

Oregon Statute requires the **Oregon Department of Energy to develop a Biennial Energy Report** to “inform local, state, regional, and federal energy policy development, energy planning and energy investments, and to identify opportunities to further the state’s energy policies.” Statute also says that the department may include “**recommendations** for the development and maximum use of cost-effective conservation methods and renewable resources...” (ORS 469.059).

ODOE’s first Biennial Energy Report, published in 2018, included recommendations in four key areas: data gaps, addressing equity and energy burden, planning for the future, and assessing the need for state engagement and investment. In the 2020 report, ODOE did not include a specific list of recommendations, but instead included ideas embedded in topic-specific policy briefs.

To prepare for and draft this report, ODOE staff engaged in stakeholder and public outreach, original research, discussions with other agencies, and reviews of technical studies. Throughout this effort, staff heard numerous ideas for how the state can and should meet its energy and greenhouse gas reduction goals. From those involved in research and development to industry stakeholders to advocates to consumers, Oregonians have many perspectives on the right approach to modernize and improve our energy systems as the state moves from a reliance on fossil fuels to clean energy. There are multiple pathways to achieve the state’s goals, and each comes with opportunities and challenges.

Over the past year, a common theme has emerged during the drafting of this and other legislatively directed reports and has formed the basis of our recommendation:

The state would **benefit from an energy strategy** to align policy development, regulation, financial investment, and technical assistance in support of an intentional transition to a clean energy economy. This strategy could identify specific pathways to meet the state’s policy goals that maintain affordability and reliability, strengthen the economy, and prioritize equity while balancing tradeoffs to maximize benefits and minimize harms. Ultimately, this strategy could be used to **make informed decisions and motivate action**.

Statewide energy strategies have been recently developed and implemented in many states across the nation, including Washington, Utah, Wyoming, New Hampshire, Minnesota, and others.

The influx of federal funding coming from the Infrastructure Investment and Jobs Act and the Inflation Reduction Act creates an opportunity and adds urgency. The state should invest federal funds and deploy resources strategically in activities and programs that target areas where the market alone may not achieve the optimal outcome for Oregonians. A strategy, informed by the latest information and analysis and developed with input from diverse voices from across the state, could help guide the Oregon Department of Energy, other state agencies, and local jurisdictions as they determine which funds to apply for and how to spend the funding that comes to the state.

A valuable state energy strategy would be a comprehensive, system-wide approach that provides guiding principles and a framework to promote coordination on energy policy, planning, and resource investment. State agencies, regional entities, utilities, and local communities have led the way in developing plans with specific actions that work best for their customers and constituents. A strategy could complement and build on their existing work, identify and address gaps and barriers to success, and improve alignment within the state on energy and other related issues like public health, community development, and land use.

The policy briefs in this report review recent studies that, collectively, identify the types of actions that will be required to achieve the state's climate and energy goals, focusing on four pillars of decarbonization: energy efficiency, electrification of end uses, decarbonizing the electric sector, and developing lower-carbon fuels. The optimal approach for Oregon will likely require some combination of these four pillars, and policymakers will need to make decisions on whether, and to what extent, to encourage specific technologies and resources within this transition. Each pathway comes with tradeoffs; decision-makers need to balance these tradeoffs and make informed decisions that maximize benefits and minimize harms to Oregonians and important state resources.

The exact scope of the energy strategy should be developed by engaging with stakeholders, community members, and other state agencies, ideally as a result of direction from the Legislature and Governor. The strategy should be developed using an inclusive process and should focus not only on how the state's energy systems can decarbonize, but also how to help Oregonians navigate the transition – with previously underrepresented voices at the center of the conversation and decision making. Below are just a few of the key questions that might frame a discussion about an energy strategy.

- **Renewable generation:** Can the state identify a preferred resource development pathway for renewables that optimizes across multiple objectives, such as minimizing land use and agricultural disturbance, protecting cultural resources, supporting fish and wildlife, addressing the need for transmission development, supporting local economic development, offering resilience benefits, ensuring equitable access, and considering total costs of energy?
- **Energy Efficiency:** Efficiency has traditionally been the least-cost, no-regrets resource in the Pacific Northwest and must be the centerpiece of the state's approach to decarbonization. How can a strategy be designed to maximize the energy savings and additional co-benefits of energy efficiency?
- **Creating space for innovation:** Optimal technology solutions may not yet be commercially available. To what extent should Oregon develop policy flexibility to allow for a range of solutions, such as gas power plants with carbon capture, renewable hydrogen, or large-scale development of biofuels? What role should the state play in supporting or pursuing the development of these types of innovative technologies?
- **Equity:** What can the state do to ensure the distribution of benefits and burdens in the transition doesn't exacerbate historical inequities? How can the state ensure that the transition creates opportunities to lift up and invest in communities that have been left behind by previous economic transitions?

- **Cost:** What policy solutions can help mitigate the costs of the clean energy transition across sectors and types of customers, particularly for the state’s most energy-burdened and vulnerable residents? Is there a way to meet the state’s energy goals in way that reduces costs for Oregonians?
- **Resilience and energy security:** Given that the state is already experiencing the effects of climate change, is there an optimal pathway that achieves the necessary scale of clean energy affordably while also improving community energy resilience and energy security across the state?
- **Regionalization:** Oregon is already part of an interconnected electricity grid and imports most of its transportation and gaseous heating fuels from neighboring states. Is there a regionalization strategy that can balance interests in developing in-state clean energy resources with the efficiencies that might come from increased regionalization?
- **Workforce:** What investments does the state need to make to ensure there is a workforce available to implement the strategy, and how can the state help prepare the energy sector for energy jobs of the future? How can the state promote workforce development practices and programs that value diversity, advance equity, and create inclusive careers and opportunities in the energy sector?

The state’s climate and energy goals can be achieved with a combination of different answers to these questions. But how they are answered will affect all Oregonians and have significant implications for the electric, natural gas, and transportation sectors.

With a thoughtful strategy in place, the state can align regulation, policy, financial incentives, and technical assistance to support it. The strategy can help guide Oregon’s resources toward the highest priority opportunities, addressing key questions, such as:

- **Incentives:** Where and how should Oregon invest state and federal dollars to help businesses and consumers with the transition? How can the state target assistance to those who need it most?
- **Technical assistance:** What are the questions and challenges that consumers, businesses, and local governments have as Oregonians adopt new clean energy technologies? How should the state support awareness of these opportunities? What technical assistance do communities need as they adopt new clean energy technologies?
- **Data, information, and analysis:** What data gaps remain and what information will help inform policymakers in developing specific programs and investments to advance the strategy? What topics and types of analysis are needed to understand the energy landscape and inform future decision making?

As the Biennial Energy Report demonstrates, the clean energy transition is already happening. Through the development of an energy strategy, the state has an opportunity to proactively plan for an energy transition that works for Oregon and her people.

The Oregon Department of Energy is pleased to present the **2022 Biennial Energy Report** – the third 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 stakeholders, 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. 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 more than 50 responses through a public survey, comment portal, and during staff discussions with experts and interested parties.

- **Survey:** ODOE’s online survey collected responses from the general public, local governments, non-profits, and experts in energy-related fields. Most respondents had read previous reports and offered feedback supporting the continuation of the structure and approach from the 2020 report.
- **Online Comment Form:** Throughout the scoping process, ODOE provided a website portal to collect input. Feedback came from energy organizations and associations, utilities, non-profits,

government, industry, and the general public. Many respondents use past versions of Energy by the Numbers and requested more granular analysis when possible.

- **Direct Discussions:** Staff engaged in more than two dozen targeted scoping conversations with utilities, energy organizations, ODOE's Energy Advisory Work Group, legislative and advisory committees, and Government-to-Government tribal staff. Respondents provided specific topic ideas for Energy 101s and Policy Briefs and supported expansion of the Energy History Timeline.

Feedback included **common areas of interest:** technologies and resources like energy storage, renewable natural gas, hydrogen, alternative fuels, hybrid technologies, and heat pumps; consumer costs and energy burden; energy efficiency; EV integration; federal funding; HB 2021; PURPA; renewable energy development considerations; rentals and multifamily housing; supply chain and workforce; understanding the energy landscape; utility system planning and transmission

Later in the process, ODOE also published and shared a draft Table of Contents to solicit additional feedback. All of this stakeholder 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 equity considerations for this topic, including opportunities, challenges, and how are these being addressed?* Incorporating equity in the drafting process prompted additional outreach with community-based organizations and analysis of needs and benefits for underserved communities. These engagements support ODOE's strategic focus area to Build Practices and Processes to Achieve More Inclusive and Equitable Outcomes
- **Data Management:** During each iteration, the Biennial Energy Report has refined internal data collection processes, management roles, and structures. The 2022 report included improvements in data processing, fact-checking, and validation to ensure report accuracy and quality. Authors were also supported by a new centralized data approach and enhanced data analysis and visualization platforms. 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](https://energyinfo.oregon.gov/BER)**

**[www.oregon.gov/energy/Data-and-Reports/Pages/Biennial-Energy-Report.aspx](https://www.oregon.gov/energy/Data-and-Reports/Pages/Biennial-Energy-Report.aspx)**

## ABOUT THE DATA

The Oregon Department of Energy helps Oregonians make informed decisions about their energy choices and advance 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 and, where helpful, this is supplemented with more general, 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. DOE 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
- **State:** Oregon Department of Energy; Oregon Department of Transportation; Oregon Housing and Community Services; Oregon Public Utilities Commission; Oregon Department of Environmental Quality; Oregon Health Authority; Oregon Department of Administrative Services
- **Utilities and energy service providers**
- **Energy associations and organizations**

The COVID-19 pandemic created challenges in data collection because many trusted data sources re-focused their work to respond to the crisis. Thus, in some instances, data production was understandably delayed, incomplete, or not available. This was the primary limitation for the 2022 report as some datasets previously featured in the report were not available (this mostly affected the Energy by the Numbers section). As a result, where data was unavailable or incomplete, the ODOE data team made choices on how best to provide useful information. In some instances, older datasets used in previous reports may still be referenced, or more recent national data used as a proxy. In some cases, ODOE opted to pause covering certain topics because the data did not meet agency needs. This approach enabled ODOE to maintain strong data standards despite some gaps in the datasets.

The effects of the pandemic response across the energy landscape also led to some data points that were not aligned with previous trends and outcomes. This effect is of interest, and can provide valuable information to governments, utilities, and other organizations as they consider how to build more resilient systems and practices. However, it is also problematic, because it may distort trends and conditions, limiting our view of how other events, policies, and activities are influencing the energy sphere. It is tempting to look at aberrational data and attribute it to COVID-19, but it is important to keep in mind that correlation does not imply causation. The data should be interpreted with these limitations in mind, and more weight given to long-term trends. As the world emerges from the pandemic, it will be important to note where data return to anticipated trend lines, and, perhaps more interesting, to understand where they do not.

We are proud of this report and how the data has 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 approach to better understand Oregon's energy resources, activities, trends, and forecasts, and 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.