ABOUT THE REPORT

The Oregon Department of Energy is pleased to present the **2024 Biennial Energy Report** – the fourth iteration since the inaugural report was published in 2018.

The primary **purpose of the report**, as directed in ORS 469.059, is to inform local, state, regional, and federal energy policy development, planning, and investments, and to identify opportunities to further the energy policies of the state. To do this, ODOE, the state's dedicated energy office, **collects critical energy data and information** and analyzes what they mean for Oregon.

The report evolves based on Oregonians' current interests and inquiries about energy resources, policies, trends, and forecasts across the state. The **biennial nature of the report** provides a **"go-to" document** and reliable agency process that is timely and responsive to external partners, Tribes, communities, and the public. Ultimately, the Biennial Energy Report is meant to **serve as a trusted, data-driven platform** for conversations on emerging issues and policies, informing energy goals and strategies for the future.

Scoping & Development

As directed by statute, ODOE "shall seek public input and provide opportunities for public comment during the development of the report." The agency conducts broad outreach to collect feedback from diverse audiences and perspectives, which is intentionally done early in the scoping process to inform content development. In addition, other agency programs and projects reach out and collect feedback that can inform the Biennial Energy Report, allowing for those questions and ideas to be explored through infographics, Energy 101 articles, and more. The Biennial Energy Report process is also aligned with ODOE's Strategic Plan focus areas of engagement, equity, and data.

Development of the report also includes **process objectives**:

- Meet statutory requirements while engaging with new people and organizations, including historically and currently underserved populations and communities.
- Focus on content that is relevant and timely to stakeholder interests and responds to questions from Oregonians across the state.
- Ensure collection of stakeholder input and data is integrated with and complementary to other agency engagement and activities.

During the scoping phase, ODOE shared a project summary and key questions to guide input and offered different options for providing feedback online and through various agency communication channels. The agency collected responses through a public survey, comment portal, and during staff discussions with Energy Advisory Work Group and other external organizations.

This year, Oregon Department of Energy staff were engaged on two major projects in addition to the Biennial Energy Report: the Energy Security Plan and the Oregon Energy Strategy. There is strong emphasis on updating the Energy by the Numbers section and on Energy 101 content in this edition of the Biennial Energy Report that provides foundational material supporting the Energy Security Plan

and the Oregon Energy Strategy, including Alternatives to New Transmission 101, Utility Rate Increase Drivers 101, and Energy Resilience 101.

Later in the process, ODOE also shared a draft Table of Contents with Energy Advisory Work Group members and other external partners to solicit additional feedback. All of this input was evaluated in scoping the report and selecting final topics. Comments received after the scoping and content development processes were incorporated where possible.

Drafting & Implementation

The project team ensured all input was considered in the development process. The scoping process also helped identify cross-cutting areas of focus for the agency in drafting the report, consistent with ODOE's strategic plan:

- Equity: The agency considered key questions, including: *What are the specific equity considerations for this topic?* Incorporating equity in the drafting process prompted additional analysis in the Energy 101s that provided context on equity considerations specific to each topic The development of the Energy Strategy will provide more analysis on more equity issues, including information about how different energy choices might influence consumer costs and air quality outcomes. These analyses support ODOE's strategic focus areas to assess and enhance organizational data capabilities and, in particular, to collect and analyze demographic data to better inform ODOE's work and to identify barriers to achieving equitable energy outcomes.
- Data Management: During each iteration, the Biennial Energy Report has refined internal data collection processes, management roles, and structures. The 2024 report once again included data processing, fact-checking, and validation to ensure report accuracy and quality. The growing collection of data and analysis provided through the report supports ODOE's strategic focus area to Assess and Enhance Organizational Data Capabilities.
- Peer Review and Interagency Collaboration: In preparing this report, ODOE leveraged the knowledge and data of state agencies, energy organizations, and subject-matter experts. **ODOE greatly appreciates the many staff and other experts who reviewed sections of the report with quick turnaround, offered expert feedback, and provided assistance.** Their contributions improved the quality of this report and are an example of collaboration needed to support ODOE's strategic focus area to Expand and Improve Stakeholder Engagement.

Resources

- Project Website: ODOE hosts a public website for the Biennial Energy Report: https://www.oregon.gov/energy/Data-and-Reports/Pages/Biennial-Energy-Report.aspx. The website includes a link to sign up for email updates, online comment form, and materials from past reports and presentations.
- Online Comment Form: ODOE continues to provide a portal to collect feedback on the Biennial Energy Report: https://odoe.powerappsportals.us/en-US/ber-comment. Depending on the type

of input and timing, the project team will continue to incorporate comments into report development processes and scoping for future reports.

- Webinars and presentations: ODOE staff are available to make presentations in person and virtually on the Biennial Energy Report; an overview or on specific topics and sections. Past webinars are posted on ODOE's website and new materials are provided throughout the year. Organizations and communities interested in specific presentations can submit a request through the online comment form.

energyinfo.oregon.gov/BER

www.oregon.gov/energy/Data-and-Reports/Pages/Biennial-Energy-Report.aspx

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ABOUT THE DATA

The Oregon Department of Energy helps Oregonians make informed decisions about their energy choices and advances solutions that will shape an equitable, clean energy transition. ODOE serves as the state's central repository of energy data, information, and analysis, and fulfills this role through rigorous data collection, production standards, and quality assurance protocols. The agency assesses the quality of data based on its relevance to Oregon, its credibility, and its comprehensiveness. In alignment with the statutory requirements for the report, common data and analyses found in the report include:

- Energy consumption, expenditures, and costs
- Generation and transmission
- Production, imports, and exports
- Energy sectors, markets, and jobs
- Technologies and resources, including facilities
- Energy efficiency and conservation
- The effects of energy use, including greenhouse gas emissions

ODOE's preference is for Oregon-specific data, supplemented with national data to fill in gaps or provide context for Oregon's place within a larger energy landscape. For example, Oregon's Electricity Resource Mix and Transportation Sector Fuel Consumption charts were developed from Oregon-specific data sources, rather than using U.S. Department of Energy estimates. ODOE relied on government agencies, academic institutions, and trusted partners with credible and peer-reviewed data and information. Finally, the most thorough and comprehensive datasets from these sources were prioritized, depending on how they could best illuminate specific sectors, markets, resources, and trends.

Common data sources used in development of the report include:

- Federal/National: U.S. Energy Information Administration (EIA); U.S. Department of Energy; the National Labs; U.S. Environmental Protection Agency, U.S. Federal Highways Administration; U.S. Census Bureau; American Council for an Energy-Efficient Economy (ACEEE); ASHRAE
- Regional: Northwest Energy Efficiency Alliance; Northwest Power and Conservation Council; Bonneville Power Administration; Energy Trust of Oregon
- State: Oregon Department of Energy; Oregon Department of Transportation; Oregon Housing and Community Services; Oregon Public Utility Commission; Oregon Department of Environmental Quality; Oregon Health Authority; Oregon Department of Administrative Services
- Utilities and energy service providers
- Energy associations and organizations

Notable changes were made to both the methodology and collection of the data used in this iteration of the report.

The biggest change relates to U.S. Energy Information Administration State Energy Data System, which is the data source behind much of the Energy by the Numbers section. The EIA converts all forms of energy use into British thermal units, or Btus. This conversion helps compare and contrast energy consumption across different energy types, including electricity and fossil fuels. For electricity, this generally is calculated by comparing the primary fuel combusted – natural gas or coal – with the amount of electricity generated. For noncombustible generation resources, such as hydroelectric, geothermal, solar, and wind, this value must be a proxy or estimated value because there is no fuel combusted to produce the electricity.

Previously, the EIA used a "fossil fuel equivalency" method, which applies a proxy value for Btus for these resources based on a calculation that averages fuel consumption for all fossil-based generating plants. This proxy value represents the energy consumed as if the electricity were generated by fossil fuels. This value changed year-to-year as combustible generation changed. EIA's new "captured energy approach" applies a constant conversion factor based on the heat content of electricity itself. This is a static value and is more consistent with international energy calculations. The value of the static captured energy approach proxy is lower than the fossil fuel equivalency value.

The change in methodology has created some anomalies in historical renewable energy consumption data presented in the report. This is because it produces significantly lower values for total electric energy consumption, driven by the lower calculated consumption for the noncombustible hydro, solar, wind, and geothermal resources serving Oregon load. In most cases, overall trends in consumption data remain consistent with previous reporting, although anomalies can be seen in some year-to-year comparisons between data presented in the 2020 and 2022 Biennial Energy Reports.

Other changes to the data resulted from changes to data sources for two topics in Energy by the Numbers: the County Profiles and Oregon's Electricity Resource Mix.

In previous reports, we used Oregon Department of Housing and Community Services' County Profiles Dashboard as the data source for home energy burden costs. The data provided in the OHCS dashboard is necessarily focused on housing accessibility and affordability. The purpose of this report is to provide key information on the accessibility and affordability of energy services, so ODOE analyzed the primary data sources that inform the OHCS dashboard to produce energy-specific information with county-level demographic data. Data sources for the County Profiles include the U.S. Census Bureau, the Home Energy Affordability Gap, the Oregon Public Utility Commission, the U.S. Department of Health and Human Services, and the Housing and Transportation Affordability Index.

The data presented in Oregon's Electricity Resource Mix have also changed, largely affecting how the data on electricity market purchases are presented. ODOE now collects data on electricity produced for Oregon consumers from the Oregon Department of Environmental Quality, rather than directly from utilities. Because electricity generation is a primary input for the state Greenhouse Gas Reporting Program, this process ensures consistency of energy data across state agencies, and is a more efficient data collection process from the utilities.

While this change to the production of the ERM is more efficient and consistent, it does not currently provide the necessary data to calculate a specific resource mix for utility market purchases. ODOE has previously produced this information using an external contractor who analyzed data and information

about the resources committed across the Pacific Northwest region to produce a mix of likely resources contributing to the market. While this assessment was sufficient to produce a reasonable assessment of the market purchases resource mix, growth in participation in energy imbalance markets and increasing reliance on electric utility market purchases has made this process more challenging and will increasingly produce results that are less certain. As a result, ODOE made the decision to no longer provide this specific data breakout.

Data presented on in-state electricity generation facilities were also modified and improved since the last report. Data were updated to not only include new facilities and remove resources that were retired, but ODOE also conducted an audit of the data and identified several generators serving the same facility that were listed as separate facilities. The data now align with the U.S. EIA in how it identifies generators at the same facility – with unique identifiers assigned based on how the site was permitted and installed. Where ODOE found generators at the same site and with the same unique EIA identifier listed separately, the information was consolidated under a single facility. This appears as a drop in the number of sites when compared to previous reports. However, this is not reflective of actual trends, since only one wind facility and one coal plant in Oregon were retired between 2020 and 2024.

It's important to note that data reported between 2020 and 2022 were influenced by changes in energy consumption resulting from the response to the COVID-19 pandemic. This led to many data points in these years that did not align with previous trends and outcomes. Where analysis provides insights into how the pandemic affected energy trends, ODOE has provided that information. While there is only a single year of post-pandemic response data, ODOE also provides an assessment of whether recent energy data are or are not indicating a return to pre-COVID trends. Future versions of this report will have additional data that provide a more complete understanding of how COVID-19 affected our energy production and consumption.

We are proud of this report and how the data have been presented. ODOE is a steward of accurate, reliable, and credible data, which we achieve through attention to detail, standardized data management practices, and continual efforts to improve and expand our data capabilities. This is crucial to a data-driven report about Oregon's energy resources, activities, trends, and forecasts, and the data and analysis presented is foundational to making energy decisions that affect all Oregonians. If you identify any potential data quality issues or know of more representative or complete data sets that can be used in future reports, please reach out to us: https://odoe.powerappsportals.us/en-US/ber-comment/.

The agency, in collaboration with our many data partners, will continue to strive to be a central resource for sound and objective energy information and ensure the report reflects the most accurate and relevant data for Oregon.