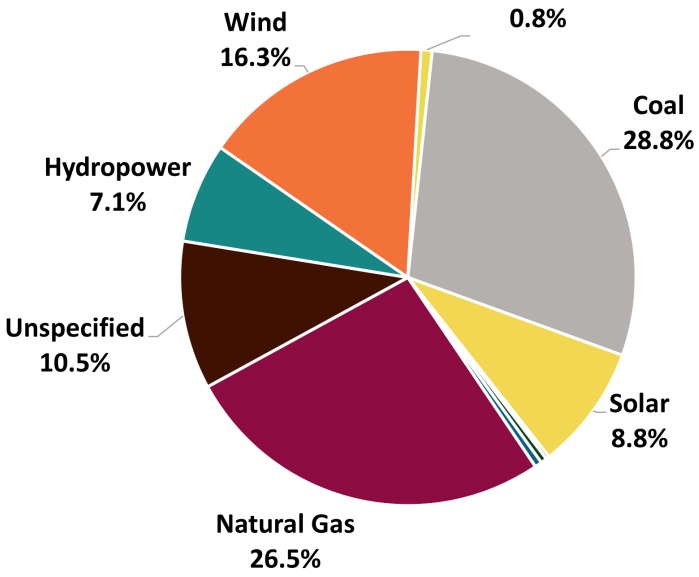
Investor-Owned Utility Resource Mix

The resources utilities use to generate electricity consumed in Oregon vary depending on the utility provider. The electricity resource mixes for Oregon's three investor-owned utilities are shown below. Only 2024 data are shown for each utility; mixes will fluctuate over the years depending on the availability of certain resources like hydro or, increasingly, solar. The dark brown wedge labeled as "unspecified" represents the real-time market purchases to meet demand.[2]

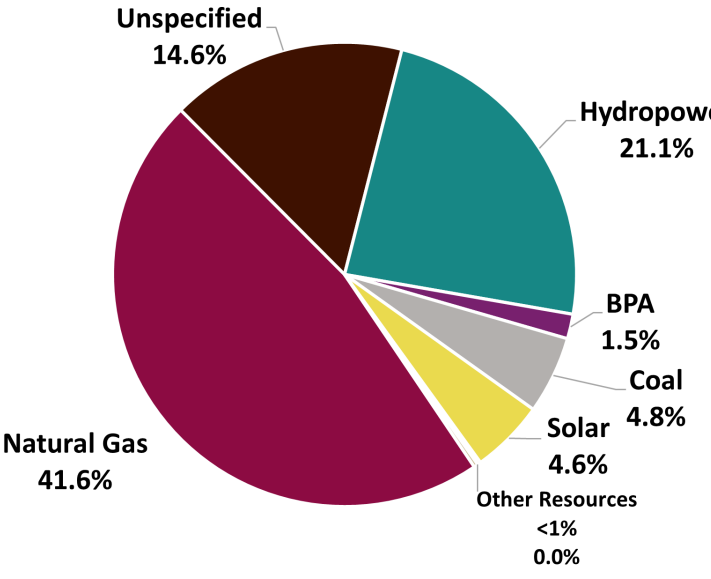
Idaho Power Company 2024



Pacific Power 2024



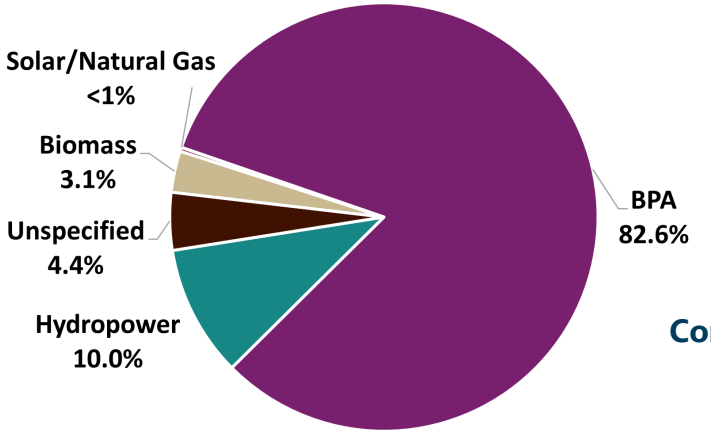
Portland General Electric 2024



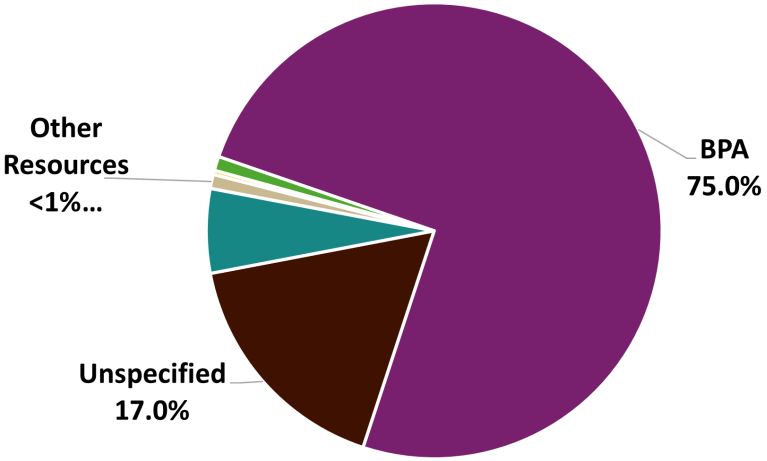
Consumer-Owned Utility Resource Mix

The electricity resource mixes for the Eugene Water & Electric Board (the largest consumer-owned utility by number of customers) and a composite of other COUs operating in Oregon are below. Clatskanie People's Utility District is also included as an example. Only 2024 data are shown for the utilities; COU mixes fluctuate less over the years as many depend on the Bonneville Power Administration to provide their electricity and the BPA mix is typically more consistent year to year.[2]

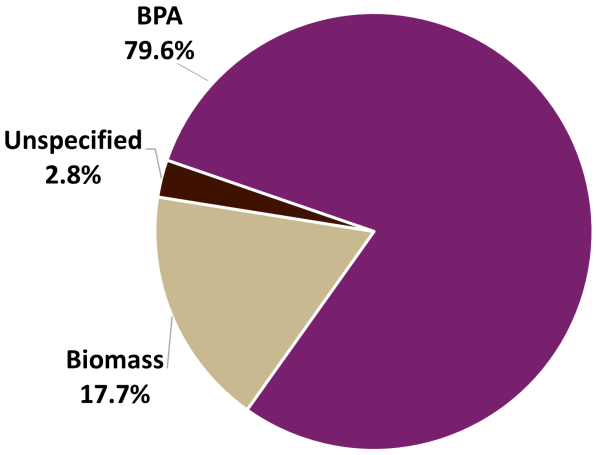
Eugene Water & Electric Board 2024



Composite of Consumer-Owned Utilities (not including EWEB) 2024



Clatskanie People's Utility District 2024



While the majority of power supplied by Oregon's consumer-owned utilities comes from the Bonneville Power Administration, **COUs have also invested in their own energy-generation sources**. For example, Clatskanie PUD supplements the electricity it buys from BPA with purchase agreements for biomass and biogenic facilities.[v] Emerald PUD supplies some of its electricity from solar, biogas, and unspecified purchases from energy markets.

Thanks to the BPA-supplied power – which is mostly from federally owned dams – and their own resources, COU electricity mixes have very low greenhouse gas emissions.

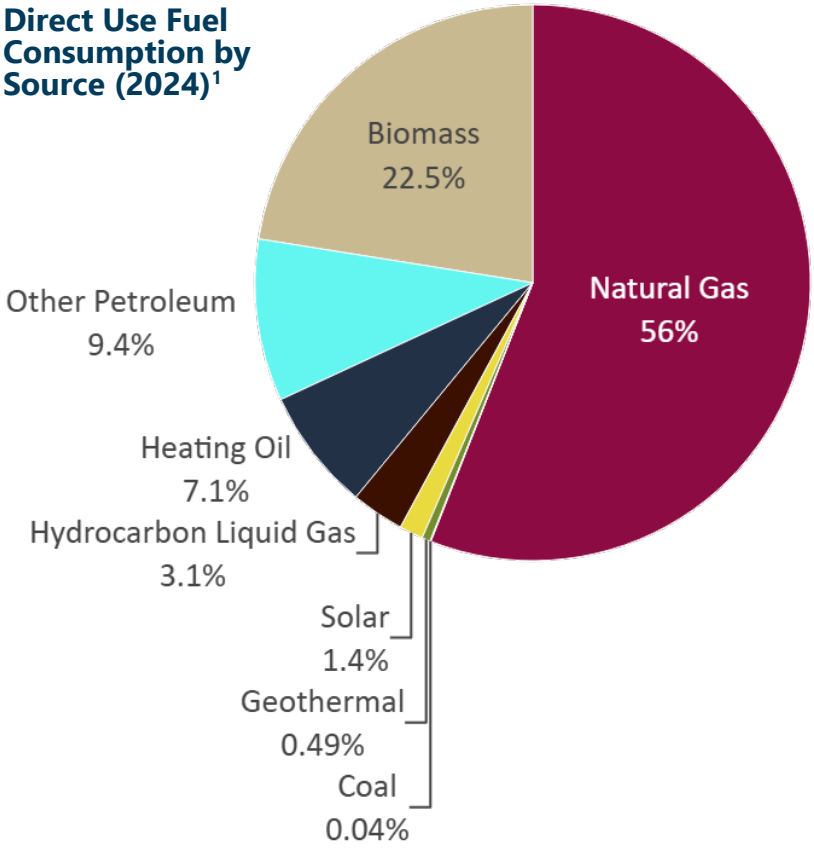
v Biogenic facilities produce energy from waste materials breaking down in a landfill.[10]

Direct Use Fuels

What We Use and Where it Comes From

In 2024, Oregon used 250.5 trillion Btu of direct use fuels to heat buildings, cook food, and support commercial and industrial processes.[1] Direct use fuels make up about 28 percent of the total energy consumption in Oregon.[2] These fuels are used on-site in the residential, commercial, and industrial sectors. They do not include fuels used to generate electricity or support the transportation sector.

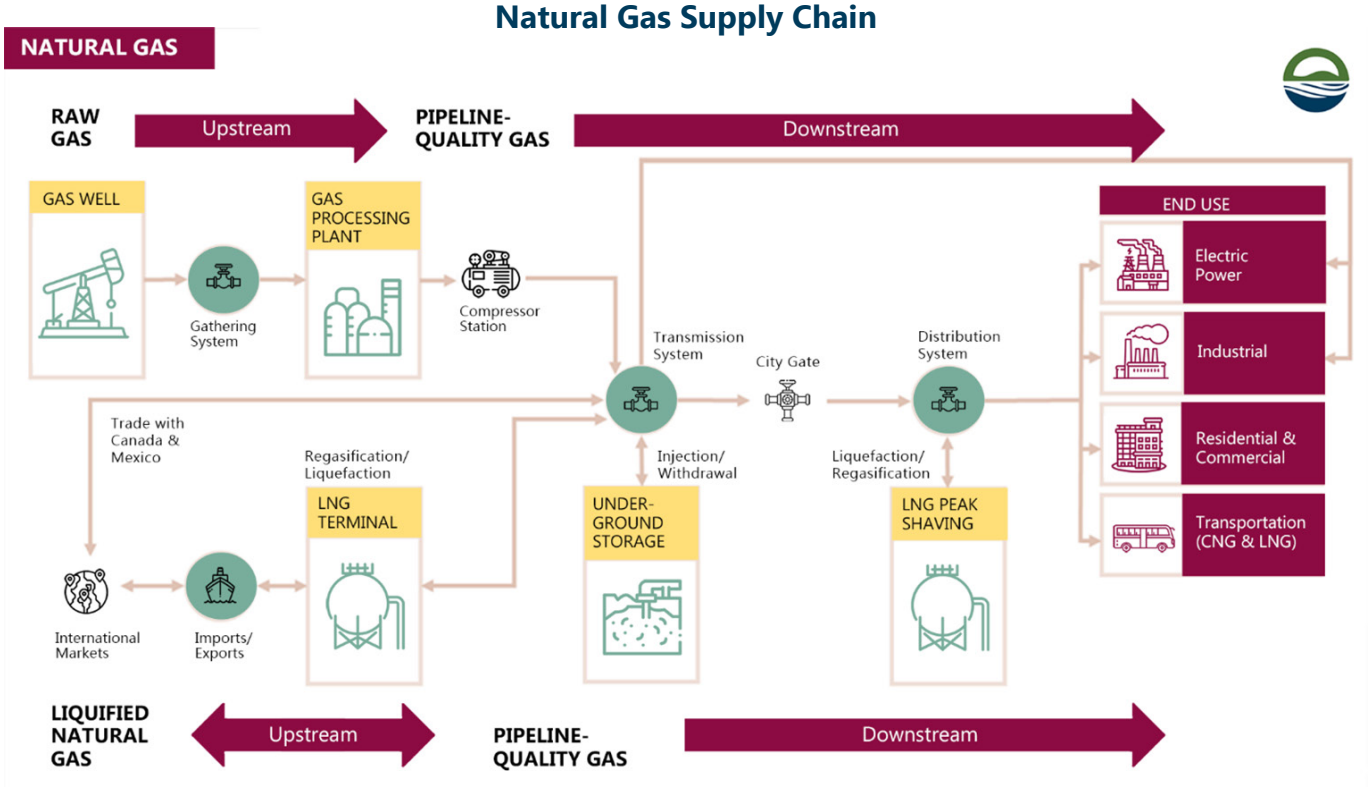
Direct Use Fuel Consumption by Source (2024)[1]





Natural Gas. A gaseous mixture of hydrocarbon compounds (primarily methane), natural gas is a fossil energy source from beneath the earth's surface. The United States is the world's largest producer of natural gas.[3] [4] Production and supply have increased in the last few decades with horizontal drilling and hydraulic fracturing unlocking shale gas reserves.[5] [6] Increased supply, lower costs, and lower greenhouse gas emissions in comparison to other fossil fuels have led to greater consumption in Oregon. Natural gas comes to Oregon by pipeline and is used directly

Natural Gas Supply Chain



for space and water heating, cooking, and many agricultural, commercial, and industrial processes. It can also be efficiently stored and transported by being compressed into high pressure tanks, which is called compressed natural gas or CNG, or it can be cooled to a liquid state, called Liquefied Natural Gas or LNG. LNG is about 600 times smaller in volume than in a gaseous state, which makes it easier to ship.[7] Oregon does not have LNG import or export facilities. Export capacity is expanding in North America, which could lead to interest in developing export facilities in Oregon or other west coast states.[8]

Natural Gas Consumption by Sector[1]

Commercial Sector | 32.5 trillion Btu

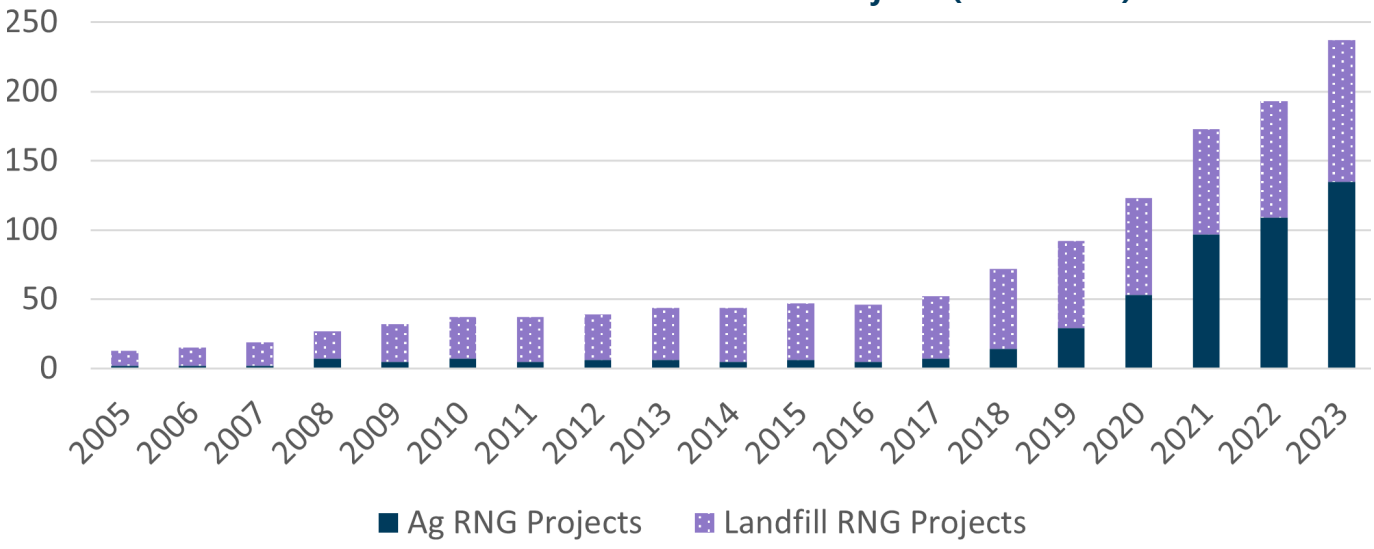
Residential Sector | 48.3 trillion Btu

Industrial Sector | 59.4 trillion Btu

In 2024, Oregon used 140.3 trillion Btu of natural gas for direct uses — nearly all of it imported from Canada and the Rocky Mountain states.[1] The Pacific Northwest's only natural gas extraction facility is located near Mist, Oregon and its resources go to NW Natural, one of three investor-owned gas companies serving the state.[1 9] The Mist field is primarily used for natural gas storage and produced only 0.09 trillion Btu of natural gas in 2024, representing 0.03 percent of Oregon's annual use.[1] Learn more about natural gas in a BER 101 from 2020.

Renewable natural gas, a low carbon-intensity alternative to fossil natural gas, is made by capturing methane biogas emitted from decomposing food waste, agricultural manure, landfills, and wastewater treatment plants.[10] Biogas is collected and processed to remove non-methane elements and then it becomes renewable natural gas. It can then be added to a pipeline or used onsite as natural gas. Oregon natural gas utilities are investing in RNG projects in and outside the state to reduce the greenhouse gas emissions attributed to natural gas combustion.[11 12 13]

Number of U.S. Renewable Natural Gas Projects (2005-2023)[10]



Biomass. Biomass is an organic material that comes from plants and animals that is burned to create energy. Biomass is considered a renewable source of energy, and comes from resources like wood, agricultural crops and waste, food or yard waste, and animal and human waste. Organic waste materials are

Biomass Consumption by Sector [1]

Commercial Sector | 2.7 trillion Btu

Residential Sector | 11.7 trillion Btu

Industrial Sector | 42.0 trillion Btu[1]

collected and combusted to make energy that can be used on site or distributed to a facility instead of filling space in a landfill. Biomass also commonly refers to end-products such as wood chips, wood pellets, and charcoal that are used for thermal energy. Some industrial facilities in Oregon burn woody biomass waste to generate heat for their manufacturing processes or electricity to be used on site or sold to utilities. Biomass is also used as a thermal energy source in commercial buildings, including schools and hospitals. In 2024, Oregon consumed 56.3 trillion Btu of biomass as a direct use fuel.[1]

Heating Oil. Heating oil is a petroleum distillate fuel that is used primarily to heat buildings; some buildings also use it to heat water. Because space heating is the primary use for heating oil, demand is highly seasonal and affected by the weather. Most Oregon heating oil use occurs during the heating season: October through March.

Heating Oil Consumption by Sector [1]

Commercial Sector | 2.5 trillion Btu

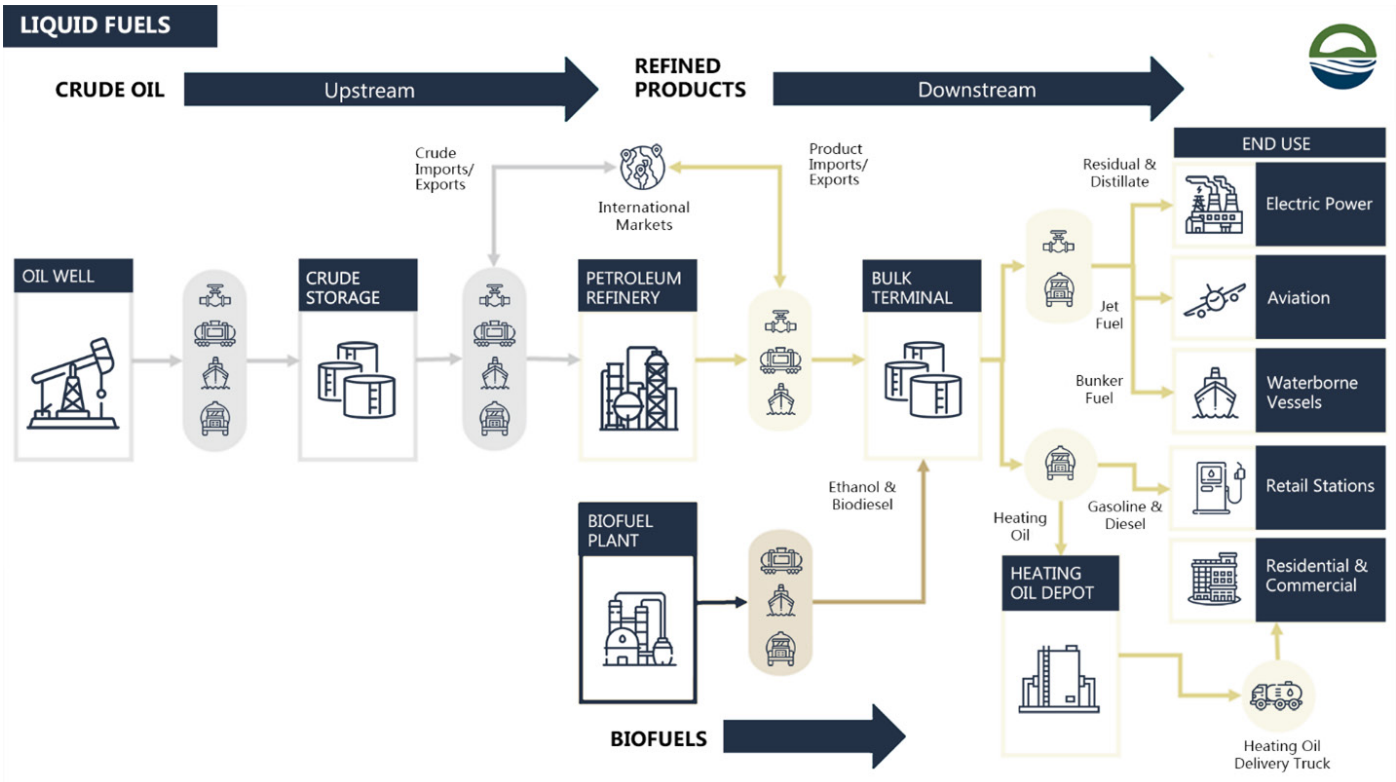
Residential Sector | 1.8 trillion Btu

Industrial Sector | 13.5 trillion Btu[1]

In 2024, Oregon used 17.8 trillion Btu of heating oil for direct uses, and 1.2 percent of Oregon homes use fuel oil for heating.[1] [14] It is also used to heat commercial buildings and for industrial applications. Oregon does not produce any heating oil in the state, so most of Oregon's petroleum supply comes from refineries in Washington.[15]

Biodiesel heating oil is a renewable fuel made from vegetable oils, like soy and canola, and is a lower carbon intensity alternative to petroleum heating oil. Biofuels are mixed with petroleum heating oil to create blends of 5 to 20 percent to create a cleaner burning alternative fuel. The mixes can be used by typical oil furnaces in homes, but increasing the portion of vegetable oils in the blends does require adjustments to home oil furnaces.[16] Policies such as the Oregon Renewable Fuel Standard and Oregon Department of Environmental Quality's Clean Fuels

Liquid Fuels Supply Chain



Program are driving increased demand for biodiesel and other biofuels as they displace petroleum fuels used for transportation and heat.[17] For more information about biofuels powering transportation in Oregon, see the 2022 BER Resource and Technology Review of Transportation Fuels.

Hydrocarbon Gas Liquids and Propane. HGLs are gases at atmospheric pressure and can be liquefied by cooling and pressurizing. Their versatility and high energy density in liquid form make them useful for many purposes, including as feedstock in petrochemical plants, as fuel for home space and water heating or cooking, and as transportation fuels, additives, or as a diluent. Propane is a hydrocarbon gas liquid that can be used to power farm and industrial equipment, backyard barbecues, and Zamboni machines at ice skating rinks. Propane remains a viable fuel over long periods of storage, making it a common backup fuel for essential facilities like hospitals and a potential resource in response to an emergency. Propane is a byproduct of natural gas production and crude oil refining.[18] As U.S. natural gas production has increased, the supply of propane has followed, making it an affordable and attractive option for many Oregonians.[19]

Hydrocarbon Gas Liquids and Propane Consumption by Sector[1]

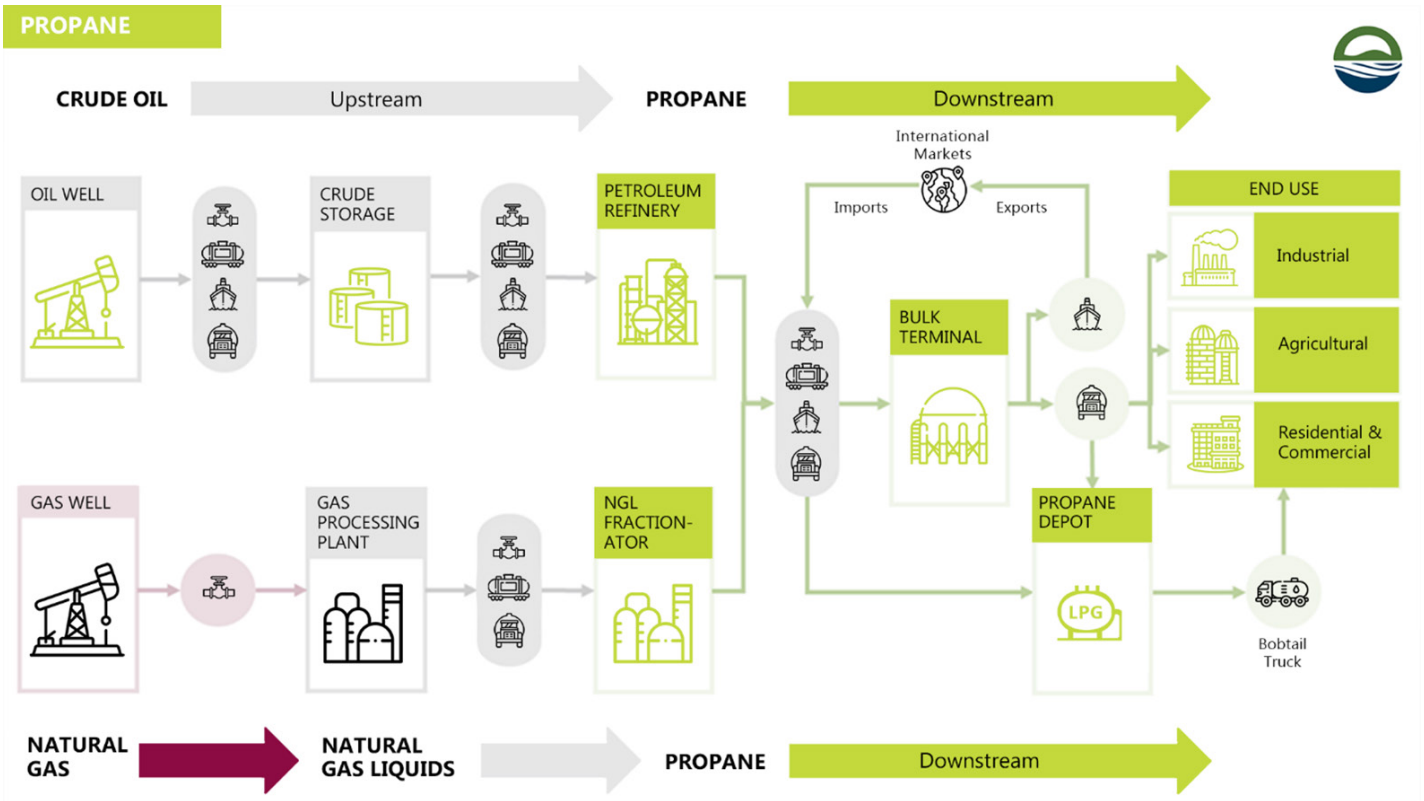
Commercial Sector | 4.2 trillion Btu

Residential Sector | 2.2 trillion Btu

Industrial Sector | 1.3 trillion Btu

Propane consumed in Oregon is imported. Based on the available data on propane production, imports, exports, and transportation, the Pacific Propane Gas Association estimates that more than 95 percent of the propane consumed in Oregon is sourced from natural gas processing plants in Alberta and British Columbia, Canada.[20]

Propane Supply Chain



Renewable propane is a lower carbon form of propane made from a mix of waste residues and sustainably sourced materials, including agricultural waste products, cooking oil, and animal fats.[21] Renewable propane production is in its early stages, with the first commercial production in the United States beginning in 2018. It is most often created as a byproduct of renewable diesel or sustainable aviation fuel production. Other methods for producing renewable propane are being studied and tested. It is currently available only in limited quantities and is typically mixed into existing propane supplies for distribution to propane vehicle fleets.

Oregon consumed 7.7 trillion Btu of propane in 2024 as a direct use fuel.[1] About 1.4 percent of Oregon residents use propane boilers or furnaces to heat their homes; even more use it for cooking.[14]



Other Petroleum. These are petroleum fuels like kerosene or lubricants that are not propane or heating oil, and are used, for the most part, in Oregon's commercial and industrial sectors to fuel machinery and manufacturing processes. In 2024, Oregon consumed about 23.6 trillion Btu of Other Petroleum fuels.[1]

Other Petroleum Consumption by Sector[1]

Commercial Sector 4.9 trillion Btu

Residential Sector 0.2 trillion Btu

Industrial Sector 18.5 trillion Btu



Solar Thermal. While solar is commonly thought of as a resource to generate electricity, Oregon also uses sunlight to produce energy to heat spaces and water in homes and businesses. Over 3.5 trillion Btu of solar thermal energy was consumed in Oregon in 2024.[1] Solar thermal is most used as a direct use fuel in solar water heating systems in buildings. Solar water heating systems collect and transfer thermal energy to preheat water for the building, which reduces natural gas or electricity consumption.

Solar Thermal Consumption by Sector[1]

Commercial Sector | 0.5 trillion Btu

Residential Sector | 2.9 trillion Btu

Industrial Sector | 0.1 trillion Btu



Geothermal. In 2024, Oregonians consumed 1.2 trillion Btu of geothermal energy for heating and cooling residential, commercial, and industrial spaces.[1] Geothermal energy is a renewable fuel that comes from the internal heat of the earth and is produced in Oregon. While geothermal is often used to generate electricity, it can also be used for thermal energy applications such as heating spaces and keeping bridges and sidewalks from icing over.[22]



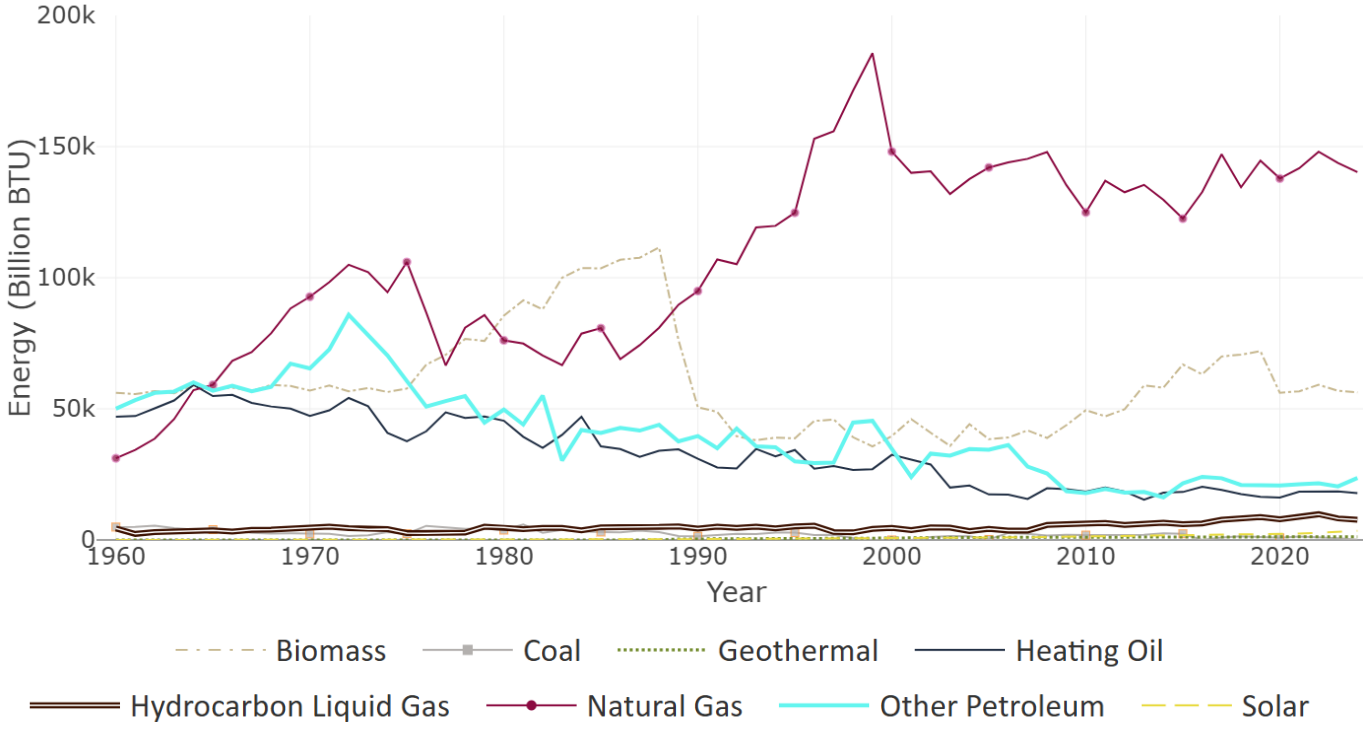
Coal. Coal is imported to Oregon for use as a direct fuel in the industrial sector. Oregon consumed 0.1 trillion btu in 2024. Most applications of coal as a direct use fuel in Oregon have been replaced by other fuels like natural gas, which has led to a general decrease in coal use since the 1990s.[1]

Geothermal and coal represent
less than 1 percent of Oregon's direct use fuels.[1]

Direct Use Fuels Over Time

Oregon's energy consumption has evolved over time. For direct use fuels, that has meant decreasing wood and fuel oil use and an increase in natural gas. The chart below uses data from the U.S. Energy Information Administration to compare total consumption of direct use fuel types in Oregon's residential, commercial, and industrial sectors from 1960 to 2024. The chart does not include transportation fuels or fuels used to generate electricity.

Oregon Direct Use Fuels Consumption: 1960-2024 (Billion Btu)[1]



Natural gas has replaced heating oil and coal use in many Oregon buildings and industrial processes as a cleaner-burning and, in many cases, less expensive fuel. Oregon's natural gas utilities are planning for the blending of lower carbon alternative fuels such as renewable natural gas and hydrogen with fossil natural gas to reduce the GHG emissions from fuel consumption.[11] [12] [13]

Geothermal is one of the smallest direct use fuels consumed in Oregon, but it has the potential to be a greater clean energy resource in the future. Research and pilot projects are spurring more potential for geothermal for electricity generation. Although this is directly related to advancements in the electricity sector, the knowledge gained from these projects could inform more opportunities or technological innovations in geothermal energy as a direct use fuel.

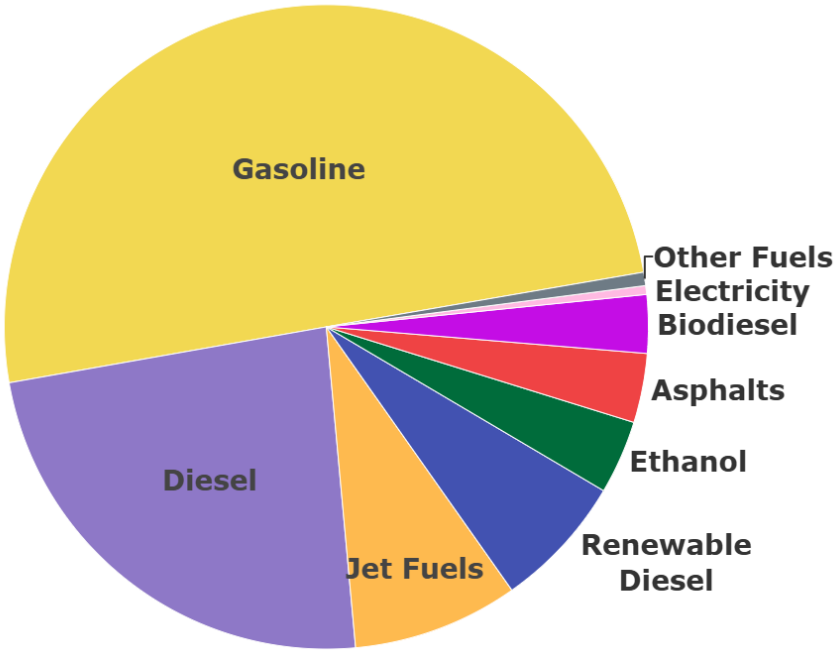
Oregon industry consumes a significant amount of biomass energy from secondary waste products, like lumber mill residue, logging slash, and animal manure. Waste products are burned to provide heat to manufacturing processes or generate electricity or they can be processed to become a commercial energy product like wood pellets or charcoal briquettes.

Transportation Fuels

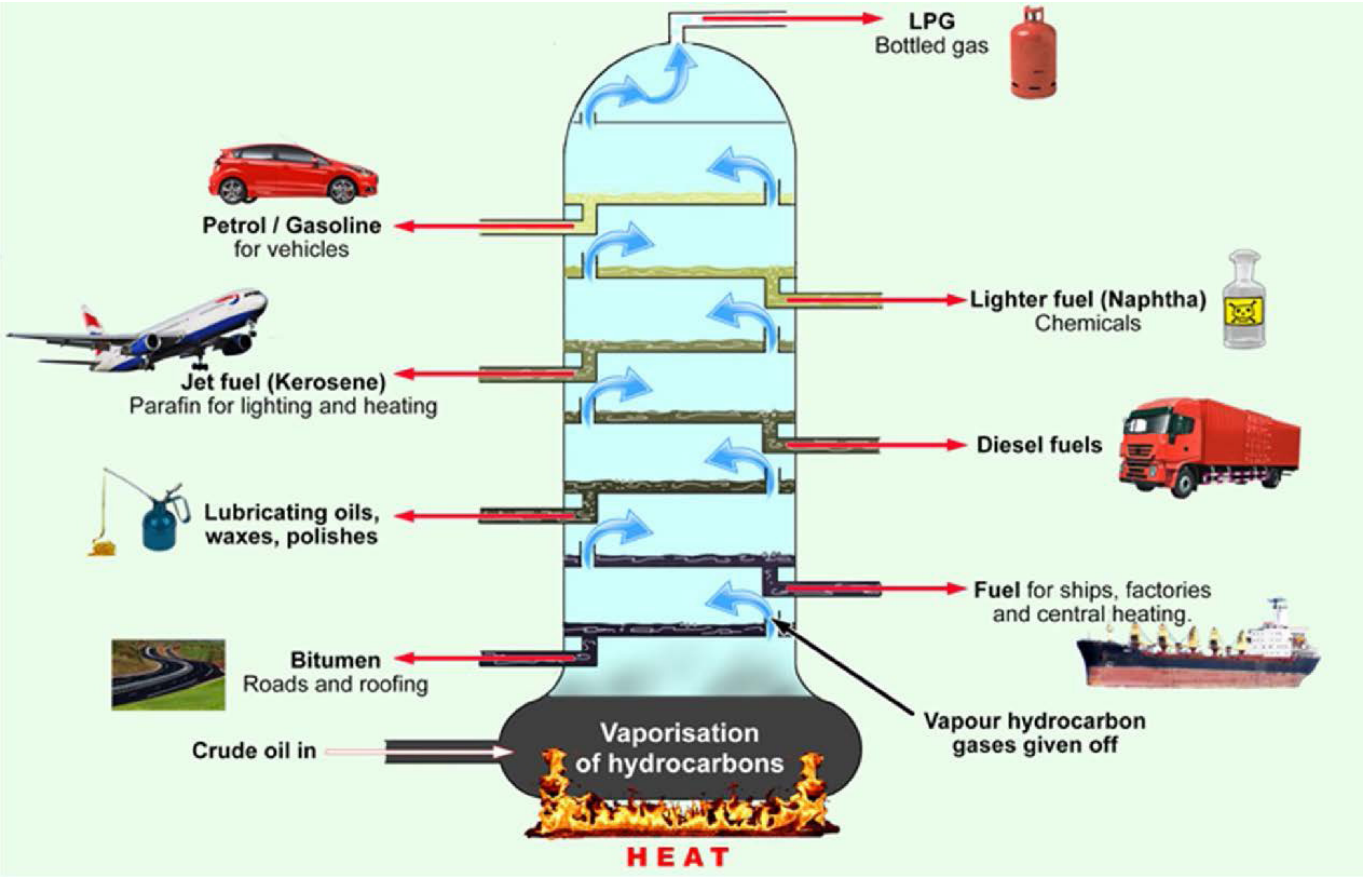
What We Use

In 2024, Oregon's transportation sector accounted for 36.1 percent of the energy consumed in Oregon.[1] Petroleum-based products represent 86 percent of fuel consumed in this sector. Alternative fuels or biofuels like ethanol, biodiesel, and renewable diesel accounted for 13.6 percent, and electricity accounted for 0.4 percent of the fuels consumed.[1]

Oregonians consume many different types of transportation fuels.[3]



Uses for Petroleum Distillates in the Transportation Sector[2]



Petroleum-based products make up 86 percent of Oregon's transportation fuel use.[1] They are processed by heating crude oil and separating components by weight, sometimes referred to as fractionations (of the crude oil).

Gasoline. Lighter distillate of petroleum used by cars, motorcycles, light trucks, airplanes, and boats.

Diesel. Heavier distillate of petroleum used by trucks, buses, trains, boats, and ships.

Propane. A light petroleum hydrocarbon gas liquid fuel used to power cars, buses, trucks, and some non-road vehicles.

Alternative fuels (to petroleum) used in Oregon are produced by various means, usually by collecting and processing crops, byproducts, or waste streams.[4]

Ethanol. Fuel produced from agricultural crops or wood that is blended with gasoline and used by cars and trucks.

Biodiesel. Fuel from organic oils and fats that can be blended with diesel fuel (up to 20 percent) and used by trucks, buses, trains, and boats.

Electricity. Fuel that powers some public mass transit systems, school buses, port equipment, and passenger zero-emission vehicles.

Natural Gas. Compressed and liquefied natural gas used by cars, buses, trucks, and ships.

Renewable Natural Gas. Biogas from agricultural waste, wastewater, or garbage collected and refined to power natural gas cars and trucks.

Renewable Diesel. Fuel from organic oils and fats using a different production process than biodiesel to power diesel vehicles.

Hydrogen's Potential as a Transportation Fuel in Oregon?

A potential emerging resource in Oregon and beyond is renewable and clean hydrogen, which could be used as a replacement for fossil-based hydrogen currently in use, as a direct transportation fuel for medium- or heavy-duty vehicles, as storage for clean electricity generation, for industrial processes and heat, and other uses.

In November 2022, the Oregon Department of Energy published a study on the potential of renewable hydrogen, including opportunities and challenges for using the resource in the state.[5]

Use Over Time

The U.S. Energy Information Administration has tracked national energy consumption and individual state consumption since 1960. In Oregon and nationally, overall transportation fuels consumption increased between 1960 to 2018. In 2020, there was a 16 percent reduction in the use of gasoline and a 37 percent reduction in jet fuel, but a 3 percent uptick in the use of diesel. Analysis indicates this is due to less personal vehicle travel and more delivered goods during the COVID-19 pandemic.[7] [8] Since 2020, energy consumption in Oregon's transportation sector has risen, and in 2023 exceeded pre-pandemic levels. In 2024, Oregonians consumed 322.9 trillion Btu[i] of energy in the transportation sector.[1]

i Energy consumption data are based on data sets from Oregon Departments of Environmental Quality and Transportation. For this reason, actual Btu numbers for the sector and individual fuels may not exactly match U.S. Energy Information Administration values.

Petroleum consumption in Oregon's transportation sector has generally increased over time and continues to comprise the vast majority of transportation fuel use. All petroleum-based transportation fuels consumed in the state are imported, which means most of the $9.5 billion spent in 2024 on transportation fuel is not retained in Oregon's economy. In 2024, in-state production accounted for only 1.6 percent of total transportation fuel consumption, primarily from 4.2 trillion Btu of fuel ethanol. Oregon electric utilities supplied an additional 0.84 trillion Btu of electricity for electric vehicle charging in 2024.[1] Oregon has no crude oil reserves or petroleum refineries. More than 90 percent of the petroleum products delivered to and used in the state originate from four refineries located in Washington.[9] These refineries process crude oil sourced from Alaska, western Canada, and North Dakota.

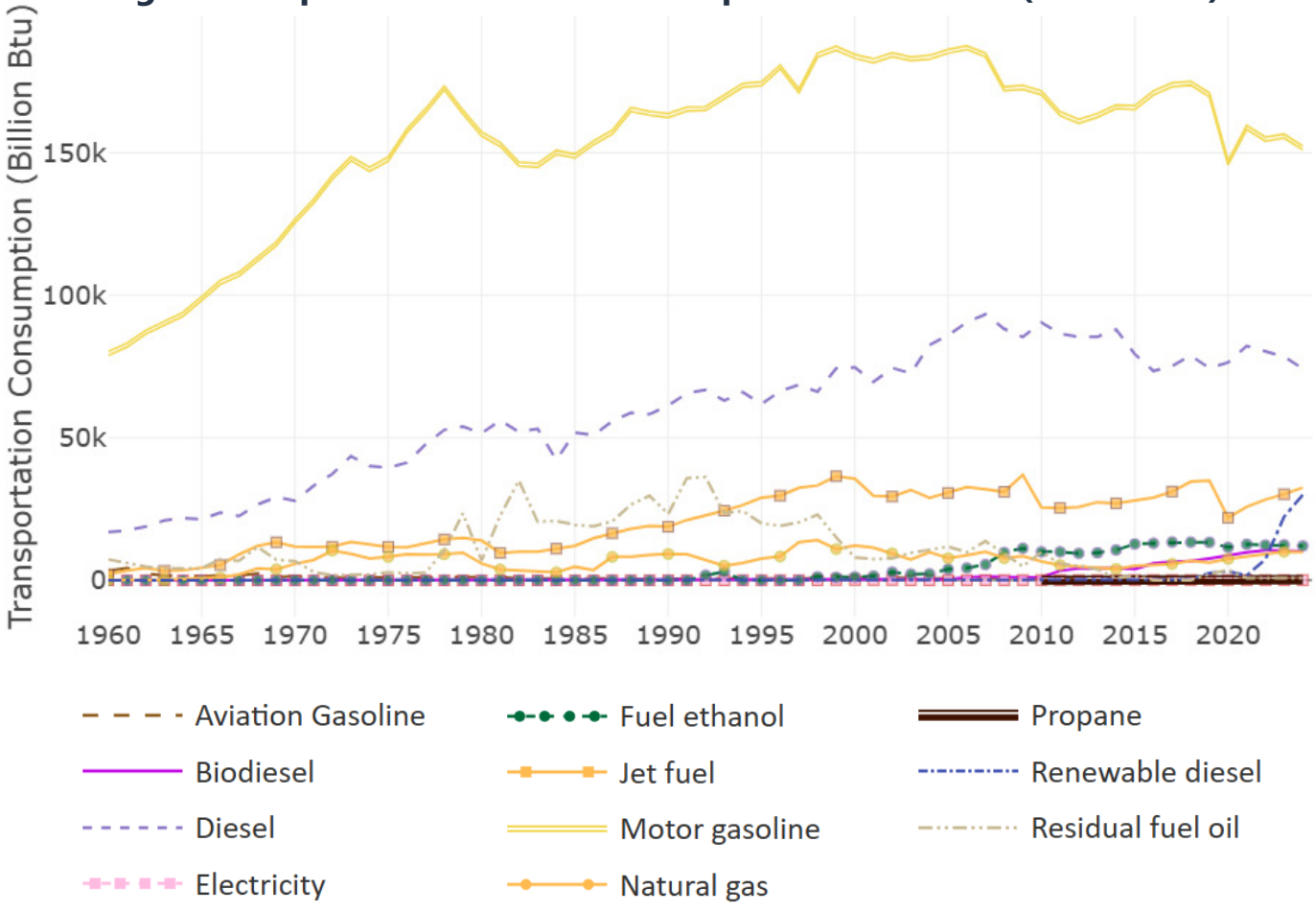
1.6%

Percentage of transportation fuel used in Oregon that was produced in state.[1]

$9.5 billion

The amount of money Oregonians spent on transportation fuels in 2024.

Oregon Transportation Sector Consumption: 1960-2022 (Billion Btu)[10]

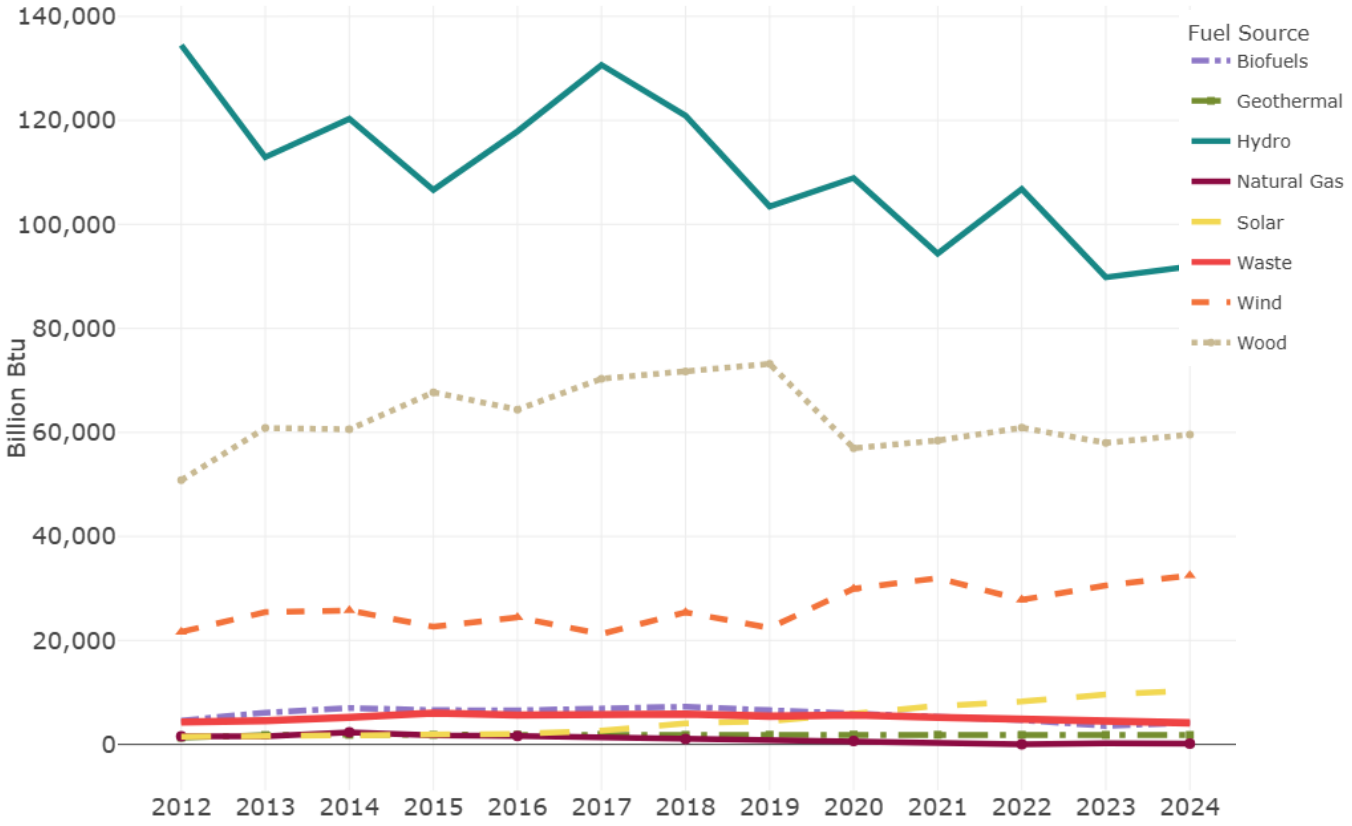


Energy Production

Overview

This section provides energy consumption and energy production data. Energy production focuses on primary and secondary energy produced in Oregon. *Primary* energy represents energy that is collected from Oregon's natural resources — it does not include energy that is imported for consumption or for electricity generation in Oregon. *Secondary* energy is consumed in real time, like electricity, or may be stored for later use, like wood pellets.

Oregon Primary Annual Energy Production Over Time[1]



The chart above shows primary energy produced in Oregon in 2024. Almost all the primary solar, wind, geothermal, and hydro energy is converted to *secondary* energy as electricity. Some of the biomass is used to make a variety of renewable fuels and some is combusted to produce heat and electricity.[1]

Over the last two decades, hydropower has been the largest primary energy source in Oregon. Wood remains the second largest primary energy source. Solar power has been steadily increasing since 2012, with faster growth starting in 2015. Wind power grew at a slower rate and is the third largest energy resource produced in Oregon. Between 2014 and 2021, natural gas production slowly declined, and is currently the smallest primary resource.[1]

Electricity

Oregon generates electricity from a variety of resources — hydropower, natural gas, and wind are the largest. In 2024, Oregon's hydroelectric facilities were responsible for 41.7 percent of the electricity generated in Oregon.[1] The state's four largest electricity generating facilities are federally owned and operated dams on the Columbia River. They account for two-thirds of the generating capacity from the 10 largest power plants in the state.[2] Oregon is the second largest producer of hydroelectric power in the U.S. after Washington.

Oregon's abundance of renewable electricity is used in Oregon and sold to utilities in other states through wholesale electricity markets. In 2024, 21.4 percent of Oregon's hydropower and 48.5 percent of its wind generation were exported.[3] Sixty percent of electricity generated in Oregon in 2024 came from non-greenhouse gas emitting resources.[1]

Natural gas accounted for 38.6 percent of Oregon's 2024 electricity generation. Nearly all the natural gas used to generate electricity in Oregon is imported. There is only one natural gas site in Mist, Oregon, but this facility is used primarily for natural gas storage. Oregon has no coal or petroleum resource extraction facilities.

65.3 Million

Megawatt hours of electricity generated in Oregon in 2024.[1]

62.4 Million

Megawatt hours of electricity consumed in Oregon in 2024.[3]

60%

Percentage of Oregon's electricity generation that comes from non-emitting resources.[3]

77%

Percentage of Oregon's electricity generation that is used in-state.[3]

Utility-Scale Solar in Oregon

The first Energy Facility Siting Council-jurisdictional solar facility constructed was the Wheatridge Renewable Energy Facility. Fifty megawatts of the approved 150 MW solar energy facility became operational in March 2022.

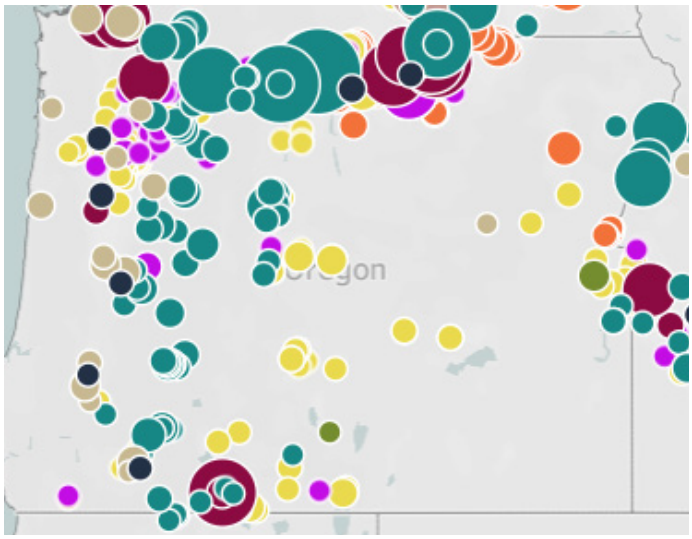
As of September 2026, there are 10 EFSC-jurisdiction solar facilities under review, under construction, or operating in Oregon, which amounts to 412 MW of solar generating facilities in operation with another 296 MW in construction.[4] The largest proposed facility to date is the 1,400 MW Speedway Energy Facility Project in Sherman County.



Construction of the Oregon Trail Solar Facility In Gilliam County.

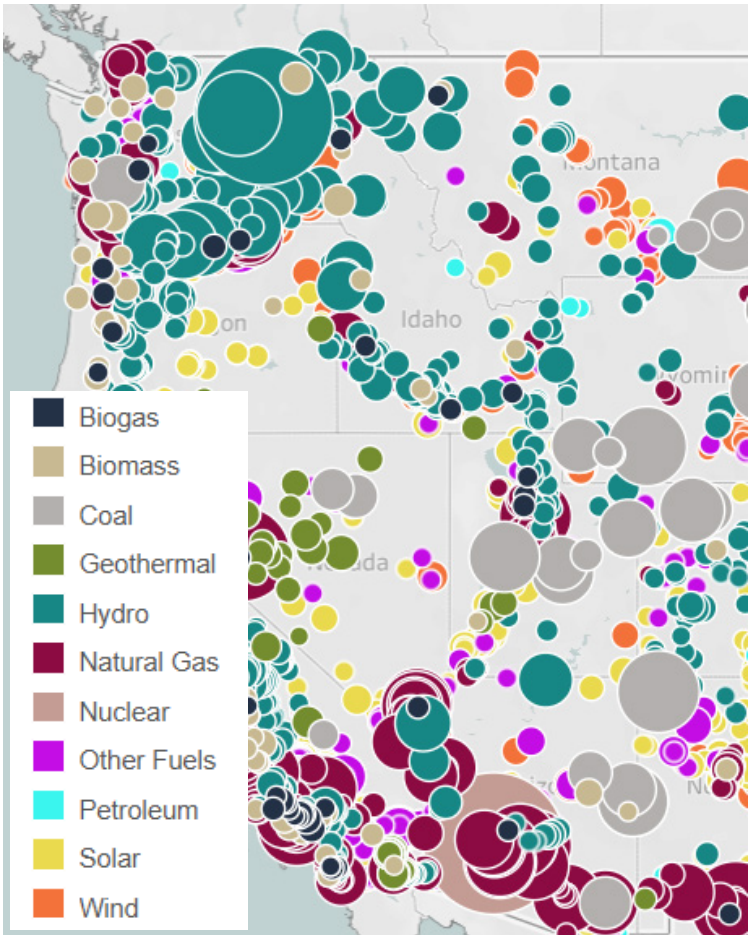
Electric Facilities

The map of Oregon at right shows where electricity generation sites are in the state. The map includes facilities owned by Oregon utilities as well as third-party owned facilities, with which utilities can contract to provide electricity to Oregon consumers. Third parties can also sell their electricity on the open energy market. Note that the color of the circles corresponds to the type of resource used to generate electricity, and the size of the circle is in relation to generation capacity or size of that facility.



Electricity used by Oregonians can come from facilities across the western United States. Oregon relies on hydroelectric power produced on rivers in the Columbia River watershed, nuclear power from the Columbia Generating Station in Washington, wind from turbines along the Columbia River Plateau, and electricity generated at coal-powered facilities located in several western states.[5]

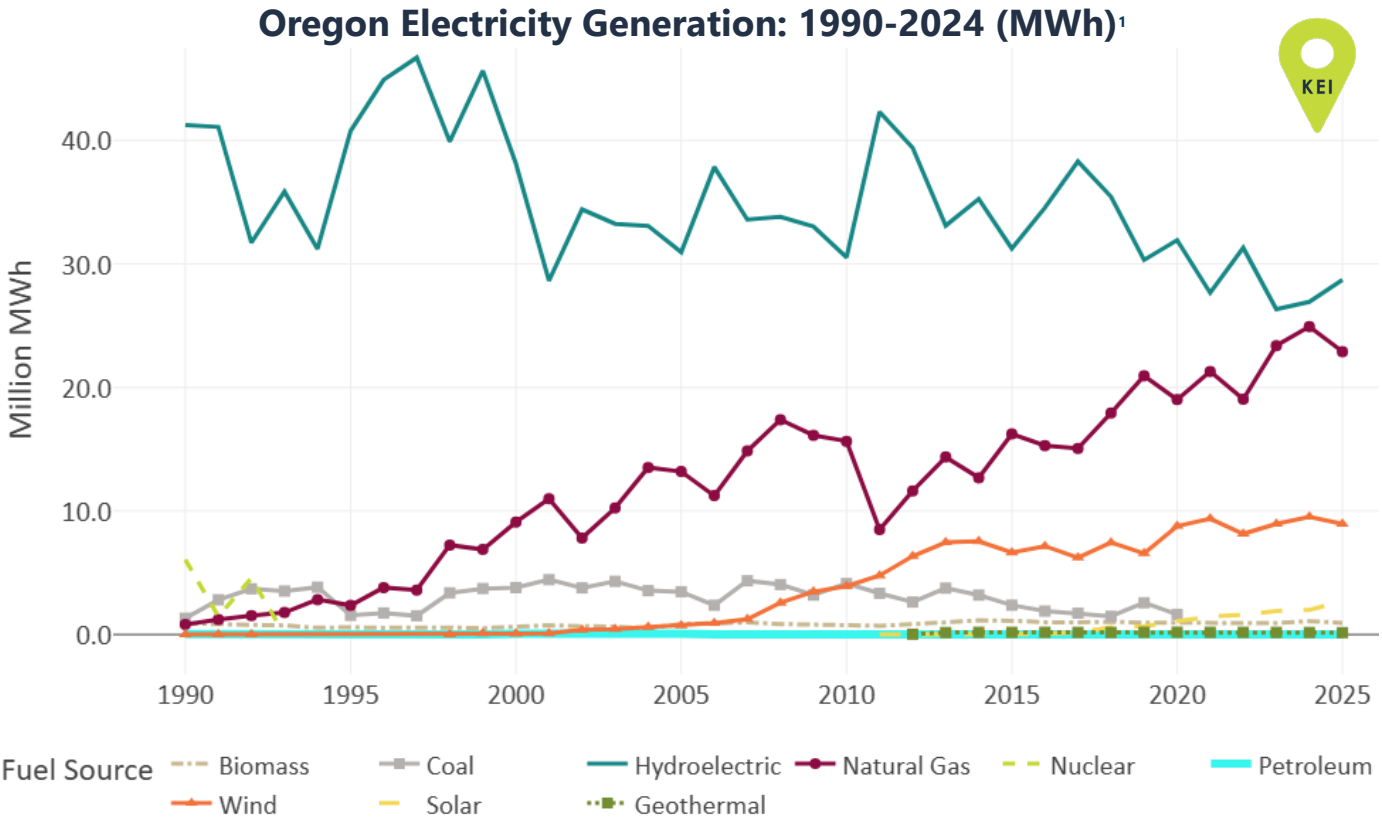
The map below shows the various electricity generation sources in the Western Electricity Coordinating Council.[6] The WECC is a nonprofit organization that focuses on system wide electricity reliability and security across a geographic region known as the Western Interconnection. This diverse region includes Oregon and most of the intermountain west and parts of Canada and Baja Mexico.



The maps of electricity generating resources are created using data from the U.S. Energy Information Administration and include facilities with a nameplate capacity of one megawatt or greater.[5] According to the EIA, nameplate capacity is defined as the maximum rated output of a generator, prime mover, or other electric power production equipment under specific conditions designated by the manufacturer. Installed generator nameplate capacity is commonly expressed in megawatts and is usually indicated on a nameplate physically attached to the generator. Not all resources or facilities shown on the map contribute to Oregon's overall fuel mix, but many are used when Oregon utilities purchase electricity on the open market. Similarly, electricity generated in Oregon may be sold through the energy market to support electricity needs in other states.

Electricity Over Time

Oregon's electricity generation has changed over the years. Hydropower, which is Oregon's largest electricity resource, varies year-to-year based on precipitation. Oregon hydropower reached a generation high of 46.7 million MWh in 1997 as shown in the chart below. Wind and natural gas have both seen a gradual increase in generation over time. In 2024, natural gas was the second largest share of Oregon's electricity generation, at 24.9 million MWh. Coal generation no longer occurs in Oregon, with the last coal generating plant closing in 2020. Solar has increased each year since 2011, and is expected to continue growing with several proposed large facilities in planning and review stages.[7]



Utility-scale Storage

There are several options for storing energy, including batteries and hydroelectric facilities. Many hydroelectric facilities store energy as water in reservoirs that can be released to flow through turbines when needed. When electricity demand is low, some of them can use their on-site electricity generation to pump water back upstream to be stored behind the reservoir until needed. Increasingly, utilities are also storing electricity in batteries, which can be sited alongside variable renewable resources like solar and wind. This helps utilities get more out of these resources by storing generation when demand is low and using them to supplement supply when demand is high. In 2025, Executive Order 25-29 established a goal of 8 GW of battery storage in Oregon by 2045.[8] As of September 2026, there are currently 9.4 GW of battery storage that have been built, are in construction, or being considered for siting approval by EFSC.[7]

Renewable Electricity

Renewable electricity generated in Oregon has grown due to customer demand, dramatic reductions in costs, and clean energy policies, like the Renewable Portfolio Standard and the 100 percent clean electricity by 2040 target set in House Bill 2021 (2021).[9] [10] Demand for clean energy in California also spurred prior wind development in Oregon – contributing to the large share of wind energy Oregon exports.[3]

Solar[11]

KEI

2016 Generation	2020 Generation	2022 Generation	2024 Generation
40,900 MWh	1,077,900 MWh	1,505,400 MWh	2,001,400 MWh



10.7% of Oregon's solar consumption was imported in 2024.[3]

Oregon has 1,150 MW of utility-scale solar facilities and 183 MW[i] of net-metered solar installations on homes and businesses.

Wind[12]

KEI

2016 Generation	2020 Generation	2022 Generation	2024 Generation
7.2 Million MWh	8.8 Million MWh	8.2 Million MWh	9.5 Million MWh[3]



48.5% of Oregon's wind generation was exported in 2024.[3]

Oregon has 3,863 MW of wind facilities in operation.[8]

Hydro[12]

KEI

2016 Generation	2020 Generation	2022 Generation	2024 Generation
34.6 Million MWh	31.9 Million MWh	31.3 Million MWh	26.9 Million MWh



21.4% of Oregon's hydropower generation was exported in 2024.[3]

In some Oregon utility service areas, hydropower provides over 90% of consumers' electricity.[4]

Oregon's hydropower resource fluctuates from year-to-year due to changing precipitation and water conditions.

i Rooftop solar capacity is provided in direct current, or DC megawatts.

Direct Use Fuels

Natural gas is Oregon's most consumed direct use fuel and almost all of it is imported. Biomass is the most produced direct use fuel in Oregon but makes up only 22.5 percent of total consumption in the state; most direct use fuels — consumed by the residential, commercial, and industrial sectors — are imported. In 2024, Oregon used 250.55 trillion Btu of direct use fuels, representing about 28 percent of the total energy consumed in Oregon.[1] While the majority of Oregon's primary energy production comes from energy sources like hydropower, wind, and solar electricity generation, Oregon also produces some direct use fuels.

100%

Percentage of Oregon geothermal energy consumption that is produced in-state.

28%

Percentage of Oregon overall direct use fuels consumption that is produced in-state.[1]

The table below shows a comparison of the direct use fuels produced in Oregon to how much is consumed by the residential, commercial, and industrial sectors. If energy is produced in Oregon and not consumed in state, the Oregon Department of Energy determines that energy was exported to support neighboring states' energy systems. If more of a specific energy resource was consumed than produced, it is assumed that it was imported into the state for consumption.

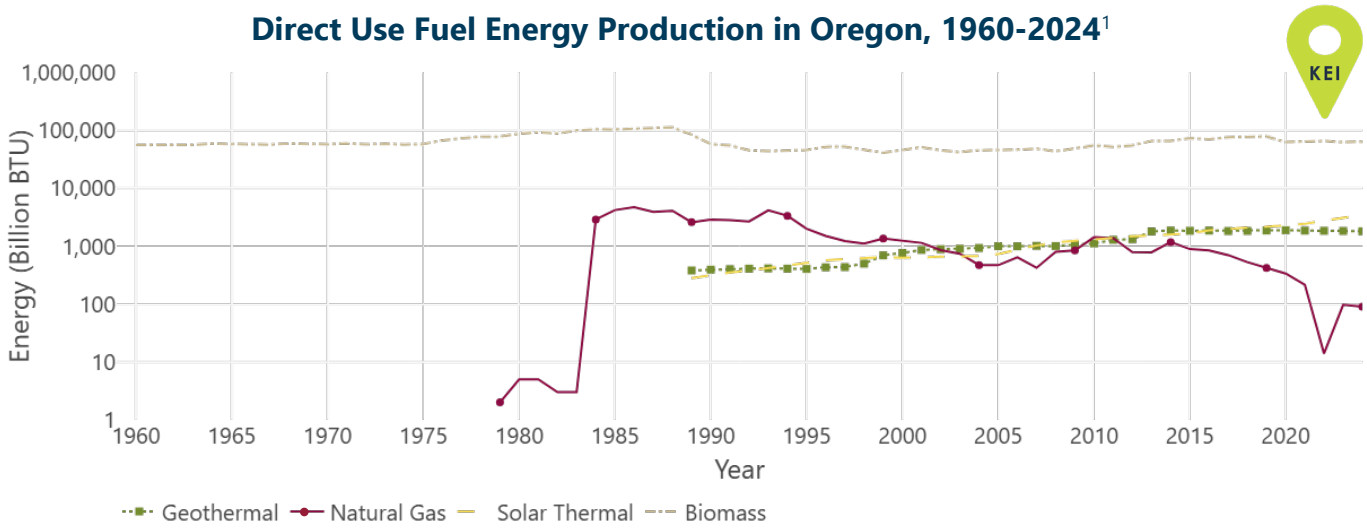
In 2024, Oregon produced approximately 63.72 trillion Btu of direct use fuels energy from biomass.[1] The U.S. Energy Information Administration collects and shares these high-level energy production and consumption estimates to inform Oregon's understanding of state and federal energy systems — but the data do not show where each Btu of energy is consumed. The data do not include agricultural biomass used to produce ethanol in Oregon, because it is typically used only as a transportation fuel.

Production & Consumption of Direct Use Fuels in 2024 (trillion Btu)[1]

Resource	Consumption in Oregon	Oregon Production	Imported	% of Consumption Produced in Oregon
Natural Gas	140.26	0.09	140.17	0%
Biomass	56.32	63.72	-7.4[i]	100%
Other Petroleum	23.61	0	23.61	0%
Heating Oil	17.82	0	17.82	0%
Hydrocarbon Gas & Liquids/ Propane	7.72	0	7.72	0%
Solar Thermal (for heat)	3.48	3.48	0	100%
Geothermal	1.23	1.23	0	100%
Coal	0.11	0	0.11	0%
Totals	**250.55**	**68.52**	**182.03**	**27%**

i Negative values in the imported column indicate that more energy was exported out of the state than imported into the state.

Direct Use Fuel Energy Production in Oregon, 1960-2024[1]



Like the Oregon Primary Annual Energy Production Over Time chart at the beginning of this section, the chart above uses a logarithmic scale to compare direct use energy produced in Oregon so that the natural gas, geothermal, and solar thermal resources can more easily be discerned. Although not an intended effect, this change in scale emphasizes changes in smaller resources like natural gas, solar thermal, and biomass, and deemphasizes changes in resources that constitute a larger proportion of the resources, like biomass.

Natural Gas. The Pacific Northwest's only natural gas production is located outside of Mist, northwest of Portland, and is owned and operated by NW Natural, one of three investor-owned natural gas companies serving Oregon. The Mist field produced about 84 million cubic feet of natural gas or 0.09 trillion Btu of energy in 2024.[1] The facility hit a production peak of 4.6 billion cubic feet in 1986, and since then production has steadily declined.[13]

The Mist facility is used to store natural gas sourced from outside Oregon for electricity generation and for customers served by the natural gas distribution system. NW Natural injects natural gas into underground rock formations for later use during cold weather events to help balance fluctuations in its pipeline system, and to reduce costs for customers by purchasing gas throughout the year when market conditions are favorable.

Renewable Natural Gas. Biogas must be cleaned up to be a substitute for fossil natural gas and often needs to meet stringent specifications required for injection into a natural gas distribution pipeline. Biogas is collected from landfills where it is produced from decaying municipal waste streams like food and garbage, from anaerobic digesters at wastewater treatment plants (waste and food), and at agricultural sites that process waste streams like manure.[14]

There are six RNG projects located in Oregon, and three are currently operational and able to inject RNG into natural gas pipelines.[15] [16] In 2018, the Oregon Department of Energy conducted an inventory of current and potential RNG facilities and estimated 4.5 percent of Oregon's total annual natural gas use could be replaced with RNG produced in the state. Production capacity could reach as high as 17.5 percent of annual use with future technological advancements in collection and processing.[17] In November 2021, the Metropolitan Wastewater Management Commission in Lane County became the first public agency in Oregon to collect and inject RNG into NW Natural's gas line. The biogas is collected and processed from a regional wastewater treatment plant in Eugene, Oregon.[18]



Solar Thermal. Solar thermal energy is a resource used directly to provide heat in Oregon homes and businesses. Solar thermal systems capture energy from the sun to provide water heating and space heating in buildings. Most solar thermal systems installed in Oregon are solar water heating systems that provide supplemental energy to residential water heaters, which can reduce water heating bills. In the last 10 years, residential solar water heating system installations have declined. Instead, more Oregonians are installing solar photovoltaic systems combined with energy efficient heat pump water heating systems as these combined systems have come down in cost.



Geothermal Energy. Direct use geothermal energy uses hot water or steam from reservoirs below the earth's surface piped to end users for water or space heating. Oregon produced 1.8 trillion Btu of geothermal energy in 2024, and 1.2 trillion Btu of it was consumed as a direct use fuel.[1] For decades, the City of Klamath Falls and the Oregon Institute of Technology Klamath Falls Campus have used geothermal heat sources to heat buildings, residences, pools, and sidewalks.[19] [20] Schools and hospitals in Lakeview use a geothermal well system to heat some buildings.[21] The geothermal energy not used as a direct use fuel is used to generate electricity.

Other examples of direct use of geothermal heat in the state include drying agricultural products, aquaculture (raising fish), heating greenhouses, and heating swimming pools. There are more than 2,000 thermal wells and springs delivering direct heat to buildings, communities, and other facilities in Oregon. The U.S. Department of Energy ranked Oregon as the state with the third highest geothermal potential, behind only Nevada and California.[2]



Biomass, Wood Pellets, and Charcoal Briquettes. Biomass energy is from plants and plant-derived materials, including wood, wood waste, wood pellets, and charcoal briquettes. Residual materials or waste from forest harvest and mill operations are converted into useful retail products. Wood and wood waste biomass have been Oregon's largest direct fuel production source since 1960. In 1988, wood and wood waste production hit a high of 113 trillion Btu. Thirty-six years later, Oregon's production was 63.7 trillion Btu — a 44 percent decrease.[1] In Oregon, the industrial sector is the largest producer and consumer of biomass energy. Eleven woody biomass facilities use biomass to generate electricity used onsite and sold to other businesses in Oregon, primarily in the wood-products industry.[22] Wood is also produced and consumed as firewood to heat homes — after industrial, the residential sector is the second largest consumer of wood energy in Oregon.[1]

Wood pellets are manufactured from timber waste and used for residential and commercial heating. Biomass Magazine lists five wood pellet plants in Oregon, with an annual production capacity of 207,500 metric tons per year.[23] Charcoal briquettes and cooking pellets also use timber waste to create a fuel source for cooking; wood waste is burned in the manufacturing process as the products are heated up to remove moisture. Springfield, Oregon, is home to one of Kingsford's five charcoal briquette manufacturing plants in the U.S. The facility has 90 local employees, is on a 40 acre site, and has been in operation for over 50 years.[24] [25]

Transportation Fuels

Only 1.6 percent of the 323 trillion Btu of energy Oregonians consumed for transportation in 2024 was produced in state.[26] Oregon does not produce or refine any petroleum-based transportation fuels, but does produce 36 percent of the ethanol that is blended into the gasoline used.[26] Though still a small fraction of the total transportation fuels, electricity use for transportation is growing in Oregon. The state consumed 1.38 trillion Btu of electricity in 2024 for transportation, or about 0.44 percent of total transportation fuel consumption.

5%

Biodiesel blend is used in most heavy-duty vehicles both on and off the highway.[27]

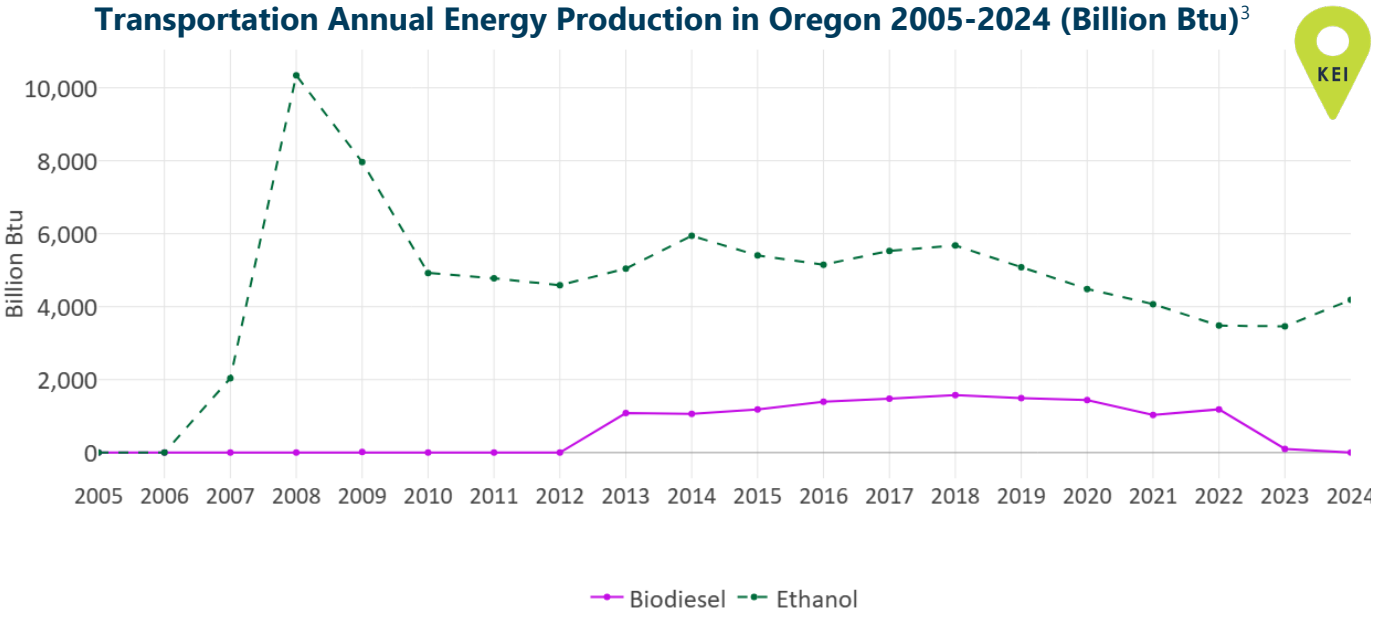
10%

Ethanol blend fuel is used in a majority of light-duty vehicles in Oregon.[27]

Production & Consumption of Transportation Fuels in 2024[26] (Trillion Btu)

Resource	Consumption in Oregon	Oregon Production	Imported	% of Consumption Produced in Oregon
Gasoline	156.8	0	156.8	0%
Diesel	74.16	0	74.16	0%
Jet Fuel	26.1	0	26.1	0%
Renewable Diesel	21.1	0	21.1	0%
Fuel Ethanol	11.6	4.2	7.4	36%
Asphalt & Road Oil	10.88	0	10.88	0%
Biodiesel	9.16	0	9.16	0%
Lubricants	1.04	0	1.04	0%
Electricity	1.38	0.84	0.54	61%
Bio-Compressed Natural Gas	0.5	0	0.5	0%
Aviation Gasoline	0.32	0	0.32	0%
Liquid Propane Gas/ Propane	0.22	0	0.22	0%
Renewable Propane	0.00	0	0.00	0%
Natural Gas	<0.01	0	<0.01	0%
Hydrogen	<0.01	0	<0.01	0%
Totals	**313.26**	**5.04**	**308.22**	**1.6%**

Transportation Annual Energy Production in Oregon 2005-2024 (Billion Btu)[3]



Ethanol. Oregon began producing fuel ethanol in 2007 and had its largest production year in 2008 with 10.3 trillion Btu of energy created. In 2024, Oregon produced 4.2 trillion Btu of ethanol.[1] Oregon has one commercial ethanol producer — Alto Ingredients' Columbia Dry Mill and Distillery in Boardman (previously known as Pacific Ethanol). Carbon dioxide emissions from the plant are captured and used by the food and beverage industry, turning emissions into a beverage-grade liquid used to carbonate soft drinks and make dry ice.[28]

Biodiesel. The U.S. Energy Information Administration began tracking Oregon biodiesel production in 2013. Oregon no longer produces biodiesel in the state. In January 2024, SeQuential Pacific Biodiesel was acquired by Neste Corporation and has been merged with Mahoney Environmental.[29] The company continues to collect used cooking oils in Oregon as a feedstock for renewable diesel produced at a facility in Martinez, California.[30]

Electricity. Increasingly, more zero-emissions vehicles – fully battery electric or plug-in hybrids that can use both electricity and petroleum – are operating in Oregon.[31] Historically, Oregon has imported almost all of the fuel consumed in the transportation sector.[1] As electric vehicle adoption increases, more of the money Oregonians spend on transportation fuels will remain in the state economy because many electricity jobs and investments are located in Oregon.



The State of Oregon and Portland General Electric partnered to host a Fleet Forward Electric Ride and Drive event at Portland International Raceway in September 2026, offering the broader Oregon fleet electrification community the opportunity to get behind the wheel of the latest electric trucks and vans on the market.

Energy Facility Siting in Oregon

Oregon's Energy Facility Siting Council is a governor-appointed body that oversees the siting of energy facilities in the state and is staffed by the Oregon Department of Energy. The types and sizes of energy projects subject to EFSC jurisdiction have changed over time. While the bulk of applications have been for electric generation projects, EFSC has also reviewed site certificate applications for electrical energy transmission, pipelines, nuclear research reactors, ethanol production, liquified natural gas storage, and many others. More recently, EFSC has reviewed battery storage as part of other energy projects. EFSC also has ongoing responsibility for approved sites, including monitoring projects going into construction and operation, and reviewing site certificate amendment requests.

65

Total number of site certificates issued by EFSC — **45** are for facilities that are either operating, under construction, or have the appropriate state approvals to begin construction.[1]

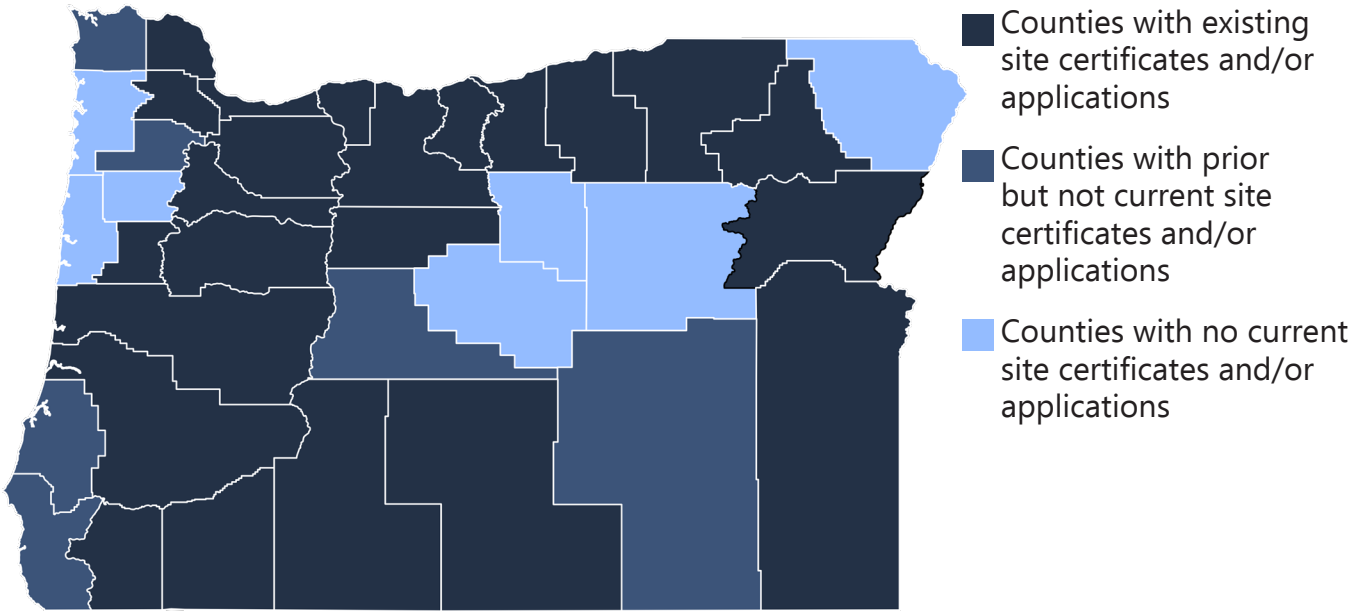
30 Gigawatts

Total capacity of electricity energy generation facilities that have been approved by EFSC.[1]

14.7 Gigawatts

Total capacity of renewable electricity generation under EFSC review, approved to begin construction, under construction, or operating.[1]

Oregon Counties with State Jurisdictional Energy Projects



Site Certificate — under ORS 469.300(26) — means the binding agreement between the State of Oregon and the applicant, authorizing the applicant to construct and operate a facility on an approved site, incorporating all conditions imposed by EFSC on the applicant.

EFSC Jurisdiction Renewable Electricity Projects (Megawatts) [2]

Active

Status	Wind	Solar	Geothermal	Hydro	Battery*	Total MW*
Operational	2,919	412	-	-	56	3,331
In Construction	0	296	-	-	185	296
Approved	440	3,396	-	-	2,983	3,836
Under Review	1,578	5,634	-	-	6,143	7,212
Subtotal	**4,937**	**9,738**	**-**	**-**	**9,367**	**14,675**

Inactive

Status	Wind	Solar	Geothermal	Hydro	Battery*	Total MW*
Approval Expired	1,034	120	35	-	70	1,189
Decommissioned	-	-	-	-	-	-
Denied	-	-	-	80	-	80
Withdrawn	2,646	2,460	180	200	2,701	5,486
Subtotal	**3,680**	**2,580**	**215**	**280**	**2,771**	**6,755**

Total MW	**8,617**	**12,318**	**215**	**280**	**12,138**	**21,430**

**Standalone battery energy storage system projects are not state jurisdictional. Storage values provided above include storage approved by EFSC that was part of a larger site approval but are not included in the Total MW reported. ORS 469.320(8)(a)(C) allows developers to opt in to EFSC siting approval, but no projects have yet to opt into state jurisdiction.*

Klondike III Wind Project operating in Sherman County



EFSC Jurisdiction Non-Renewable Electricity Projects (Megawatts)[1 2]

Active

Status	Coal	Nuclear	Natural Gas	Other	Total MW
Operational	-	-	3,237	51	3,288
In Construction	-	-	-	-	-
Approved	-	-	-	-	-
Under Review	-	-	-	-	-
Subtotal	**-**	**-**	**3,237**	**51**	**3,288**

Inactive

Status	Coal	Nuclear	Natural Gas	Other	Total MW
Approval Expired	109	5,040	3,636	38	8,823
Decommissioned	550	1,130	415	-	2,095
Denied	-	-	-	-	-
Withdrawn	431	-	5,147	109	5,687
Subtotal	**1,090**	**6,170**	**9,198**	**147**	**16,605**

TOTAL MW	**1,090**	**6,170**	**12,435**	**198**	**19,893**

EFSC Jurisdiction Non-Electricity Generation Projects (Number) — Part 1[1 2]

Active

Status	Research Reactors & ISFSI*	Electric Transmission Line	Natural Gas Storage	Liquefied NG Storage	Total Projects
Operational	3	1	1	-	5
Under Construction	-	1	-	-	1
Approved	-	0	-	-	-
Under Review	-	2	-	-	2
Subtotal	**3**	**4**	**1**	**-**	**8**

Inactive

Status	Research Reactors & ISFSI*	Electric Transmission Line	Natural Gas Storage	Liquefied NG Storage	Total Projects
Withdrawn	-	1	-	2	3
Subtotal	**-**	**1**	**-**	**2**	**3**
Total	**3**	**5**	**1**	**2**	**11**

**Portland General Electric's Independent Spent Fuel Storage Installation Facility at decommissioned Trojan Power Plant.*

Non-Electricity Generation EFSC Projects Summary (Number) — Part 2[1 2]

Active

Status	Natural Gas Pipeline	Ethanol Production	Total Projects
Operational	2	1	3
Approved	-	-	-
Under Review	-	-	-
Subtotal	**2**	**1**	**3**
Total MW	**2**	**2**	**4**

Inactive

Status	Natural Gas Pipeline	Ethanol Production	Total Projects
Withdrawn	-	1	1
Subtotal	**-**	**1**	**1**
Total MW	**2**	**2**	**4**

Energy Costs & Economy

What We Spend

In 2024, Oregon spent $18.9 billion on energy. This is less than the $19.4 billion spent in 2022, primarily due to reductions in transportation fuel costs which had risen sharply during the COVID-19 pandemic. Despite this, energy costs have largely increased in the last decade as Oregon's population and economy have grown.[1] Oregon's per capita energy expenditures rose from an estimated annual consumer cost of $3,736 in 2014 to $4,439 in 2024, an increase of $703.[i] Energy expenditures include electricity and fuel for homes and businesses, industrial energy uses, and petroleum used in the transportation sector.

Since 2014, Oregon is spending $2.5 billion more on electricity and $1.3 billion more on petroleum fuels annually. Transportation accounts for about half of our state's energy expenditures and sees the largest swings in price due to volatile global and regional petroleum fuel markets. This variability in transportation fuel costs is the primary driver for fluctuations in Oregon's total energy expenditures. In 2024, Oregonians spent over $9.5 billion on transportation fuels and most of it went to other states and countries where extraction, processing, and refining of transportation fuels occurs.[1]

$18.9 billion

Amount Oregonians spent on energy in 2024, over 57 percent more than the amount in 2020.[1]

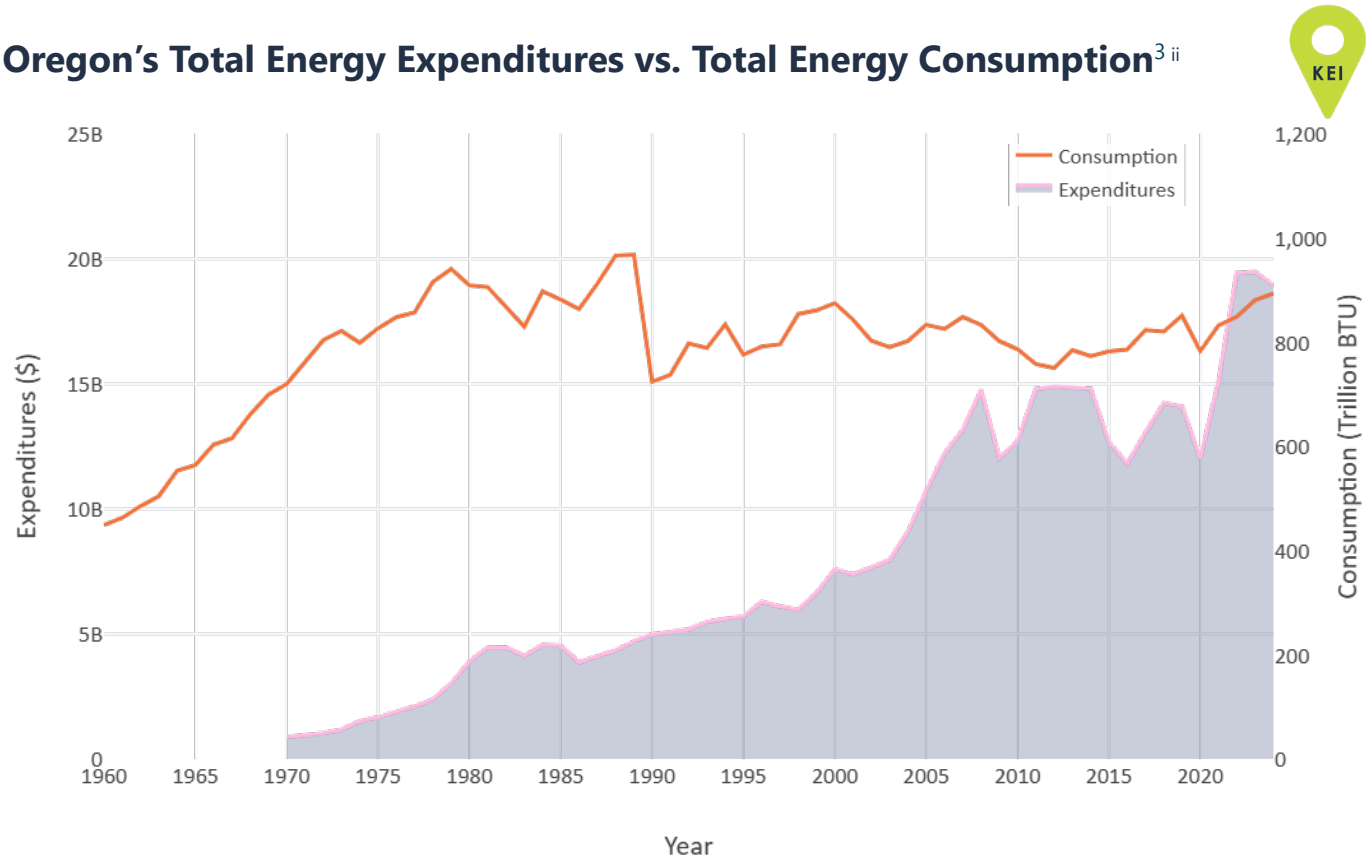
14.86 cents

Oregon's average residential retail price per kilowatt hour of electricity for 2022.[2]

5.73%

Percentage of Oregon's GDP spent on energy in 2024.[1]

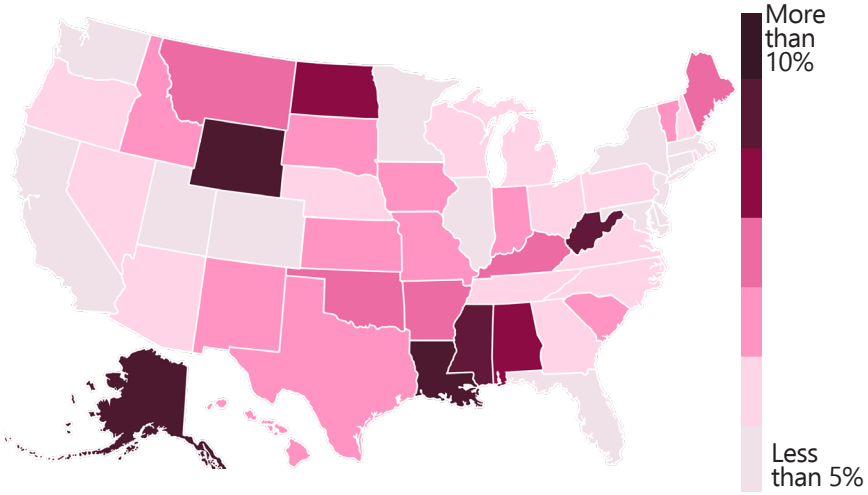
Oregon's Total Energy Expenditures vs. Total Energy Consumption[3] [ii]



i Estimates are in 2026 dollars and not adjusted for inflation over time.
ii Figures show expenditures in nominal dollars, which are not adjusted for inflation.

Oregon's energy expenditures as a percentage of the state's gross domestic product was 5.73 percent in 2024, which is above the 5.15 percent national average.[1]

State Total Energy Expenditures as a Percentage of State Gross Domestic Product (2024)[1]

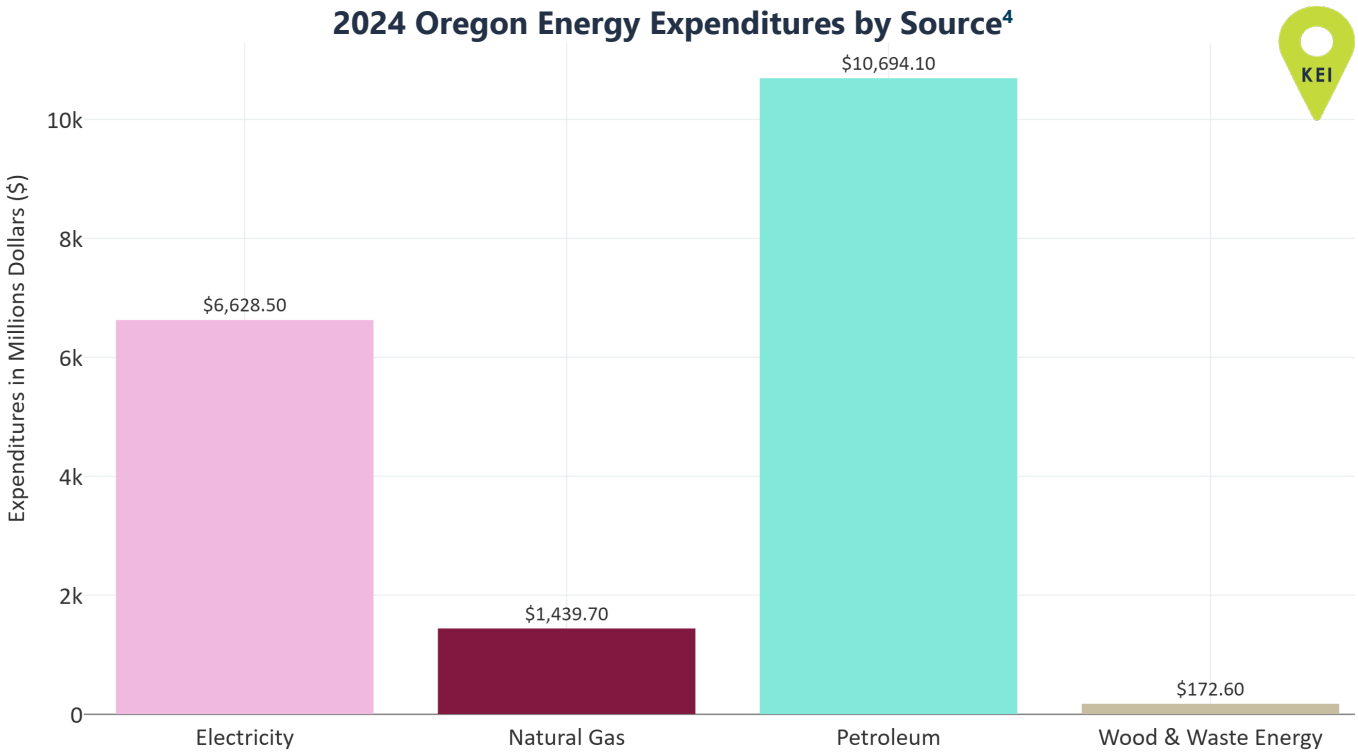


Oregon Energy Expenditures by Source

Oregon's industrial, commercial, residential, and transportation sectors spent over $18.9 billion on energy from petroleum, electricity, natural gas, wood, waste, and some coal in 2024.[1]

The petroleum category is dominated by transportation fuels. The transportation sector accounts for over half of all energy expenditures mainly for petroleum products, though it also includes some natural gas and electricity expenditures. Unlike these energy commodities, which are subject to regulation by the Oregon Public Utility Commission, petroleum product prices are unregulated and experience a high level of price volatility. The price per unit of energy of petroleum products may rise and fall over the short periods of time, but Oregonians are spending more on transportation fuels over the long term. In 2024, Oregon spent $1.3 billion more on petroleum products than in 2014.[1] This trend is expected to continue, and with elevated gas and diesel prices throughout much of 2026, it is likely overall energy expenditures in Oregon will rise over the next two years.

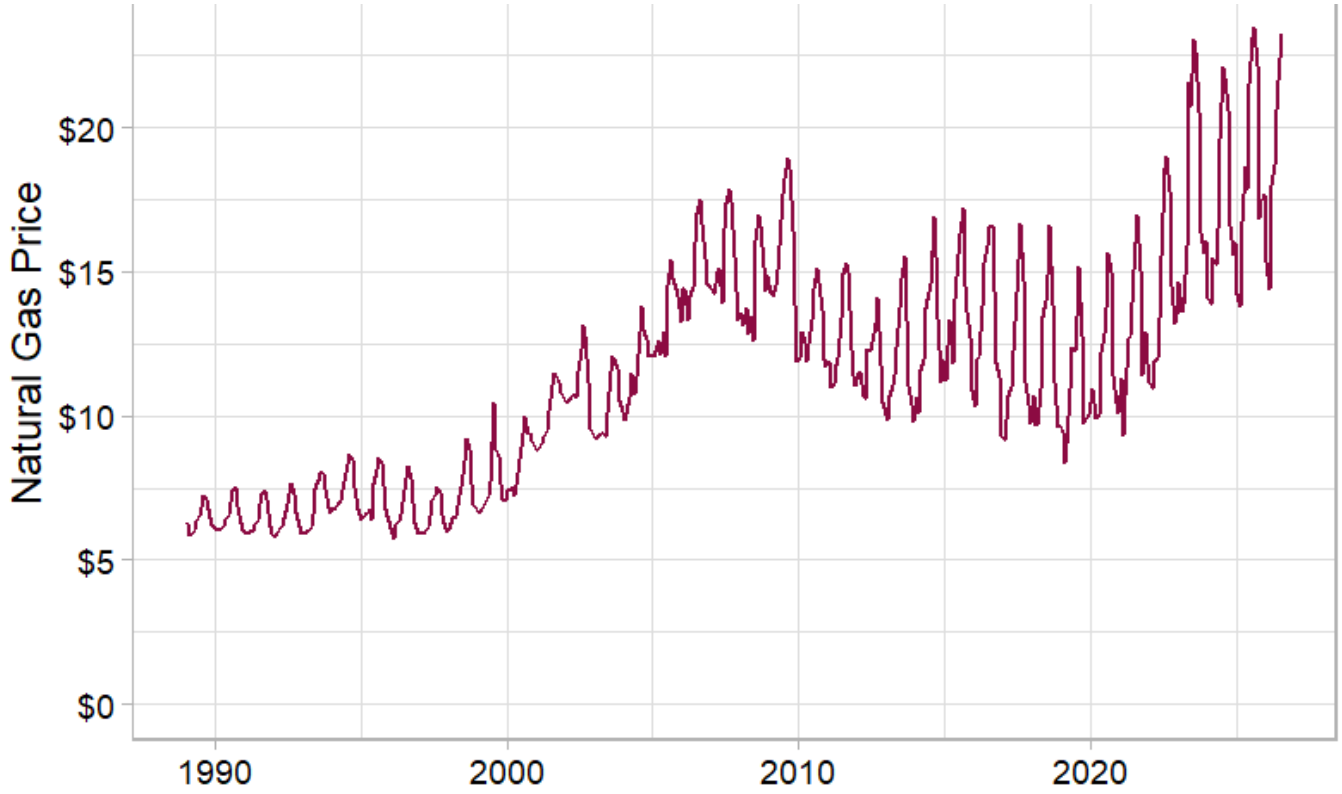
2024 Oregon Energy Expenditures by Source[4]



The average price of electricity increased slowly from 2020 through 2024, but regulation of retail rates by the OPUC and local governing boards of consumer-owned utilities keeps retail electricity prices from being as volatile as transportation fuel costs. Since 2022, many electric utility customers have seen rate increases, with the highest increases for investor-owned utility customers.[5]

Natural gas expenditures constitute a smaller portion of total consumer energy expenditures in Oregon, primarily because not all people and businesses use natural gas. Natural gas retail prices are also regulated by the OPUC, and like electricity prices, have increased since 2020.[2] Customers have faced higher retail prices due to a variety of factors, including higher natural gas supply costs.[6] Investments in energy efficiency, low-carbon alternative fuels, and other options to decarbonize Oregon's existing natural gas system could increase the cost of doing business for utilities and contribute to future retail rate increases.[7] [8]

Oregon Price of Natural Gas Delivered to Residential Consumers over time[9]



Home Energy Burden

The Oregon Energy Wallet

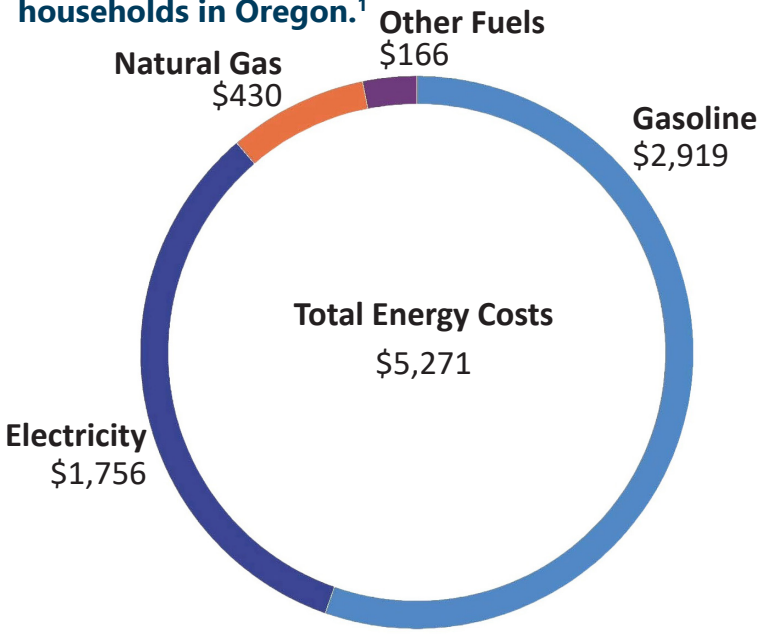
An energy wallet provides a high-level view of what the average household is spending on energy sources in a year. These expenditure averages consist of utility bills for electricity and gasoline for transportation (including electricity used for charging electric vehicles at home), the purchase and delivery of propane and natural gas, and costs associated with solar installation and operation. These average costs create a picture of what Oregonians spend on energy and provide insight into how changes in energy costs affects household budgets.

In 2024, Oregon residents spent an average of $5,271 per year on energy-related expenses. Of those costs, electricity accounted for an average of $1,756 per year, natural gas an additional $430, and other fuels (propane, fuel oil, solar etc.) accounting for $166. However,

the largest energy-related expense for Oregonians is gasoline sales for transportation purposes, accounting for approximately $2,919 per year across households in the state, or 55 percent of all energy costs.[1]

The Oregon Energy Wallet data provide insight into the percentage of income dedicated to energy costs and how that may affect Oregonians' budgets. However, to better understand the effect of energy expenditures on household finances, average household energy expenditures are compared against average income, which provides the commonly used metric of energy burden.[iii]

2024 Average annual energy costs for single family households in Oregon.[1]



Effects of global energy market conditions on Oregon's economy

The costs of transportation fuels influence the costs for goods and services that rely on those fuels. Gasoline and diesel are important energy sources for the transportation of goods and commodities, as well as people. Fuel prices rose in 2026, and if they remain elevated, Oregon residents can expect to pay more for fuel in 2026. Stanford University estimates that the average U.S. household will pay an additional $857 in 2027, but since Oregon fuel prices are higher than the national average, Oregonians are likely to pay more. Jet fuel prices have increased by approximately 75 percent. Fuel costs account for roughly 30 percent of total airline operating costs, which are likely to translate into higher prices for travelers. Higher diesel prices raise costs for agricultural production and transportation, which affect prices for food and goods. This volatility in the fuel energy market presents an ever-growing challenge for Oregonians and Oregon businesses and industry. It is particularly challenging for lower-income families, who must dedicate an ever-increasing portion of their total income to energy expenditures.[8]

Oregon households earning the median income ($83,011 per year in 2024 based on an average household size of 2.42) spend 6.34 percent of their total income on energy expenditures.

This increases dramatically to 13.19 percent for households living at or below the poverty line ($39,950 per year), though energy use for these households may be substantially different from the average.[1 2] A household is considered energy burdened if 6 percent or more of their income was dedicated to energy expenses and severely burdened at 10 percent.[3]

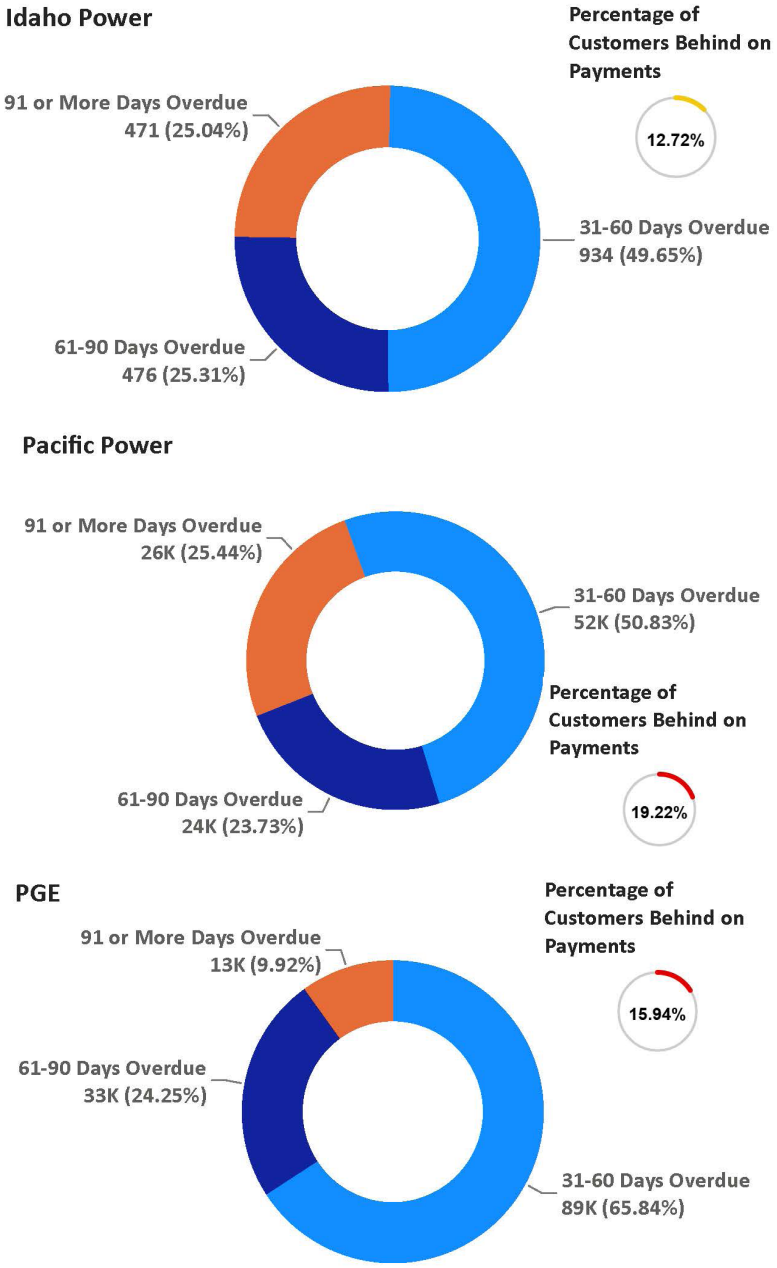
iii The energy wallet used for this discussion estimates average household energy expenditures by calculating total energy costs across all types of energy used in the state and normalizing that value to the level of the household. It does not examine the average energy use of a representative household, which varies significantly in the amounts and types of energy used. See https://energywallet.epri.com/en/current.html for a more thorough discussion of the metric.

Analysis of current data finds that all Oregonians at or below median income would be classified as "energy burdened." While it should be noted that previous energy burden analysis did not include transportation fuels, including these costs allows for a more complete picture of total household energy expenditures. These energy burden statistics demonstrate the disproportionate effect of energy costs on lower income households and highlight the increasing need for affordable efficiency and energy solutions for those who need them most. Additionally, for those residents unable to afford these high energy costs, many face falling behind on payments or the threat of disconnection due to non-payment. High energy costs can also lead to residents choosing between paying energy bills or purchasing everyday necessities like food, childcare, medical expenses, clothing, etc.

Investor-owned utility data submitted to the Oregon Public Utility Commission provide greater insight into the challenges emerging from high energy costs. In March and April 2026, 15.96 percent of reporting electric utility customers and 8.08 percent of reporting natural gas utility customers were declared in arrears and behind on payments (300,363 customers in total). Of those customers, 7,123 experienced utility disconnection due to non-payment, and 110,443 received disconnection notices. Additionally, some Oregon households take part in utility discount programs, and 253,070 customers were reported to have received a discount on their bills.[7]

Taken with the Oregon Energy Wallet, the number of Oregonians reliant on bill discount programs and facing either arrears or disconnection suggests energy affordability remains a significant challenge for Oregon residents, especially those at or below the federal poverty line.

March and April 2026 IOU Electric Utility Energy Burden Data[7]



The Oregon Energy Strategy identified energy efficiency as one of the cheapest and best energy resources available. By identifying households with high energy burdens and prioritizing them for investment, energy efficiency can be an effective solution in reducing overall home energy consumption.

Water, sewage, and waste removal are additional costs often associated with utility/energy expenses. On average, a household in 2026 can expect to pay $1,735 per year in non-energy related, basic utility costs.[4–6]

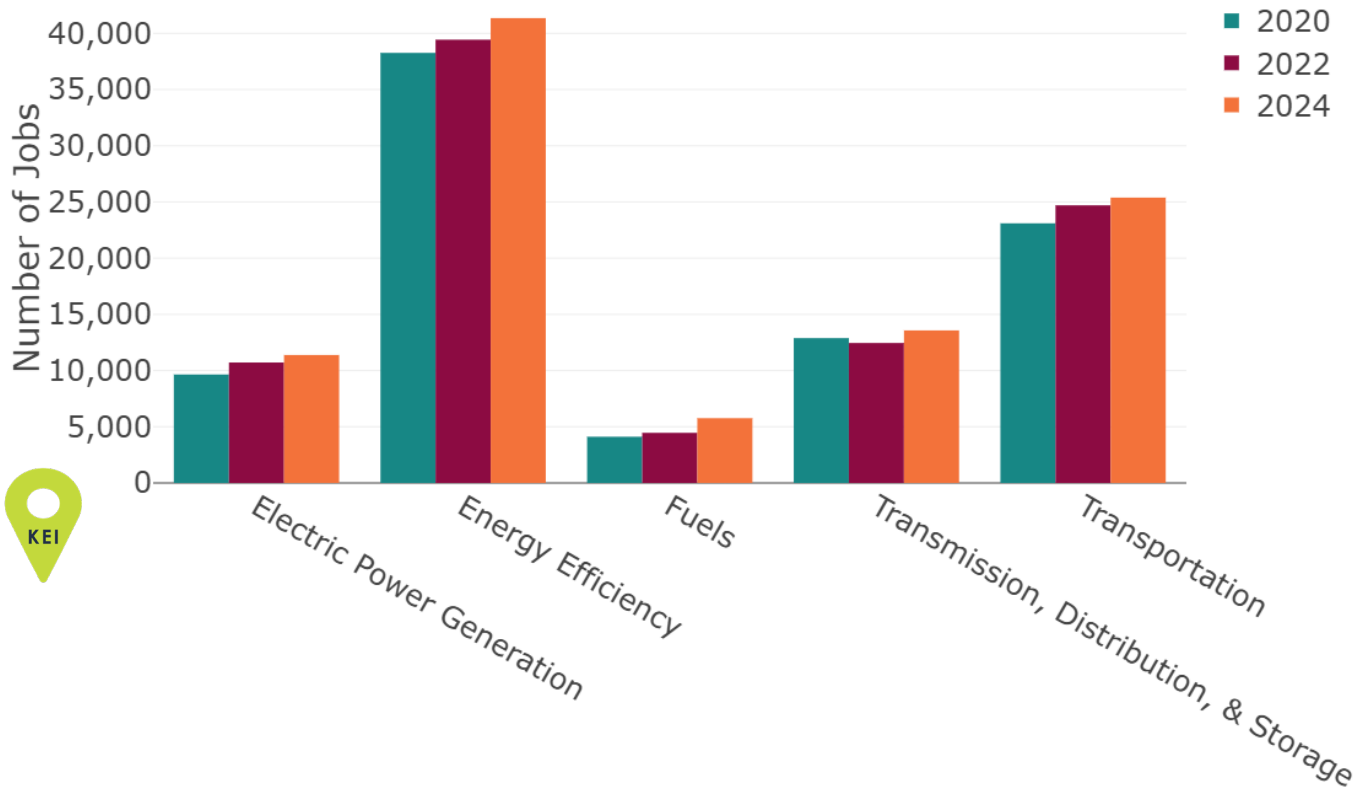
Energy Jobs

Oregonians hold many different types of jobs in the energy industry — from energy utility workers to wind turbine technicians to HVAC[iv] installers.

Energy employment is often sorted into energy efficiency, traditional energy, and transportation sector jobs. In Oregon, most energy-industry employees work in energy efficiency, including high-efficiency and traditional HVAC, and renewable heating and cooling firms, in addition to other specialized areas. Traditional energy jobs include power generation, transmission, distribution, and storage as well as jobs related to the extraction, processing, production, and distribution of fuels. Transportation jobs include the manufacturing and distribution of parts for gasoline as well as plug-in hybrid, battery electric, and hydrogen fuel cell vehicles for all industries from large scale industrial vehicles to small recreational vehicles such as golf carts.

There were 97,466 Oregonians employed in the energy industry in 2024.

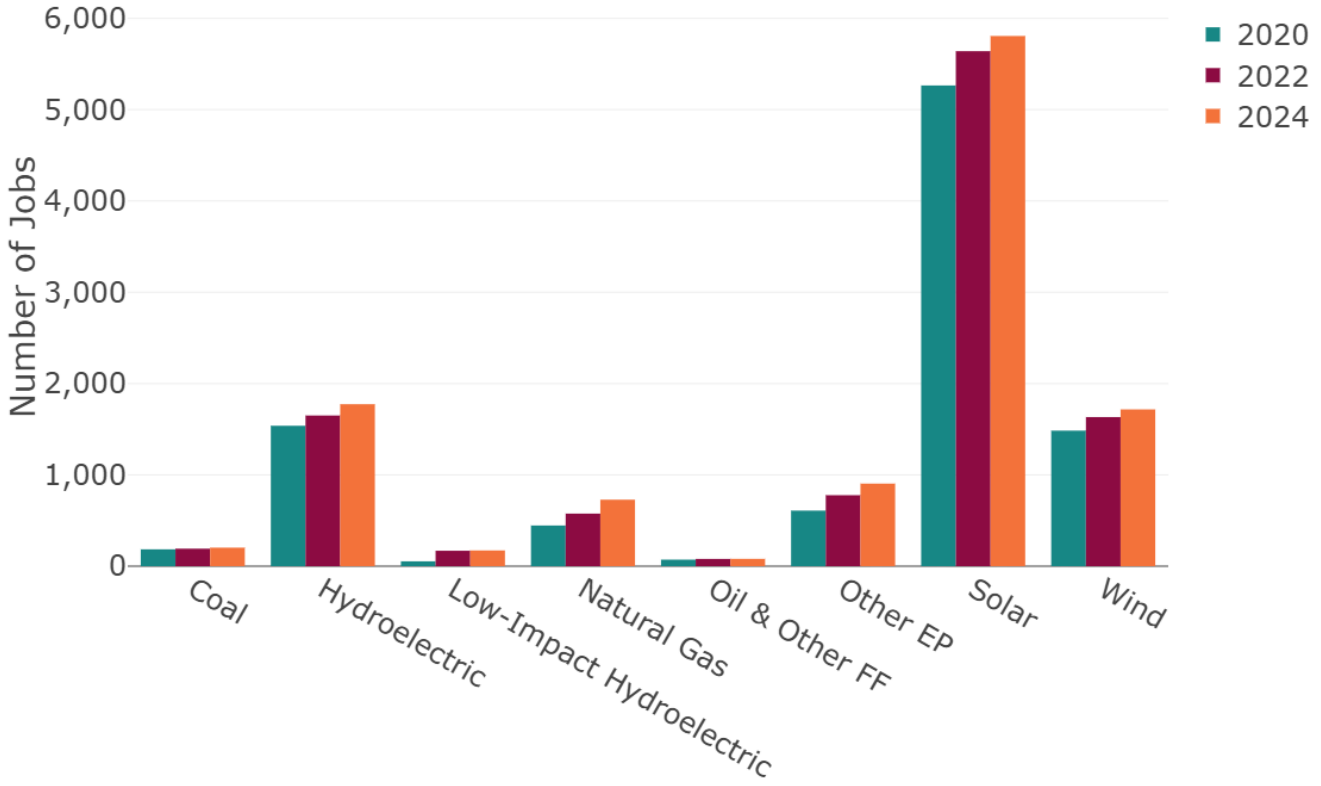
Number of Energy Jobs in Oregon by Type (2020, 2022, 2024)[10 11]



The electric power generation sector in Oregon employed 11,917 workers in 2024, an increase of 1,200 jobs from 2022.[10 11] In 2024, there were 5,807 Solar jobs in Oregon – 167 more than 2022. In Oregon, the solar industry has rapidly expanded since the early 2000s due to many factors, including solar potential, previous incentive programs, and clean energy policies in the state. In 2024, hydroelectric generation and wind energy provided 1,774 and 1,717 jobs, representing gains of 124 and 84 jobs from 2022, respectively.

iv HVAC stands for heating, ventilation, and air conditioning.

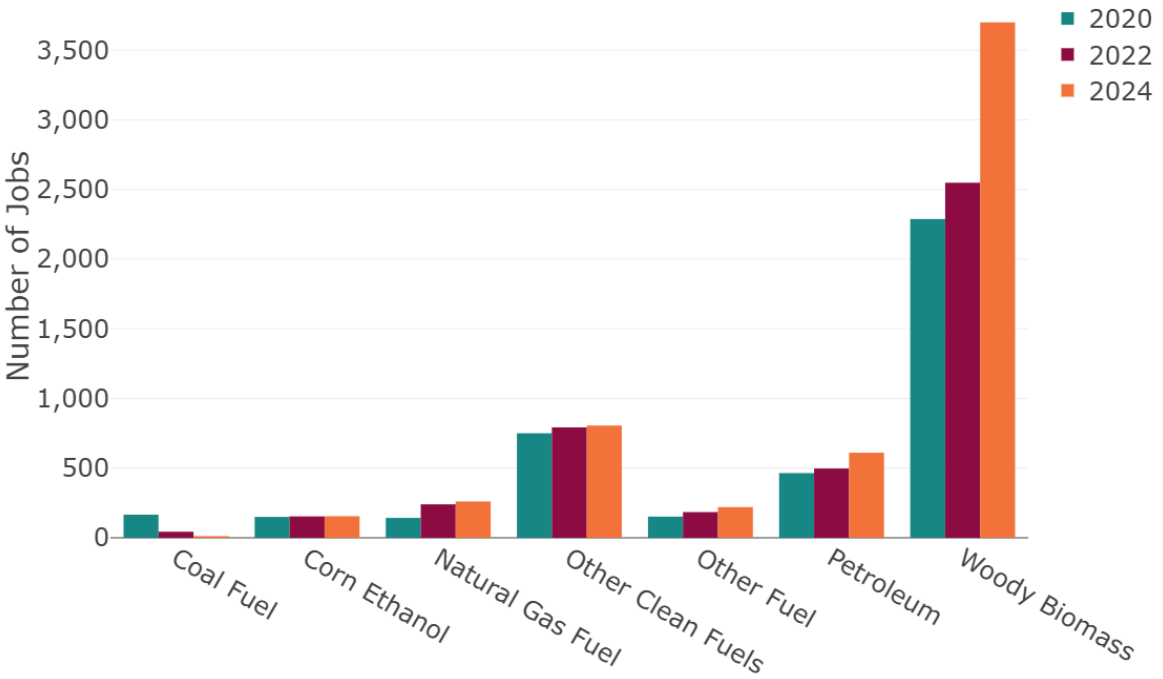
Electric Power Generation Jobs in Oregon by Technology (2020, 2022, 2024)[10 11]



The fuels sector in Oregon employed 5,234 workers in 2024, 773 more than 2022.[10 11] Fuel jobs are positions involved in the extraction, processing, production, or distribution of specific energy sources that are combusted or spent to generate electricity, produce heat, and power transportation. For example, natural gas jobs include all work associated with extracting and preparing it for use, generating fuel products from it, and transporting it to end users.

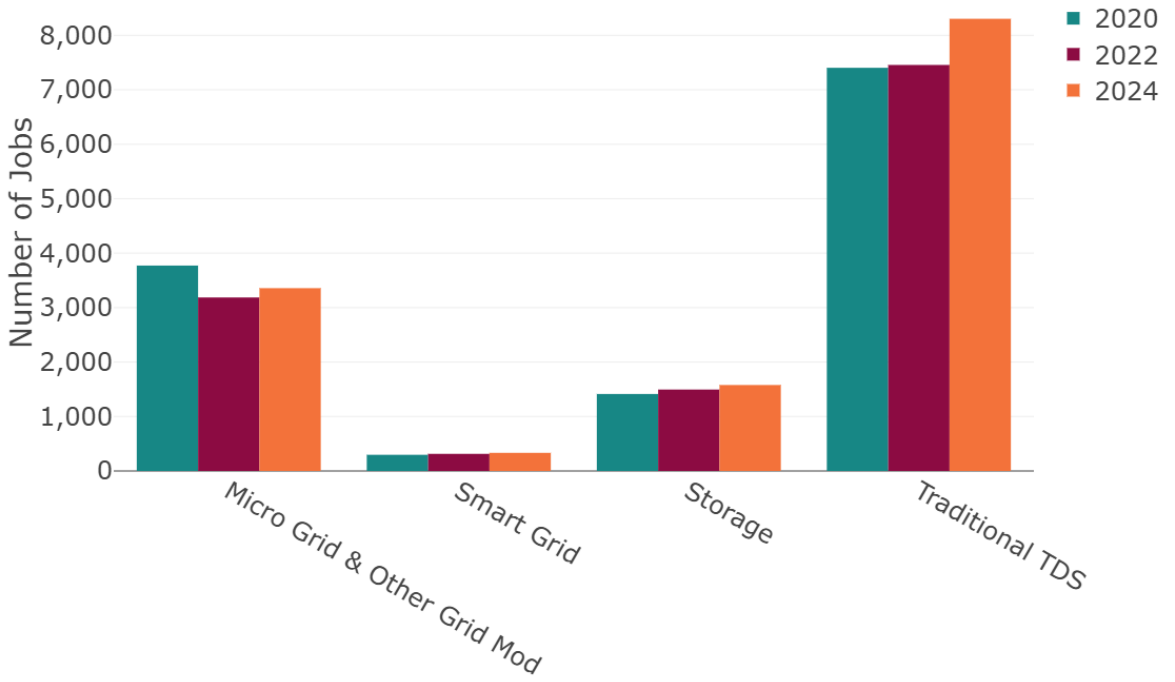
More than half, or 3,700, of the fuel jobs in Oregon are related to woody biomass.

Fuels Jobs in Oregon by Resource (2020, 2022, 2024)[10 11]



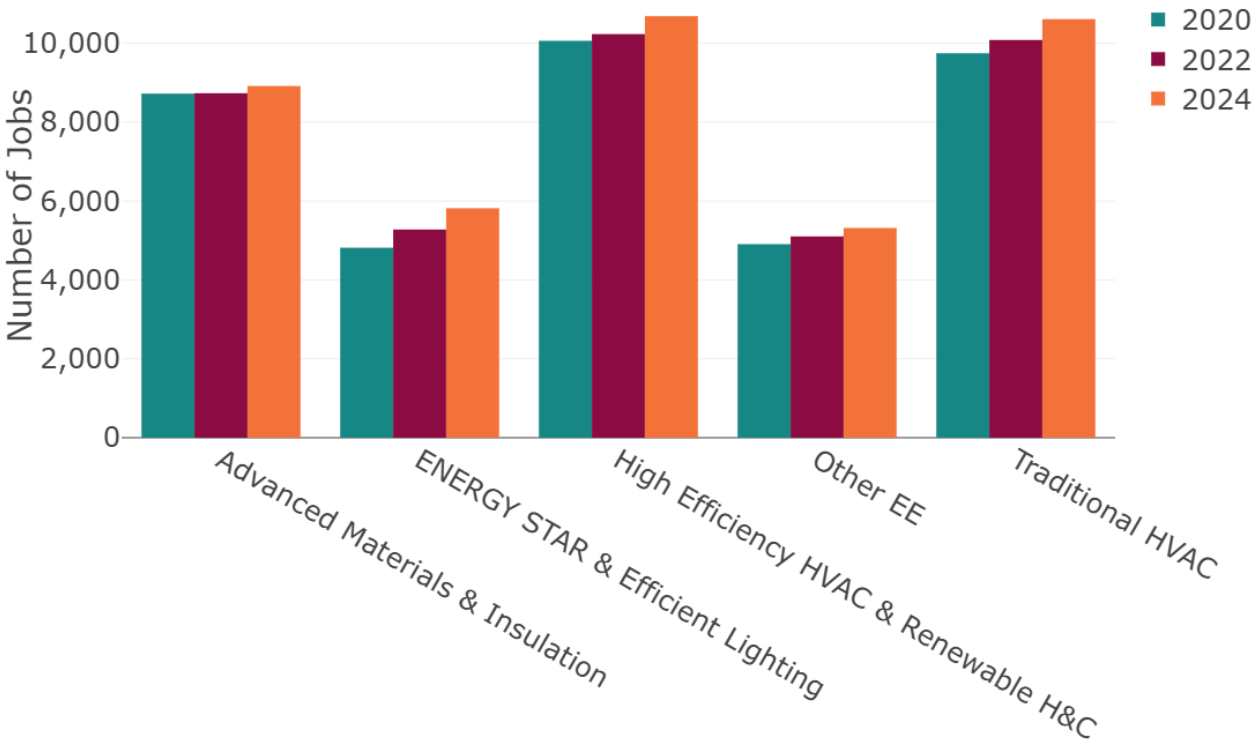
The transmission, distribution, and storage sector in Oregon employed 13,572 workers in 2024, an increase of 1,120 jobs from 2022.[10] [11]

Transmission, Distribution, and Storage Jobs in Oregon (2020, 2022, 2024)[10] [11]



The energy efficiency sector in Oregon employed 41,357 workers in 2024, up 1,920 jobs from 2022.[10] [11] Employment in the categories of High Efficiency & Renewable Heating & Cooling and Traditional HVAC both grew from 2022 and account for more than half of the energy efficiency sector jobs in Oregon in 2024. Traditional HVAC companies are companies where more than 50 percent of installations are not considered high efficiency. High Efficiency & Renewable Heating

Energy Efficiency Jobs in Oregon by Technology (2020, 2022, 2024)[10] [11]



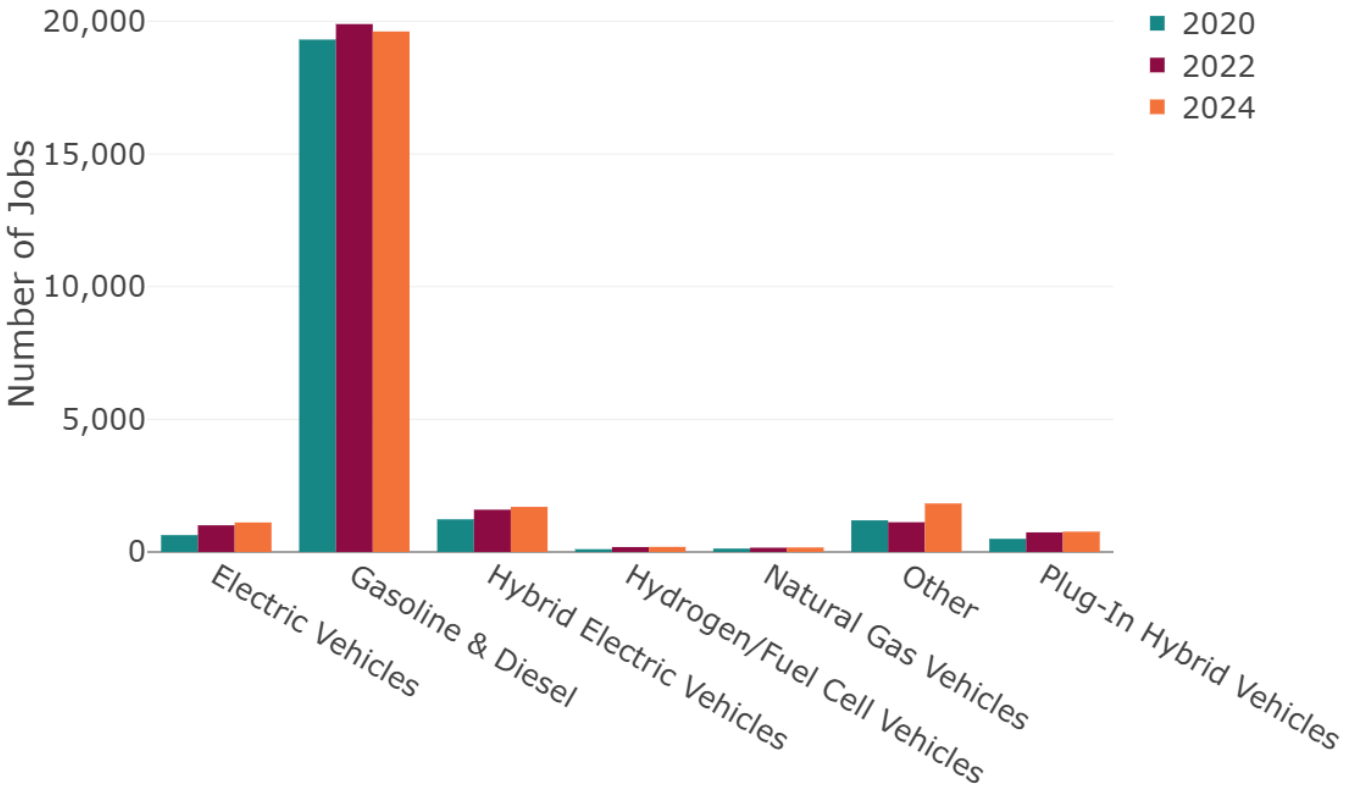


Heat pump installation supported by the Oregon Rental Home Heat Pump Program

& Cooling indicates businesses where more than 50 percent of installations performed are considered high efficiency, such as heat pumps. The transportation sector in Oregon employed 25,386 workers in 2024, an increase of 684 jobs from 2022.[10] [11]

The majority of jobs in the transportation sector remain in the gasoline and diesel sectors. In 2024, the motor vehicle commodity flows, which are jobs related to the transportation of motor vehicles, were added to the dataset. The commodity flows contributed 707 jobs to the "other" category in 2024.

Transportation Jobs in Oregon by Technology (2020, 2022, 2024)[10] [11]



Oregon Energy Strategy Jobs Analysis

The Oregon Energy Strategy is a comprehensive, first-of-its-kind report developed by the Oregon Department of Energy under House Bill 3630 (2023) that outlines pathways, policies, and recommended actions to help the state meet clean energy goals while supporting affordability and reliability. Created through extensive collaboration with Tribes, agencies, energy partners, and the public, the strategy evaluates five key pathways — energy efficiency, clean electricity, electrification, low-carbon fuels, and resilience — and examines their impacts on household energy costs, air quality, public health, jobs, and the economy. The energy strategy offers policy recommendations and near-term legislative actions focused on program support, agency coordination, energy burden reduction, and environmental justice. Its development relied on broad engagement over two years, including an interagency steering group, advisory groups, working groups, public sessions, and feedback.[12]

To support the pathways and actions identified in the Oregon Energy Strategy, ODOE worked with the Clean Energy Transition Institute and BW Research to conduct a jobs analysis. The jobs analysis indicates that Oregon's clean energy transition is likely to generate substantial net employment gains, with total energy sector jobs projected to grow 7 to 12 percent by 2035 and 11 to 19 percent by 2050. Most new jobs stem from major growth in the electricity and building sectors, driven by expanded grid infrastructure, utility-scale renewable development, and investments in energy efficiency and electrification. The fuels sector sees modest net gains, primarily from hydrogen, while transportation experiences job displacement as electric vehicles reduce demand for fuel stations and maintenance. These shifts highlight both the need for strategies to support affected workers and the importance of developing robust training pipelines to ensure Oregon has the skilled workforce required to meet its clean energy goals.[13]

In addition, ODOE is partnering with the University of Oregon's Institute for Policy Research and Engagement to conduct a workforce needs assessment that will give the state information needed to understand strengths and weaknesses in Oregon's clean energy workforce and training pipelines.





Energy Efficiency

Oregon's Second Largest Resource

9th

Oregon's 2025 rank among U.S. states for energy efficiency by the American Council for an Energy Efficient Economy.[6]

Energy efficiency, the use of less energy to perform the same task or produce the same result, plays a critical role in Oregon. It remains the second largest resource in the state after hydropower, and Oregon has consistently met increased demand for electricity by implementing energy efficiency strategies.[1] The Northwest Power & Conservation Council reports that since 1978, the Pacific Northwest has provided about 8,247 average megawatts of savings through efficiency programs and improvements.[2] That's more electricity than the whole state of Oregon uses in a year.

In 2010, Oregon's per capita energy use was 204.9 million Btu, and by 2024 it was 209.5 million Btu, despite the state's population growing a half a million people to 4.3 million people from 3.8 million.[3] [4] One reason for this slowed increase is energy efficiency.[5] Oregon's gains in energy efficiency have been helped by federal appliance standards, state policies and programs, natural gas and electric utility programs, Energy Trust of Oregon utility programs, and other non-governmental organizations. Energy efficiency gains are cumulative and continue paying dividends for the region over time. Of the region's cumulative energy savings, 59 percent comes from utility and Bonneville Power Administration programs.[2]

While Oregon has long remained in the American Council for an Energy Efficient Economy's (ACEEE) top ten ranking, the state fell to eleventh place in 2022.[7] The latest ranking puts Oregon back into the top ten, largely due to the adoption of statewide commercial Building Performance Standards.

Heat Pump Purchase Program

The Oregon Heat Pump Purchase Program represents a major investment in decarbonizing Oregon's homes; backed by a $24 million EPA Climate Pollution Reduction Grant and administered by ODOE. The program began in June 2025 offering 12,000 incentives of $2,000 each, spanning owner-occupied homes (2,000 units), rental properties (6,000 units), and new residential construction (4,000 units).[8]

The Heat Pump Purchase Program builds on Oregon's success with earlier programs like the Oregon Rental Home Heat Pump and Community Heat Pump Deployment Programs but streamlines the process with a simplified one-step incentive via contractors.[9]



Heat pump installations supported by ODOE incentives.

Oregon Electricity Savings

8,247
Average megawatts of regional electricity savings from energy efficiency (1978-2024).[2]

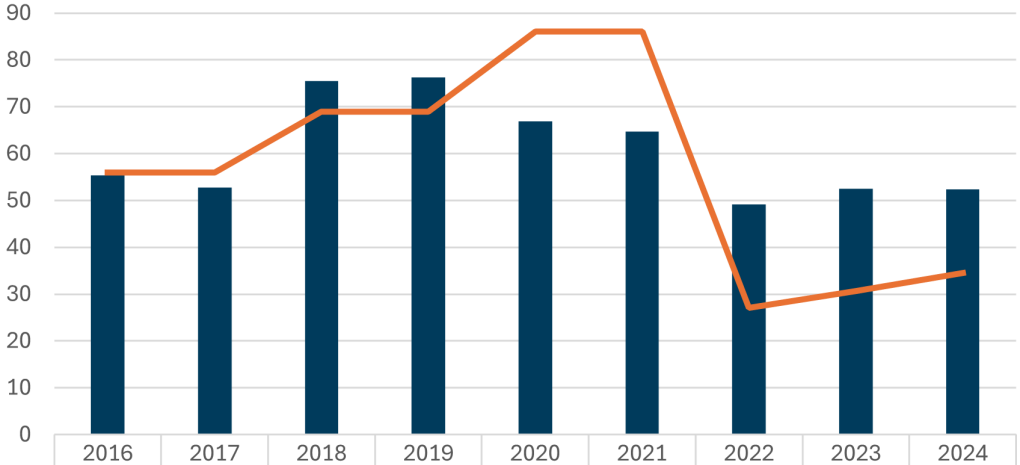
2,412
Average megawatts of Oregon electricity savings from energy efficiency (1978-2024).[14]

The Northwest Power & Conservation Council tracks energy savings in the region against goals set forth in the Northwest Regional Power Plan.[10] The Council publishes a power plan about every five years. The most recent is the 2021 Power Plan, which set a regional conservation target of 750 – 1,000 average megawatts by 2027.[11] In 2026, the Council published the draft 9th Northwest Power Plan, which proposes a new regional conservation target of 1,060 aMW by 2032.[12] The Council further proposed a demand response goal of 590 MW. As of the time of publication of this article, the Council was reviewing comments submitted on the draft 9th Power Plan, including comments from the Oregon Department of Energy. A key innovation in development of the 9th Power Plan has been modeling the region as 17 zones, which provides more granular data on the avoided cost of energy efficiency and marginal cost of resources across the zones. The final energy efficiency, demand response, and other goals will be published in the final 9th Northwest Power Plan, following the Council's review and consideration of comments to the draft plan.

The Regional Conservation Progress Report to the Northwest Power & Conservation Council in September 2024 evaluated progress toward the targets set in the 2021 Plan and noted that the region achieved 160 average megawatts of energy savings from conservation measures in 2024, maintaining the trajectory set in the first plan to meet or exceed the savings achievement targets set.[13]

Bonneville Power Administration and individual utilities set goals for energy efficiency based on the most recent Council power plan goal, but to assess progress as a state, ODOE calculated a goal for Oregon based on the regional goal. This analysis illustrates Oregon's progress within the regional context but does not indicate whether or not BPA and Oregon utilities met their individual targets. ODOE determines this energy efficiency goal by assuming Oregon will meet a percent share of the Northwest Power & Conservation Council energy efficiency goal equivalent to its percent share of electricity consumption compared to the region. The average megawatts shown in the figure below reflect that percentage.

Oregon Electricity Savings & Estimated Share of the 2021 Power Plan Goal (aMW)[14]

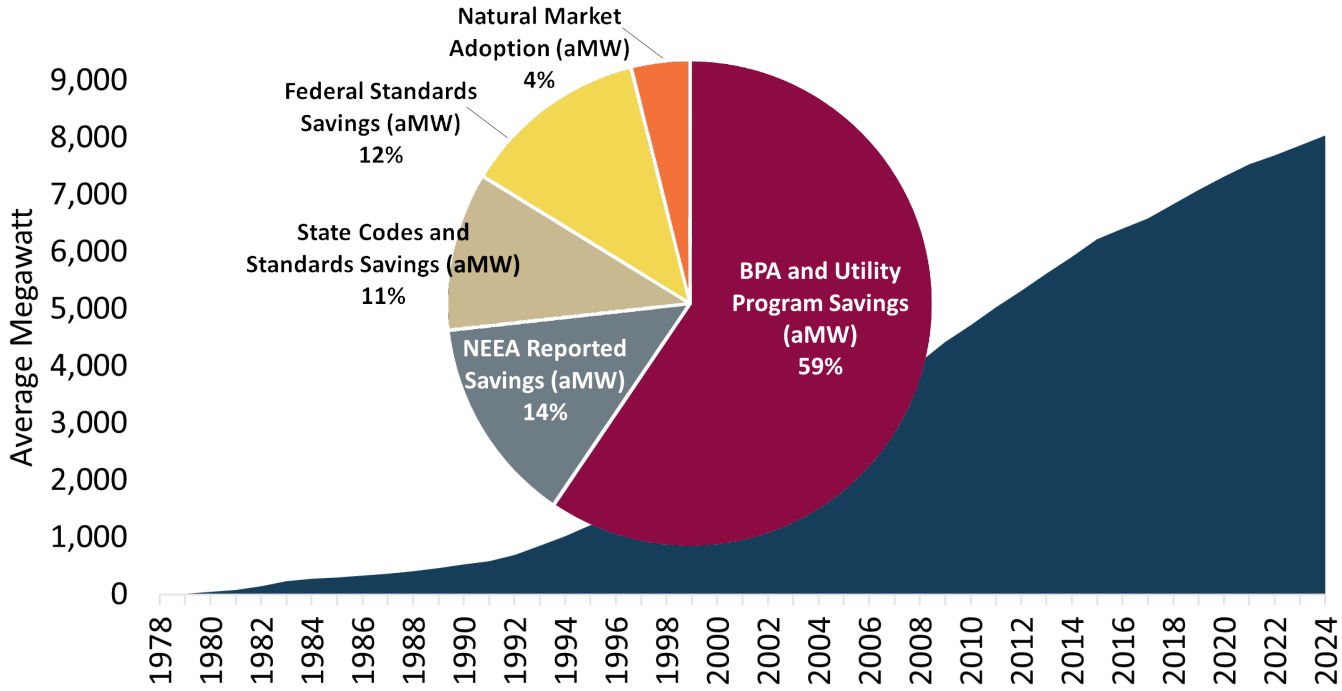


	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Oregon Savings	55.3	52.8	75.5	76.2	66.9	64.7	49.1	52.5	52.4
Estimated Oregon Share of Goal	56.0	56.0	69.0	69.0	86.0	86.0	27.0	30.6	34.5

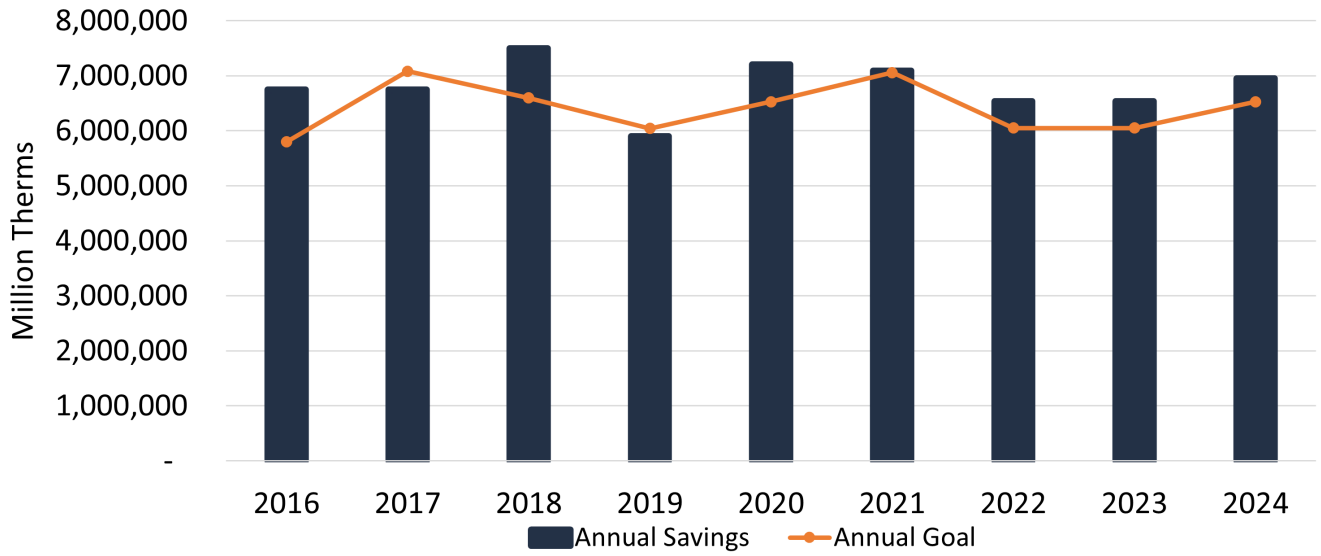
i ODOE used 750 aMW as the target, based on the 2021 Power Plan goal range of 700 to 1,000 aMW.[13]

Oregon energy efficiency achievement has varied over the last nine years, as shown in the varying heights of the bars in the chart. The annual goal shown as the line on the chart also varies, depending on the amount of energy consumed during the year and updates to the regional energy efficiency goals. Oregon has largely achieved its proportional share of the regional goal since 2016. Several factors contributed to underperforming in 2020 and 2021, including increasing costs for energy efficiency measures without subsequent increases in energy efficiency investments. Energy efficiency targets were updated in the 2021 Power Plan, and Oregon has achieved the proportional goal since then.

NWPCC Cumulative Regional Energy Efficiency Savings and Share of Cumulative Savings by Mechanism[15]



The figure above shows cumulative regional energy efficiency savings since 1978. Savings are shown cumulatively because each measure continues to provide efficiency savings over the life of the equipment. The pie chart indicates how each program or mechanism contributed to the savings over the entire time frame from 1978 through 2024. Federal standards include federal appliance and equipment efficiency standard programs such as Energy Star. States in the region set building codes, efficiency codes and may set additional standards for appliances and equipment that are not included in the Federal standards. The Northwest Energy Efficiency Alliance supports building code and energy efficiency standard work in the region and implements market transformation programs that seek to remove market barriers to energy efficiency and drive permanent change through the supply chain.[16] Market momentum is an estimate of additional energy savings attributed to the changing market. The largest slice of energy saving contributions is the utility programs shown in red, this is inclusive of all local utility programs and the regional Bonneville Power Administration programs that some local utilities participate in.



Oregon Natural Gas Savings

Natural gas efficiency goals are developed in each natural gas utility's Integrated Resource Plan submitted to the Oregon Public Utility Commission. The utilities' savings exceeded goals from 2016 and 2018 with a slight decline in 2019, then continued to exceed goals in 2020 through 2024.[7] Energy Trust of Oregon implements energy efficiency programs for the state's natural gas utilities. Programs are funded by customer rates, and cost effectiveness tests of natural gas measures ensure that efficiency investments cost less than building new natural gas infrastructure.

Building Performance Standard Program

Oregon's Building Performance Standard program requires owners of large buildings to dedicate resources for energy management and in some cases to implement energy efficiency projects. These efforts will lead to installation of cost-effective energy efficiency measures that will create operational savings for the building owners, lower energy use, and reduce greenhouse gas emissions. For utilities, these reductions can translate to real demand-side reductions to support meeting their energy efficiency goals.

i A therm is a unit of measurement describing the amount of heat, or energy content, in a unit of natural gas.

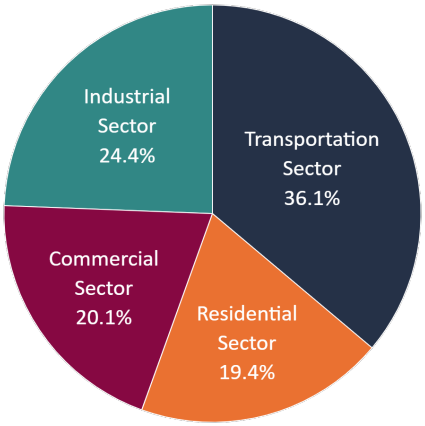
Energy End Use Sectors

Consumption

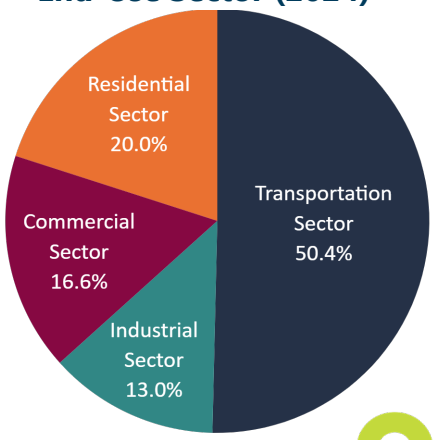
As noted earlier in this section, energy metrics are commonly divided into four end-use sectors: residential, commercial, industrial, and transportation. Consumption and cost of energy vary across the sectors. In 2024, transportation accounted for 36.1 percent of energy consumption and 50.4 percent of expenditures due to the higher per-unit cost of transportation fuels.[1 2 3] The industrial sector used 24.4 percent of the total energy but accounted for only 13 percent of expenditures due to lower per-unit costs relative to the other sectors. Industrial users can buy some types of energy in bulk or are large users and in some cases have different (lower) rates.

Energy consumption across all sectors has remained relatively steady over the last two decades. Increased population, GDP, and more vehicle miles traveled — which all affect energy use — have been offset by efficiency gains and a shift toward less energy-intensive industries, demonstrated in the relatively flat energy use since the early 2000s, as shown in the figure below. However, in the last few years energy consumption has trended upward, particularly in the commercial and transportation sectors. Industrial energy use slightly increased over this time frame, while residential energy use has decreased.

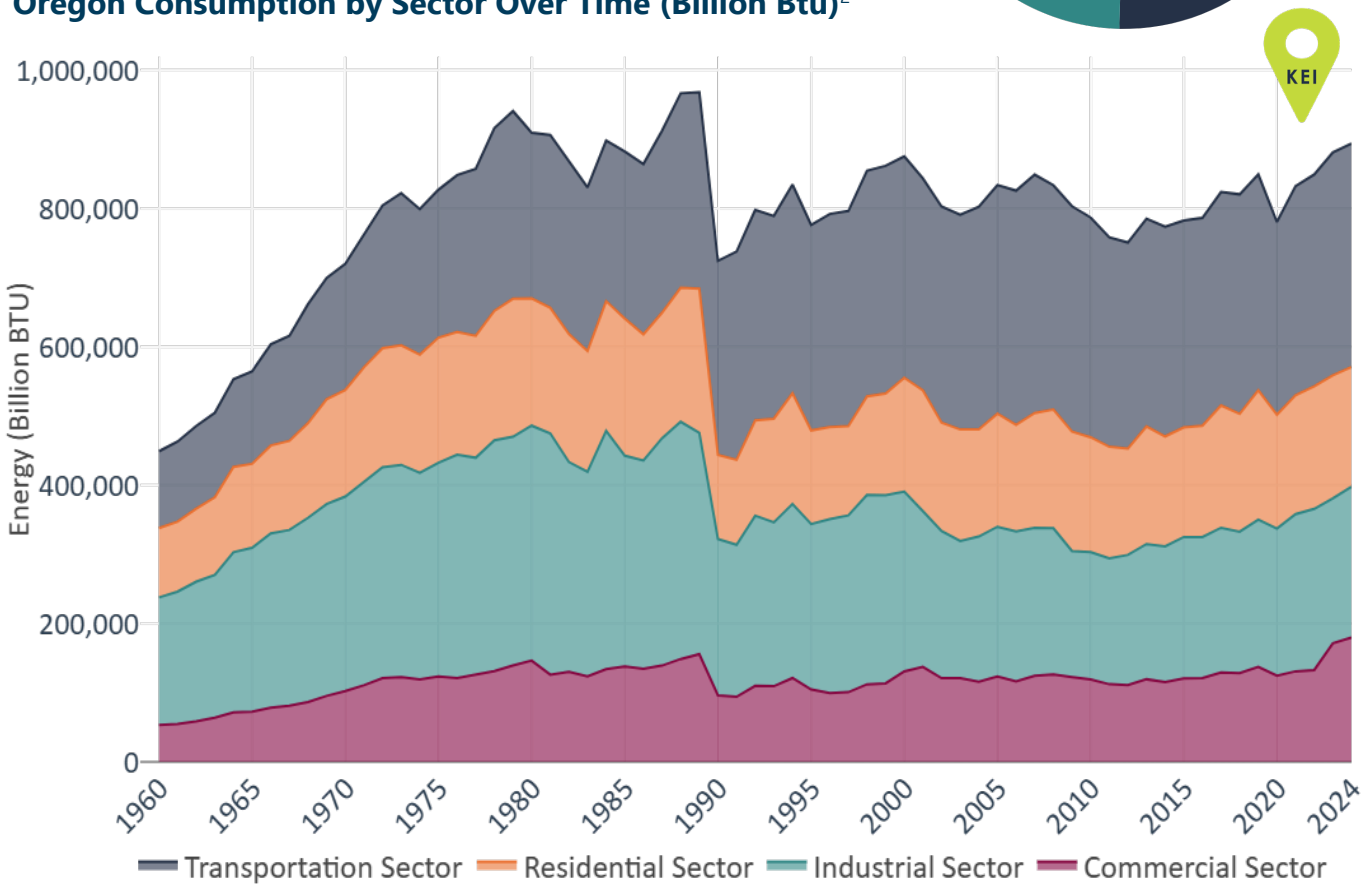
Oregon Consumption by End-Use Sector (2024)[1]



Oregon Expenditures by End-Use Sector (2024)[2 3]



Oregon Consumption by Sector Over Time (Billion Btu)[2]



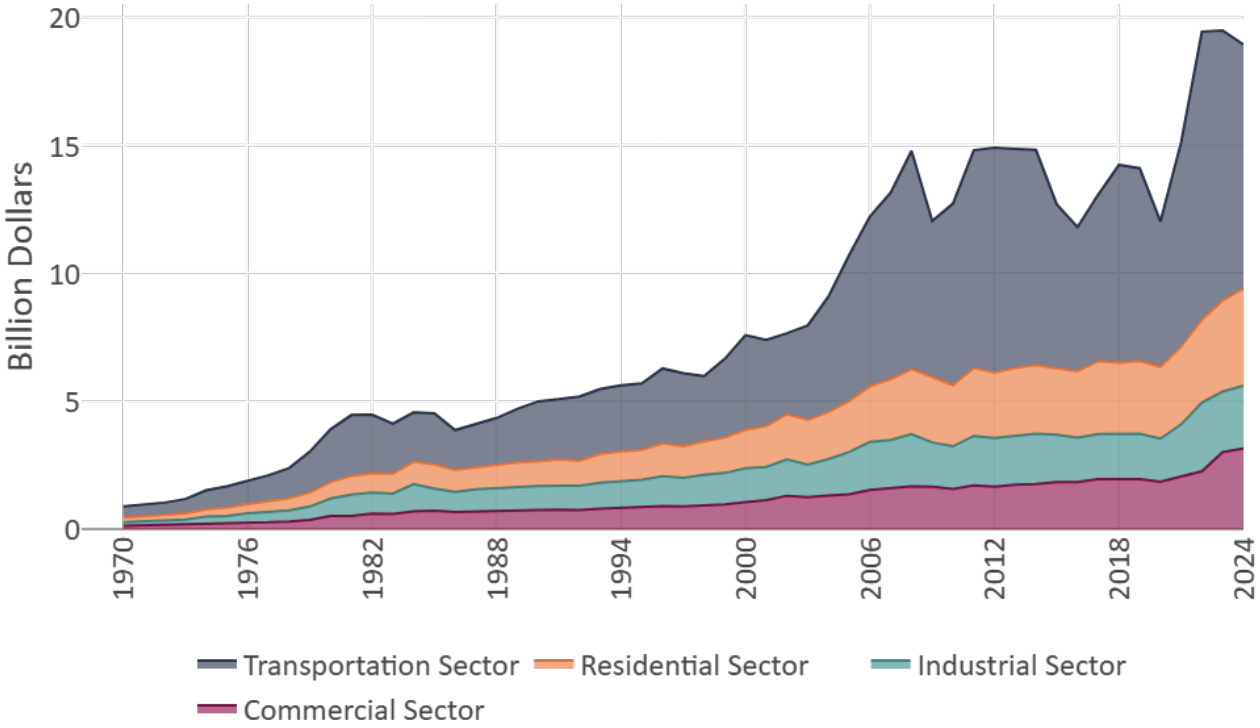
Expenditures

Oregonians' 2024 energy expenditures can be separated by sector. The transportation sector accounts for about half of all expenditures.[1] The large variances in transportation sector expenditures reflect greater price volatility in transportation fuels. Oregon does not have any petroleum resources or fuel refineries, so most transportation expenditures exit Oregon's economy.[3]

The variability in what Oregonians spend on energy is driven primarily by transportation fuel costs. The data show lower expenditures across all sectors for 2019 and 2020 — a sharp drop in transportation and slight decreases in each of the other sectors. This coincides with the start of the COVID-19 pandemic, which affected energy use and prices during this time frame. Initially the pandemic reduced demand for all transportation fuels, resulting in the sharp decrease, but as more people turned to shipping goods to their home, demand for fuel increased sharply.[1] This led to rising expenditures in transportation fuel costs. Since 2022, energy expenditures for the transportation and industrial sectors have been declining while residential and commercial expenditures have been rising in Oregon, largely due to increases in electricity and direct use fuel costs and growing energy demand.

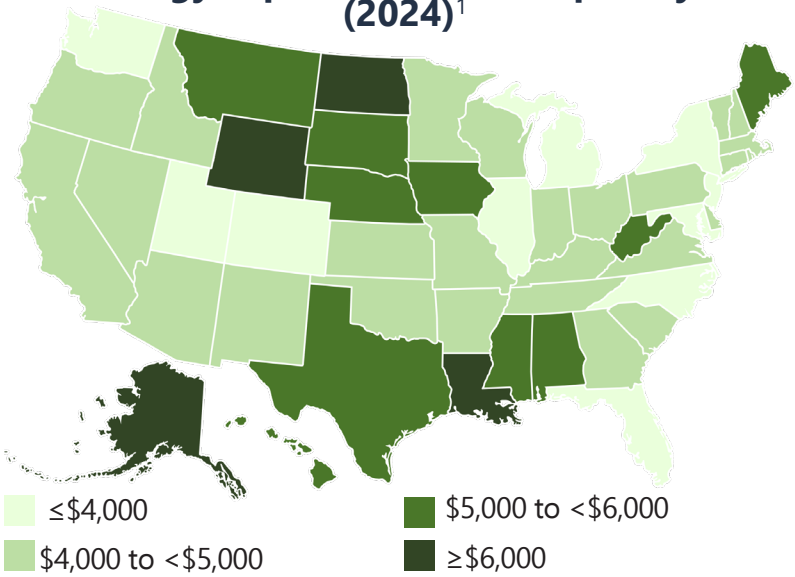
Although the pandemic drove changes in transportation fuels consumption that led to higher costs, expenditures are also rose due to increasing passenger vehicle use. As the economy recovered in post-pandemic years, individuals began driving more. Even with the brief dip during the early pandemic, total vehicle miles traveled in Oregon increased by 15.8 percent between 2020 and 2024.[4] At the same time, crude oil prices – the primary driver of the price of gasoline and diesel – increased from an average closing price of $41.96 per barrel in 2020 to an average of $82.25 in June 2024, with a peak of $127.40 in June 2022.[5] [6] From 2023 to 2024, lower fuel prices led to a reduction in transportation expenditures even as VMT rose. With fuel prices rising considerably in 2025 along with increases in prices for electricity and direct use fuels, it is almost certain that Oregon's total current energy expenditures are higher than in 2024.

Oregon's Total Energy Expenditures by Sector Over Time[1]



The U.S. EIA reports prices in current dollars per million Btu and expenditures in current dollars — the chart is not adjusted for inflation. Learn more: https://www.eia.gov/state/seds/

U.S. Energy Expenditures Per Capita by State (2024)[1]



$4,440

Per capita energy expenditures in Oregon in 2024. The amount has increased by 57 percent since 2020.[7]

38th

Oregon's rank in the U.S. for per capita energy expenditures, meaning 37 states spend more per capita.[3]

Greenhouse Gas Emissions

Most of Oregon's greenhouse gas emissions come from the energy we use every day. These GHG emissions contribute to climate change.

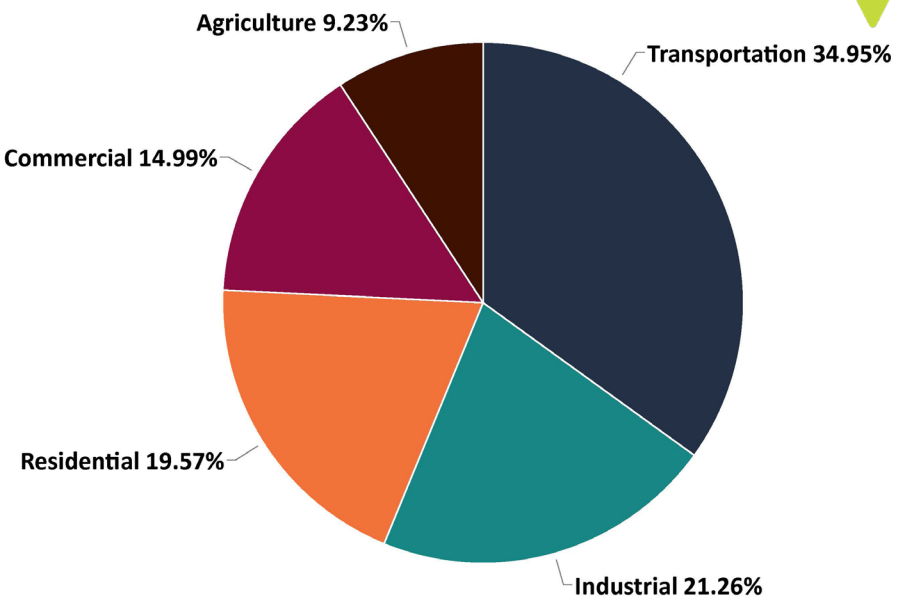
The Oregon Department of Environmental Quality collects data on GHG emissions in Oregon. DEQ publishes the data and uses it to create a sector-based GHG emissions inventory, which is updated annually. The data presented are based on the DEQ sector-based emissions inventory for 2023.[8]

Greenhouse gas emissions can be categorized in multiple ways: by the end-use – for example, heating or lighting – that creates emissions, by end-use within a sector, and by the source of the emissions. DEQ provides a mixture of these data categories. As a result, when analyzing the data, various methods of categorization can reveal new insights. In this section, the data are first presented based on end-use sector, then by source, and then by a mixture of sector and source – presenting DEQ's usual sector-based inventory depiction and an expanded depiction based on further analysis of the data.

GHG Emissions by Sector[8]

A majority of Oregon's greenhouse gas emissions come from the production or use of energy. The state categorizes and reports GHG emissions for five end-use sectors — transportation, residential, commercial, industrial, and agriculture. Note that in other sections of this report, agriculture is included in the industrial sector. Oregon's sector-based GHG inventory reports

Oregon Greenhouse Gas Emissions by Sector[8]



annual emissions from each of these sectors.

This chart summarizes emissions by sector for 2023. The transportation sector is the largest source of sector emissions, contributing over a third of Oregon's total GHG emissions. The residential and industrial sectors each contribute approximately 20 percent of state emissions, and the commercial sector contributes 15 percent. Together, energy consumption makes up nearly 90 percent of Oregon's greenhouse gas emissions.

Transportation GHGs. Transportation is the state's largest source of sector-based GHG emissions, primarily from the direct combustion of petroleum products in on- and non-road vehicles (such as construction equipment, agricultural vehicles, and off-road recreational vehicles). About 57 percent of Oregon's transportation emissions are from gasoline combustion in passenger cars and other gas-powered vehicles, and about 27 percent are from medium- and heavy-duty diesel vehicles.

Commercial & Residential GHGs. The largest sources of GHG emissions from the residential and commercial sectors include electricity generation, natural gas direct use, municipal landfills, commercial petroleum combustion, and wastewater treatment.

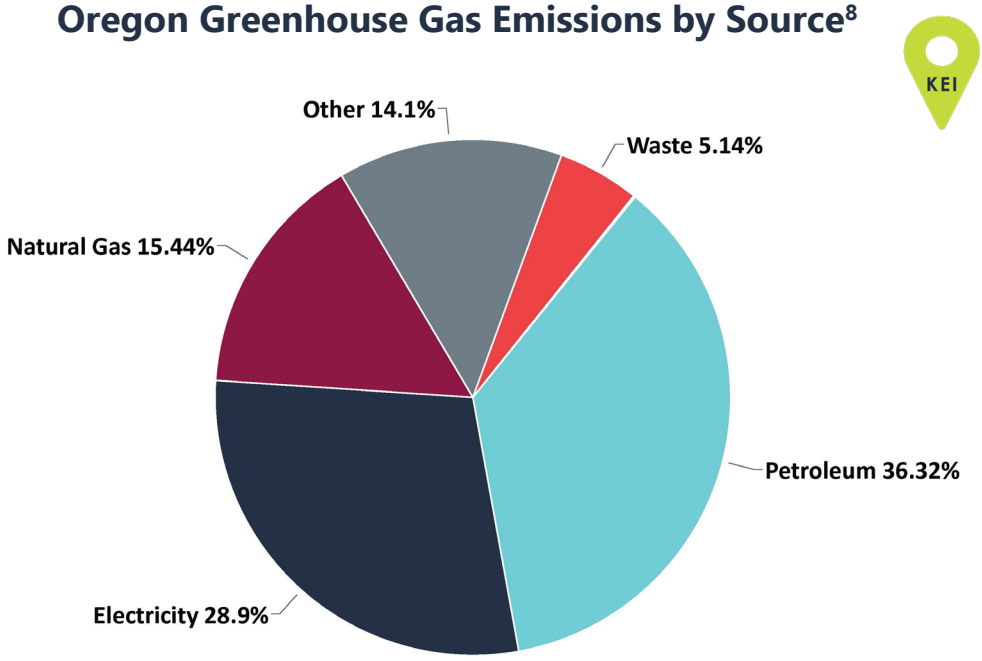
Industrial GHGs. The largest sources of industrial GHG emissions in Oregon are semiconductor manufacturing, natural gas distribution and production, and cement manufacturing. The sector-based inventory includes industrial emissions from electricity generation, natural gas direct use, and petroleum combustion, in addition to GHG emissions from industrial processes unrelated to energy use.

Agricultural GHGs. Oregon's sector-based GHG inventory tracks emissions from certain agricultural processes and waste products, including manure and other organic wastes, fertilizer application and soil management, and agricultural residue burning.[i]

GHGs by Source[8]

GHG emissions data can also be categorized by the direct source of emissions, which relates to energy production and consumption processes that directly emit greenhouse gases. This includes petroleum combustion, electricity generation, and natural gas combustion, as well as emissions from waste production and treatment.

Oregon Greenhouse Gas Emissions by Source[8]



i The sector-based inventory exclusively tracks anthropogenic (i.e., human-caused) emissions for the agricultural sector, which are primarily methane and nitrous oxide emissions from agricultural processes. Energy consumption, such as electricity and fuels used in this sector are included in the transportation and industrial sectors.[8]

The combustion of petroleum products is the largest source of emissions at 36 percent, followed by emissions resulting from generating electricity then natural gas use.

Petroleum. Petroleum-derived fuels, including diesel, gasoline, and jet fuel, are primarily consumed by the transportation sector. Emissions from petroleum-fueled equipment used by the residential, commercial, and industrial sectors are also included.

Electricity. This accounts for electricity used in all sectors, which includes emissions from the generation of electricity used in the state, regardless of where it is generated. Emissions from electricity generated in Oregon but used out of state are not included.

Natural Gas. This includes direct use of natural gas in all sectors, plus fugitive emissions from distribution. It does not include emissions associated with natural gas-fired power plants.

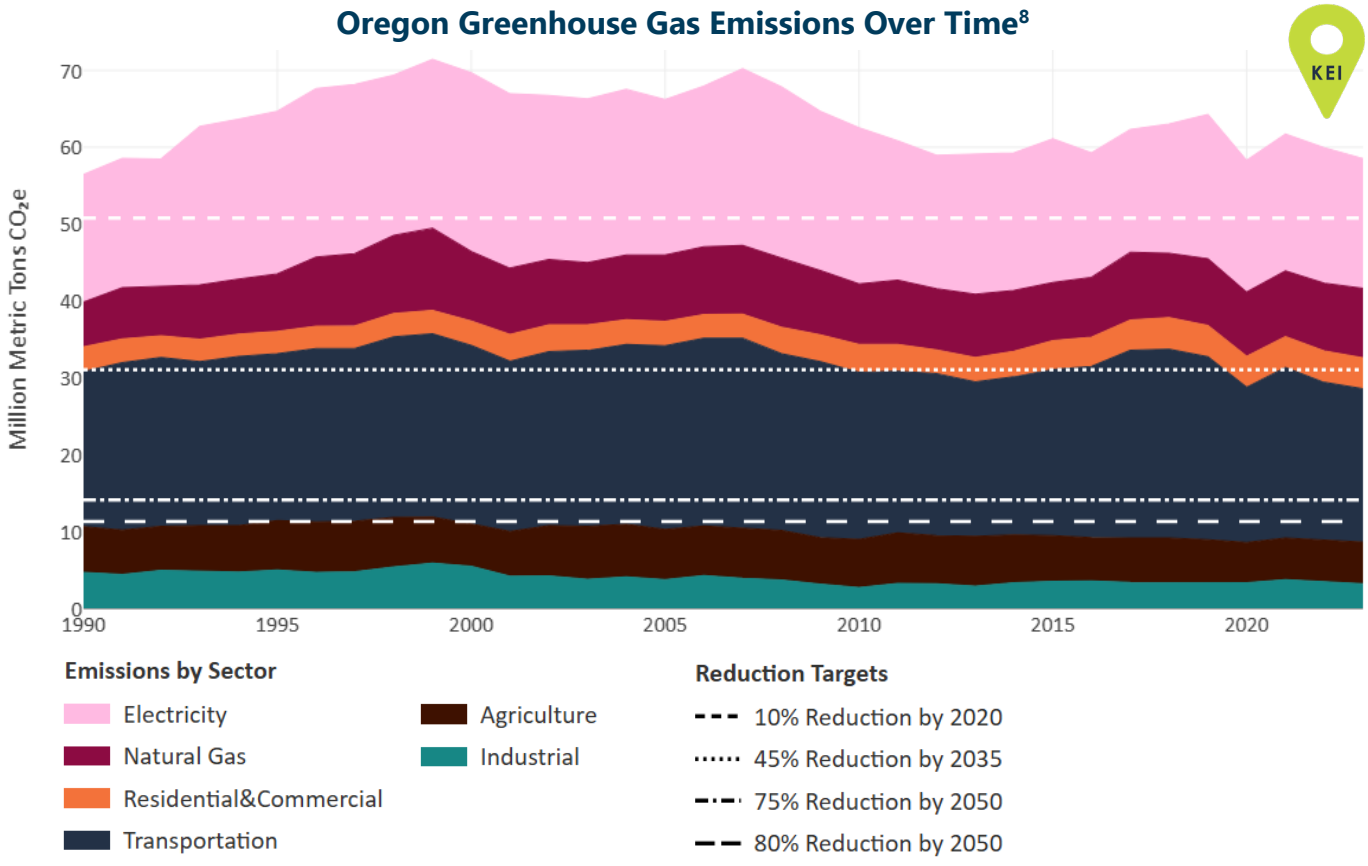
Other. This category includes uses specific to a sector's activity, such as fertilizer, cement and soda ash production and consumption, semiconductor manufacturing, and use of refrigerants and solvents.

Waste. This includes treatment of waste products from the various sectors, including landfill waste and agricultural waste. Some of these emissions result from the combustion of waste.

GHGs by Sector and Source[8]

Whether something is classified as a sector or a source can sometimes be blurred in GHG emissions data. For example, electricity can sometimes be considered a sector or source, depending on what is being assessed.

This chart reflects emissions across six categories, including for each of the sectors, as well as for electricity and natural gas. The residential and commercial sectors have been combined.



Electricity and natural gas reflect source emissions, while the remaining categories are sector specific. As a result, the residential and commercial, and industrial source emissions in this chart do not include emissions associated with electricity or natural gas use on site.

Assessing progress toward meeting Oregon's GHG emission reduction goals requires looking at recent and historical emissions as compared with the state's targets. The Oregon Climate Action Commission and others use DEQ's inventory to track progress toward the state's GHG emissions reduction goals, including goals established in legislation and by executive order. The different goals are indicated by horizontal lines on the chart. Although emissions are declining, Oregon did not achieve its goal of 10 percent below 1990 levels by 2020 (top line), nor has the state yet met this goal.

In 2020, Executive Order 20-04 established an updated 2050 goal, going from 75 percent (dashed and dotted line) to at least 80 percent below 1990 levels by 2050 (dashed line at the bottom) and a near-term goal of at least 45 percent below 1990 levels by 2035 (dotted line).[9] The most recent GHG emissions forecast for the Oregon Climate Action Commission found that Oregon is not on track to achieve its 2035 goal even if all currently adopted climate policies and programs are fully implemented.[10] The single largest contributor to Oregon no longer being on track to meet its sector-based climate goals is the forecasted load growth from new data centers. The projected load growth accounts for 34 percent of all forecasted emissions by 2050. However, these emissions could be greatly reduced if these facilities can meet their energy needs with clean energy sources.

Oregon's Greenhouse Gas Emissions Forecast

The Oregon Department of Energy prepares the Transformational Integrated Greenhouse Gas Emissions Reduction (TIGHGER) analysis to evaluate the emissions reductions anticipated from existing state laws, programs, and regulations, and to identify additional actions to further reduce emissions while continuing to grow Oregon's economy. The most recent TIGHGER analysis in 2026 will present a series of gap measures, or potential actions to inform state climate actions and help put Oregon on track to meet its GHG emissions reduction goals.[ii]

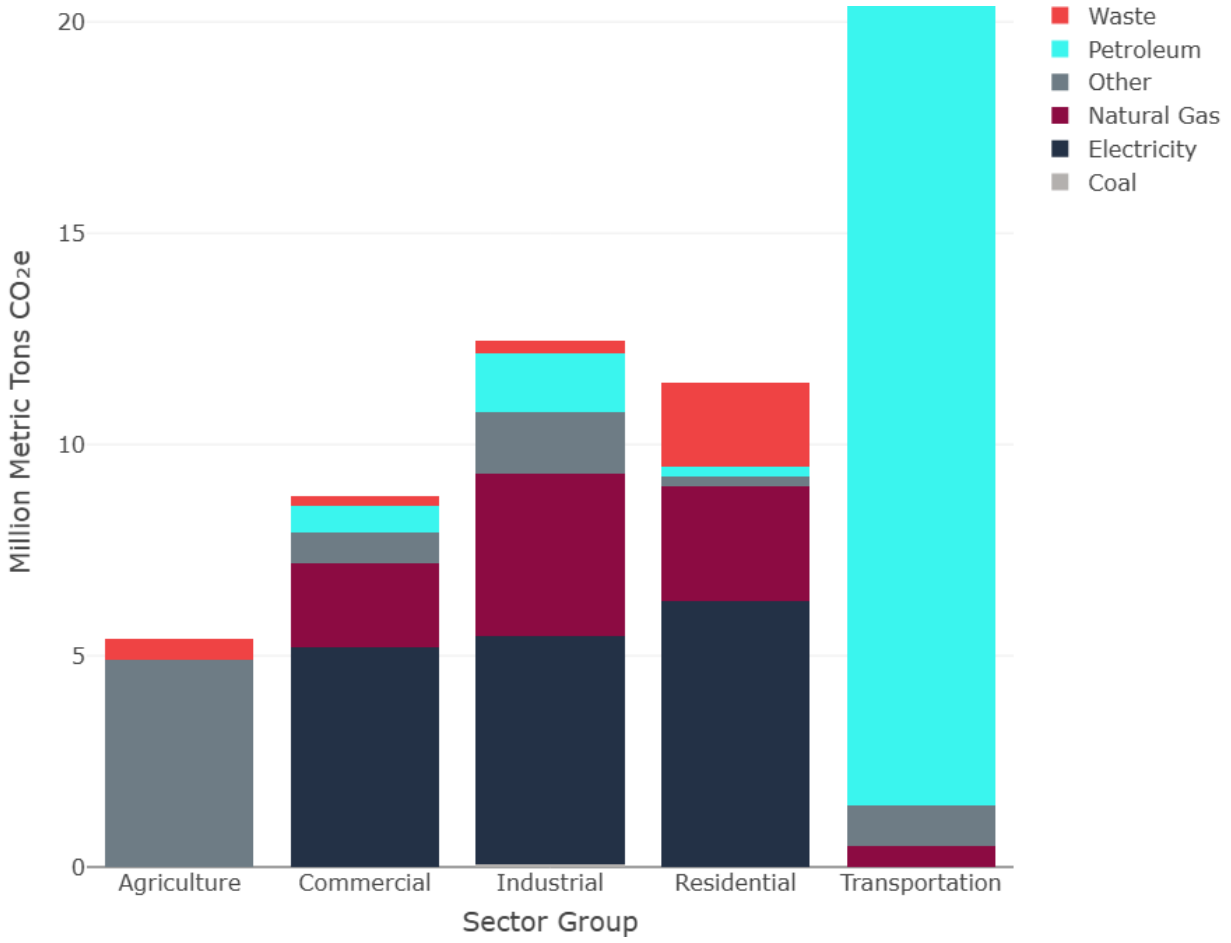
The following chart shows Oregon's 2023 emissions from the five GHG sectors, broken out into emissions by source within each sector.[10] The color fields within the bars reflect energy-related emissions and their source. The chart shows transportation emissions as largely driven by petroleum combustion, while the residential, commercial, and industrial sector emissions largely come from electricity generation followed by natural gas use. The chart shows that energy use is the primary source of GHG emissions in Oregon.

Viewing these data over time shows the variety of emissions sources in Oregon and emissions trends from these sources over time. This level of analysis informs policy makers about what potential programs or policies will most effectively reduce emissions and meet state goals.

This chart groups emissions by sector, with emissions by source illustrated using similar colors within each sector.

ii The 2026 TIGHGER 2.0 analysis has not been published at the time of this report, but the draft final report will be available on the Oregon Climate Action website in late 2026.

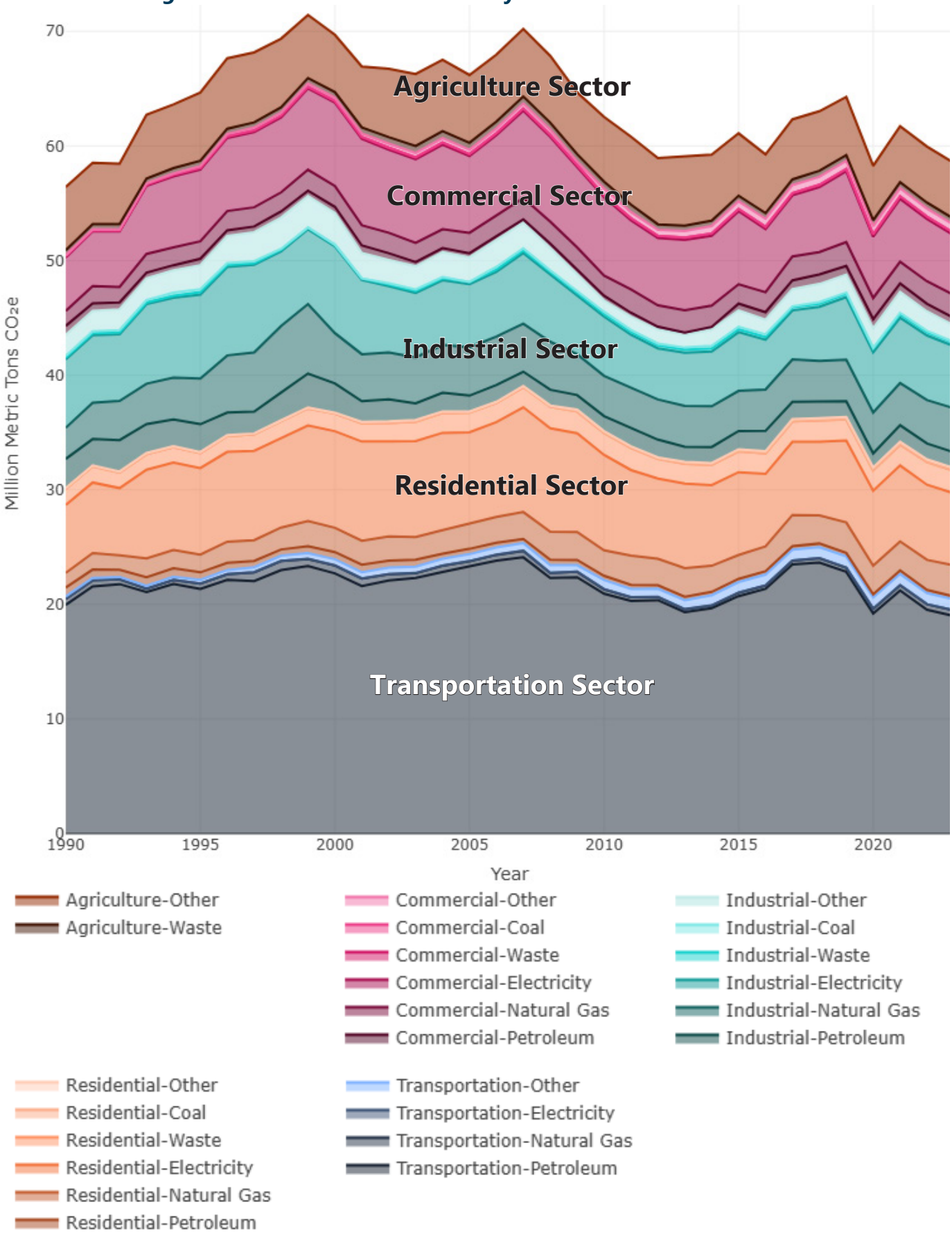
Oregon Greenhouse Gas Emissions By Sector and Source[8]



The chart above shows that electricity consumption is the largest source of emissions in the commercial, residential, and industrial sectors. This means policies like those incorporated into HB 2021, which requires a 100 percent reduction in emissions from electricity sold to investor-owned electric utility customers by 2040, will have the greatest effect on emissions across these sectors.[11]

Almost all emissions in the transportation sector come from petroleum use. State greenhouse gas policies, such as DEQ's Climate Protection Program, Clean Fuels Program, Advanced Clean Cars II (ACC II) rule, and Advanced Clean Trucks (ACT) rule, would, if fully funded and implemented as planned, drive electrification of vehicles and, in conjunction with decarbonization of the electricity sector, address much of the emissions in this sector. However, in 2025 Congress created uncertainty about the future of these policies; this action is currently in litigation.[12] [13] Due to this uncertainty, Oregon could see a short-term slowdown in the rate of electric vehicle adoption across the state.

Oregon Greenhouse Gas Emissions By Sector and Source Over Time[8]



Sector Profiles

Residential

The residential sector consists of both single- and multi-family occupancies. Common uses of energy associated with this sector include space heating, water heating, air conditioning, lighting, refrigeration, cooking, and appliances. Residential energy use is closely tied to weather, housing size and vintage (the decade a home is built), and type of housing.

19.4%

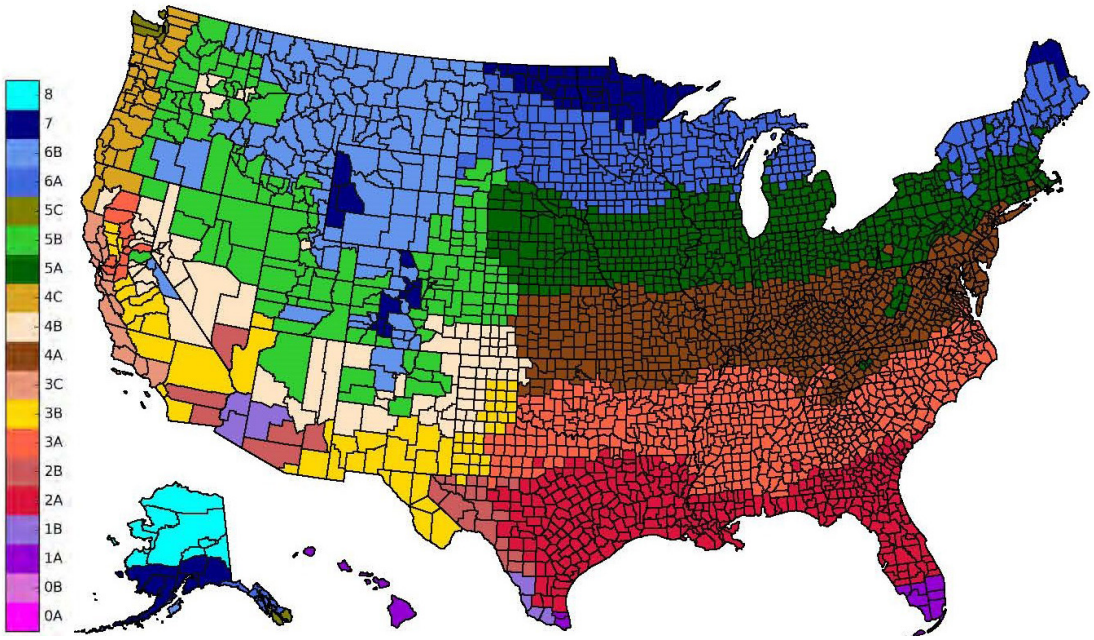
Residential sector's share of Oregon's energy use in 2024.[1]

1.72 Million

Number of occupied housing units in Oregon in 2024.[2]

Weather

Oregon is divided by two climate zones with different energy needs and weather patterns. The map below demonstrates the climates zones in the U.S.[3] In Oregon, west of the Cascade mountain range is a temperate mixed marine – or more humid – climate zone. East of the Cascade Mountain range is a cool, dry climate with more heating and cooling days that require more energy use. Buildings in Eastern Oregon have a higher average energy use index, meaning they typically use more energy per square foot.

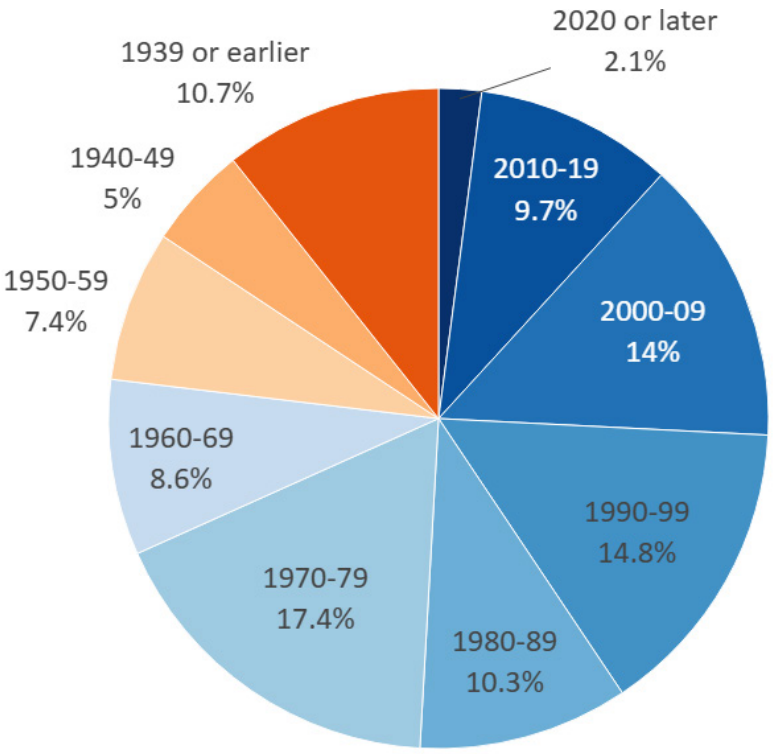


Home Vintage

The residential sector includes new construction and existing construction — and energy use can be very different between them, especially when comparing a newly built home to a decades-old home. Oregon's residential energy code has made significant performance increases since Oregon's first energy code in 1974.

Older homes with less insulation and older equipment use more energy for heating and cooling than newer, more efficient homes. Home vintage can indicate opportunities for updating heating and cooling equipment, water heating, insulation, windows, and house weatherization. About 61 percent of all homes in Oregon were built before 1990.[4]

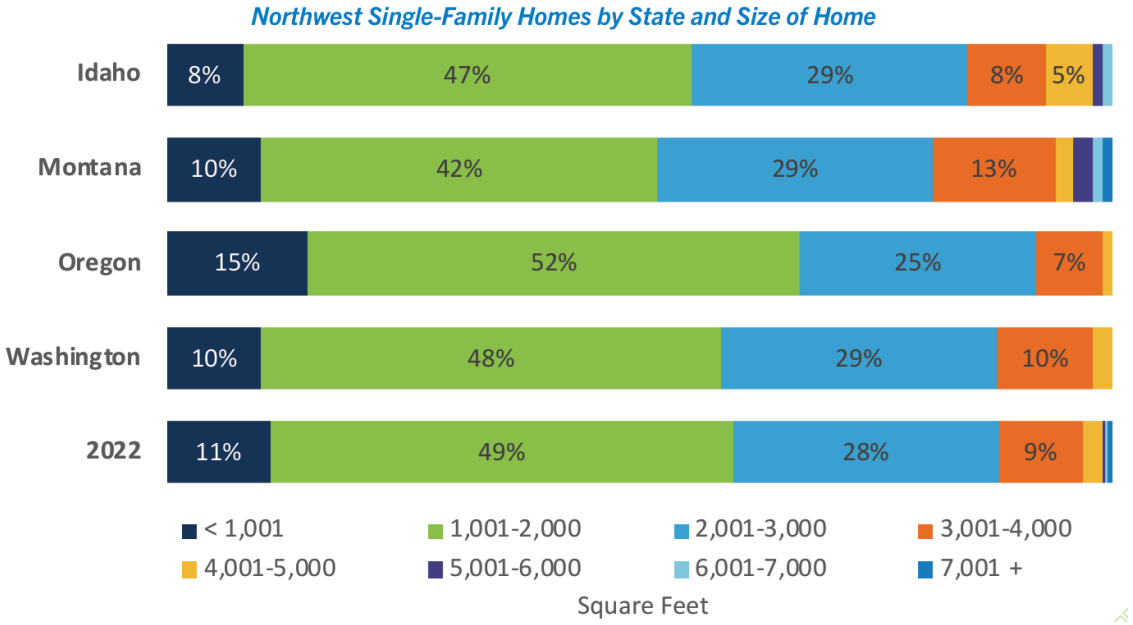
Oregon Homes by Vintage[4]



Size of Housing

The size of a home affects energy use. Typically, larger homes use more energy, since there is a greater volume of air to heat or condition. Since 2015, the size of new single-family homes has become smaller as homes have become less affordable.[5] One exception is in 2021, when home sizes grew as interest rates were very low, creating the opportunity for homebuyers to afford more.[6] However, as interest rates increased in 2022 and 2023, homes became harder to afford again, resulting in consumers choosing smaller homes. New single-family homes became smaller from 2023 into 2024, then largely stabilized in 2025 as builders continued to respond to housing-affordability pressures. The visual below shows the size distribution of single-family homes by state in the region.

Northwest Single-Family Homes by State and Size of Home[7]



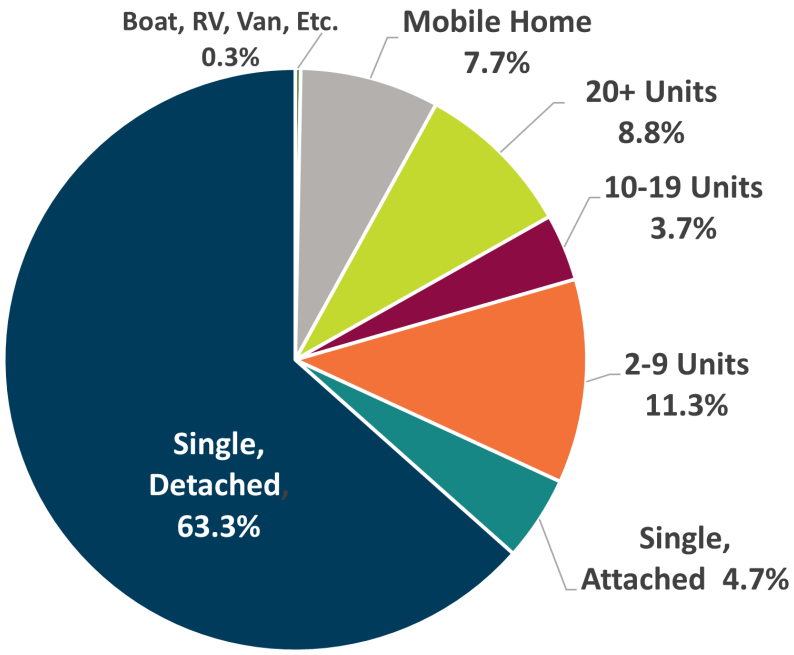
Type of Housing

Most housing in Oregon (63 percent) is detached, single-family. Multifamily complexes with 20 or more units represent 8.8 percent of all housing, followed by mobile/ manufactured homes at 7.7 percent. Other multifamily units (like those with fewer than 20 units) comprise the remainder.[8]

Ownership and Home Vintage

Another way to look at housing stock in Oregon is by ownership and home vintage across the region. Northwest Oregon has the most housing units, as well as the highest percentage of rental units.[9] The distribution also shows over 60 percent of housing units were built prior to 1990.

Oregon Housing Types[8]



Oregon Housing Characteristics by Region[9]

Region	Total Occupied Housing Units	Average Share of Units That Are Renter Occupied	Average Share of Units Built Before 1980
East Oregon	221,493	30%	55%
NW Oregon	1,280,770	34%	49%
SW Oregon	216,159	29%	52%
All of Oregon	1,718,422	32%	52%

Residential Energy Efficiency

Oregon's energy efficiency programs and policies continue to help residential customers save energy and money while improving home comfort. According to the Northwest Power and Conservation Council, the region is actively tracking progress toward the conservation goals set in the 2021 Power Plan, which call for acquiring 750-1,000 average megawatts of cost-effective energy efficiency by 2027.[10] Recent Regional Conservation Progress Reports show that the region achieved 182 aMW of savings in 2025, with the residential sector contributing nearly 15

percent of those savings. The report finds that the region continues to make progress toward the 2021 Power Plan goals and recommended pursuing all cost-effective energy efficiency first. The report acknowledged that the region may need to also consider non cost-effective measures to achieve energy efficiency goals, including improvements in weatherization, ensuring access to energy efficiency programs in small and rural markets, and encouraging jurisdictions pursuing decarbonization goals to include energy efficiency options.

Oregon's energy efficiency programs and policies save residential customers energy and money while increasing household comfort. In their 2021 Power Plan, the Northwest Power and Conservation Council estimated the total technical energy efficiency potential of the residential sector in the Pacific Northwest would meet about 27 percent of the projected load in 2041.[11] The Northwest Power and Conservation Council outlines several opportunities for increased efficiency in residential buildings:

Heating, Ventilation and Air Conditioning. Nearly half the residential achievable technical potential is in this sector.[11] For example, upgrading an electric furnace to a heat pump can cut heating electricity use in half.[12]

Water Heating. More efficient water heating technologies could achieve up to 31 percent of the region's residential energy efficiency potential.[11] Heat pump water heater market share in the Northwest remains low, but still makes up a meaningful portion of the market at 18.6 percent.[13] A heat pump water heater that earns the ENERGY STAR label uses about one quarter of the energy of a standard model, providing consumer savings and helping the region achieve efficiency targets.[14]

Electronics. Homes have a lot of electronic devices, and many are plugged in most of the time. Simple controls that turn off equipment when nobody is in the room can significantly reduce energy use.[10]

Lighting. Lighting has historically been a significant energy efficiency opportunity, and the region has made great progress. However, much of this has been captured and is expected to play a smaller role going forward.[9]

Residential Heating and Cooling

More than half of Oregon homes heat with electricity.[15] Cooling types vary among Oregon homes, and the percentage of homes in the region using air conditioning increased from 57 to 66 percent between 2017 and 2022.[16] [i]

Average electricity use in Oregon decreased slightly from 11,323 in 2022 to 10,560 kWh in 2024.[17] [18] Average residential electricity use in consumer-owned utility territory is typically higher than in investor-owned territory. In 2024, the average annual COU customer use was 12,588 kWh, while for IOUs it was 9,859 kWh. This may be partially due to higher prevalence of electric resistance heating – which is less efficient than natural gas – in more rural COU territories, and more homes that use gas as a heat source in urban IOU areas.

10,560 kWh[17]

KEI

Average annual residential electricity use in Oregon in 2024

600 therms[17] [18]

KEI

Average annual residential natural gas use in Oregon in 2024

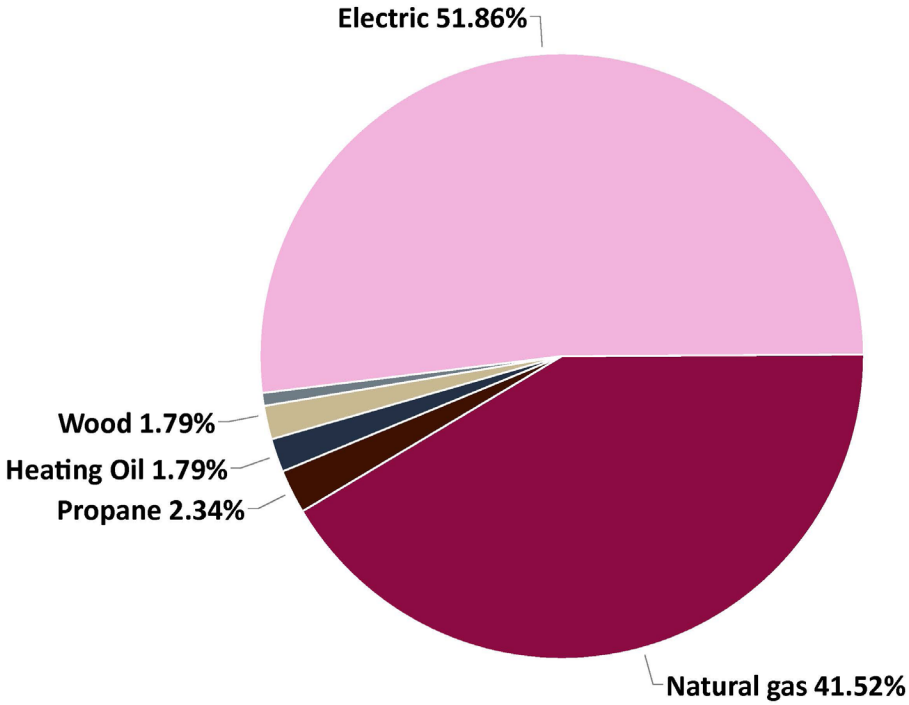
i ODOE uses the Northwest Energy Efficiency Alliance's 2022 Residential Building Stock Assessment to provide heating and cooling data for Oregon homes. NEEA is beginning work on preparing the next RBSA, which is expected in 2027.

Oregon County Profiles

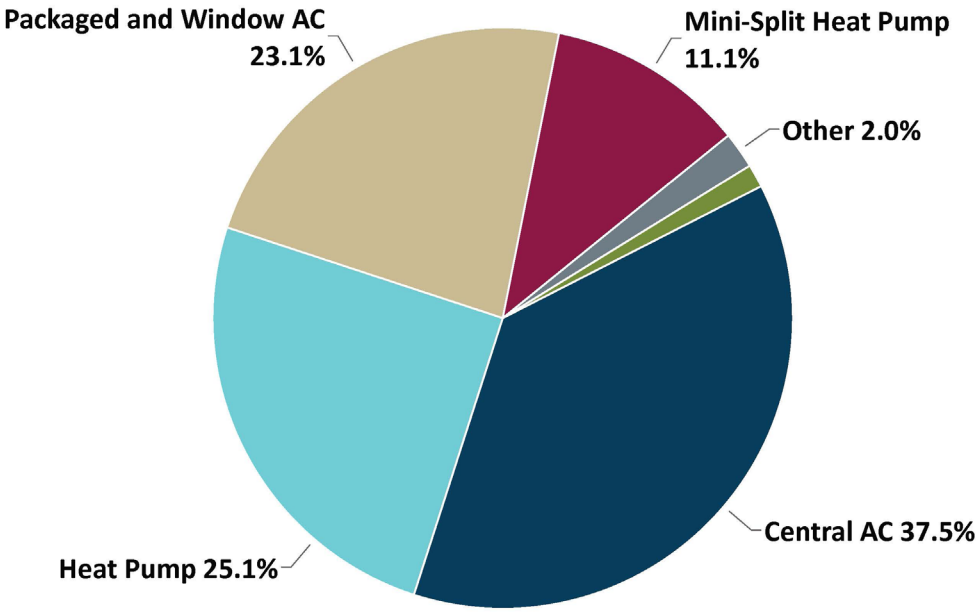
Data used to populate the county profiles have been updated and remain helpful for understanding how Oregon county energy use differs, including energy and transportation burden. View the county profiles online:

energyinfo.oregon.gov/ber

Average Heating Types Across Oregon Homes[15]



Average Cooling Types Across Oregon Homes[16]



The bottom figure shows the types of cooling equipment in Oregon homes as a percentage of the homes that have cooling equipment. In Oregon, many homes do not have cooling equipment. Historically, weather patterns have kept much of the state's population in a moderate climate where passive cooling strategies – such as shading, reflective surfaces, and night ventilation – were often sufficient to maintain comfortable indoor conditions. Recent extended high heat weather events have motivated many homeowners to install new cooling equipment and state programs have incentivized heat pump installations to provide cooling.

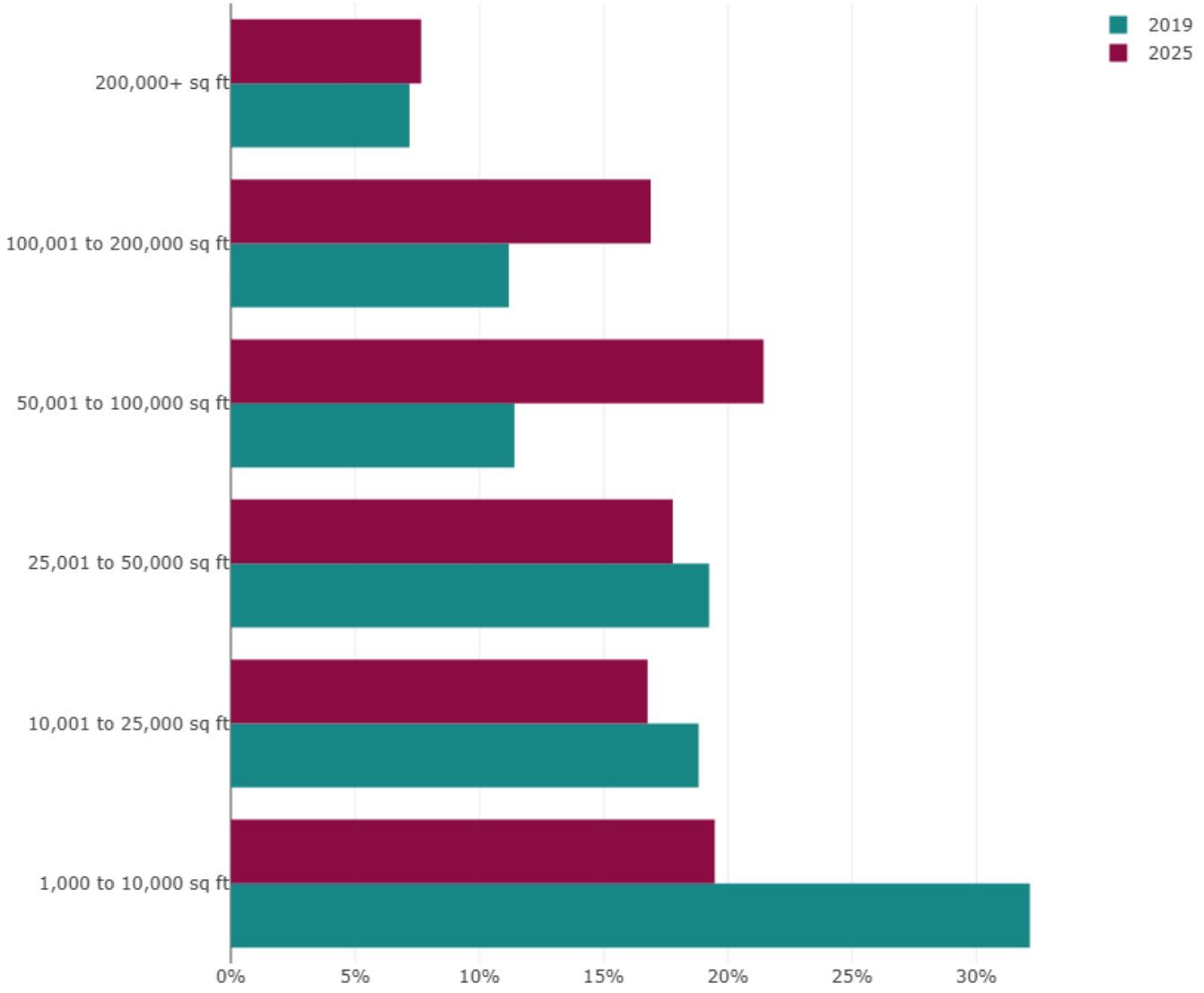
Commercial

The commercial sector includes buildings that support community needs and economic life, from small local storefronts and schools to hospitals, restaurants, and industrial facilities.

In recent years, this sector has become an increasingly significant part of Oregon's energy landscape: commercial energy use grew approximately 35 percent between 2022 and 2024, rising from 16 percent to 20 percent of statewide consumption, its highest share in the historical record. This rapid growth reflects not only the expansion of energy-intensive uses such as data centers, but also broader shifts in how Oregon's commercial buildings are developed, occupied, and used.

To better understand the makeup of the region's commercial sector, the Northwest Energy Efficiency Alliance conducts a Commercial Building Stock Assessment[ii] every five years.

Distribution of Regional Floor Space by Building Size in the Northwest[22]



ii The 2025 Commercial Building Stock Assessment, the fifth CBSA conducted on behalf of NEEA and its funders since 2003, collects, analyzes, and publishes data on the characteristics, installed equipment, and energy consumption of commercial and muti-family residential buildings in four states in the Northwest region of the United States: Idaho, Montana, Oregon, and Washington. Data from the study are intended to inform energy savings potential, load flexibility, load forecasting, and other regional data needs for the commercial and multi-family residential sectors.

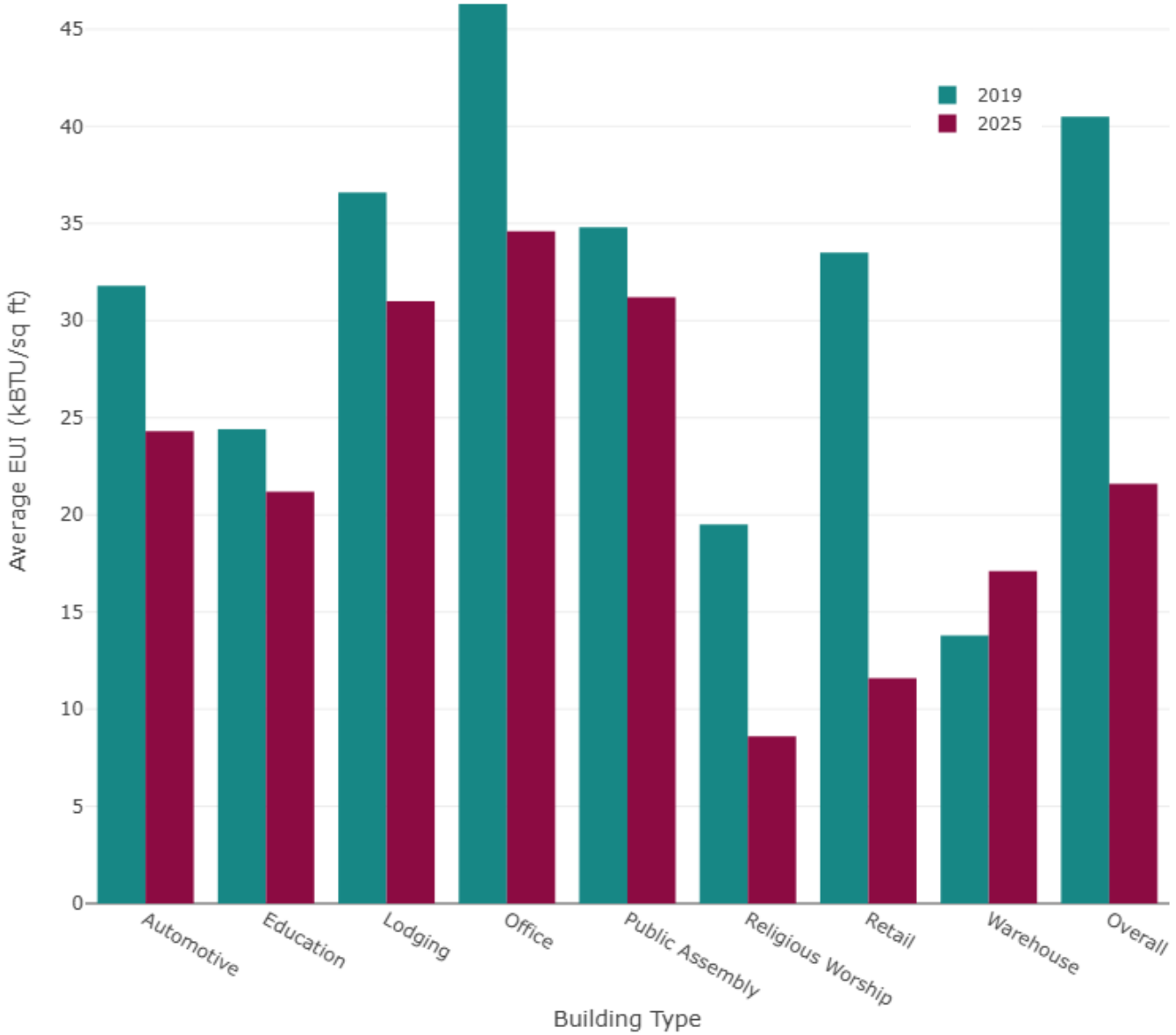
The previous assessment was completed in 2019, and results from the 2025 study were recently published.[19] Findings show an increase in the total floor space of mid-sized buildings (50,000 – 200,000 square feet) alongside a decrease in the largest buildings (200,000 square feet and greater). This pattern reflects post-pandemic redevelopment across the commercial real estate market. Research indicates that many large office buildings are being demolished or removed, confirming the reduction in inventory of buildings over 200,000 square feet.[20] Additionally, there is evidence that large buildings are being repurposed into smaller commercial footprints due to hybrid and remote work trends, persistent vacancy, and the underuse of older office assets.[21]

Energy Performance

Energy performance in commercial buildings is commonly measured using a building's Energy Use Intensity, which compares annual energy consumption to building size. EUI brings all energy sources, such as electricity and natural gas, into a common unit of thousands of Btu per square foot per year. This metric reflects how factors such as construction practices, equipment efficiency, operational patterns, and climate influence a building's total energy use.

In 2023, Oregon adopted a Building Performance Standard aimed at improving energy performance in large commercial and multifamily buildings.[23] Modeled after ANSI/ASHRAE/IES Standard 100-2024, the BPS requires covered buildings to benchmark their energy use and meet

Energy Use Intensity by Building Type[22]

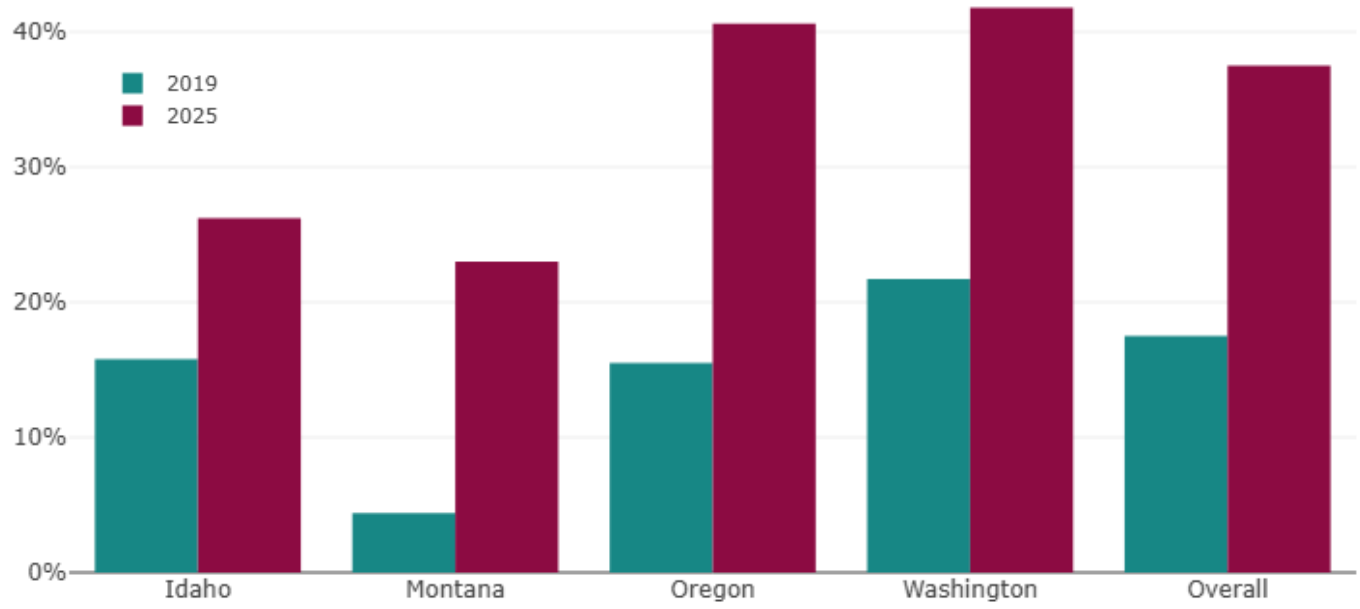


EUI targets over time. Compliance will phase in based on building size, with initial reporting beginning in 2028. The standard is designed to reduce statewide energy consumption, support climate goals, and strengthen the local energy-efficiency workforce.

Recent trends in the Commercial Building Stock Assessment report reveal that efficiency improvements over the past five years in the Pacific Northwest have not been evenly distributed across fuel types.[19] Electricity EUIs decreased significantly due to sustained reductions in lighting energy use. Natural gas EUIs, however, remained comparatively stable, reflecting both the persistence of combustion-based heating systems and the slower pace of upgrades to major heating equipment.

While many buildings continue to rely on combustion-based heating systems, the share of commercial buildings in Oregon using heat pumps for at least one portion of heating increased from 15 percent in 2019 to 41 percent in 2025, marking one of the most significant changes identified in the Commercial Building Stock Assessment. Similar growth is evident in neighboring states, with Washington showing the highest adoption rate in 2025.

Share of Heat Pumps in Commercial Buildings[19]



Industrial

The industrial sector includes all facilities and equipment used for producing, processing, or assembling goods. The U.S. Energy Information Administration defines the industrial sector to include manufacturing, agriculture (including fishing and forestry), construction, and mining (which includes oil and natural gas extraction).[24]

Nationally, manufacturing was about 80 percent of industrial energy consumption in 2022,[iii] by far the largest share of any of the industrial subsectors.[25] The largest industrial energy consumer of the manufacturing segment is the bulk chemical industry (followed by petroleum refining and paper production). Oregon's industrial manufacturing subsector includes paper and food processing, along with wood products, and computers and electronics.

The industrial sector uses electricity to operate machine drives (motors), lights, computers and office equipment, and equipment for facility heating, cooling, and ventilation. Machine drives are the largest use of electricity by U.S. manufacturers.[26] Industry uses fossil fuels and renewable energy sources for heat in industrial processes and space heating in buildings, boiler

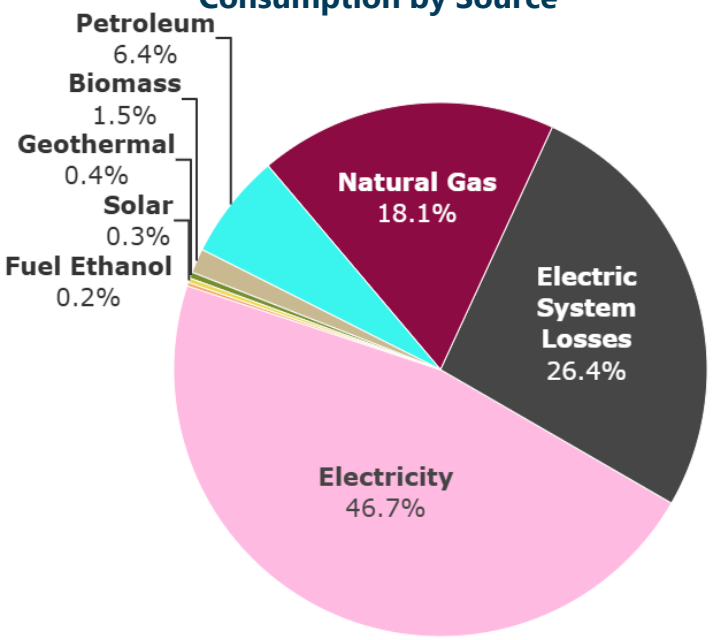
iii 2022 is the most recent year for which manufacturing data is available from the MECS.

fuel to generate steam or hot water for process heating and generating electricity, and feedstocks (raw materials) to make products like plastics and chemicals.[25]

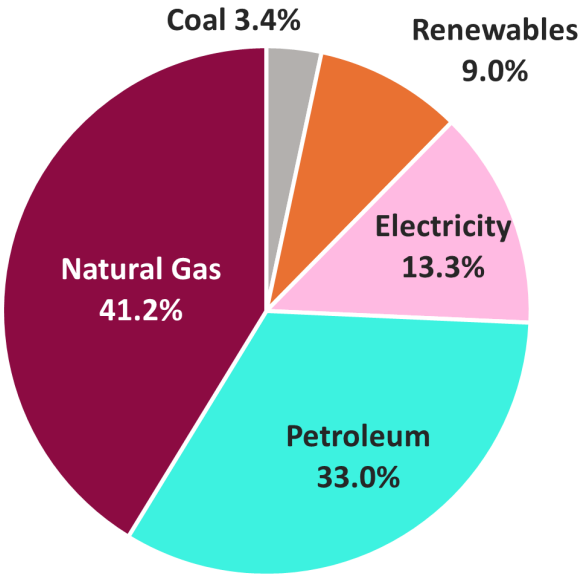
24.4%
Industrial sector's share of Oregon's energy use in 2024.[1]

According to the U.S. Energy Information Administration, most of Oregon's Gross Domestic Product comes from "non-energy-intensive, service-providing businesses," though the energy-intensive subsectors of agriculture, food processing, and forest products manufacturing are important to Oregon. Computers and electronic products (not including data centers, which are included in the commercial sector) accounted for about 40 percent of Oregon's manufacturing GDP. Relative to other states, Oregon's industrial sector energy use is lower per capita — about 60 percent of other states.[27] Computer and electronic manufacturing overall have low energy intensity relative to their high dollar value contribution to GDP.[27] Many forest products and paper operations in Oregon offset natural gas for heat and electricity from the grid by using residual woody biomass and black liquor,[iv] respectively, for cogeneration of electricity and steam for process heat.

2024 Oregon Industrial Energy Consumption by Source[1]



2024 U.S. Industrial Sector Energy Use by Source[25]



Transportation

The transportation sector covers the movement of goods, services, and people — including passenger and commercial vehicles, trains, aircraft, boats, barges, and ships. Fuel, mostly in the form of petroleum products, is used directly for transportation vehicles and to fuel equipment.[24]

Transportation fuel costs tend to be higher in Oregon than many other states because of the region's distance from fuel supplies and refineries, state taxes, and clean fuel policies.[29–32] Although passenger vehicles have improved their efficiency due to fuel economy standards, motor gasoline consumption is the largest portion of Oregon's transportation sector energy use.[33 34] Oregonians tend to keep their vehicles longer with an average age of 14.5 years, compared to the national average of 12.2.[35] Also, SUVs and pickup trucks make up more than half (31 and 24 percent respectively) of passenger vehicles registered in Oregon.[36]

iv Black liquor is produced as a byproduct of creating paper from wood pulp. It can be combusted to produce electricity for on-site generation.[28]

Of the transportation fuels used in Oregon, gasoline creates the largest amount of greenhouse gas emissions — about 17.0 million metric tons of carbon dioxide equivalent[v] in 2024.[38] Diesel is the second largest contributor of emissions at just over 9.9 million metric tons of carbon dioxide equivalent. Increased consumption of lower-emitting and renewable fuel sources such as electricity, biodiesel, renewable natural gas, and renewable diesel helps reduce emissions from the transportation sector.

Greenhouse gas emissions per light-duty passenger vehicle decreased in the early parts of the century primarily due to federal fuel efficiency standards.[39] Emissions per vehicle have held steady since 2012 but dipped in 2020 because although the total number of vehicles remained the same, gas consumption dropped during the COVID-19 pandemic. As gasoline consumption increased, emissions per vehicle rebounded in 2021 and 2022, but not to pre-COVID levels.

36.1%

Transportation sector's share of Oregon's energy use in 2024.[1]

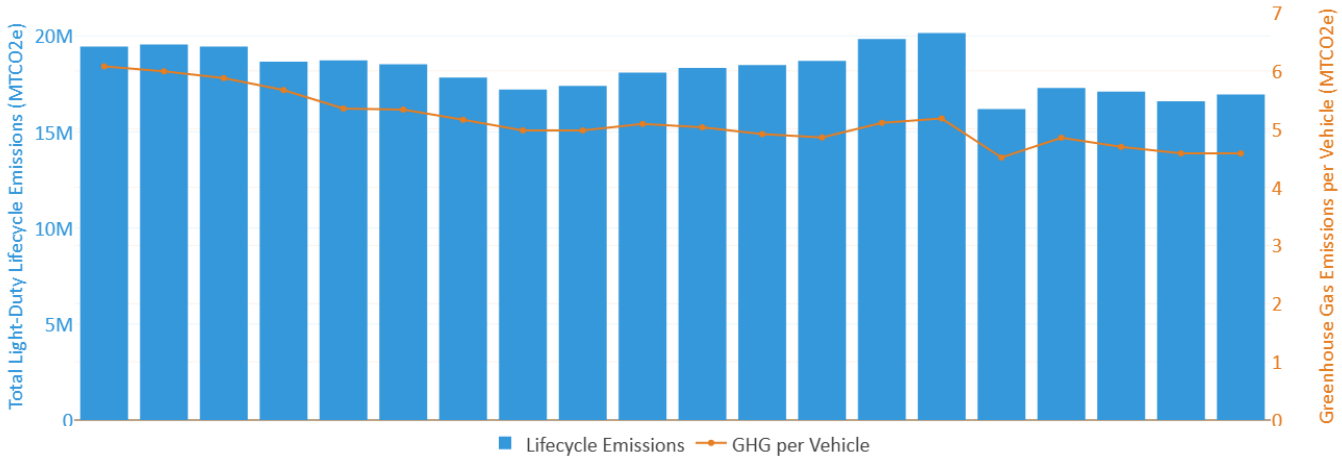
25 miles per gallon

Average fuel efficiency of a registered passenger vehicle in Oregon.[36]

400 grams per mile

Amount of CO2 emitted per mile by the average passenger vehicle in the U.S. This adds up to about 4.6 metric tons of CO2 per year.[37]

Metric Tons of CO2 produced by all Light-Duty Vehicles and Metric Tons of CO2 per vehicle[38]



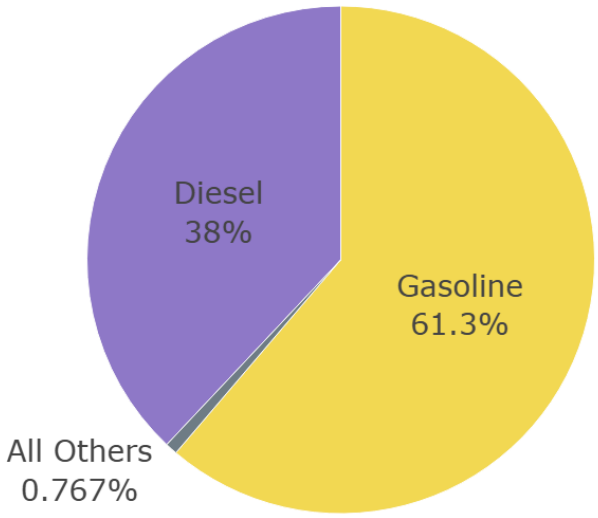
Transportation Fast Facts

- **In 2024, just over 1.35 billion gallons of gasoline powered vehicles on Oregon roads.**[38]
- **That's over 318 gallons per Oregonian.**
- **The typical Oregon household has at least two cars.**[40]
- **For electric vehicles, no matter where a car is fueled in Oregon, drivers reduce their greenhouse gas emissions by 50 to 95 percent[vi] by fueling with electricity.**[41]

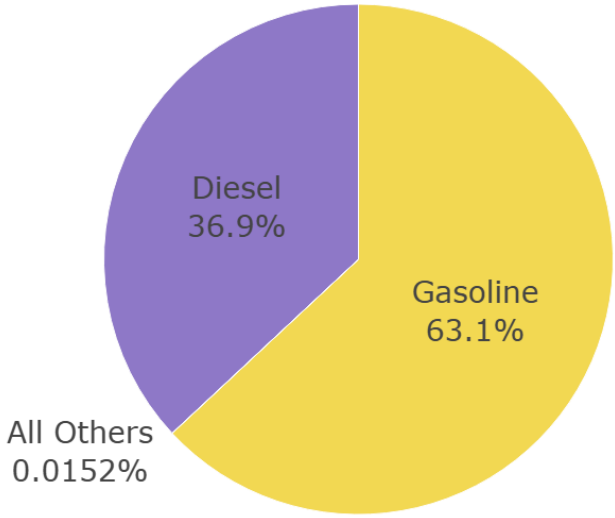
v Oregon Department of Environmental Quality's Clean Fuels Program calculates emissions for the program using carbon dioxide equivalent, which includes additional greenhouse gas emissions beyond carbon dioxide alone. This differs from the U.S. Environmental Protection Agency data, which provides data on transportations sector emissions as CO2 emissions only. According to the EPA, CO2 comprises 95-99 percent of CO2e.[48]

vi Assuming the vehicle is operating only using electricity.

Percent of On-Highway Transportation Fuel Consumption in Oregon (2024)[22]



Percent of On-Highway GHG Emissions of Transportation Fuel Types (2024)[22]



Other fuels include different small amounts of renewable natural gas, propane, and hydrogen. It does not include jet fuel, aviation gasoline, road oil, or asphalt because these are not used for on-highway vehicles.

Electric Vehicles

January 2015: 6,861 registered EVs[42]

KEI

May 2022: 52,108 registered EVs - More than 45,000 EVs added in just over seven years[42]

May 2026: 140,297 registered EVs - More than 85,000 EVs added in four years[42]

Oregon's Zero Emission Vehicle Targets (Senate Bill 1044 and the Advanced Clean Cars II Rules)[43] [44] [45]

- At least 250,000 registered ZEVs on Oregon roads by 2025
- At least 25 percent of registered vehicles and at least half of the new vehicles sold annually are ZEVs by 2030
- 100 percent of new vehicle sales are ZEVs beginning in 2035.

Oregon EVs by the Numbers (through May 2026)[46]

3,743,463 registered passenger vehicles

140,297 registered electric vehicles

3.75% of registered vehicles are EVs

102,036 are battery EVs

38,261 are plug-in hybrid EVs

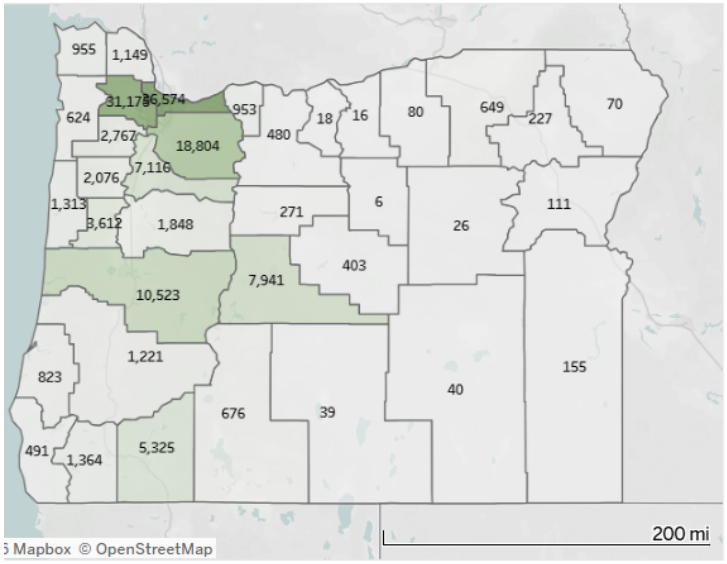
Oregon's EV Charging (through July 2026)[47]

4,313 public EV charging ports

1,662 public charging locations

Oregon Electric Vehicle Dashboard[41]

ZEVs by County as of May 2026



ut-of-state vehicles registered in Oregon are excluded from the map and scatter plot.

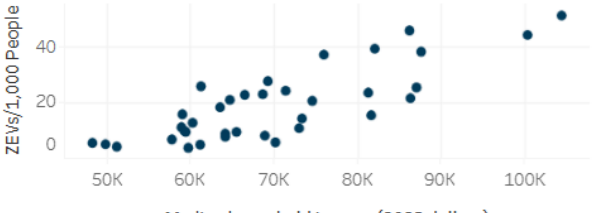
ZEVs by Type as of May 2026

BEV	PHEV
102,036	38,261

Total ZEVs

140,297

ZEVs/1,000 People vs. Income by County as of May 2026



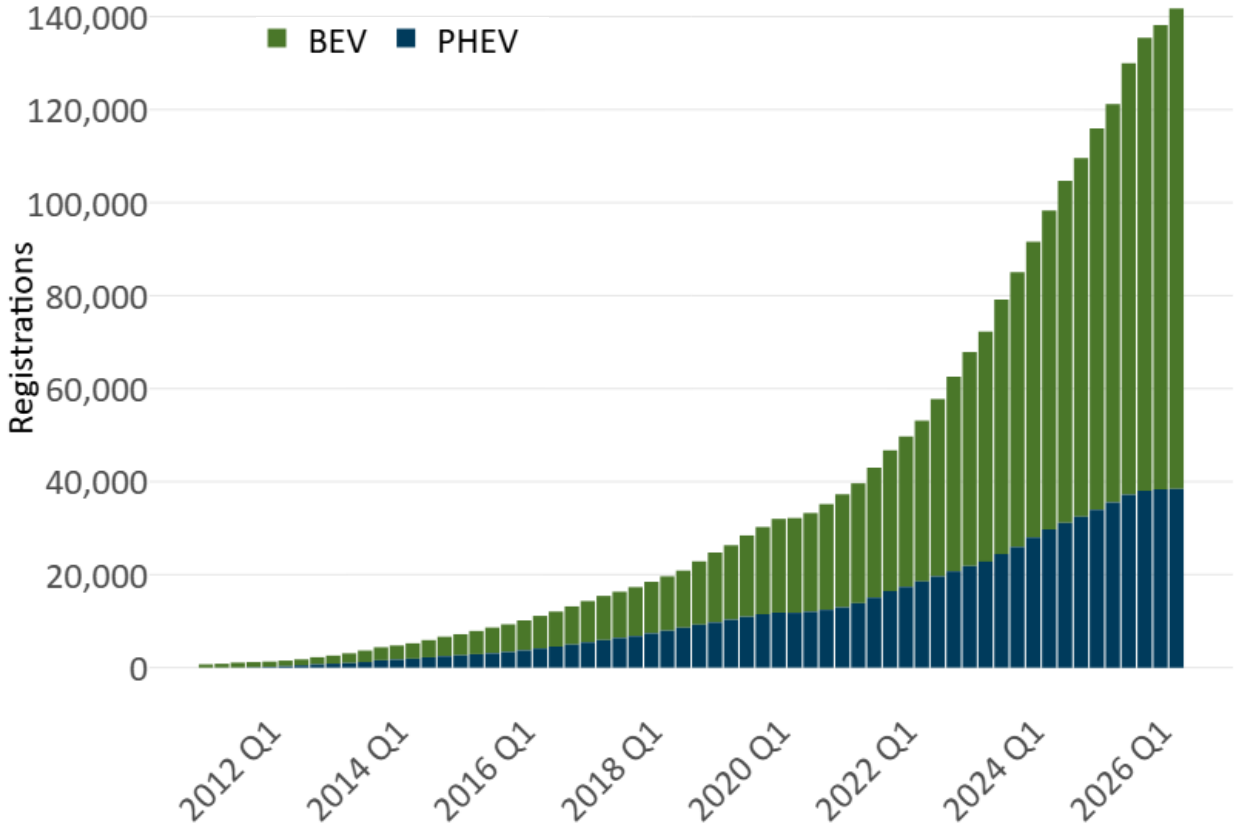
The Oregon Department of Energy's interactive Electric Vehicle Dashboard shows county-by-county EV adoption information, popular EV models, and other data. The dashboard also includes a calculator to calculate estimated fuel and greenhouse gas savings by making the switch to an EV.

www.tinyurl.com/OregonEVDashboard

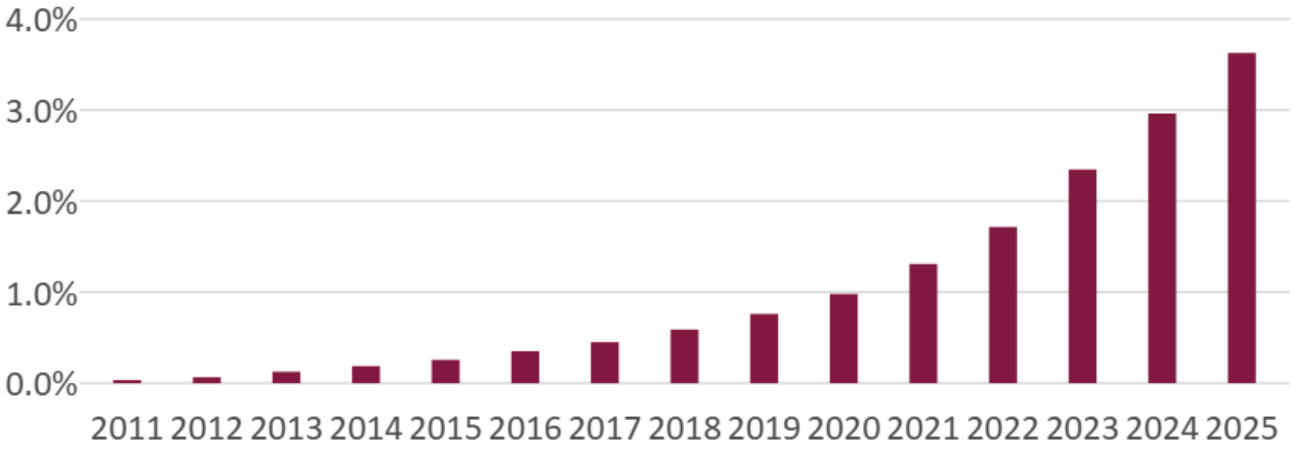
SCAN OR CLICK



Cumulative Oregon Electric Vehicle Registrations by Quarter Year (Q1 2013 – Q1 2026)[41]



BEVs and PHEVs as a Percent of Total Fleet by Year[41]



County Profiles

Oregon county profiles are a compilation of demographic, economic, and geographical datasets representing Oregon's 36 counties. The profiles aim to highlight aspects of each county's economic status and provide a focused perspective on the diverse communities within our state.

The profiles have been updated with the most currently available data from 2024 and include the following categories: County Seat, Poverty & Energy Burden, Homes, Energy, Home Primary Heating, and Travel. The following describes these categories and how they provide information about energy use and costs in different Oregon counties.

County Demographics[1] [2]

Demographic characteristics play a role in county-level energy consumption. Accounting for factors such as county area (total acreage), population, number of households, regional average annual household income, and diversity index[i] assist with understanding population, demographics, and cultural factors affecting energy consumption.

Homes[1]

The residential sector contains new, existing, and vintage constructions, with home energy use varying significantly depending on the type and size of the home under consideration. Accounting for factors such as the age of residences, type and size of residences, and type of ownership, aids in understanding the energy needs of state residents.

Energy[2] [3]

Energy use represents the direct use of energy resources within each county. These data demonstrate the amount of energy consumed by county residents and include the average annual residential electricity use and cost, average annual residential natural gas use and cost, and the average cost of these as a percentage of a typical income for that county. Ranges are provided where more than one utility serves a county.

Home Primary Heating[1]

Home heating evaluates the primary heating resources used by residents within the county. Heating systems vary depending on the energy source and the mechanical device that produces the heat. Heating systems used by residents can vary depending on their needs and the energy resources available. In the county profiles, heating systems are categorized as natural gas, electricity, propane, or wood fueled systems.

Travel[4]

The transportation and travel section accounts for the transportation burden of county residents. Information in this section includes average vehicle miles traveled per household, the fuel, maintenance, and repair costs associated with that VMT, VMT costs as a percent of typical income, and VMT as a percentage of 200 percent the federal poverty level income.[5] ODOE uses the U.S. Department of Health and Human Services federal poverty guidelines and assumes an average household size of three. This is $25,820 per year, so costs for 200% poverty level are compared to a $51,640 income.

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i The diversity index is a measurement that describes how diverse a population is by calculating the probability that two people chosen at random will be from different rae and ethnicity groups. The metric considers all of the race and ethnicity data selection options collected in the U.S. Census and is updated every 10 years.

Profiles

Below are three county profiles that provide a view of the different demographic, economic, and geographic factors that affect the state. A comprehensive set of county profiles can be found on the Oregon Department of Energy website.

County #1
Multnomah
County Seat: Portland

Characteristic	Amount
Area (Total Land Acres)[6]	275,848
Population (2024)[7]	803,343
Diversity Index[8]	53.9%
Number of Households[9]	349,803
Median Household Income (2024)[10]	$88,766

Homes



Characteristic	Amount
Homes Built Before 1990[11]	68%
Owner-Occupied Homes[12]	53%
Renter-Occupied Homes[12]	47%

Energy



Characteristic	Amount
Average Annual Residential Electricity (kWh)[13]	9,318 – 10,592
Average Annual Electricity Cost[13]	$1,562 - $1,695
Average Annual Residential Natural Gas Therms[13]	517
Average Annual Natural Gas Cost[13]	$887
Electricity and Natural Gas Average Costs (percent of typical income)[ii]	2.8 – 2.9%

Home Primary Heating



Characteristic	Amount
Electricity[14]	49%
Natural Gas[14]	46%
Propane[14]	1.1%
Wood[14]	0.6%
Other[14]	2.9%

Travel



Characteristic	Amount
Average Annual Vehicle Miles Traveled (VMT) Per Household[15]	13,311
Annual VMT Cost (Fuel, Maintenance, Repairs)[15]	$3,001
VMT Cost as Percent of Regional Typical Income[iii]	3.4%
VMT as Percent of 200% Federal Poverty Level Income[iv]	5.8%

ii Calculation of total average costs for electricity and natural gas divided by median income.
iii Calculation of total annual VMT cost divided by median county income.
iv Calculation of total annual VMT cost divided by the 200% poverty level for a 3-person household in Oregon in 2024 ($51,640).

County #2 Grant

County Seat: Canyon City

Characteristic	Amount
Area (Total Land Acres)[6]	2,897,787
Population (2024)[7]	7,225
Diversity Index[8]	20.5%
Number of Households[9]	3,444
Median Household Income (2024)[10]	$59,450

Homes



Characteristic	Amount
Homes Built Before 1990[11]	76%
Owner-Occupied Homes[12]	77%
Renter-Occupied Homes[12]	23%

Energy



Characteristic	Amount
Average Annual Residential Electricity (kWh)[13]	10,237 – 16,509
Average Annual Electricity Cost[13]	$1,212 - $1,610
Average Annual Residential Natural Gas Therms[13]	NA[v]
Average Annual Natural Gas Cost[13]	NA[ii]
Electricity and Natural Gas Average Costs (percent of typical income)[vi]	2.0 – 2.7%

Home Primary Heating



Characteristic	Amount
Electricity[14]	39%
Natural Gas[14]	0.4%[ii]
Propane[14]	6.3%
Wood[14]	39%
Other[14]	15%

Travel



Characteristic	Amount
Average Annual Vehicle Miles Traveled (VMT) Per Household[15]	27,551
Annual VMT Cost (Fuel, Maintenance, Repairs)[15]	$6,209
VMT Cost as Percent of Regional Typical Income[vii]	11%
VMT as Percent of 200% Federal Poverty Level Income[viii]	12%

v ODOE is unaware of any Natural Gas utilities serving Grant County. The U.S. Census Bureau data indicates 0.7 percent of Grant County residents use natural gas, but Oregon Public Utility Commission data do not indicate any natural gas use in Grant County.
vi Calculation of total average costs for electricity divided by median income.
vii Calculation of total annual VMT cost divided by median county income.
viii Calculation of total annual VMT cost divided by the 200% poverty level for a 3-person household in Oregon in 2024 ($51,640).

County #3 Klamath

County Seat: Klamath Falls

Characteristic	Amount
Area (Total Land Acres)[6]	3,807,934
Population (2024)[7]	69,474
Diversity Index[8]	41.9%
Number of Households[9]	28,999
Median Household Income (2024)[10]	$58,830

Homes



Characteristic	Amount
Homes Built Before 1990[11]	70%
Owner-Occupied Homes[12]	69%
Renter-Occupied Homes[12]	31%

Energy



Characteristic	Amount
Average Annual Residential Electricity (kWh)[13]	10,592 – 15,496
Average Annual Electricity Cost[13]	$1,562 - $1,872
Average Annual Residential Natural Gas Therms[13]	517 - 697
Average Annual Natural Gas Cost[13]	$772 - $885
Electricity and Natural Gas Average Costs (percent of typical income)[ix]	4.0 – 4.7%

Home Primary Heating



Characteristic	Amount
Electricity[14]	34%
Natural Gas[14]	43%
Propane[14]	3.4%
Wood[14]	11%
Other[14]	9.0%

Travel



Characteristic	Amount
Average Annual Vehicle Miles Traveled (VMT) Per Household[17]	21,558
Annual VMT Cost (Fuel, Maintenance, Repairs)[17]	$4,858
VMT cost as Percent of Regional Typical Income[x]	8.3%
VMT as Percent of 200% Federal Poverty Level Income[xi]	9.4%

ix Calculation of total average costs for electricity and natural gas divided by median income.
x Calculation of total annual VMT cost divided by median county income.
xi Calculation of total annual VMT cost divided by the 200% poverty level for a 3-person household in Oregon in 2024 ($51,640).

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