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Marion County
Planning

Testimony from John J. Audley
In Support of AR 25-015 Application to Site a Battery Energy
Storage System in Marion County on EFU Land as a Utility Facility
Necessary for Public Service

Public Hearing November 6, 2025

I. Background

My name is John J. Audley, and for twenty years I have worked in Oregon in policy and government relations. One of my areas of expertise is energy policy. Since 2008, I have contributed to the creation and implementation of numerous clean energy policies throughout the Northwest. I was deputy director at Renewable Northwest and served as administrator of policy at the Oregon Department of Energy. Among my current and former clients are national and international energy companies working in the Pacific Northwest, including RWE.¹

Based this expertise, I offer the following testimony as evidence that energy storage systems have become integral to the way Oregon's independently owned utilities provide services to Oregon customers. Building off eighty years of active energy policy shaping the State's energy mix, Oregon is using energy policies to better prepare the State to generate and store energy for a more uncertain energy future.

II. Oregon is a National Leader in Energy Policy

For nearly a century Oregon policymakers have used policy to promote a broad array of electricity sources to meet the energy needs of the State.²

- **Hydropower:** With the passage of the Bonneville Project Act in 1937, the United States Congress put Oregon and the Pacific Northwest on a path to generate most of its energy by harvesting hydropower. Oregon's first renewable portfolio standard included hydropower as a renewable energy. Congress passed the Pacific Northwest Electric Power Planning and Conservation Act (also known as the NW

¹ My professional history and curriculum vitae can be found at <https://www.jjaconsults.com/> and is available as Exhibit 1 to this comment.

² For a comprehensive review of Oregon's energy policies, see the attached report titled *Oregon's Energy History* (2020) prepared by the Oregon Department of Energy, available as Exhibit 2 and also at: <https://www.oregon.gov/energy/Data-and-Reports/Documents/2020-BER-Energy-History.pdf>

Power Act) in 1980, directing the newly established Pacific Northwest Electric Power and Conservation Planning Council (later named NW Power and Conservation Council), to adopt a regional energy conservation and electric power plan, as well as a program to protect, mitigate, and enhance fish and wildlife affected by hydropower on the Columbia River and its tributaries.

- **Nuclear:** In the 1940s, the Hanford Nuclear facility became the world's first plutonium production reactor, spurring regional nuclear power development into the 1970s.
- **Natural Gas:** Jordan Cove and Pacific Connector pipeline were proposed in 2006 as a liquid natural gas (LNG) import terminal in Coos County, OR.
- **Coal:** In 1996 the State approved the 550 MW Boardman Coal Plant proposed by Portland General Electric.
- **Renewable Energy:** In 1997, Oregon became the first state to establish a price on carbon, requiring power plants to avoid, displace, or sequester a portion of their CO2 emissions. In 2001, the EFSC-approved Stateline Wind Project in Umatilla County becomes first utility-scale wind energy facility built in Oregon. In 2007 the Oregon legislature passed SB 838, requiring the state's largest utilities to provide 25 percent of retail sales from eligible renewable sources by 2025. In 2016, Oregon adopted a 50% renewable portfolio standard. And in 2020, Oregon Governor Kate Brown issued Executive Order 20-04 Directing State Agencies to Take Actions to Reduce and Regulate Greenhouse Gas Emissions.

III. Oregon is Developing a Comprehensive Energy Strategy – and Energy Storage Systems are Part of that Strategy

Until recently, the product of these various energy policies has been a comparatively diverse and relatively inexpensive array of energy sources to meet the energy needs of Oregonians.³ However, concerns over climate, the frequency of catastrophic events, and growing concerns over the risks to energy systems and national security prompted Oregon

³ ODOE has an interactive map that shows the different percentages of energy and their sources. An excerpt of the map is attached as Exhibit 3, but is also available at: https://public.tableau.com/views/PowerProductionOregon2023/OREGONERM?:language=en-US&:embed=y&:sid=&:redirect=auth&:embed_code_version=3&:loadOrderID=0&:display_count=y&publish=yes&:origin=viz_share_link.

and other states to develop plans to promote more resilient energy systems at the regional, state, and local level. The Oregon Department of Energy (ODOE) published the inaugural Oregon Energy Security Plan in September 2024 following direction from the Oregon legislature pursuant to SB 1567.⁴ The plan identifies risks to electric, liquid fuel, and natural gas/propane systems, and proposes ways to mitigate those risks. ODOE expects to update the plan annually to reflect the latest data and information. According to ODOE:

“A resilient energy system is one that can recover quickly after a disruption like a Cascadia Subduction Zone earthquake, a sea level rise such as a storm surge, or heightened forest fire dangers . . . Our programs support projects that boost resilience, such as distributed generation, [marine energy](#), and [energy storage](#). ODOE is also working with other state and local agencies and stakeholders to assess the current risks to our energy system, and how we would respond.”⁵

In 2023, the Oregon legislature established a grant program designed to support efforts by Oregon counties to develop and implement energy resilience plans. One element of that planning includes mapping the energy infrastructure within the county, including energy system storage facilities.⁶ According to ODOE energy storage also improves the resiliency of the power grid.⁷

Eugene Water and Electric (EWEB) installed its own battery backup system as part of its response to electricity reliability challenges.⁸

A. Towards the Creation of an Oregon Energy Strategy:

In 2023 the Oregon legislature instructed ODOE to develop an energy strategy that would assist the State in its efforts to realize its energy goals.⁹ A robust process involving public outreach to stakeholders across the state was initiated in 2024, and the first draft of the

⁴ See Exhibit 4, Senate Bill 1567, also available at:

<https://olis.oregonlegislature.gov/liz/2022R1/Measures/Overview/SB1567>

⁵ See Exhibit 5, ODOE, Safety and Resilience, Energy System Resilience, also available at:

<https://www.oregon.gov/energy/safety-resiliency/Pages/Resilience.aspx>.

⁶ See Exhibit 6, ODOE, Safety and Resilience, County Energy Resilience Grant Program, also available at:

<https://www.oregon.gov/energy/safety-resiliency/Pages/County-Resilience.aspx>.

⁷ See Exhibit 7, ODOE, Safety and Resilience, Energy Storage, also available at:

<https://www.oregon.gov/energy/safety-resiliency/Pages/Energy-Storage.aspx>.

⁸ See Exhibit 8, Oregon Resilience Case Study, Business Continuity Planning, DERS & Microgrids, also

available at: <https://www.oregon.gov/energy/safety-resiliency/Documents/DERS-Microgrids-Case-Study.pdf>

⁹ See Exhibit 9, House Bill 3630, also available at:

<https://olis.oregonlegislature.gov/liz/2023R1/Downloads/MeasureDocument/HB3630/Enrolled>.

plan was released for comment in August 2025. A final report will be submitted to the Oregon legislature in November 2025.¹⁰

Among its anticipated components will be recommendations to increase the use of energy storage systems to promote greater system resiliency and reliance upon locally produced electricity.

B. Oregon's Largest Utilities Have Integrated Battery Storage into their Integrated Resource Planning:

In 2015, the Oregon legislature required both PGE and PacifiCorp to acquire at least one energy storage system.¹¹ Both PGE and PacificCorp have submitted compliance filings to the Oregon Public Utility Commission (PUC):

PacificCorp PUC Filing: UM1857¹²

Portland General Electric PUC Filing: UM1856¹³

Considering the focus of this proceeding, it is interesting to note that all pilot energy system storage projects proposed by both PGE and PacifiCorp are in the North Willamette Valley. PGE has signed an agreement with the Oregon Military Department to provide services to one of its facilities in Oregon.

Both PacifiCorp and PGE have integrated battery storage their Clean Energy Plans.¹⁴ To underscore how policy shapes these utilities energy acquisition, I have selected a few quotes from PacifiCorp's IRPs:

PacifiCorp's 2025 CEP Key Findings include:

"To meet ambitious HB 2021 decarbonization targets, the 2025 CEP preferred portfolio includes 11,837 megawatts (MW) of new proxy resources to serve Oregon

¹⁰ See Exhibit 10, ODOE, Data & Reports, Oregon Energy Strategy, also available at:

<https://www.oregon.gov/energy/Data-and-Reports/Pages/Energy-Strategy.aspx>.

¹¹ See Exhibit 11, House Bill 2193, also available at:

<https://olis.oregonlegislature.gov/liz/2015R1/Downloads/MeasureDocument/HB2193>

¹² See Exhibit 12, PacifiCorp's Compliance Filing, Docket UM 1857, also available at:

<https://edocs.puc.state.or.us/efdocs/HAD/um1857had333292114.pdf> and

<https://apps.puc.state.or.us/edockets/docket.asp?DocketID=20915>

¹³ See Exhibit 13, Portland General Electric Company, Draft Storage Potential Evaluation Filing, Docket UM

1856, also available at: <https://edocs.puc.state.or.us/efdocs/HAD/um1856had162631.pdf>

<https://apps.puc.state.or.us/edockets/docket.asp?DocketID=20913>

¹⁴ PacifiCorp's plan is available at: <https://www.pacificcorp.com/energy/oregon-clean-energy-plan.html>.

PGE's plan is available at: <https://portlandgeneral.com/about/who-we-are/resource-planning/combined-cep-and-irp>

over the 21-year planning period, including: 2,491 MW of wind; 2,152 MW of utility-scale solar; 1,032 MW of small-scale solar; 3,835 MW of storage resources; 2,045 MW of energy efficiency; and 153 MW of demand response.

In the near-term, Oregon will require 153 MW of new renewable resources and 186 MW of storage resources before 2030. Between 2030 and 2034, there is an additional need of 2,694 MW of new utility-scale renewable resources, 326 MW of new small-scale renewables and 757 MW of new storage resources.

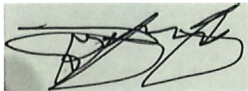
If compliance with HB 2021 requires Oregon load to be served on an hourly, as opposed to annual basis, Oregon might require an additional 12 GW of non-emitting and storage resources over the planning horizon to comply with HB 2021”¹⁵

IV. Conclusion

In conclusion, building off eighty years of active energy policy shaping the State’s energy mix, Oregon is using energy policies to better prepare the State to generate and store energy for a more uncertain energy future. As the customer service provider, utilities must not only meet these policy objectives but do so in a way that continues to provide its customers with the least cost, least risk electricity product. To plan for that future, consistent with both policy mandates and customer demand large utilities are integrating electricity storage systems into their infrastructure planning and development, making them instrumental for conducting business and meeting policy requirements.

If you have any questions, please don’t hesitate to contact me.

Sincerely,



John J. Audley

john@jjaconsults.com

971-203-3248

¹⁵ See PacifiCorp’s Clean Energy Plan Engagement Series Meeting August 20, 2025 at 13. Available at: https://www.pacificpower.net/content/dam/pcorp/documents/en/pacificpower/community/or-clean-energy-plan/OR_CEP_Meeting_2025-08_August_Slides.pdf

JOHN J. AUDLEY CONSULTING

Excels at defining and delivering successful outcomes in complex environments -- Talent for communicating complex ideas to a wide audience -- Expertise in Oregon housing, natural resource, economic development, and energy policies.

PROVEN ABILITY AND RESULTS

Success in Local, State, and National Political Environments

- Secured \$5MM in state funds to support an innovative affordable housing loan program
- Secured \$5MM in state funds to launch a pilot project to build modular houses made from mass timber products
- Forged bi-partisan support and funding for an affordable loan program to help families replace failed septic systems -- \$10MM in state funding secured over four legislative sessions
- Passed major energy legislation in Montana, Washington, and Oregon
- Built markets for biomass by expanding its eligibility as a fuel stock under Washington and Oregon's renewable energy laws

Sustainable, Successful, Organizational Leadership

- Built and maintained an independent consulting company, now in its ninth successful year
- Managed as many as 25 direct reports and forty indirect reports
- Oversaw the Oregon Department of Energy policy development and implementation
- Led Sustainable Northwest through transition from founding executive director
- Created new policy programs at two national environmental organizations and two international policy organizations.
 - One of those programs was established in Brussels, Belgium

RELEVANT WORK EXPERIENCE

- **John Audley Consulting**, July 2015 to present
 - *Clients include the Oregon Business Council, Craft3, Vision To Learn, Capital Power, Hacienda CDC, and the Washington Department of Natural Resources*
- **Sustainable Northwest, President. 2013-2015**
- **Oregon Department of Energy, Policy Administrator, 2012-2013**
- **Renewable Northwest Project, Deputy Director, 2008-2012**
- **The Nature Conservancy in Oregon, Federal Government Relations, 2007-2008**
- **The German Marshall Fund of the United States, European Fellow, 2003-2006**
- **Carnegie Endowment for International Peace, Founder and Director Trade, Equity and Development Policy Program, 2001-2003**
- **United States Environmental Protection Agency, Trade Program Coordinator, 1998-2001**

PUBLIC SERVICE

- *Staffed Governor Kate Brown's Council on Wildfire Response, 2018-19*
- *Board Member, PECL, 2017 to 2020*
- *Board Member, The Climate Trust, 2013 to 2016*
- *Board Chair, Sustainable Northwest Wood, 2013-2015*
- *Working Forest Landscape, Oregon State University School of Forestry, 2014-15*
- *Steering Committee, Strategic Health Impact Assessment on Wind Energy Development in Oregon, Oregon Health Authority, 2012.*
- *Oregon Sage Grouse Advisory Committee, 2010-2012*

EDUCATION

- *The University of Maryland, Ph.D, political economy*
- *The University of Arizona: BA, political science, MA, political science*
- *The American Graduate School of International Management, Masters in International Business Management*

SELECTED PUBLICATIONS

With Martin Doyle, **Securing Oregon's Water Future**. 2022. Oregon Business Council Report.

Importance of Water in the North Santiam Watershed; an Economic Description. 2019. EcoNorthwest (organized by Oregon Business Council).

with Scott Campbell, **Work in Eastern Oregon is Tied to the Land**, Oregonian op ed, 2014

with Mike MacArthur, **Wildlife Officials Should Involve Public in Sage Grouse Plan**, Bend Bulletin, op ed, 2010

Publications from The Carnegie Endowment

Green Politics and Global Trade: NAFTA and the Future of Environmental Politics.1997; Georgetown University

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Consulting.

OREGON'S ENERGY HISTORY

We hope this timeline of Oregon's energy history will serve as a useful reference for readers as they review sections of this report, especially where we discuss energy data over time.

There are six notable entries from just the last two years — what will be added by the time we publish the 2022 *Biennial Energy Report*?

Energy history is being made.



Introduction

Oregon's energy system has evolved based on the state's natural resources and in response to events like technology development and energy crises. Native American tribes, as the original inhabitants of Oregon, have had their land base significantly diminished or completely removed – this altered the way natural resources were traditionally managed and has resulted in an enduring change in the landscape that influences the options for our energy system today. Over time, deliberate policy choices helped create not only our energy system but also shaped our society. In order to help shed light on how we got to where we are today, this timeline includes a number of events that unfolded over time and policy choices that Oregon's leaders and citizens have made in response to these events. A better understanding of how we got to where we are can help us more effectively manage the energy opportunities and challenges of today and tomorrow.

Indigenous tribes and bands have been with the lands that we inhabit today in the Willamette Valley and throughout Oregon and the Northwest since time immemorial. It is impossible to understand Oregon or U.S. history, geography, or government without having essential understandings of the rich culture and contributions of Native peoples. We would like to express our respect to the First Peoples of this land, the nine federally recognized tribes of Oregon: Burns Paiute Tribe, Confederated Tribes of Coos, Lower Umpqua & Siuslaw, Confederated Tribes of Grand Ronde, Confederated Tribes of Siletz Indians, Confederated Tribes of the Umatilla Indian Reservation, Confederated Tribes of the Warm Springs Reservation, Coquille Indian Tribe, Cow Creek Band of Umpqua Tribe of Indians, and Klamath Tribes. ODOE's office is in Salem, Oregon, the land of the Kalapuya, who today are represented by the Confederated Tribes of the Grand Ronde and the Confederated Tribes of the Siletz Indians, and whose relationship with this land continues to this day.

Timeline of Oregon's Energy History



Event



Energy policies enacted at state and federal levels



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



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



Missoula Flood Paths, courtesy of Washington Geological Survey.

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

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

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



"The exclusive right of taking fish in the streams running through and bordering said reservation is hereby secured to said Indians; and at all other usual and accustomed stations, in common with citizens of the United States."⁷ - *Excerpt from the Warm Springs treaty*

Left- Gustav Sohon's depiction of the 1855 treaty gathering, courtesy of the Washington State Historical Society.

1859 – Oregon becomes the 33rd state.⁸

1860 – Portland Gas Light Co. lights up part of downtown with gas streetlights from coal gas. It becomes Northwest Natural Gas Company in 1958.⁹

1878 – The Wadatika Band of Northern Paiutes abandon the Malheur Reservation to escape conflict. Upon return, the reservation becomes "Public Domain" and tribal members establish a makeshift encampment on the outskirts of the town of Burns, OR. The Burns Paiute Tribe, descendants of the Wadatika Band, regains reservation land in Harney County in 1972.¹⁰

1879 – Thomas Edison invents the light bulb.¹¹

1883 – American inventor Charles Fritts creates the first working selenium solar cell – the ancestor of modern solar cells.¹²

1889 – The first long-distance transmission line in North America is energized between the generating station at Willamette Falls in Oregon City and Portland.¹³ Three years later, the Willamette Falls Electric Company becomes Portland General Electric (PGE).¹⁴

1889 – McMinnville Water and Light becomes Oregon's first municipally-owned utility.¹⁵

1890-1910 – Coal mining occurs in Coos Bay area, the only area in Oregon to produce coal commercially.¹⁶

1910 – Pacific Power & Light is formed from the merger of several financially troubled utilities in the Pacific Northwest. PP&L eventually becomes PacifiCorp.¹⁷

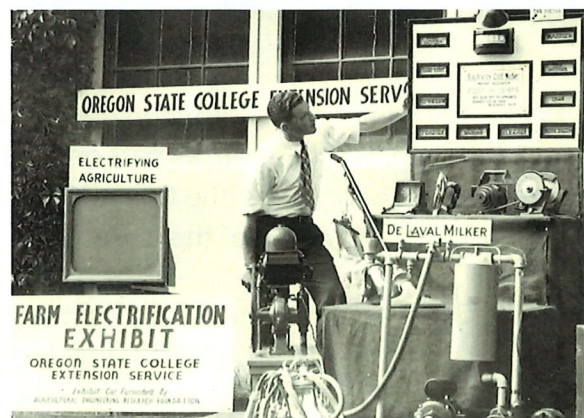
1911 – Public Utility Act of 1911 in Oregon extends the jurisdiction of the existing Railroad Commission to utilities and transportation regulation.¹⁸

1914-1918, World War I – Newly electrified industries in the northwest, including shipbuilding, lumber, machinery, and woolens, help fuel America's contribution to the allied victory in World War I.¹⁹

1919 – Oregon passes the first per-gallon tax on gasoline, at a rate of one cent per gallon.²⁰

1920 – Congress passes the Federal Water Power Act, which creates the Federal Power Commission to regulate the construction, operation, and maintenance of non-federal hydroelectric power projects. The Federal Power Commission becomes the Federal Energy Regulatory Commission (FERC) in 1977.²¹

1935 – President Roosevelt establishes the Rural Electrification Administration by Executive Order. The next year, Congress passes the Rural Electrification Act, providing funding to bring electricity to farms.²² In a speech two years later at the dedication of a new electric cooperative (or co-op), Roosevelt states, "Electricity is a modern necessity of life, not a luxury."²³ At the time, only 27 percent of Oregon farms have electricity. By 1940, 59 percent of farms in Oregon have electricity.²⁴



Milk machine exhibit as part of OAC Extension Service's Farm Electrification Exhibit, 1950-1959, courtesy of OSU.

1937 – Congress passes the Bonneville Project Act and creates a temporary agency, the Bonneville Power Project, to market and transmit power from federal hydropower projects and “give preference and priority” to public bodies and cooperatives. Construction of Bonneville Dam is completed in 1938.²⁵ The Bonneville Power Project is renamed the Bonneville Power Administration in 1940.²⁶

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

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



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

1944 – The world's first plutonium production reactor begins operations at the Hanford site, near Richland, Washington, as part of the Manhattan Project. This site is approximately 30 miles from Oregon along the Columbia River. Plutonium production ended in 1989, and the Hanford site is now one of the largest and most expensive cleanup sites in the country.³⁰

1946 – Congress passes the Atomic Energy Act of 1946, establishing the Atomic Energy Commission. The AEC would take over responsibility of United States nuclear development from the Manhattan Engineer District. The purpose of the AEC is to promote the use of atomic energy for peaceful purposes.³¹

1954 – The Western Oregon Indian Termination Act terminates federal recognition of 61 tribes. The Klamath Termination Act terminates federal recognition of the Klamath Tribes.³² After many years of work by tribal members, federal recognition of these tribal governments is restored: Confederated Tribes of Siletz Indians (1977), Cow Creek Band of Umpqua Tribe of Indians (1982), Confederated Tribes of Grand Ronde (1983), Confederated Tribes of Coos, Lower Umpqua and Siuslaw Indians (1984), the Klamath Tribes (1986), and Coquille Indian Tribe (1989).³³

1954 – Two Oregonians, Daryl Chapin and Gerald Pearson, both graduates of Willamette University, help invent the first solar cell using silicon.³⁴

Solar technology inventors Gerald L. Pearson, Daryl M. Chapin, and Calvin S. Fuller, courtesy of solarcellcentral.com

1954 – Congress passes the Atomic Energy Act of 1954, permitting private ownership of nuclear materials and the sale of nuclear power.³⁵

1957 – Construction of The Dalles Dam is completed. While the project contributes to flood control, navigation, power generation, and irrigation, it also submerges Celilo Falls, an important Native American fishing area with settlements and trading villages in the oldest continuously inhabited place in the region.³⁶



1959 – An amendment to the Federal Atomic Energy Act allows states to control radiation hazards. Oregon subsequently enters into an agreement with the federal government under which the state assumed certain regulatory authority.^{37 38}



1961 – Nick Holonyak Jr., employed at General Electric, develops the first light-emitting diode that emitted light in the visible part of the frequency range. It was a red LED.³⁹

1964 – The United States and Canada implement the Columbia River Treaty to provide flood control and optimize hydropower generation within the Columbia River Basin.⁴⁰

1969 – In *U.S. v. Oregon* the U.S. District Court rules that the Nez Perce, Umatilla, Warm Springs, and Yakama tribes that negotiated the Treaty of 1855 have “an absolute right” and are entitled to “a fair share” of the fish produced by the Columbia River system.⁴¹ This continues to be an on-going Federal court proceeding and fisheries in the Columbia River have been managed subject to provisions under the jurisdiction of the federal court.⁴²

1969 – Governor McCall establishes the Nuclear Siting Task Force of the Nuclear Development Coordinating Committee by Executive Order. The Task Force is created to approve the location of nuclear power plants consistent with Oregon’s environmental protections.

1970 – Congress passes the Clean Air Act to protect public health and welfare from air pollution from power plants, motor vehicles, and industrial facilities.⁴³

1971 – The Oregon Legislature creates the Nuclear and Thermal Energy Council to regulate the siting of nuclear and coal-fired generating plants larger than 200 megawatts. This Council eventually becomes Energy Facilities Siting Council (EFSC) in 1975.⁴⁴

1971 – The 1,130 MW Trojan Nuclear Power Plant proposed by PGE in Columbia County receives a site certificate from the Nuclear and Thermal Energy Council.⁴⁵

1973 – Arab oil embargo leads to a quadrupling of oil prices, rationing of gasoline, and eventually efforts by U.S. policymakers to reduce the country's dependence on foreign oil.⁴⁶



Portland during the early morning hours of pumping when gas was limited to five gallons per car on a first-come, first served basis, courtesy of David Falconer/EPA/US National Archives.

"The 1973 Oil Embargo acutely strained a U.S. economy that had grown increasingly dependent on foreign oil. The efforts of President Richard M. Nixon's administration to end the embargo signaled a complex shift in the global financial balance of power to oil-producing states and triggered a slew of U.S. attempts to address the foreign policy challenges emanating from long-term dependence on foreign oil." - *U.S. Department of State, Office of the Historian.*⁴⁷

1973 – President Nixon establishes the Federal Energy Office within the Office of the President to help coordinate the American response to the Arab oil embargo. This office evolved into the Federal Energy Administration the following year, before becoming part of the newly established U.S. Department of Energy in 1977.⁴⁸

1973 – The Oregon Legislature passes SB 100 creating a comprehensive land use planning system in the state.⁴⁹ Land use planning shapes the development of Oregon's landscape, affecting everything from transportation patterns to how energy facilities are sited in Oregon.

1973 – Congress passes the Endangered Species Act to provide for the conservation of ecosystems upon which threatened and endangered species of fish, wildlife, and plants depend.⁵⁰



1973 – The Oregon Office of Energy Research and Planning writes the first Biennial Energy Plan (now known as the Biennial Energy Report), called “Transitions: A Book on Future Energy”.⁵¹



In his introduction to the 1977 reprint of this report, Governor McCall wrote, “As governor of Oregon at the time this document was prepared, I believed that there was a role in state government for bold new ideas and for innovative, long-range planning. I was aware of the controversy which would surround this report, but I also knew that Oregon had just experienced its first dramatic energy crisis and that we needed new planning tools that would help us better understand and modify the relationships between energy and our natural and human systems... Transition is a bold document. It challenges the people of this state to create their own future rather than having it arbitrarily imposed upon them, by special interests and external events. I knew the people of Oregon could respond to such a challenge. They had already responded gallantly with dramatic conservation achievements during the energy crisis of 1973-74.”⁵²

1974 – Oregon Uniform Building Code first includes thermal insulation requirements for buildings.⁵³

1974 – In *U.S. v Washington* the U.S. District Court rules in Washington that the Nez Perce, Umatilla, Warm Springs, and Yakama tribes’ “fair share” means half of the harvestable fish in the Columbia River. The Ninth Circuit Court of Appeals later upheld this decision in 1975.⁵⁴

1975 – Congress passes the Energy Policy Conservation Act (EPCA), creating the Strategic Petroleum Reserve, Corporate Average Fuel Economy (CAFE) standards for cars and light trucks (18 mpg for model year 1978), state energy conservation programs, and energy efficiency targets for consumer products. To reduce U.S. dependence on oil, the law also creates incentives for coal mining and calls for conversion of oil and gas facilities to coal.⁵⁵

1975 – Lower Granite Dam on the Snake River and Libby Dam on the Kootenai in Montana, the last of the mainstem dams on the Federal Columbia River Power System, are constructed.⁵⁶

1975 – Oregon Legislature creates the Oregon Department of Energy and the Energy Facility Siting Council. EFSC is charged with overseeing the siting, construction and operation energy facilities in a manner consistent with the protection of public health and safety and in compliance with the energy policy while protecting Oregon’s environment. The department is formed to promote energy conservation and development of renewable energy sources and to provide staff support for EFSC.



Current day Oregon Department of Energy offices and the Energy Facility Siting Council visiting the Boardman Solar Energy site.

Emerging from the energy shortages of the early 1970s, Oregon policymakers were focused on energy scarcity, energy independence, and the influence that Oregonians could have over their energy futures. The themes of scarcity, sustainability, energy efficiency, and energy education are embedded in ODOE's authorizing statute (ORS 469.010), passed in 1975. The two findings contained in the statute are: "The Legislative Assembly finds and declares that:

- Continued growth in demand for nonrenewable energy forms poses a serious and immediate, as well as future, problem. It is essential that future generations not be left a legacy of vanished or depleted resources, resulting in massive environmental, social and financial impact.
- It is the goal of Oregon to promote the efficient use of energy resources and to develop permanently sustainable energy resources. The need exists for comprehensive state leadership in energy production, distribution, and utilization."⁵⁷

1975 – EFSC approves the 550 MW Boardman Coal Plant proposed by PGE in Morrow County. The Plant is eventually constructed and placed into service in 1980.⁵⁸

1976 – Commercial operation begins at PGE's Trojan Nuclear Power Plant; at 1,100 MW it is the largest plant of its kind at the time. The plant is licensed to run for 30 years.⁵⁹

1977 – The Yakama, Umatilla, Warm Springs, and Nez Perce tribes form the Columbia River Inter-Tribal Fish Commission (CRITFC) for the purpose of reversing the decline of salmon, lamprey, and sturgeon, protecting fishing rights, sharing salmon culture, and providing fishery services.⁶⁰



Yakama Chairman Watson Totus signed the CRITFC constitution on behalf of his tribe in 1977, courtesy of www.critfc.org.

1977 – Congress passes the Department of Energy Organization Act, creating the U.S. Department of Energy and bringing together federal energy activities under one agency.⁶¹

1978 – Congress passes National Energy Conservation Policy Act, which establishes the federal Residential Conservation Service, requires large electric and natural gas utilities to provide residential energy audits to their customers, creates a matching grant program providing funding for energy audits and energy saving retrofits in nonprofit institutional buildings (colleges, schools, and hospitals), requires that some appliance efficiency targets become mandatory, and encourages lending institutions to offer extended mortgage credit for the purchase of energy efficient homes.⁶²

1978 – Oregon's Residential Energy Tax Credit begins. The following year, the Business Energy Tax Credit begins.⁶³

1979 – Accident at Three Mile Island nuclear plant in Pennsylvania draws worldwide attention and focus on nuclear power and its potential safety issues.⁶⁴

1980 – Oregon voters pass an initiative 53-47 percent that prohibits the licensing of a new nuclear power plant unless it is approved by the voters and only if there is a permanent repository licensed by the federal government for disposal of high-level radioactive waste. There is still no permanent repository for disposal of high-level radioactive waste in the US.⁶⁵

1980 – Congress passes the Pacific Northwest Electric Power Planning and Conservation Act (also known as the NW Power Act). The Act establishes the Pacific Northwest Electric Power and Conservation Planning Council (later named NW Power and Conservation Council), and directs the Council to adopt a regional energy conservation and electric power plan, as well as a program to protect, mitigate, and enhance fish and wildlife affected by hydropower on the Columbia River and its tributaries. It also establishes provisions that the BPA Administrator must follow in selling power, acquiring resources, implementing energy conservation measures, and setting rates.⁶⁶

According to the NW Power and Conservation Council, a critical factor to passing the NW Power Act was the region's "disastrous" efforts, led by the Washington Public Power Supply System (WPPSS, or "Whoops") and Bonneville Power Administration, to build five nuclear power plants in the 1970s. "Utilities based their decision in part on inaccurate Northwest electricity load forecasts. Only one of the plants, the currently operating Columbia Generating Station, was ever completed. Due to exorbitant cost overruns, utilities abandoned or mothballed the other four plants prior to completion. Two of the unfinished plants were responsible for one of the largest bond defaults in the history of the nation, while the Bonneville Power Administration backed the financing for the other three plants. And, from 1978 to 1984, BPA was forced to raise its rates by 418 percent (adjusted for inflation) to pay for the cost of these plants. Even today...BPA pays millions of dollars a year on debt service for two of the unfinished plants."⁶⁷



Unfinished WPPSS Unit 5 near Satsop, WA, courtesy of www.historylink.org.

1983 – EFSC approves its first renewable energy project, a 40 MW (850 40-80 kW turbines) proposal by Wind Energy Specialist for a site in Curry County. This facility was never constructed.

1983 – Northwest Power Planning Council produces Model Conservation Standards for the region, including guidance for energy efficiency codes and conservation programs. The model asserts that “to ensure that the region captures all regional cost-effective savings, utilities should secure proportional savings from hard to reach populations.”⁶⁸



1984 – Through a ballot measure, voters in Oregon create the Oregon Citizens' Utility Board (CUB) to advocate on behalf of residential customers of investor-owned utilities in Oregon.⁶⁹

1984 – Columbia Generating Station nuclear power plant, located on the Hanford site near Richland, Washington, becomes operational.⁷⁰

1985 – The Hood River Conservation Project, funded by Bonneville Power Administration and operated by Pacific Power, helps prove that conservation was a viable energy resource that could be considered on equal ground with supply-side options in the Northwest.⁷¹



1986 – Oregon voters approve a ballot measure finalizing a three-person, Governor-appointed Public Utility Commission of Oregon to replace the single commissioner system previously in place.⁷²

1986 – Chernobyl nuclear plant meltdown and steam explosion releases radioactivity into the atmosphere and becomes the worst nuclear accident in history.⁷³

1988 – NASA climate scientist James Hansen testifies before Congress and warns about the dangers of global warming.⁷⁴ Meanwhile, the Intergovernmental Panel on Climate Change (IPCC), an intergovernmental body of the United Nations, is established to provide objective scientific information about climate change.⁷⁵

1989 – Oregon requires investor-owned utilities (IOU) to conduct Integrated Resource Plans (IRPs), putting energy efficiency on equal footing with traditional generation resources.⁷⁶

1990 – Congress passes the Clean Air Act Amendments of 1990 to curb acid rain, urban air pollution, toxic air emissions, and stratospheric ozone depletion.⁷⁷ Two-thirds of the sulfur dioxide emissions that cause acid rain come from fossil fuel power plants.⁷⁸ By 2019, the acid rain program had reduced SO₂ emissions from power plants by 92 percent and NO_x by 85 percent.⁷⁹

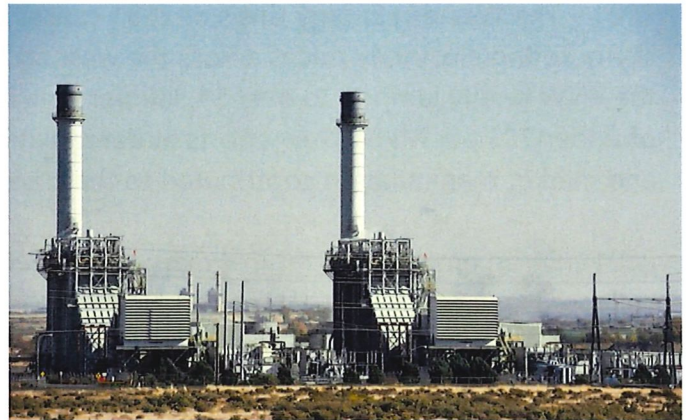


1991 – Snake River Sockeye Salmon are listed as an endangered species pursuant to the Endangered Species Act.⁸⁰ Between 1991 and 2005, 13 species of salmon or steelhead and four other fish within the Columbia River Basin, are listed for protection under the Endangered Species Act.⁸¹

1992 – Congress passes Energy Policy Act of 1992. Considered in the wake of the Persian Gulf War, the bill promotes energy efficiency and alternative fuels.⁸²

1993 – After a series of mechanical problems, PGE permanently shuts the Trojan Nuclear Power Plant.⁸³

1994 – The Hermiston Generating Project becomes the first natural gas facility to receive a site certificate from EFSC. The 468 MW plant begins operation in 1996.



The Hermiston Generating Plant provides power for nearly 500,000 households in the Pacific NW, courtesy of Perennial Power.

1997 – Portland General Electric, the utility with the most Oregon ratepayers, is bought by Enron for \$2.1 billion and the assumption of \$1.1 billion in debt.⁸⁴

1997 – World powers, including the U.S., sign the Kyoto Protocol, committing industrialized countries, and economies in transition, to limit and reduce GHG emissions in accordance with individual targets. The Protocol goes into effect on 2005.⁸⁵

1997 – Oregon becomes the first state in the country to establish a price on carbon with the EFSC CO₂ standard. It requires power plants to avoid, displace, or sequester a portion of their CO₂ emissions; applicants can pay a fee to offset these emissions.⁸⁶ The fees are used by The Climate Trust to purchase offsets.

1997 – Northwest Energy Efficiency Alliance (NEEA) is formed to promote energy efficiency through market transformation.⁸⁷

1997 – Released in Japan in 1997 and worldwide in 2000, the Toyota Prius becomes the world's first mass-produced hybrid electric vehicle.⁸⁸



1999 – EPA issues the Regional Haze Rule to reduce the pollution that causes visibility impairment in national parks and wilderness areas. EPA requires states to submit regional haze plans in 2007.⁸⁹ The expense of complying with this plan contributes to the early closure of the Boardman Coal Plant, which is shuttered in 2020.

1999 – Oregon legislature passes SB 1149, creating the Public Purpose Charge for energy efficiency, renewable and low-income energy programs and partially deregulating the electric sector by authorizing long-term direct access for certain large retail customers of IOUs.⁹⁰

1999 – Oregon legislature passes HB 3219, requiring electric utilities to allow net metering so that customers can generate onsite renewable resources and reduce their electricity bills.⁹¹

2001 – The Western Energy Crisis of 2001 causes power shortages in California and skyrocketing electricity prices across the west, including Oregon. Wholesale energy prices in the PNW briefly jumped to over \$1,300 per megawatt hour, much higher than the typical price of under \$50 per MWh. New efforts at deregulation, combined with historic drought conditions and market manipulation contributed to the crisis.⁹²

2001 - Enron engages in criminal market manipulation, exacerbating the energy crisis. Enron's collapse leads to many PGE employees losing their jobs and much of their retirement savings.⁹³

2001 – By the end of the year, 10 aluminum smelters in the NW are shutdown. This direct service industry goes from using a high of about 3,000 aMW in 1995 to about 300 aMW by 2006.⁹⁴

2001 – The EFSC-approved Stateline Wind Project in Umatilla County becomes first utility-scale wind energy facility built in Oregon. The 222 MW facility has 229 turbines, each 440' tall.⁹⁵

2002 – Oregon becomes the first state to install solar panels on its state capitol building.⁹⁶

2002 – Energy Trust of Oregon begins operation to administer energy efficiency and renewable energy programs for investor owned utilities.⁹⁷



Wind turbine construction in Oregon.

2004 – Decommissioning of the Trojan Nuclear Power Plant is completed. The spent nuclear fuel remains onsite and is expected to stay onsite until there is a federally-approved repository for this material. The cooling tower is demolished two years later.⁹⁸

2005 – Congress passes the Energy Policy Act of 2005. Among other things, this bill gives FERC explicit and “exclusive” authority to approve onshore LNG terminal siting applications.⁹⁹

2006 – Jordan Cove and Pacific Connector pipeline are proposed as an LNG import terminal in Coos County, OR.¹⁰⁰

2007 – Oregon legislature establishes Oregon’s first greenhouse gas reduction goals and creates the Oregon Global Warming Commission.¹⁰¹



2007 – Oregon legislature passes SB 838, requiring the state’s largest utilities to provide 25 percent of retail sales from eligible renewable sources by 2025.¹⁰²

2008 – Ratepayer concerns contribute to an agreement by PGE to close the Boardman Coal Plant, which had been scheduled to operate until 2040, by the end of 2020. This is the first time a utility agrees to voluntarily close a coal plant in the U.S.¹⁰³

2009 – Congress passes the American Recovery and Reinvestment Act, investing millions of dollars in states for clean energy and energy efficiency.¹⁰⁴



2010 – Klamath Hydroelectric Settlement Agreement that is signed by PacifiCorp, several tribes, Oregon, California, and stakeholders. Through a surcharge, Oregon customers will help pay for Oregon’s share of dam removal costs. Timing of the dam removal is uncertain.¹⁰⁵

Signing the Klamath agreements, from left, PacifiCorp Chairman and CEO Greg Abel, Interior Secretary Ken Salazar, Governor Arnold Schwarzenegger and Governor Ted Kulongoski. Photo courtesy Office of Governor Schwarzenegger and ENS.

2011 – Fukushima nuclear power plant accident in Japan is caused by a 9.0 earthquake and subsequent 40-foot tsunami that knocks out the electrical generation for the coolant pumps, resulting in core meltdowns at three units, the release of radioactive material, the evacuation of thousands of people, and the establishment of an uninhabitable exclusions zone.¹⁰⁶ Cleanup is expected to cost at least \$75 billion and as much as \$660 billion and take 30-40 years.¹⁰⁷

2011 – Drive Oregon (now known as Forth) is incorporated by local business leaders and receives \$1.2 million in seed funding from the Oregon Legislature via the Oregon Innovation Council to grow Oregon's electric vehicle industry.¹⁰⁸

2012 – Obama Administration finalizes agreement with 13 large automakers to increase CAFE standards to 54.5 miles per gallon for cars and light-duty trucks by model year 2025.¹⁰⁹

2012 – Jordan Cove and Pacific Connector pipeline revises plans to build an LNG import terminal in Coos County, and instead proposes an *export* terminal.¹¹⁰

2014 – Sunset of Oregon's Business Energy Tax Credit. Under this program, ODOE certified almost 25,000 projects that helped save energy, displace conventional energy sources, or generate renewable energy.¹¹¹

2015 – 195 countries join the Paris Agreement, bringing together developed and developing nations in committing to keep global temperature rise well below 2°C (3.6°F).¹¹²

2015 – Volkswagen pleads guilty to emissions-cheating scandal.¹¹³



Volkswagen created Electrify America with \$2 billion in funding as part of its emissions scam settlement with the U.S. and California. Pictured above, an Electrify America EV charging bank in Hood River, OR, courtesy of Columbia Insight. Photo by Jurgen Hess.

2016 – After years of planning, DEQ launches the Oregon Clean Fuels Program to reduce the carbon intensity of Oregon's transportation fuels by 10% over 10 years.¹¹⁴

2016 – Oregon adopts a 50 percent renewable portfolio standard and becomes the first state to legislatively mandate an end to coal in the state's electricity mix by 2030 with the passage of SB 1547, the Clean Electricity and Coal Transition Plan. This law also created a community solar program with requirements for low-income customer participation.¹¹⁵

2017 – Oregon's Residential Energy Tax Credit expires. Over the lifetime of this program, more than 15,000 solar projects are approved, with a production estimate of about 75 million kWh/year.¹¹⁶



2017 – With the passage of the Keep Oregon Moving Act (HB 2017), Oregon adopts an Electric Vehicle Rebate program that includes a “Charge Ahead” component for low-income participants.¹¹⁷ Oregon Governor Kate Brown issues Executive Orders 17-20¹¹⁸ and 17-21¹¹⁹ to reduce greenhouse gas emissions by accelerating energy efficiency in Oregon’s built environment and accelerating zero emission vehicle adoption.



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



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



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



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



2020 – Oregon has 31,977 registered electric vehicles as of July 1.¹²⁴



2020 – The Boardman Coal Plant, Oregon’s only coal power plant, closes on October 15.¹²⁵



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



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- ¹¹⁸ <https://www.oregon.gov/energy/Get-Involved/Pages/BEEWG.aspx>
- ¹¹⁹ <https://www.oregon.gov/energy/Get-Involved/Pages/ZEWIWG.aspx>
- ¹²⁰ <https://www.oregon.gov/energy/facilities-safety/facilities/Pages/BSE.aspx>
- ¹²¹ <https://www.oregon.gov/energy/Data-and-Reports/Documents/2020-Solar-Storage-Rebate-Program-Legislative-Report.pdf>
- ¹²² <https://www.eia.gov/energyexplained/us-energy-facts/imports-and-exports.php>
- ¹²³ https://www.oregon.gov/gov/Pages/carbonpolicy_climatechange.aspx
- ¹²⁴ Oregon Department of Energy. EV Dashboard – ZEV Adoption Trends. Accessed October 13, 2020. <https://www.oregon.gov/energy/Data-and-Reports/Pages/Oregon-Electric-Vehicle-Dashboard.aspx>
- ¹²⁵ <https://www.bizjournals.com/portland/news/2020/10/15/oregon-boardman-coal-closure.html>
- ¹²⁶ <https://www.oregon.gov/energy/facilities-safety/facilities/Pages/Facilities-Under-EFSC.aspx>

Oregon Electricity Use: Resource Mix

This illustration shows the state-level resource mix for investor- and consumer-owned electric utilities serving Oregon from 2019 to 2023. The mix of resources generating electricity used in Oregon includes in-state and out-of-state electricity generation. Most of the mix came from hydropower, natural gas, and coal. A smaller percentage of power in the region was provided by non-hydroelectric renewable resources, such as wind, solar, and biomass. Utilities also purchased 11.7 million megawatt-hours of unspecified power in 2023. "Unspecified" is the term used to describe electricity purchases from the regional market where the generating resource is not known. See the *Data Info* button for more information. In 2023, Oregonians used 60.3 million MWh of electricity. While not a generating resource, energy efficiency is considered the second largest resource behind hydropower. Energy efficiency is relied u..

Explo..



Resource Type Report Year

- Hydro
- Unspecified
- Natural Gas
- Coal
- Wind
- Nuclear
- Solar
- Biomass
- Other
- Geothermal
- Biogas
- Petroleum

The bubble chart demonstrates how Oregon's electricity mix changes over time. Click ..

2023

☒ Show history

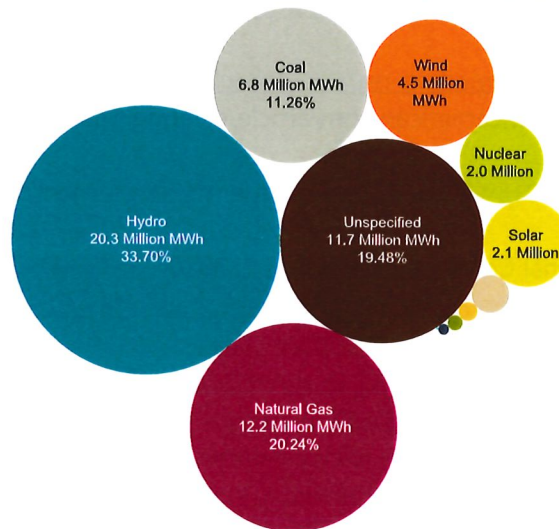
DATA INFO

National Electricity Resource Mix for..



- Natural Gas 43.1%
- Nuclear 18.6%
- Coal 16.2%
- Wind 10.2%
- Hydro 5.7%
- Solar 3.9%
- Biomass 1.1%
- Petroleum 0.4%
- Geothermal 0.4%
- Other 0.4%

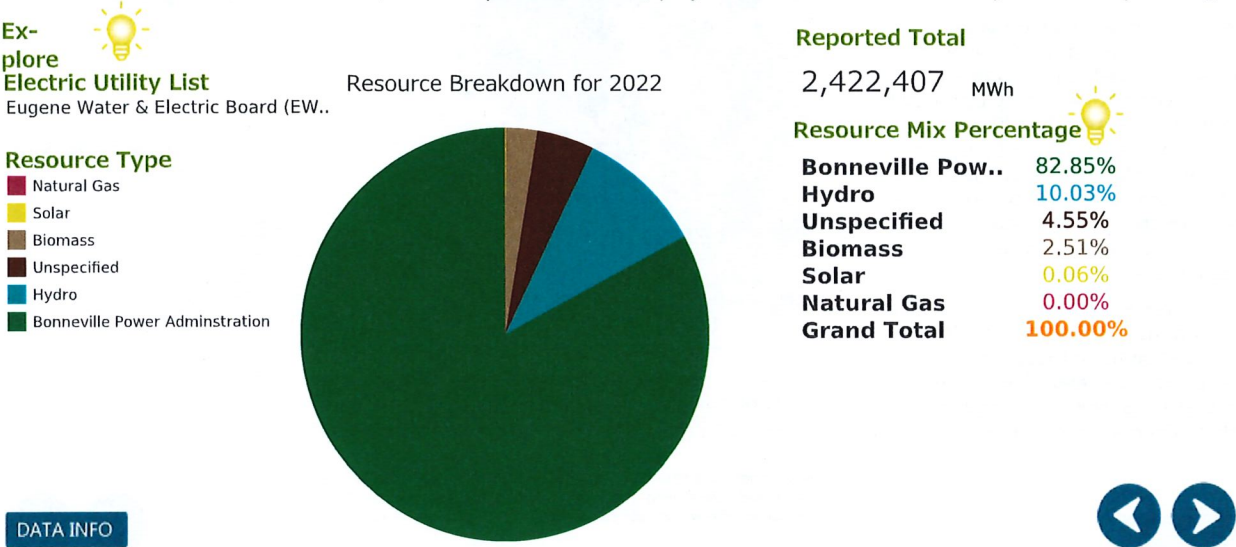
Oregon Electricity Use: Resource Mix Over Time



Electricity Resource Mix by Utility

Three investor-owned electric utilities serve Oregonians: Pacific Power, Portland General Electric, and Idaho Power (which serves customers in the northeast corner of Oregon), delivering approximately 60 percent of the electricity used by Oregonians in 2022. Portland General Electric is the state's largest utility - when ranked by either electricity sales or number of customers - with more than 922,444 customers in the Portland metro area and Salem. Pacific Power serves portions of Oregon, California, and Washington and is the state's second-largest electricity provider - when ranked by either electricity sales or number of customers - with 616,834 Oregon customers. The third-largest utility by electricity sales is Umatilla Electric Cooperative, serving 15,920 customers, some of which are large industrial customers. The fourth-largest utility by electricity sales is Eugene Water & Electric Board, serving 97,096 customers in the greater Eugene area. The fifth-largest electric utility by electricity sales is Central Lincoln PUD with 40,827 customers served along Oregon's central coastline. Together the 38 consumer-owned utilities serving Oregon delivered nearly 36 percent of all electricity used in Oregon in 2022. There are three types of COUs - electric cooperatives, people's utility districts, and municipal utilities - which are governed by publicly-elected boards. Electricity Service Suppliers deliver nearly 5 percent of electricity in Oregon. Find your utility here: <https://www.oregon.gov/energy/energy-oregon/pages/find-your-utility.aspx>

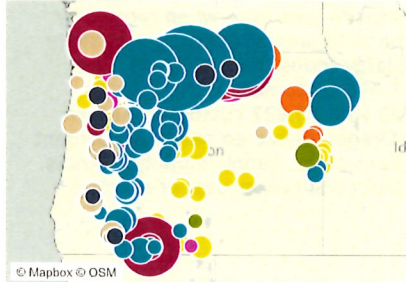
The Bonneville Power Administration, a federal power marketer, plays a critical role in the delivery of electricity to Oreg..



Electric Generation Sources in the Western Electric Coordinating Council Region

2023 Net Generation in MWh by Plant

Oregon Genera..

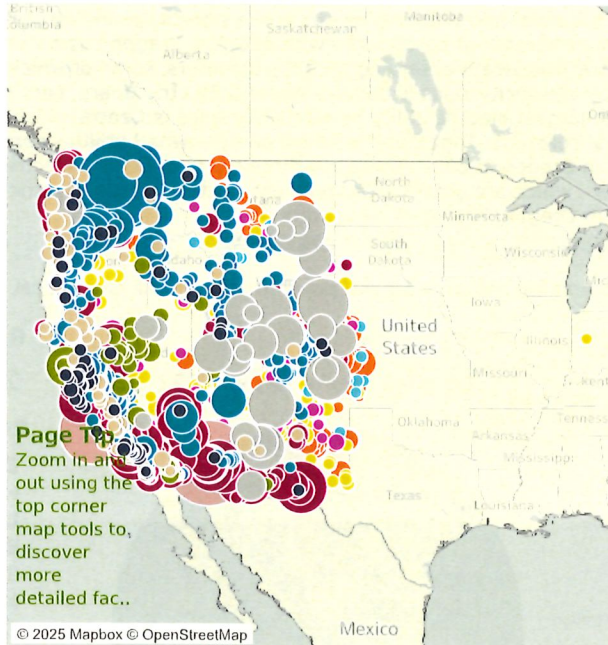


These regional maps provide information about the facilities and resources used to generate electricity in the Western Electricity Coordinating Council's U.S. territory. The maps include facilities owned by Oregon utilities, facilities that utilities contract with to provide power to Oregon, and facilities that sell their electricity to Oregon utilities and others on the open western energy market.

Not all resources or facilities shown contributed to Oregon's 2023 resource mix, but some of these energy generators sell electricity to the western U.S. energy market from which Oregon utilities purchase power.

[DATA INFO](#)

Western Generation



Page Tip
Zoom in and out using the top corner map tools to discover more detailed fac..

Similarly, power that is produced in Oregon may be sold through the energy market to serve customers in other states. See the *Data Info* button for more information.

Note: There is a data issue with the magenta-colored "Other Fuels" dots not adequately identifying the resource. We are working on identifying the correct resources and will update this information as soon as we can.

[Explore](#)


Resource Type

- Biogas
- Biomass
- Coal
- Geothermal
- Hydro
- Natural Gas
- Nuclear
- Other Fuels
- Petroleum
- Solar
- Wind

Generating Site Owner

All



Greenhouse Gas Emissions by Utility

Each utility’s electricity resource mix determines how much greenhouse gas is emitted for every kilowatt hour of electricity it sells to customers in Oregon, which is shown in this bar chart. For example, in years where a greater portion of the resource mix is attributed to renewable energy resources, the emission rates go down. Oregon is on a path to reducing the amount of carbon dioxide and other greenhouse gas emissions associated with the state’s electricity resource mix.

Emissions per kWh Over Time

This information is based on Oregon Department of Environmental Quality GHG Reporting Program data. See the *Data Info* tab for more information.

Ex-
plore

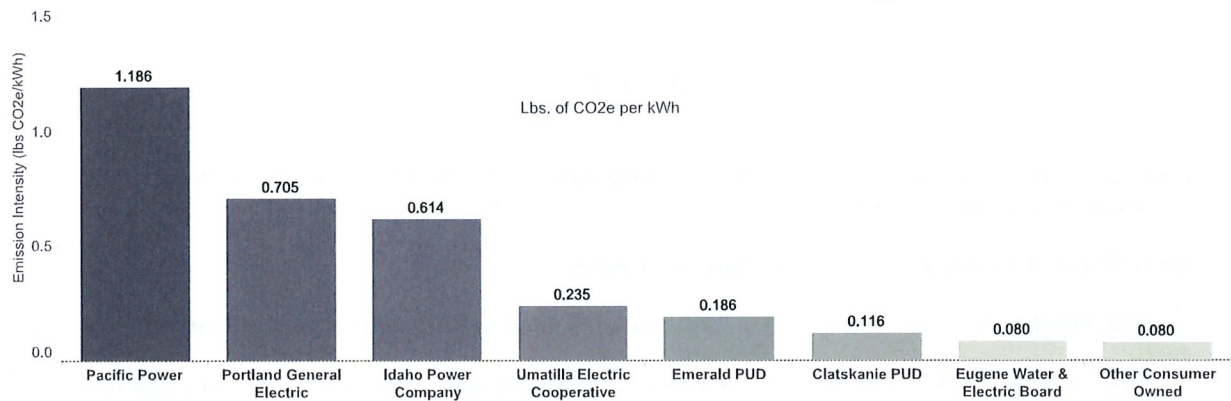


Report Year

The bar chart shows utility emissions over time. Click the forward play button or manually adjust the slider from 2019 to 2023.

2023

☒ Show history



DATA INFO



Enrolled Senate Bill 1567

Sponsored by Senators DEMBROW, MANNING JR, FREDERICK, Representatives DEXTER, EVANS, GRAYBER, PHAM; Senators ARMITAGE, GELSER BLOUIN, GORSEK, JAMA, LAWRENCE SPENCE, PATTERSON, STEINER HAYWARD, TAYLOR, WAGNER, Representatives ALONSO LEON, CAMPOS, GOMBERG, HELM, HOLVEY, HUDSON, NATHANSON, NELSON, NOSSE, POWER, REARDON, REYNOLDS, RUIZ, SANCHEZ, SCHOUTEN, WITT (Presession filed.)

CHAPTER

AN ACT

Relating to energy infrastructure resilience; creating new provisions; amending ORS 659A.885; and prescribing an effective date.

Be It Enacted by the People of the State of Oregon:

SECTION 1. Sections 2 to 6 of this 2022 Act are added to and made a part of ORS chapter 468B.

SECTION 2. (1) As used in sections 2 to 6 of this 2022 Act, “bulk oils or liquid fuels terminal” means an industrial facility located in Columbia, Multnomah or Lane County that is primarily engaged in the transport or bulk storage of oils or liquid fuel products and is characterized by having:

- (a) Marine, pipeline, railroad or vehicular transport access;
- (b) Transloading facilities for transferring shipments of oils or liquid fuel products between transportation modes; and
- (c) One or more bulk storage tanks with a combined capacity of two million gallons or more.

(2) An owner or operator of a bulk oils or liquid fuels terminal shall conduct and submit to the Department of Environmental Quality a comprehensive seismic vulnerability assessment for the entire bulk oils or liquid fuels terminal. A seismic vulnerability assessment submitted to the department under this section must:

(a) Include a seismic risk assessment, or a series of seismic risk assessments, conducted by qualified professionals using the most recent industry standards for assessing seismic risk to:

- (A) Buildings, structures and ancillary components;
- (B) Bulk storage tanks;
- (C) Spill containment structures;
- (D) Transloading facilities, including wharves, piers, moorings and retaining structures;
- (E) Loading racks;
- (F) Control equipment; and
- (G) Any other structures and related or supporting facilities that constitute the bulk oils or liquid fuels terminal;

(b) Include a determination of the bulk oils or liquid fuels terminal's vulnerability to liquefaction triggering and liquefaction consequences, such as lateral spreading and coseismic settlement, using standards in accordance with guidance contained in "National Academies of Sciences, Engineering and Medicine, State of the Art and Practice in the Assessment of Earthquake-Induced Soil Liquefaction and Its Consequences, 2016";

(c) Include a determination of whether the existing structures and related or supporting facilities that constitute the bulk oils or liquid fuels terminal have been designed, improved or retrofitted to reduce the potential for significant structural damage to property or harm to people or the environment in or adjacent to the bulk oils or liquid fuels terminal in the event of a magnitude 9.0 Cascadia Subduction Zone earthquake, including impacts from the expected duration of shaking; and

(d) Include a determination of the structures and related or supporting facilities that are most vulnerable to seismic risks and the potential of those structures and facilities to maintain safe operating conditions, or safe shutdown procedures, to protect public health, life safety and environmental safety against releases of oils or liquid fuel products, including information about operational procedures during disasters.

(3) The department shall review a seismic vulnerability assessment submitted under this section and approve the assessment if it meets the requirements of subsection (2) of this section and any other requirements for seismic vulnerability assessments contained in rules adopted under subsection (4) of this section.

(4)(a) The Environmental Quality Commission, in consultation with the State Department of Geology and Mineral Industries, may adopt by rule requirements for seismic vulnerability assessments submitted to the Department of Environmental Quality under this section.

(b) Rules adopted by the commission may require the owner or operator of a bulk oils or liquid fuels terminal to submit seismic vulnerability assessment updates to the department:

(A) Upon the retrofit or reconstruction of all or a part of a bulk oils or liquid fuels terminal; or

(B) Based on new scientific or technical findings, but no more frequently than once every three years.

(c) Notwithstanding subsection (2)(b) of this section, the commission may by rule adopt revised or additional standards for determining a bulk oils or liquid fuels terminal's vulnerability to liquefaction triggering and liquefaction consequences if the commission determines that guidance contained in "National Academies of Sciences, Engineering and Medicine, State of the Art and Practice in the Assessment of Earthquake-Induced Soil Liquefaction and Its Consequences, 2016" no longer represents the most recent industry standards for determining vulnerability to soil liquefaction triggering and liquefaction consequences.

SECTION 3. (1) The owner or operator of a bulk oils or liquid fuels terminal shall properly implement a seismic risk mitigation implementation plan that has been approved by the Department of Environmental Quality. A seismic risk mitigation implementation plan must, at a minimum, identify actions, with timelines, to protect public health, life safety and environmental safety within the facility, in areas adjacent to the facility and in other areas that may be affected as a result of damages to the facility. A seismic risk mitigation implementation plan, as a risk-based assessment, must include consideration of the likelihood of a magnitude 9.0 Cascadia Subduction Zone earthquake, the potential consequences of that event and the resources needed to respond to that event.

(2) The Environmental Quality Commission, in consultation with the State Department of Geology and Mineral Industries, shall adopt by rule a seismic risk mitigation implementation program for bulk oils or liquid fuels terminals that is based on risk. To the extent feasible and appropriate, the program adopted under this section shall be consistent and coordinated with the program established under ORS 468B.345 to 468B.415. Rules adopted under this section shall include, but not be limited to:

(a) Rules for the required content of seismic risk mitigation implementation plans and rules for approval by the Department of Environmental Quality of seismic risk mitigation implementation plans.

(b) Provisions for training, response exercises, external peer reviews, inspections and tests in order to verify the ability of the facility to sustain safe conditions and respond to uncontrolled releases of hazardous materials from the bulk oils or liquid fuels terminal due to an earthquake.

(c) Requirements to minimize harmful impacts to local communities and natural resources due to uncontrolled releases of hazardous materials from the bulk oils or liquid fuels terminal due to an earthquake and its associated direct and indirect impacts, including fires and flooding.

(d) Requirements for the inspection of bulk storage tanks at bulk oils or liquid fuels terminals.

(e) Design and construction standards for new bulk storage tanks constructed at bulk oils or liquid fuels terminals.

(f) Design and construction standards for seismic mitigation of existing bulk storage tanks, piping and related structures constructed at bulk oils or liquid fuels terminals.

(g) Provisions requiring the proper installation of seismically certified generators to power critical operations, or at a minimum, the installation of electrical hookups for emergency generators.

(h) Provisions for the review of seismic vulnerability assessments required under section 2 of this 2022 Act and seismic risk mitigation implementation plans required under subsection (1) of this section by state agencies with expertise in earthquake hazards, risk mitigation or emergency preparedness or management.

(i) Provisions requiring the owner or operator of a bulk oils or liquid fuels terminal to submit seismic vulnerability mitigation implementation plan updates to the department:

(A) According to a schedule established by the commission;

(B) Upon the retrofit or reconstruction of all or a part of a bulk oils or liquid fuels terminal; and

(C) Based on new scientific or technical findings, but no more frequently than once every three years.

(j) Provisions establishing a fee calculated to cover the costs to the department of reviewing seismic risk mitigation implementation plans submitted under this section and seismic risk assessments submitted under section 2 of this 2022 Act, less any federal funds received by the department for those purposes. Fees received by the department under this paragraph shall be deposited in the Seismic Risk Mitigation Fund established under section 6 of this 2022 Act.

(k) Provisions establishing grants or other financial assistance to owners or operators of bulk oils or liquid fuels terminals for improvements to existing infrastructure, provided that federal funds are made available to the department for that purpose.

SECTION 3a. The requirements of sections 2 to 6 of this 2022 Act do not apply to a bulk oils or liquid fuels terminal to the extent those requirements are preempted by the federal Pipeline Safety Improvement Act of 2002, 49 U.S.C. 60101 et seq.

SECTION 4. Confidential business information submitted to the Department of Environmental Quality by the owner or operator of a bulk oils or liquid fuels terminal under section 2 or 3 of this 2022 Act is confidential and not subject to public disclosure under ORS 192.311 to 192.478, except that the department may disclose summarized information or aggregated data if the information or data does not directly or indirectly identify the confidential business information.

SECTION 5. (1) It is an unlawful employment practice for the owner or operator of a bulk oils or liquid fuels terminal to discharge, demote, suspend or in any manner discriminate or retaliate against an employee of the bulk oils or liquid fuels terminal with regard to pro-

motion, compensation or other terms, conditions or privileges of employment because the employee has in good faith:

(a) Reported information that the employee believes is evidence of a violation of a state or federal law, rule or regulation; or

(b) Provided information regarding a public health, life safety or environmental safety risk at the bulk oils or liquid fuels terminal to a federal, state or local government official or a person conducting a seismic risk assessment under section 2 of this 2022 Act.

(2) This section is subject to enforcement under ORS chapter 659A.

(3) The remedies provided by ORS chapter 659A are in addition to any common law remedy or other remedy that may be available to an employee for the conduct constituting a violation of this section.

SECTION 6. (1) The Seismic Risk Mitigation Fund is established in the State Treasury, separate and distinct from the General Fund. Interest earned by the Seismic Risk Mitigation Fund shall be credited to the fund.

(2) Moneys in the Seismic Risk Mitigation Fund shall consist of:

(a) Money appropriated to the fund by the Legislative Assembly;

(b) Fees deposited in the fund under section 3 of this 2022 Act;

(c) Moneys transferred to the fund from the federal or state government; or

(d) Gifts, grants and donations received from any source.

(3) All moneys in the Seismic Risk Mitigation Fund are continuously appropriated to the Department of Environmental Quality for the purposes of:

(a) Reviewing seismic risk mitigation implementation plans submitted under section 3 of this 2022 Act and seismic risk assessments submitted under section 2 of this 2022 Act; and

(b) Providing grants or other financial assistance to owners or operators of bulk oils or liquid fuels terminals under section 3 (2)(k) of this 2022 Act.

SECTION 7. ORS 659A.885 is amended to read:

659A.885. (1) Any person claiming to be aggrieved by an unlawful practice specified in subsection (2) of this section may file a civil action in circuit court. In any action under this subsection, the court may order injunctive relief and any other equitable relief that may be appropriate, including but not limited to reinstatement or the hiring of employees with or without back pay. A court may order back pay in an action under this subsection only for the two-year period immediately preceding the filing of a complaint under ORS 659A.820 with the Commissioner of the Bureau of Labor and Industries, or if a complaint was not filed before the action was commenced, the two-year period immediately preceding the filing of the action. In any action under this subsection, the court may allow the prevailing party costs and reasonable attorney fees at trial and on appeal. Except as provided in subsection (3) of this section:

(a) The judge shall determine the facts in an action under this subsection; and

(b) Upon any appeal of a judgment in an action under this subsection, the appellate court shall review the judgment pursuant to the standard established by ORS 19.415 (3).

(2) An action may be brought under subsection (1) of this section alleging a violation of:

(a) ORS 10.090, 10.092, 25.337, 25.424, 171.120, 243.323, 408.230, 408.237 (2), 475C.285, 476.574, 652.020, 652.220, 652.355, 653.060, 653.263, 653.265, 653.547, 653.549, 653.601 to 653.661, 659.852, 659A.030, 659A.040, 659A.043, 659A.046, 659A.063, 659A.069, 659A.082, 659A.088, 659A.103 to 659A.145, 659A.147, 659A.150 to 659A.186, 659A.194, 659A.199, 659A.203, 659A.218, 659A.228, 659A.230, 659A.233, 659A.236, 659A.250 to 659A.262, 659A.277, 659A.290, 659A.300, 659A.306, 659A.309, 659A.315, 659A.318, 659A.320, 659A.343, 659A.355, 659A.370 or 659A.421 or section 5 of this 2022 Act; or

(b) ORS 653.470, except an action may not be brought for a claim relating to ORS 653.450.

(3) In any action under subsection (1) of this section alleging a violation of ORS 25.337, 25.424, 243.323, 652.220, 652.355, 653.547, 653.549, 659.852, 659A.030, 659A.040, 659A.043, 659A.046, 659A.069, 659A.082, 659A.103 to 659A.145, 659A.199, 659A.203, 659A.228, 659A.230, 659A.250 to 659A.262, 659A.290, 659A.318, 659A.343, 659A.355, 659A.370 or 659A.421:

(a) The court may award, in addition to the relief authorized under subsection (1) of this section, compensatory damages or \$200, whichever is greater, and punitive damages;

(b) At the request of any party, the action shall be tried to a jury;

(c) Upon appeal of any judgment finding a violation, the appellate court shall review the judgment pursuant to the standard established by ORS 19.415 (1); and

(d) Any attorney fee agreement shall be subject to approval by the court.

(4) Notwithstanding ORS 31.730, in an action under subsection (1) of this section alleging a violation of ORS 652.220, the court may award punitive damages if:

(a) It is proved by clear and convincing evidence that an employer has engaged in fraud, acted with malice or acted with willful and wanton misconduct; or

(b) An employer was previously adjudicated in a proceeding under this section or under ORS 659A.850 for a violation of ORS 652.220.

(5) In any action under subsection (1) of this section alleging a violation of ORS 653.060 or 659A.147, the court may award, in addition to the relief authorized under subsection (1) of this section, compensatory damages or \$200, whichever is greater.

(6) In any action under subsection (1) of this section alleging a violation of ORS 171.120, 476.574 or 659A.218, the court may award, in addition to the relief authorized under subsection (1) of this section, compensatory damages or \$250, whichever is greater.

(7) In any action under subsection (1) of this section alleging a violation of ORS 10.090 or 10.092, the court may award, in addition to the relief authorized under subsection (1) of this section, a civil penalty in the amount of \$720.

(8) Any individual against whom any distinction, discrimination or restriction on account of race, color, religion, sex, sexual orientation, gender identity, national origin, marital status or age, if the individual is 18 years of age or older, has been made by any place of public accommodation, as defined in ORS 659A.400, by any employee or person acting on behalf of the place or by any person aiding or abetting the place or person in violation of ORS 659A.406 may bring an action against the operator or manager of the place, the employee or person acting on behalf of the place or the aider or abettor of the place or person. Notwithstanding subsection (1) of this section, in an action under this subsection:

(a) The court may award, in addition to the relief authorized under subsection (1) of this section, compensatory and punitive damages;

(b) The operator or manager of the place of public accommodation, the employee or person acting on behalf of the place, and any aider or abettor shall be jointly and severally liable for all damages awarded in the action;

(c) At the request of any party, the action shall be tried to a jury;

(d) The court shall award reasonable attorney fees to a prevailing plaintiff;

(e) The court may award reasonable attorney fees and expert witness fees incurred by a defendant who prevails only if the court determines that the plaintiff had no objectively reasonable basis for asserting a claim or no reasonable basis for appealing an adverse decision of a trial court; and

(f) Upon any appeal of a judgment under this subsection, the appellate court shall review the judgment pursuant to the standard established by ORS 19.415 (1).

(9) When the commissioner or the Attorney General has reasonable cause to believe that a person or group of persons is engaged in a pattern or practice of resistance to the rights protected by ORS 659A.145 or 659A.421 or federal housing law, or that a group of persons has been denied any of the rights protected by ORS 659A.145 or 659A.421 or federal housing law, the commissioner or the Attorney General may file a civil action on behalf of the aggrieved persons in the same manner as a person or group of persons may file a civil action under this section. In a civil action filed under this subsection, the court may assess against the respondent, in addition to the relief authorized under subsections (1) and (3) of this section, a civil penalty:

(a) In an amount not exceeding \$50,000 for a first violation; and

(b) In an amount not exceeding \$100,000 for any subsequent violation.

(10) In any action under subsection (1) of this section alleging a violation of ORS 659A.145 or 659A.421 or alleging discrimination under federal housing law, when the commissioner is pursuing the action on behalf of an aggrieved complainant, the court shall award reasonable attorney fees to the commissioner if the commissioner prevails in the action. The court may award reasonable attorney fees and expert witness fees incurred by a defendant that prevails in the action if the court determines that the commissioner had no objectively reasonable basis for asserting the claim or for appealing an adverse decision of the trial court.

(11) In an action under subsection (1) or (9) of this section alleging a violation of ORS 659A.145 or 659A.421 or discrimination under federal housing law:

(a) "Aggrieved person" includes a person who believes that the person:

(A) Has been injured by an unlawful practice or discriminatory housing practice; or

(B) Will be injured by an unlawful practice or discriminatory housing practice that is about to occur.

(b) An aggrieved person in regard to issues to be determined in an action may intervene as of right in the action. The Attorney General may intervene in the action if the Attorney General certifies that the case is of general public importance. The court may allow an intervenor prevailing party costs and reasonable attorney fees at trial and on appeal.

SECTION 8. ORS 659A.885, as amended by section 10, chapter 197, Oregon Laws 2017, section 6, chapter 139, Oregon Laws 2019, section 8, chapter 343, Oregon Laws 2019, section 8, chapter 463, Oregon Laws 2019, section 13, chapter 701, Oregon Laws 2019, and section 45, chapter 367, Oregon Laws 2021, is amended to read:

659A.885. (1) Any person claiming to be aggrieved by an unlawful practice specified in subsection (2) of this section may file a civil action in circuit court. In any action under this subsection, the court may order injunctive relief and any other equitable relief that may be appropriate, including but not limited to reinstatement or the hiring of employees with or without back pay. A court may order back pay in an action under this subsection only for the two-year period immediately preceding the filing of a complaint under ORS 659A.820 with the Commissioner of the Bureau of Labor and Industries, or if a complaint was not filed before the action was commenced, the two-year period immediately preceding the filing of the action. In any action under this subsection, the court may allow the prevailing party costs and reasonable attorney fees at trial and on appeal. Except as provided in subsection (3) of this section:

(a) The judge shall determine the facts in an action under this subsection; and

(b) Upon any appeal of a judgment in an action under this subsection, the appellate court shall review the judgment pursuant to the standard established by ORS 19.415 (3).

(2) An action may be brought under subsection (1) of this section alleging a violation of:

(a) ORS 10.090, 10.092, 25.337, 25.424, 171.120, 243.323, 408.230, 408.237 (2), 475C.285, 476.574, 652.020, 652.220, 652.355, 653.060, 653.263, 653.265, 653.547, 653.549, 653.601 to 653.661, 659.852, 659A.030, 659A.040, 659A.043, 659A.046, 659A.063, 659A.069, 659A.082, 659A.088, 659A.103 to 659A.145, 659A.147, 659A.150 to 659A.186, 659A.194, 659A.199, 659A.203, 659A.218, 659A.228, 659A.230, 659A.233, 659A.236, 659A.250 to 659A.262, 659A.277, 659A.290, 659A.300, 659A.306, 659A.309, 659A.315, 659A.318, 659A.320, 659A.343, 659A.355, 659A.357, 659A.370 or 659A.421 or **section 5 of this 2022 Act**; or

(b) ORS 653.470, except an action may not be brought for a claim relating to ORS 653.450.

(3) In any action under subsection (1) of this section alleging a violation of ORS 25.337, 25.424, 243.323, 652.220, 652.355, 653.547, 653.549, 659.852, 659A.030, 659A.040, 659A.043, 659A.046, 659A.069, 659A.082, 659A.103 to 659A.145, 659A.199, 659A.203, 659A.228, 659A.230, 659A.250 to 659A.262, 659A.290, 659A.318, 659A.343, 659A.355, 659A.357, 659A.370 or 659A.421:

(a) The court may award, in addition to the relief authorized under subsection (1) of this section, compensatory damages or \$200, whichever is greater, and punitive damages;

(b) At the request of any party, the action shall be tried to a jury;

(c) Upon appeal of any judgment finding a violation, the appellate court shall review the judgment pursuant to the standard established by ORS 19.415 (1); and

(d) Any attorney fee agreement shall be subject to approval by the court.

(4) Notwithstanding ORS 31.730, in an action under subsection (1) of this section alleging a violation of ORS 652.220, the court may award punitive damages if:

(a) It is proved by clear and convincing evidence that an employer has engaged in fraud, acted with malice or acted with willful and wanton misconduct; or

(b) An employer was previously adjudicated in a proceeding under this section or under ORS 659A.850 for a violation of ORS 652.220.

(5) In any action under subsection (1) of this section alleging a violation of ORS 653.060 or 659A.147, the court may award, in addition to the relief authorized under subsection (1) of this section, compensatory damages or \$200, whichever is greater.

(6) In any action under subsection (1) of this section alleging a violation of ORS 171.120, 476.574 or 659A.218, the court may award, in addition to the relief authorized under subsection (1) of this section, compensatory damages or \$250, whichever is greater.

(7) In any action under subsection (1) of this section alleging a violation of ORS 10.090 or 10.092, the court may award, in addition to the relief authorized under subsection (1) of this section, a civil penalty in the amount of \$720.

(8) Any individual against whom any distinction, discrimination or restriction on account of race, color, religion, sex, sexual orientation, gender identity, national origin, marital status or age, if the individual is 18 years of age or older, has been made by any place of public accommodation, as defined in ORS 659A.400, by any employee or person acting on behalf of the place or by any person aiding or abetting the place or person in violation of ORS 659A.406 may bring an action against the operator or manager of the place, the employee or person acting on behalf of the place or the aider or abettor of the place or person. Notwithstanding subsection (1) of this section, in an action under this subsection:

(a) The court may award, in addition to the relief authorized under subsection (1) of this section, compensatory and punitive damages;

(b) The operator or manager of the place of public accommodation, the employee or person acting on behalf of the place, and any aider or abettor shall be jointly and severally liable for all damages awarded in the action;

(c) At the request of any party, the action shall be tried to a jury;

(d) The court shall award reasonable attorney fees to a prevailing plaintiff;

(e) The court may award reasonable attorney fees and expert witness fees incurred by a defendant who prevails only if the court determines that the plaintiff had no objectively reasonable basis for asserting a claim or no reasonable basis for appealing an adverse decision of a trial court; and

(f) Upon any appeal of a judgment under this subsection, the appellate court shall review the judgment pursuant to the standard established by ORS 19.415 (1).

(9) When the commissioner or the Attorney General has reasonable cause to believe that a person or group of persons is engaged in a pattern or practice of resistance to the rights protected by ORS 659A.145 or 659A.421 or federal housing law, or that a group of persons has been denied any of the rights protected by ORS 659A.145 or 659A.421 or federal housing law, the commissioner or the Attorney General may file a civil action on behalf of the aggrieved persons in the same manner as a person or group of persons may file a civil action under this section. In a civil action filed under this subsection, the court may assess against the respondent, in addition to the relief authorized under subsections (1) and (3) of this section, a civil penalty:

(a) In an amount not exceeding \$50,000 for a first violation; and

(b) In an amount not exceeding \$100,000 for any subsequent violation.

(10) In any action under subsection (1) of this section alleging a violation of ORS 659A.145 or 659A.421 or alleging discrimination under federal housing law, when the commissioner is pursuing the action on behalf of an aggrieved complainant, the court shall award reasonable attorney fees to the commissioner if the commissioner prevails in the action. The court may award reasonable attorney fees and expert witness fees incurred by a defendant that prevails in the action if the court

determines that the commissioner had no objectively reasonable basis for asserting the claim or for appealing an adverse decision of the trial court.

(11) In an action under subsection (1) or (9) of this section alleging a violation of ORS 659A.145 or 659A.421 or discrimination under federal housing law:

(a) "Aggrieved person" includes a person who believes that the person:

(A) Has been injured by an unlawful practice or discriminatory housing practice; or

(B) Will be injured by an unlawful practice or discriminatory housing practice that is about to occur.

(b) An aggrieved person in regard to issues to be determined in an action may intervene as of right in the action. The Attorney General may intervene in the action if the Attorney General certifies that the case is of general public importance. The court may allow an intervenor prevailing party costs and reasonable attorney fees at trial and on appeal.

SECTION 9. ORS 659A.885, as amended by section 10, chapter 197, Oregon Laws 2017, section 6, chapter 139, Oregon Laws 2019, section 8, chapter 343, Oregon Laws 2019, section 8, chapter 463, Oregon Laws 2019, section 58, chapter 700, Oregon Laws 2019, section 13, chapter 701, Oregon Laws 2019, and section 46, chapter 367, Oregon Laws 2021, is amended to read:

659A.885. (1) Any person claiming to be aggrieved by an unlawful practice specified in subsection (2) of this section may file a civil action in circuit court. In any action under this subsection, the court may order injunctive relief and any other equitable relief that may be appropriate, including but not limited to reinstatement or the hiring of employees with or without back pay. A court may order back pay in an action under this subsection only for the two-year period immediately preceding the filing of a complaint under ORS 659A.820 with the Commissioner of the Bureau of Labor and Industries, or if a complaint was not filed before the action was commenced, the two-year period immediately preceding the filing of the action. In any action under this subsection, the court may allow the prevailing party costs and reasonable attorney fees at trial and on appeal. Except as provided in subsection (3) of this section:

(a) The judge shall determine the facts in an action under this subsection; and

(b) Upon any appeal of a judgment in an action under this subsection, the appellate court shall review the judgment pursuant to the standard established by ORS 19.415 (3).

(2) An action may be brought under subsection (1) of this section alleging a violation of:

(a) ORS 10.090, 10.092, 25.337, 25.424, 171.120, 243.323, 408.230, 408.237 (2), 475C.285, 476.574, 652.020, 652.220, 652.355, 653.060, 653.263, 653.265, 653.547, 653.549, 653.601 to 653.661, 657B.060 and 657B.070, 659.852, 659A.030, 659A.040, 659A.043, 659A.046, 659A.063, 659A.069, 659A.082, 659A.088, 659A.103 to 659A.145, 659A.147, 659A.150 to 659A.186, 659A.194, 659A.199, 659A.203, 659A.218, 659A.228, 659A.230, 659A.233, 659A.236, 659A.250 to 659A.262, 659A.277, 659A.290, 659A.300, 659A.306, 659A.309, 659A.315, 659A.318, 659A.320, 659A.343, 659A.355, 659A.357, 659A.370 or 659A.421 or **section 5 of this 2022 Act**; or

(b) ORS 653.470, except an action may not be brought for a claim relating to ORS 653.450.

(3) In any action under subsection (1) of this section alleging a violation of ORS 25.337, 25.424, 243.323, 652.220, 652.355, 653.547, 653.549, 657B.060 and 657B.070, 659.852, 659A.030, 659A.040, 659A.043, 659A.046, 659A.069, 659A.082, 659A.103 to 659A.145, 659A.199, 659A.203, 659A.228, 659A.230, 659A.250 to 659A.262, 659A.290, 659A.318, 659A.343, 659A.355, 659A.357, 659A.370 or 659A.421:

(a) The court may award, in addition to the relief authorized under subsection (1) of this section, compensatory damages or \$200, whichever is greater, and punitive damages;

(b) At the request of any party, the action shall be tried to a jury;

(c) Upon appeal of any judgment finding a violation, the appellate court shall review the judgment pursuant to the standard established by ORS 19.415 (1); and

(d) Any attorney fee agreement shall be subject to approval by the court.

(4) Notwithstanding ORS 31.730, in an action under subsection (1) of this section alleging a violation of ORS 652.220, the court may award punitive damages if:

(a) It is proved by clear and convincing evidence that an employer has engaged in fraud, acted with malice or acted with willful and wanton misconduct; or

(b) An employer was previously adjudicated in a proceeding under this section or under ORS 659A.850 for a violation of ORS 652.220.

(5) In any action under subsection (1) of this section alleging a violation of ORS 653.060 or 659A.147, the court may award, in addition to the relief authorized under subsection (1) of this section, compensatory damages or \$200, whichever is greater.

(6) In any action under subsection (1) of this section alleging a violation of ORS 171.120, 476.574 or 659A.218, the court may award, in addition to the relief authorized under subsection (1) of this section, compensatory damages or \$250, whichever is greater.

(7) In any action under subsection (1) of this section alleging a violation of ORS 10.090 or 10.092, the court may award, in addition to the relief authorized under subsection (1) of this section, a civil penalty in the amount of \$720.

(8) Any individual against whom any distinction, discrimination or restriction on account of race, color, religion, sex, sexual orientation, gender identity, national origin, marital status or age, if the individual is 18 years of age or older, has been made by any place of public accommodation, as defined in ORS 659A.400, by any employee or person acting on behalf of the place or by any person aiding or abetting the place or person in violation of ORS 659A.406 may bring an action against the operator or manager of the place, the employee or person acting on behalf of the place or the aider or abettor of the place or person. Notwithstanding subsection (1) of this section, in an action under this subsection:

(a) The court may award, in addition to the relief authorized under subsection (1) of this section, compensatory and punitive damages;

(b) The operator or manager of the place of public accommodation, the employee or person acting on behalf of the place, and any aider or abettor shall be jointly and severally liable for all damages awarded in the action;

(c) At the request of any party, the action shall be tried to a jury;

(d) The court shall award reasonable attorney fees to a prevailing plaintiff;

(e) The court may award reasonable attorney fees and expert witness fees incurred by a defendant who prevails only if the court determines that the plaintiff had no objectively reasonable basis for asserting a claim or no reasonable basis for appealing an adverse decision of a trial court; and

(f) Upon any appeal of a judgment under this subsection, the appellate court shall review the judgment pursuant to the standard established by ORS 19.415 (1).

(9) When the commissioner or the Attorney General has reasonable cause to believe that a person or group of persons is engaged in a pattern or practice of resistance to the rights protected by ORS 659A.145 or 659A.421 or federal housing law, or that a group of persons has been denied any of the rights protected by ORS 659A.145 or 659A.421 or federal housing law, the commissioner or the Attorney General may file a civil action on behalf of the aggrieved persons in the same manner as a person or group of persons may file a civil action under this section. In a civil action filed under this subsection, the court may assess against the respondent, in addition to the relief authorized under subsections (1) and (3) of this section, a civil penalty:

(a) In an amount not exceeding \$50,000 for a first violation; and

(b) In an amount not exceeding \$100,000 for any subsequent violation.

(10) In any action under subsection (1) of this section alleging a violation of ORS 659A.145 or 659A.421 or alleging discrimination under federal housing law, when the commissioner is pursuing the action on behalf of an aggrieved complainant, the court shall award reasonable attorney fees to the commissioner if the commissioner prevails in the action. The court may award reasonable attorney fees and expert witness fees incurred by a defendant that prevails in the action if the court determines that the commissioner had no objectively reasonable basis for asserting the claim or for appealing an adverse decision of the trial court.

(11) In an action under subsection (1) or (9) of this section alleging a violation of ORS 659A.145 or 659A.421 or discrimination under federal housing law:

(a) "Aggrieved person" includes a person who believes that the person:

(A) Has been injured by an unlawful practice or discriminatory housing practice; or

(B) Will be injured by an unlawful practice or discriminatory housing practice that is about to occur.

(b) An aggrieved person in regard to issues to be determined in an action may intervene as of right in the action. The Attorney General may intervene in the action if the Attorney General certifies that the case is of general public importance. The court may allow an intervenor prevailing party costs and reasonable attorney fees at trial and on appeal.

SECTION 10. A person who owns or operates an existing bulk oils or liquid fuels terminal on the effective date of this 2022 Act shall submit the seismic vulnerability assessment required by section 2 of this 2022 Act no later than June 1, 2024.

SECTION 11. (1) Section 3 of this 2022 Act becomes operative June 1, 2024.

(2) The Environmental Quality Commission, the Department of Environmental Quality, and the State Department of Geology and Mineral Industries may adopt rules and take any action before the operative date specified in subsection (1) of this section that is necessary to enable the commission, the Department of Environmental Quality and the State Department of Geology and Mineral Industries, on and after the operative date specified in subsection (1) of this section, to exercise all of the duties, powers and functions conferred on the commission, the Department of Environmental Quality and the State Department of Geology and Mineral Industries by section 3 of this 2022 Act.

SECTION 12. (1) The State Department of Energy shall develop an energy security plan. The energy security plan must meet the requirements for a state energy security plan described in 42 U.S.C. 6326.

(2) To the extent consistent with the requirements of 42 U.S.C. 6326, the energy security plan must align with strategies in the Oregon Fuel Action Plan developed by the department and must include, but need not be limited to:

(a) An evaluation of the state's ability to recover quickly from physical threats, including a magnitude 9.0 Cascadia Subduction Zone earthquake, and cybersecurity threats.

(b) Recommendations for increasing the geographic diversity of fuel storage capacity throughout this state.

(c) An assessment of the seismic resilience of existing fuel storage facilities throughout this state.

(d) Consistent with state programs to reduce greenhouse gas emissions associated with transportation fuels, an assessment of the use of renewable fuels and other innovative alternatives to improve disaster resilience.

(e) An evaluation of strategies for mitigating barriers to implementing a geographically distributed fuel network throughout this state, including:

(A) Adoption of Oregon Fuel Action Plan criteria for predesignated fuel points of distribution for receiving emergency fuel supplies at selected fuel diversification sites.

(B) Strategies for expanding storage capacities at public facilities with existing capability to store and dispense unleaded, diesel or aviation fuel, including an evaluation of whether fuel storage sites contain properly installed seismically certified generators and adequate on-site fuel storage capacity to power backup generators so that independent operations can be maintained for three or more weeks after a Cascadia Subduction Zone earthquake.

(C) Partnerships with private-sector companies to build fuel storage capacity at identified, prioritized locations, especially private-sector companies that provide an emergency or essential service mission to save or sustain life or support the restoration of critical lifelines and services in support of the state's overall response and recovery effort.

(D) Strategies for increasing geographically distributed fuel storage that prioritize areas of this state that are expected to be most vulnerable to a Cascadia Subduction Zone earth-

quake, including local or regional islanding effects that would isolate a region from the rest of this state as a result of road or bridge damage.

(E) An evaluation of potential impacts to communities adjacent to potential locations for emergency fuel storage or expanded fuel storage, including consultation and outreach with those communities.

(3) In developing and implementing the energy security plan, the department shall consult with:

(a) Relevant state government agencies, including the Public Utility Commission, the Department of Environmental Quality, the Department of Transportation, the Oregon Department of Aviation, the Office of Emergency Management, the State Department of Geology and Mineral Industries and the Environmental Justice Task Force;

(b) Local governments;

(c) Tribal governments;

(d) Consumer-owned and investor-owned electric utilities;

(e) Natural gas utilities;

(f) Fuel suppliers;

(g) Qualified technical experts in disaster resilience; and

(h) Any other person with relevant knowledge or experience.

(4) No later than September 15 of each even-numbered year, the State Department or Energy shall provide to the interim committees of the Legislative Assembly related to energy a report in the manner provided under ORS 192.245 describing the implementation or revision of the energy security plan developed under this section.

SECTION 13. Section 12 of this 2022 Act is amended to read:

Sec. 12. (1) The State Department of Energy shall develop an energy security plan. The energy security plan must meet the requirements for a state energy security plan described in 42 U.S.C. 6326.

(2) To the extent consistent with the requirements of 42 U.S.C. 6326, the energy security plan must align with strategies in the Oregon Fuel Action Plan developed by the department and must include, but need not be limited to:

(a) An evaluation of the state's ability to recover quickly from physical threats, including a magnitude 9.0 Cascadia Subduction Zone earthquake, and cybersecurity threats.

(b) Recommendations for increasing the geographic diversity of fuel storage capacity throughout this state.

(c) An assessment of the seismic resilience of existing fuel storage facilities throughout this state.

(d) Consistent with state programs to reduce greenhouse gas emissions associated with transportation fuels, an assessment of the use of renewable fuels and other innovative alternatives to improve disaster resilience.

(e) An evaluation of strategies for mitigating barriers to implementing a geographically distributed fuel network throughout this state, including:

(A) Adoption of Oregon Fuel Action Plan criteria for predesignated fuel points of distribution for receiving emergency fuel supplies at selected fuel diversification sites.

(B) Strategies for expanding storage capacities at public facilities with existing capability to store and dispense unleaded, diesel or aviation fuel, including an evaluation of whether fuel storage sites contain properly installed seismically certified generators and adequate on-site fuel storage capacity to power backup generators so that independent operations can be maintained for three or more weeks after a Cascadia Subduction Zone earthquake.

(C) Partnerships with private-sector companies to build fuel storage capacity at identified, prioritized locations, especially private-sector companies that provide an emergency or essential service mission to save or sustain life or support the restoration of critical lifelines and services in support of the state's overall response and recovery effort.

(D) Strategies for increasing geographically distributed fuel storage that prioritize areas of this state that are expected to be most vulnerable to a Cascadia Subduction Zone earthquake, including local or regional islanding effects that would isolate a region from the rest of this state as a result of road or bridge damage.

(E) An evaluation of potential impacts to communities adjacent to potential locations for emergency fuel storage or expanded fuel storage, including consultation and outreach with those communities.

(3) In developing and implementing the energy security plan, the department shall consult with:

(a) Relevant state government agencies, including the Public Utility Commission, the Oregon Department of Environmental Quality, the Department of Transportation, the Department of Aviation, the [Office] **Oregon Department** of Emergency Management, the State Department of Geology and Mineral Industries and the Environmental Justice Task Force;

(b) Local governments;

(c) Tribal governments;

(d) Consumer-owned and investor-owned electric utilities;

(e) Natural gas utilities;

(f) Fuel suppliers;

(g) Qualified technical experts in disaster resilience; and

(h) Any other person with relevant knowledge or experience.

(4) No later than September 15 of each even-numbered year, the State Department of Energy shall provide to the interim committees of the Legislative Assembly related to energy a report in the manner provided under ORS 192.245 describing the implementation or revision of the energy security plan developed under this section.

SECTION 14. The amendments to section 12 of this 2022 Act by section 13 of this 2022 Act become operative on July 1, 2022.

SECTION 15. No later than November 1, 2024, the Department of Environmental Quality shall provide a report, including recommendations for legislation, to the interim committees of the Legislative Assembly related to energy, in the manner provided under ORS 192.245. The report required under this section must include:

(1) A summary of information received by the department under section 2 of this 2022 Act; and

(2) Policy recommendations for making the provisions of sections 2 to 6 of this 2022 Act applicable to additional regions of this state, based on the risk to each additional region from an earthquake or tsunami.

SECTION 16. The State Department of Energy shall submit the energy security plan developed under section 12 of this 2022 Act in a report to the interim committees of the Legislative Assembly related to energy, in the manner provided under ORS 192.245, no later than June 1, 2024.

SECTION 17. Sections 15 and 16 of this 2022 Act are repealed on January 2, 2025.

SECTION 18. (1) Notwithstanding any other provision of law, the General Fund appropriation made to the Department of Environmental Quality by section 1 (3), chapter 673, Oregon Laws 2021, for the biennium ending June 30, 2023, for land quality, is increased by \$712,318 for implementation of the provisions of sections 2 to 6 and 15 of this 2022 Act.

(2) Notwithstanding any other law limiting expenditures, the limitation on expenditures established by section 4, chapter 423, Oregon Laws 2021, for the biennium ending June 30, 2023, as the maximum limit for payment of expenses from federal funds collected or received by the State Department of Energy, is increased by \$327,996 for implementation of the provisions of sections 12 and 16 of this 2022 Act.

SECTION 19. This 2022 Act takes effect on the 91st day after the date on which the 2022 regular session of the Eighty-first Legislative Assembly adjourns sine die.

Passed by Senate March 1, 2022

.....
Lori L. Brocker, Secretary of Senate

.....
Peter Courtney, President of Senate

Passed by House March 4, 2022

.....
Dan Rayfield, Speaker of House

Received by Governor:

.....M.,....., 2022

Approved:

.....M.,....., 2022

.....
Kate Brown, Governor

Filed in Office of Secretary of State:

.....M.,....., 2022

.....
Shemia Fagan, Secretary of State

Oregon Department of Energy (</energy/Pages/index.aspx>) / Safety & Resilience (</energy/safety-resiliency/Pages/default.aspx>) / Energy System Resilience

Energy System Resilience

The Oregon Department of Energy is responsible for ensuring a resilient energy system.

A resilient energy system is one that can recover quickly after a disruption like a Cascadia Subduction Zone earthquake, a sea level rise such as a storm surge, or heightened forest fire dangers.

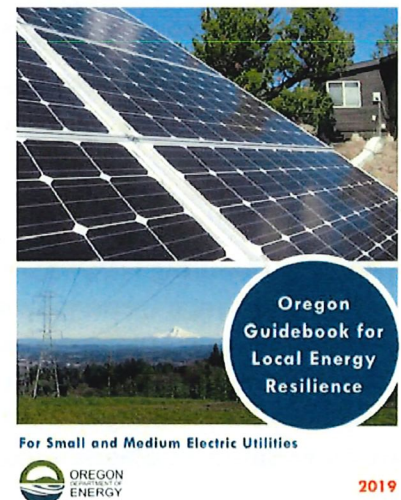
Follow updates on ODOE's **safety and resilience work on our blog** (<https://energyinfo.oregon.gov/blog?category=Safety%20%26amp%3b%20Resilience>).

Oregon Guidebook for Local Energy Resilience

(</energy/safety-resiliency/Pages/Local-Energy-Resilience-Guide.aspx>)

In 2016, ODOE and **Central Lincoln People's Utility District** (<https://clpud.org/>) were selected to participate in the **National Governors Association's Policy Academy on Grid Modernization** (<https://energyinfo.oregon.gov/blog/2016/12/19/oregon-department-of-energy-and-central-lincoln-pud-tapped-for-national-governors-association-project-to-modernize-electric-power-sector/>).

The partnership, along with input from several other Oregon utilities, helped inform the ***Oregon Guidebook for Local Energy Resilience: for Small and Medium Utilities*** (</energy/safety-resiliency/Pages/Local-Energy-Resilience-Guide.aspx>). The guidebook serves as an action plan for consumer-owned utilities, including recommended steps to enhance local energy resilience; a list of local, state, and federal resources; and a number of case studies and resilience topic deep dives to help COUs better prepare for emergencies that could disrupt electricity service.



Energy Resilience Planning

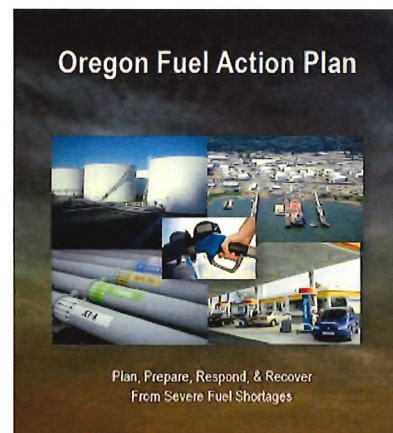
Our programs support projects that boost resilience, such as distributed generation, **marine energy** (</energy/energy-oregon/Pages/Marine.aspx>), and **energy storage** (</energy/safety-resiliency/Pages/Energy-Storage.aspx>). ODOE is also working with other state and local agencies and stakeholders to assess the current risks to our energy system, and how we would respond.

Our planning work includes mitigating the effects of a short-term disaster as well as supporting flexible energy systems that can respond to climate change efforts.

Oregon Fuel Action Plan

(</energy/safety-resiliency/Pages/Petroleum.aspx>) The Oregon Department of Energy is responsible for implementing the **Oregon Fuel Action Plan** (</energy/safety-resiliency/Pages/Petroleum.aspx>), which outlines Oregon's response to severe or long-term petroleum shortages or disruptions.

The Plan addresses how we would access gasoline and diesel in Oregon, and how we would distribute fuel to state emergency services such as law enforcement, fire, and medical services, and to essential service providers that include utilities, telecommunications, public works, public transit, and sanitation services.



Be Prepared

In addition to ODOE's work, other state of Oregon agencies are also focused on large-scale resiliency planning. The **Oregon Office of Emergency Management** (</oem/Pages/About-Us.aspx>) coordinates statewide efforts for preparedness, response, recovery, and mitigation. Learn more by reading the **Oregon Resilience Plan** [↗](/oem/Documents/Oregon_Resilience_Plan_Final.pdf) (/oem/Documents/Oregon_Resilience_Plan_Final.pdf).

Oregonians can also do their part. Be prepared for an emergency at home, at work, and in your car. **Visit our blog** (<https://energyinfo.oregon.gov/blog/2017/09/07/get-ready-get-set/>) for more tips.

Ready.gov [↗](https://www.ready.gov/) (<https://www.ready.gov/>) also has recommendations for how you can be prepared, including putting together an emergency kit with food and water, determining a family communication plan, and more.

RESOURCES

Energy Planning (</energy/energy-oregon/Pages/Energy-Planning.aspx>)

Energy Storage (</energy/safety-resiliency/Pages/Energy-Storage.aspx>)

Energy Assurance Plan (</energy/safety-resiliency/Pages/Energy-Assurance-Plan.aspx>)

Oregon Resilience Plan (/oem/Documents/Oregon_Resilience_Plan_Final.pdf)

ODOE's Blog: Safety & Resilience (<https://energyinfo.oregon.gov/blog?category=Safety%20%26amp%3b%20Resilience>)

RESILIENCE IN OREGON

Oregon Guidebook for Local Energy Resilience (</energy/safety-resiliency/Pages/Local-Energy-Resilience-Guide.aspx>)

Oregon Fuel Action Plan (</energy/safety-resiliency/Pages/Petroleum.aspx>)

Sign Up For Email Updates

(<http://web.energy.oregon.gov/cn/a6n53/subscribe>)

Contact Our Energy Resiliency Team:

503-378-4040

800-221-8035

askenergy@oregon.gov (<mailto:askenergy@oregon.gov>)

🗣️ **Help us improve!** Was this page helpful?

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No

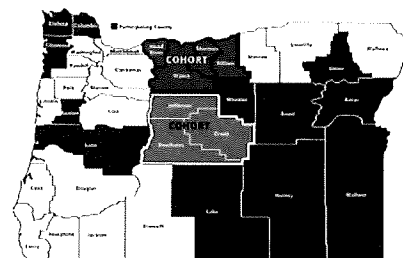
County Energy Resilience Grant Program

*In 2023, the Oregon Legislature passed **HB 3630** (<https://olis.oregonlegislature.gov/liz/2023R1/Downloads/MeasureDocument/HB3630/Enrolled>), which directed the Oregon Department of Energy to create a grant program to support Oregon counties with energy resilience planning. Specifically, HB 3630 provides up to \$50,000 per county to develop an energy resilience plan.*

(/energy/safety-resiliency/Documents/County-Resilience-Grants-ODOE-Opportunity-Announcement.pdf)

The County Energy Resilience Grant Program provides grants to Oregon counties to develop energy resilience plans that:

- Map current energy infrastructure, natural hazard risks, and communities that experience social vulnerability.
- Identify needs to increase resilience.
- Identify steps for implementation.
- Engage with environmental justice communities to identify communities that experience social vulnerabilities.



Exact requirements for plan content are stipulated in **HB 3630**

(<https://olis.oregonlegislature.gov/liz/2023R1/Downloads/MeasureDocument/HB3630/Enrolled>).

The Oregon Department of Energy has up to \$50,000 per Oregon county available for this program for a total of \$1.8 million. This is a noncompetitive grant program with no match requirement. Every one of Oregon's 36 counties are eligible to receive funds provided they meet the eligibility requirements. Counties may work together and pool funds in a cohort.

Opportunity Announcement

ODOE posted the **Opportunity Announcement** (/energy/safety-resiliency/Documents/County-Resilience-Grants-ODOE-Opportunity-Announcement.pdf) for funding on May 22, 2024 and accepted applications through February 28, 2025. Nineteen counties applied to participate in the program. Counties must submit the program completion form and a copy of their plans by August 1, 2025.

Program Resources: **FAQs** (/energy/safety-resiliency/Documents/County-Resilience-Grants-ODOE-FAQs.pdf) | **Plan Development Resources** (/energy/safety-resiliency/Documents/County-Resilience-Grants-ODOE-Resources-List.pdf)

The **resources document** (/energy/safety-resiliency/Documents/County-Resilience-Grants-ODOE-Resources-List.pdf) is a great tool for assisting in the development of the plan. It includes a list of technical assistance providers, mapping resources, example plan information, and more. The County Energy Resilience Program Coordinator is also available to answer questions and provide connections to further resources.

Stakeholder Engagement

ODOE hosted two informational webinars on June 6 and June 25 to share more about the County Energy Resilience Program. Each virtual event offered a presentation on the program, followed by a question and answer session. Find the recordings below.

Meeting Details

Informational Webinar

Tuesday, June 25, 2024 | 1 p.m. - 2 p.m.

Meeting Recording (<https://youtu.be/CIWEnzT5mXU>)

Meeting Materials

Meeting Presentation (/energy/safety-

resiliency/Documents/2024-06-25-County-Resilience-Grants-PPT.pdf)

Informational Webinar
Thursday, June 6, 2024 | 9 a.m. - 10 a.m.
Meeting Recording
(<https://youtu.be/pWU5LLh1lc>)

Meeting Presentation (/energy/safety-resiliency/Documents/2024-06-06-County-Resilience-Grants-Webinar-PPT.pdf)

Funding for Tribes

The **Bureau of Indian Affairs (BIA) Tribal Community Resilience Annual Awards Program** (<https://www.bia.gov/service/tcr-annual-awards-program>) offers funds to Tribes to achieve similar goals to the County Energy Resilience Program.

Tribes can request **no-cost, non-competitive technical assistance** (<https://www.energy.gov/indianenergy/technical-assistance>) from the U.S. Department of Energy's Office of Indian Energy Policy and Programs to complete energy resilience planning.

RESOURCES

HB 3630 (<https://olis.oregonlegislature.gov/liz/2023R1/Downloads/MeasureDocument/HB3630/Enrolled>)
Program Flyer (/energy/safety-resiliency/Documents/County-Resilience-Grants-ODOE-One-Pager.pdf)
Informational Webinars (/energy/safety-resiliency/Pages/County-Resilience.aspx#meetings)
Other ODOE Programs (/energy/Incentives/Pages/default.aspx)
Awarded Grant Recipients (<https://energyinfo.oregon.gov/blog/2025/3/17/oregon-department-of-energy-awards-grants-to-19-counties-for-energy-resilience-planning>)

2025 Report to the Legislature (/energy/Data-and-Reports/Documents/2025-County-Energy-Resilience-Annual-Report.pdf)
(/energy/safety-resiliency/Pages/County-Resilience.aspx#meetings)

Opportunity Announcement (/energy/safety-resiliency/Documents/County-Resilience-Grants-ODOE-Opportunity-Announcement.pdf)

Application Period: Closed

- **FAQs** (/energy/safety-resiliency/Documents/County-Resilience-Grants-ODOE-FAQs.pdf)
- **Plan Development Resources** (/energy/safety-resiliency/Documents/County-Resilience-Grants-ODOE-Resources-List.pdf)

FUNDING FOR TRIBES

- The **Bureau of Indian Affairs (BIA) Tribal Community Resilience Annual Awards Program** (<https://www.bia.gov/service/tcr-annual-awards-program>) offers funds to Tribes to achieve similar goals to the County Energy Resilience Program.
- Tribes can request **no-cost, non-competitive technical assistance** (<https://www.energy.gov/indianenergy/technical-assistance>) from the U.S. Department of Energy's Office of Indian Energy Policy and Programs to complete energy resilience planning.

Sign Up For Email Updates
(<http://web.energy.oregon.gov/cn/a6n53/subscribe>)

CONTACT PROGRAM STAFF

county.resilience@energy.oregon.gov (<mailto:county.resilience@energy.oregon.gov>)
971-240-3577

🗨 **Help us improve!** Was this page helpful? Yes No

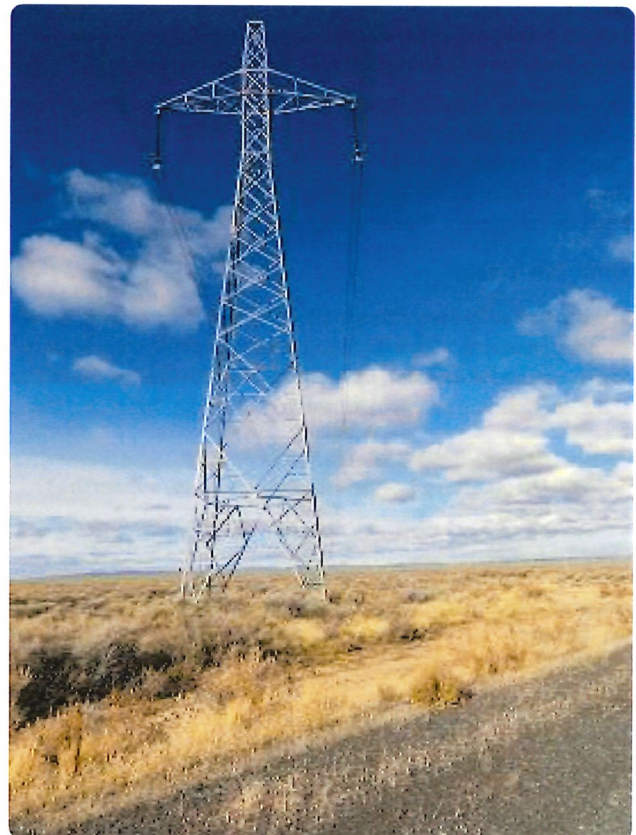
Energy Storage

Energy storage may be a key tool to integrate renewable resources into the electricity grid.

Some electricity resources, such as nuclear or coal-burning facilities, produce energy on-demand. **Renewable resources** (</energy/energy-oregon/Pages/Renewable-Energy.aspx>), such as wind and solar power, are not always available to match demand, since the wind doesn't always blow and the sun doesn't always shine.

Storing energy, like in a battery, can help us capture renewable energy to be used when it's needed (even solar power in the middle of the night). Not only can smart storage solutions help us increase the use of renewable electricity, it can also improve the resiliency of the power grid.

In 2015, ODOE secured financial and programmatic support from **Sandia National Laboratories** (<https://www.sandia.gov/>) for an energy storage pilot project at the **Eugene Water & Electric Board** (<https://www.eweb.org/>). ODOE provided technical expertise and support to EWEB for their project demonstrating energy storage and "microgrid" technology. The project helps Oregon better understand different storage technologies to improve system resilience and strengthen long-term grid resiliency.



ODOE is also bringing together statewide stakeholders to assess the long-term benefits of energy storage. Working with the **Oregon Public Utility Commission** (<https://www.puc.state.or.us/Pages/Index.aspx>), we are developing evaluation criteria for electrical storage systems:

- **Energy Storage PUC Docket for PacifiCorp** (<https://apps.puc.state.or.us/edockets/docket.asp?DocketID=20915>)

- **Energy Storage PUC Docket for Portland General Electric** 
(<https://apps.puc.state.or.us/edockets/docket.asp?DocketID=20913>)

RESOURCES

Energy System Resiliency (</energy/safety-resiliency/Pages/Resilience.aspx>)
(</energy/energy-oregon/Pages/Energy-Planning.aspx>)
Energy Planning (</energy/energy-oregon/Pages/Energy-Planning.aspx>)
(</energy/energy-oregon/Pages/Energy-Planning.aspx>)

Contact the Planning & Innovation Team:

503-378-4040

800-221-8035

askenergy@oregon.gov (<mailto:askenergy@oregon.gov>)

 **Help us improve!** Was this page helpful?

Yes

No

OREGON RESILIENCE CASE STUDY

BUSINESS CONTINUITY PLANNING: DERS & MICROGRIDS

A Business Continuity Plan (BCP) ensures an individual organization can continue to perform its **essential functions**, provide **essential services**, and deliver **core capabilities** during a disruption to normal operations.

Oregon utilities have implemented a number of BCP actions related to Distributed Energy Resources (DERs) and microgrids.

Eugene Water & Electric Board

The Eugene Water and Electric Board, which serves about 93,000 electric customers and 53,000 water customers in the Eugene area, has partnered with the two Eugene -area school districts to install back-up power capability and install or upgrade water well equipment at district-owned facilities. Many Eugene-area schools have existing rooftop solar that could provide on-site power for pumping water in addition to the back-up power sources. EWEB is investigating several possible back-up power sources, and is installing a microgrid back-up battery power source at Howard Elementary school in 2018

and a new water well and pump station in the spring of 2019. This microgrid is sized to run the water well pump at the site for up to three weeks, while the existing solar array will be configured to allow for charging of the battery bank. EWEB's project, which is designed to increase resiliency and support research and design, was funded through a grant with ODOE, Sandia National Laboratories, Advanced Grid Research and Clean Energy States Alliance. EWEB's goal is that five schools will be water resource-ready within five years. Within 5-10 years, microgrids may become more cost effective, which may result in penetration of these power sources to the electrical grid, due to an increase in customer-owned battery storage systems. Research from this first project and the following efforts will inform future policies, and will be used for planning purposes to better understand how integration with these systems will benefit the grid and the customer.

Because EWEB is both an electric and water utility, it is also focused on developing distributed emergency



EWEB contractor installs back-up battery power system.

water resources. EWEB plans to identify high-population areas where community members can access water – so locations should be accessible, have a nearby water source, and provisions for backup power capabilities to allow for pumping and filtration of water if the larger grid is down. Ideally, community members will have already stored emergency water at home and at work, and can get through the first few days or weeks after an emergency. This will allow EWEB and fellow responding agencies to get emergency hubs and water distribution centers up and running.

EWEB has partnered with the two Eugene-area school districts to install backup power capability and install or upgrade water well equipment at district-owned facilities. Many Eugene-area schools have existing rooftop solar that could provide onsite power for pumping water in addition to the backup power sources. EWEB is investigating several possible backup power sources, and is installing a microgrid backup battery power source at a school site with already existing water rights in 2018. This microgrid is sized to run the site water well pump for up to three weeks, and the existing solar will be configured to allow for charging of the battery bank. EWEB is using this project for both increasing resiliency and research and design through a grant with ODOE, Sandia National Labs, Advanced Grid Research and Clean Energy States Alliance. EWEB's goal is that five schools will be water resource-ready within five years. Within 5-10 years, the cost of microgrids may become more economic, which may result in penetration of these power sources to the electrical grid due to an increase in customer-owned battery storage systems. Research from this first project and the following efforts will inform future policies, and will be used for planning purposes to better understand how this integration with these systems will benefit the grid and the customer.

Portland General Electric

Dispatchable Standby Generation (DSG) Program: Portland General Electric is involved in several energy projects around the Portland metro area with resilience benefits. First, PGE manages a Dispatchable Standby Generation (DSG) program that partners with large customers, many of them hospitals, that already have on-site diesel generators. Through the DSG program, PGE upgrades the customers' control and communications equipment, assumes most routine maintenance and fuel costs, expands on-site fuel storage capabilities, and regularly tests the generator. In exchange, the customer agrees to allow PGE to rely on the customer's generator to supply extra capacity to meet system needs if there is ever an emergency need for capacity. PGE benefits by having an additional emergency capacity resource, while the customer benefits through a more robust on-site energy resilience solution.

City of Portland Fire Station 1: PGE is also involved in the deployment of microgrid projects that combine solar and storage to enhance resilience. In 2017, the utility partnered with the City of Portland's Fire Station 1 through its Renewable Development Fund grant program to deploy a solar and storage project that can provide resilient back-up power for the fire station following a grid disruption.



City of Portland Fire Station 1

Tillamook People's Utility District

The Tillamook area is known for its dairy production, so the area is well-stocked with animal waste. Part of the PUD's three-year strategic plan is to assess how three local waste digesters could be developed into a microgrid to provide power, particularly after an emergency.

Two digesters are currently operating in the area – one is owned by a local farmer where the power is sold into the grid using BPA transmission lines, and a second is owned by a group of five farmers where the power is purchased by the PUD. A third is currently non-functioning, and owned by the Port of Tillamook. When it's back up and running, Tillamook PUD will likely purchase the power. The three digesters could produce up to 3 MW of power altogether.

Cost remains an issue, as producing power from the digesters includes costs to ship waste and operate the equipment. Tillamook PUD currently offers a "green power" program where customers can buy blocks of the power – but it is still at a margin loss for the PUD. It is reviewing possible changes to the program, and will be working with the creamery co-op to create a marketing plan to see if customers would be interested in buying in to a re-worked waste-produced power program. Tillamook is optimistic about the program – the creamery already plans to use green power to operate its new visitor center, and the local Pelican Brewery would also use it.



Eugene Water & Electric Board

In addition to continuing to implement seismic and preparedness activities, EWEB is actively deploying AMI "smart meter" technology, as well as black starting its generation facilities after an emergency to power critical loads in the Eugene area.

An AMI system is still in the deployment stage at EWEB, with about 4,000 or so smart meters deployed among more than 90,000 electric meters territory-wide. An AMI system would allow EWEB to better respond in an emergency, where the utility could turn on or off specific areas around the city and direct power to critical services. EWEB is currently installing the smart meters as opportunity allows – including new construction, new tenants, or large renovations. EWEB hopes to have the AMI system deployed within three years.

After a large emergency, power systems are likely to experience failure. EWEB is investigating the feasibility of black starting its hydro generators and customer owned local generators to power critical facilities after an emergency. Additionally, EWEB is in plans to launch a study to work with customers to better measure their load, and identify how they could trim energy or water use during emergency situations if curtailment is needed to maintain stability. The process could identify the smallest possible load they can handle and still keep things running – this will help ensure that a black-started generator isn't overloaded with a larger load beyond its capability.

Central Lincoln People's Utility District

Central Lincoln's advanced metering infrastructure (AMI) system has been fundamental to improving reliability and resiliency in day to day operations. Employees are able to view meter data on handheld



devices and operators can determine system status from the substation to the customer meter. After a disaster, having eyes on the system to the meter level means that crews can be directed to specific prioritized outages resulting in more timely repairs and reduced outage times. Central Lincoln will continue to use AMI data to optimize its systems including the communication network that it relies upon to operate. With the AMI system, Central Lincoln is in a position to integrate distributed energy resources as they come available including solar, wind, biomass, battery storage, and wave energy.

National Examples

See our Deep Dive on [Deploying Resilient Microgrid Solutions](#) for national examples of DERs.



Information provided by the utilities in Summer 2018 and from ODOE's 2018 Biennial Energy Report.

Ex. 8, Page 4 of 4

www.oregon.gov/energy/safety-resiliency/Pages/default.aspx

503-378-4040 | 550 Capital St. NE in Salem | Page 4

Enrolled House Bill 3630

Sponsored by Representatives RAYFIELD, PHAM K, Senator GOLDEN, Representative MARSH;
Representatives ANDERSEN, BOWMAN, DEXTER, FAHEY, GAMBA, GRAYBER, HOLVEY,
HUDSON, KROPP, MCLAIN, NATHANSON, NERON, NOSSE, PHAM H, REYNOLDS, SOSA,
Senators LIEBER, PATTERSON, SOLLMAN

CHAPTER

AN ACT

Relating to energy; and declaring an emergency.

Be It Enacted by the People of the State of Oregon:

PROGRAM TO ASSIST ENVIRONMENTAL JUSTICE COMMUNITIES

SECTION 1. The State Department of Energy shall establish a program to provide assistance related to energy projects and activities to environmental justice communities, as defined in ORS 469A.400. At a minimum, the program must provide environmental justice communities with information regarding:

- (1) Funding resources.
- (2) Technical assistance.
- (3) Other support that may be available.

STATE ENERGY STRATEGY

SECTION 2. (1) The State Department of Energy shall develop a comprehensive state energy strategy that identifies optimized pathways to achieving the state's energy policy objectives.

- (2) The state energy strategy must be informed, at a minimum, by the following:
 - (a) Stakeholder perspectives;
 - (b) State laws, policies and targets regarding energy and greenhouse gas emissions;
 - (c) Existing energy and integrated resource plans;
 - (d) Energy-related studies and data analysis; and
 - (e) State energy policy objectives.
- (3) In identifying optimized pathways to achieving the state's energy policy objectives, the state energy strategy must take into account, at a minimum, the following factors:
 - (a) State energy demand and trends;
 - (b) Energy resources and technology choices in consideration of costs, energy efficiency, feasibility and availability;
 - (c) Economic and employment impacts;
 - (d) Energy burden and affordability;

- (e) Energy resilience, as defined in section 29, chapter 508, Oregon Laws 2021, and energy reliability;
 - (f) Environmental justice, as defined in ORS 469A.400;
 - (g) Land use considerations;
 - (h) Natural resource impacts;
 - (i) Emerging technologies and investment opportunities;
 - (j) Energy generation, transmission and distribution infrastructure needed to achieve state energy policy objectives;
 - (k) Existing and potential incentives to support energy efficiency, development and deployment;
 - (L) Energy security and impacts of broader markets;
 - (m) Community benefits; and
 - (n) Community energy resilience, as defined in section 29, chapter 508, Oregon Laws 2021.
- (4)(a) In developing the state energy strategy, the department shall engage with relevant state agencies, federally recognized Indian tribes and stakeholders. At a minimum, the stakeholders must represent a diverse range of:
- (A) Interests, perspectives, expertise and education;
 - (B) Socioeconomic backgrounds;
 - (C) Communities; and
 - (D) Geographic areas of this state.
- (b) The department may convene an advisory work group to inform the department on the department's engagement with stakeholders and development of the state energy strategy.
- (5)(a) The department shall ensure that the state energy strategy developed under this section reflects the best available information, data analyses and time horizons necessary to achieving the state's energy policy objectives.
- (b) The department shall periodically update the state energy strategy to reflect current information, data analysis and state energy policy objectives.
- (c) The department shall inform the Governor and Legislative Assembly when the department updates the state energy strategy.
- (6) The department may contract with third parties for assistance in performing the department's duties under this section, including assistance with technical or facilitation services.
- (7) All agencies of state government, as defined in ORS 174.111, are directed, to the extent permitted by laws relating to confidentiality, to furnish such information and advice to the department as the department considers necessary to perform the department's duties under this section.

SECTION 3. (1) The State Department of Energy shall produce a report regarding the state energy strategy developed under section 2 of this 2023 Act. The report, at minimum, must:

- (a) Summarize the state energy strategy and optimized pathways to achieving the state's energy policy objectives;
 - (b) Describe the department's engagement process with stakeholders and how stakeholder perspectives informed the state energy strategy; and
 - (c) Recommend legislation or changes to policy necessary to implement the state energy strategy.
- (2) The department shall submit the report produced under subsection (1) of this section to the Governor and the appropriate interim committees of the Legislative Assembly in the manner provided under ORS 192.245 no later than November 1, 2025.

SECTION 4. Section 3 of this 2023 Act is repealed on January 2, 2026.

COUNTY ENERGY RESILIENCE PLANS

SECTION 5. (1) The Legislative Assembly finds that each county should plan for and develop energy resilience and be prepared, in the event of major grid disruption, to maintain basic services and functions.

(2) In order to carry out the provisions set forth in subsection (1) of this section, a county may:

(a) Develop and adopt an energy resilience plan; and

(b) Incorporate the energy resilience plan into the county's applicable natural hazard mitigation plan.

(3) An energy resilience plan developed under this section must:

(a) Be based on and plan for short-term, medium-term and long-term power outages.

(b) Identify and map:

(A) Existing energy infrastructure located within the county, including transmission lines, distribution lines, substations and energy storage systems;

(B) Natural hazard risks; and

(C) Communities that experience social vulnerability.

(c) Identify potential locations for community resilience centers and communication zones that the public may use to access electricity services during a power outage;

(d) Inventory the energy consumption needs of critical public services facilities;

(e) Identify critical public services facilities where the development of alternate energy generation and storage resources will meet local energy resilience needs;

(f) Identify opportunities to coordinate and locate energy infrastructure development to align with and support critical public services facilities;

(g) Identify time schedules, priorities and potential funding sources for developing energy resilience; and

(h) Identify other actions and resources needed to implement the energy resilience plan.

(4)(a) To identify and map communities that experience social vulnerabilities under subsection (3)(b)(C) of this section, a county shall consult with representatives from local environmental justice communities.

(b) A county shall use the locations of communities that experience social vulnerabilities to prioritize the potential locations of community resilience centers under subsection (3)(c) of this section.

(5) A public utility that is operating or serving customers within the boundaries of a county that is developing an energy resilience plan shall use reasonable efforts to assist with and comply with requests from the county for information regarding energy infrastructure that is located or serving customers within the boundaries of the county, provided that the information is exempt from disclosure under ORS 192.355.

(6) As used in this section, "critical public services facility" includes a facility related to law enforcement, fire protection, health and medical services, sanitation services, fuel and fueling, public works and engineering, public information and communications and emergency response.

SECTION 6. (1) The State Department of Energy shall establish a program for awarding grants to counties to cover the costs of developing energy resilience plans that meet the requirements under section 5 (3) of this 2023 Act.

(2) Under the program:

(a) A county shall use grant moneys to cover the costs of developing an energy resilience plan that meets the requirements listed under section 5 (3) of this 2023 Act;

(b) A county may be awarded a total of no more than \$50,000;

(c) Counties may combine and use together grant moneys that have been awarded to the counties;

(d) A county may use grant award moneys to cover:

(A) The salaries and expenses of county employees for the time the employees work on developing an energy resilience plan;

- (B) The costs to hire or contract with a technical assistance provider; and
 - (C) Any other necessary costs as approved by the department; and
 - (e) The department may issue grant award moneys to a county or directly to a technical assistance provider or providers hired or contracted by the county.
- (3) The department shall establish the:
- (a) Application process;
 - (b) Eligibility criteria for awarding grants;
 - (c) Process of awarding grants; and
 - (d) Requirements for reporting on the use of grant award moneys by grantees.
- (4) No later than September 15, 2025, the department shall submit a report in the manner provided by ORS 192.245 to the interim committees of the Legislative Assembly related to energy. The report must, at a minimum:
- (a) Identify the counties that have received grants under the program and describe the status of the counties' energy resilience plans;
 - (b) Identify opportunities to incorporate county energy resilience plans into a state energy resilience plan and other planning efforts; and
 - (c) Make recommendations for improvements to the program and investments that would improve future planning efforts.

SECTION 7. Section 6 of this 2023 Act is repealed on January 2, 2026.

HOME ENERGY PROGRAMS

SECTION 8. (1) The State Department of Energy, in consultation with the Housing and Community Services Department, shall establish:

- (a) A whole-home energy savings program to provide rebates to individual homeowners, multifamily building owners and aggregators for home energy efficiency retrofits; and
 - (b) A high-efficiency electric home rebate program to provide rebates for the purchase and installation of appliances and nonappliance upgrades.
- (2) In establishing a program under this section, the State Department of Energy shall:
- (a) Consult with stakeholders, including consumer-owned utilities, as defined in ORS 757.270, and investor-owned utilities, as defined in ORS 469.631; and
 - (b) Ensure the program maximizes benefits for applicants by leveraging federal and state resources.

STATE DEPARTMENT OF ENERGY SINGLE RESOURCE

SECTION 9. (1) The State Department of Energy shall create a single resource that provides to interested persons information, technical assistance and assistance in identifying contractors and financing options, related to available energy efficiency incentives and programs.

(2) The department shall coordinate information and data exchanges between federal and state agencies, private and public utility providers, and energy efficiency incentive or program providers as may be necessary to:

- (a) Create and maintain the single resource described under subsection (1) of this section; and
- (b) Support the implementation and reporting requirements of available energy efficiency incentives and programs.

(3) The department may contract with a nonprofit or other entity as may be necessary to carry out the provisions of this section.

(4) Entities that exchange, compile or maintain information or data under this section or that are involved in carrying out the provisions of this section shall use best practices to

maintain the confidentiality and security of the information and data as required by federal and state law, including the Oregon Consumer Information Protection Act and ORS 192.355.

APPROPRIATIONS

SECTION 10. (1) Notwithstanding any other provision of law, the General Fund appropriation made to the State Department of Energy by section 1 (1), chapter __, Oregon Laws 2023 (Enrolled House Bill 5016), for the biennium beginning July 1, 2023, for energy development services, is increased by \$4,238,727 for the purpose of carrying out sections 2 to 8 of this 2023 Act.

(2) In addition to and not in lieu of any other appropriation, there is appropriated to the State Department of Energy, for the biennium beginning July 1, 2023, out of the General Fund, the amount of \$402,385, for the purpose of carrying out the provisions of section 1 of this 2023 Act.

SECTION 10a. Notwithstanding any other law limiting expenditures, the limitation on expenditures established by section 4, chapter __, Oregon Laws 2023 (Enrolled House Bill 5016), for the biennium beginning July 1, 2023, as the maximum limit for payment of expenses from federal funds collected or received by the State Department of Energy, is increased by \$48,859, for the purpose of carrying out sections 8 and 9 of this 2023 Act.

OPERATIVE DATE

SECTION 11. Sections 2 to 7 of this 2023 Act become operative on the 91st day after the date on which the 2023 regular session of the Eighty-second Legislative Assembly adjourns sine die.

UNIT CAPTIONS

SECTION 12. The unit captions used in this 2023 Act are provided only for the convenience of the reader and do not become part of the statutory law of this state or express any legislative intent in the enactment of this 2023 Act.

DECLARING EMERGENCY

SECTION 13. This 2023 Act being necessary for the immediate preservation of the public peace, health and safety, an emergency is declared to exist, and this 2023 Act takes effect on its passage.

Passed by House June 14, 2023

.....
Timothy G. Sekerak, Chief Clerk of House

.....
Dan Rayfield, Speaker of House

Passed by Senate June 24, 2023

.....
Rob Wagner, President of Senate

Received by Governor:

.....M.,....., 2023

Approved:

.....M.,....., 2023

.....
Tina Kotek, Governor

Filed in Office of Secretary of State:

.....M.,....., 2023

.....
Secretary of State

Oregon Energy Strategy

The Oregon Energy Strategy will identify pathways to achieving the state's energy policy objectives. The report will be informed by robust stakeholder engagement and help Oregon achieve emissions reductions in line with state energy and climate policy goals.

Oregon Energy Strategy Coming Soon!

The Office of Governor Kotek and the Oregon Department of Energy are conducting a final review of the Oregon Energy Strategy. Thanks for your patience as we take a few extra days to roll out this important report.

About the Project

The Oregon Department of Energy is developing the Oregon Energy Strategy, which will identify pathways to achieve the state's energy objectives. The strategy will consider benefits and challenges of different pathways, present policy recommendations, and reflect input from Oregonians who informed the Strategy.

Developing the Oregon Energy Strategy will follow a process that combines data gathering, technical analysis, and policy discussions anchored in engagement with Oregonians with diverse backgrounds and perspectives from across the state. Following public comment on the draft report, the Oregon Energy Strategy will be presented to the Governor and Legislature by November 1, 2025.

Achieving Oregon's Energy Policy Objectives

As directed by **HB 3630** (<https://olis.oregonlegislature.gov/liz/2023R1/Downloads/MeasureDocument/HB3630/Enrolled>), the strategy will outline potential actions to meet the state's energy policy objectives, including reliability, affordability, and greenhouse gas emission reduction targets:

- Executive Order 20-04: Economy-wide 80 percent reduction in greenhouse gas emissions by 2050
- HB 2021: Clean electricity targets for Portland General Electric, Pacific Power, and covered electricity service suppliers, including 80 percent emissions reductions by 2030, 90 percent by 2035, 100 percent by 2040
- Climate Protection Program: 90 percent reduction in greenhouse gas emissions from natural gas, liquid fuels, and propane by 2050

(</energy/Data-and-Reports/Pages/Oregon-Energy-Strategy-Engagement.aspx>)

Exploring Energy Pathways

(</energy/Data-and-Reports/Pages/Oregon-Energy-Strategy-Engagement.aspx>)

The Legislature tasked ODOE with coordinating development of the Oregon Energy Strategy. However, many Oregonians are contributing to its development, and the state encourages feedback and input from a diverse range of perspectives, backgrounds, and experiences.

An **Interagency Steering Group** (</energy/Data-and-Reports/Documents/OES-Interagency-Steering-Group-Roster.pdf>) of state agencies is helping to guide development of the Oregon Energy Strategy. ODOE also formed an Advisory Group and several Policy Working Groups to help inform and provide feedback to the development of the report. Learn more:

- **Oregon Energy Strategy Advisory Group** (</energy/Data-and-Reports/Pages/Energy-Strategy-Advisory-Group.aspx>)
- **Policy Working Groups** (</energy/Data-and-Reports/Pages/Energy-Strategy-Working-Groups.aspx>)

Get Involved and Stay Updated

There are many opportunities to share input and contribute throughout the development of the Oregon Energy Strategy. Please **sign up** (<http://web.energy.oregon.gov/cn/a6n53/subscribe>) to receive email updates. We also encourage written comments to be submitted to the **Oregon Energy Strategy Comment Portal** (<https://odoe.powerappsportals.us/en-US/energy-strategy/>).

Additionally, all Oregon Energy Strategy **Advisory Group** (</energy/Data-and-Reports/Pages/Energy-Strategy-Advisory-Group.aspx>) and **Working Group** (</energy/Data-and-Reports/Pages/Energy-Strategy-Working-Groups.aspx>) meetings will be open to the public to listen in. Ways to engage:

- **Public Forums and Info Sessions** (</energy/Data-and-Reports/Pages/Oregon-Energy-Strategy-Engagement.aspx>)

Oregon Energy Strategy Project Materials

Public outreach to develop and inform the Oregon Energy Strategy began in the spring of 2024. The report will be presented to the Governor and Oregon Legislature by November 2025. Materials, meeting information, supporting documents that help inform this project are available here:

(<https://olis.oregonlegislature.gov/liz/2023R1/Downloads/MeasureDocument/HB3630/Enrolled>)
 (<https://olis.oregonlegislature.gov/liz/2023R1/Downloads/MeasureDocument/HB3630/Enrolled>)

- **HB 3630** (<https://olis.oregonlegislature.gov/liz/2023R1/Downloads/MeasureDocument/HB3630/Enrolled>)
- **Project Charter** (</energy/Data-and-Reports/Documents/2023-9-25-OR-Energy-Strategy-Project-Charter.pdf>)
- **Phase 1 Project Materials** (</energy/Data-and-Reports/Pages/Oregon-Energy-Strategy-Phase1-Archive.aspx>)
- **Oregon Energy Strategy Overview** (</energy/Data-and-Reports/Documents/OES-Project-Overview-Flyer-12-2024.pdf>)

Accessibility

Oregon Energy Strategy Advisory and Working Group meetings, as well as Public Forums and Info Session, will include closed captioning, and ODOE can provide other resources, translation services, or other accommodations. Contact energy.strategy@energy.oregon.gov (<mailto:energy.strategy@energy.oregon.gov>) with requests.

Connect

Please email energy.strategy@energy.oregon.gov (<mailto:energy.strategy@energy.oregon.gov>) with any questions and **sign up** (<http://web.energy.oregon.gov/cn/a6n53/subscribe>) to receive email updates about the Oregon Energy Strategy.

PROJECT PAGES

Engagement Opportunities (</energy/Data-and-Reports/Pages/Oregon-Energy-Strategy-Engagement.aspx>)
Advisory Group (</energy/Data-and-Reports/Pages/Energy-Strategy-Advisory-Group.aspx>)
Working Groups (</energy/Data-and-Reports/Pages/Energy-Strategy-Working-Groups.aspx>)
Phase 1 Info Archive (</energy/Data-and-Reports/Pages/Oregon-Energy-Strategy-Phase1-Archive.aspx>)

PROJECT RESOURCES

HB 3630 (<https://olis.oregonlegislature.gov/liz/2023R1/Downloads/MeasureDocument/HB3630/Enrolled>)
 (/oem/Documents/Oregon_Resilience_Plan_Final.pdf) **Project Charter** (</energy/Data-and-Reports/Documents/2023-9-25-OR-Energy-Strategy-Project-Charter.pdf>)
Oregon Energy Strategy Overview (</energy/Data-and-Reports/Documents/OES-Project-Overview-Flyer-12-2024.pdf>)
 (/oem/Documents/Oregon_Resilience_Plan_Final.pdf) **Oregon Energy Strategy Q&A** (</energy/Data-and-Reports/Documents/Oregon-Energy-Strategy-QA-9-4-2024.pdf>)
 (/oem/Documents/Oregon_Resilience_Plan_Final.pdf) **Phase 1 Public Comment & Response Document** (</energy/Data-and-Reports/Documents/OES-Phase1-Comment-Response-Documents.pdf>)
 (/oem/Documents/Oregon_Resilience_Plan_Final.pdf) **Terminology and Abbreviations List** (</energy/Data-and-Reports/Documents/OES-Terminology-Abbreviations.pdf>)

(/oem/Documents/Oregon_Resilience_Plan_Final.pdf)Reference Scenario - 9/24/2024 (/energy/Data-and-Reports/Documents/OES-Final-Reference-Scenario-9-24-2024.pdf)

(/oem/Documents/Oregon_Resilience_Plan_Final.pdf)Modeling Assumptions and Sources (/energy/Data-and-Reports/Documents/Oregon-Energy-Strategy-Modeling-Assumptions-Sources.pdf)

(/oem/Documents/Oregon_Resilience_Plan_Final.pdf)Energy Strategy Technical Approach (/energy/Data-and-Reports/Documents/OES-CETI-EER-Technical-Approach-to-Modeling.pdf) (/energy/Data-and-Reports/Documents/Oregon-Energy-Strategy-Modeling-Assumptions-Sources.pdf)

(/oem/Documents/Oregon_Resilience_Plan_Final.pdf)Complementary Analyses Technical Approach (/energy/Data-and-Reports/Documents/OES-Complementary-Analysis-Technical-Approach.pdf)

(/oem/Documents/Oregon_Resilience_Plan_Final.pdf)Energy Strategy Modeling Technical Report (/energy/Data-and-Reports/Documents/2025-OES-Technical-Report.pdf)

(/oem/Documents/Oregon_Resilience_Plan_Final.pdf)Energy Pathways Modeling Data Library (/energy/Data-and-Reports/Documents/2025-OES-Energy-Pathways-Modeling-Data-Library.xlsx)

(/oem/Documents/Oregon_Resilience_Plan_Final.pdf) Complementary Analysis: Technical Report (/energy/Data-and-Reports/Documents/2025-OES-Complementary-Analysis-Tech-Report.pdf)

(/oem/Documents/Oregon_Resilience_Plan_Final.pdf) Complementary Analysis Data Library (/energy/Data-and-Reports/Documents/2025-OES-Complementary-Analysis-Data-Library.xlsx)

(/oem/Documents/Oregon_Resilience_Plan_Final.pdf)Jobs Analysis Key Model Findings (/energy/Data-and-Reports/Documents/OES-Jobs-Analysis-Key-Findings.pdf)

Phase 2 Public Comment Compilation

(/energy/Data-and-Reports/Documents/2025-OES-Phase2-Comments-compiled.pdf)

(/oem/Documents/Oregon_Resilience_Plan_Final.pdf)Energy Strategy Modeling Technical Report (/energy/Data-and-Reports/Documents/2025-OES-Technical-Report.pdf)

(/oem/Documents/Oregon_Resilience_Plan_Final.pdf)Draft Oregon Energy Strategy (/energy/Data-and-Reports/Documents/DRAFT-Oregon-Energy-Strategy.pdf)

(/oem/Documents/Oregon_Resilience_Plan_Final.pdf)Summary of Draft Oregon Energy Strategy (English) (/energy/Data-and-Reports/Documents/DRAFT-Summary-Oregon-Energy-Strategy.pdf)

(/oem/Documents/Oregon_Resilience_Plan_Final.pdf)Summary of Draft Oregon Energy Strategy (Spanish) (<https://ishortn.ink/7pC2pyfai>)

(/oem/Documents/Oregon_Resilience_Plan_Final.pdf)Summary of Draft Oregon Energy Strategy (Russian) (<https://ishortn.ink/zMMWgiGdN>)

(/oem/Documents/Oregon_Resilience_Plan_Final.pdf)Summary of Draft Oregon Energy Strategy (Chinese) (<https://ishortn.ink/RfHA2XXWF>)

(/oem/Documents/Oregon_Resilience_Plan_Final.pdf)Summary of Draft Oregon Energy Strategy (Vietnamese) (<https://ishortn.ink/nb4NUTsZP>)

(/oem/Documents/Oregon_Resilience_Plan_Final.pdf)Public Comments Received on Draft Oregon Energy Strategy (/energy/Data-and-Reports/Documents/2025-OES-Comments-on-Draft.pdf)

OTHER RESOURCES & PROGRAMS

(/oem/Documents/Oregon_Resilience_Plan_Final.pdf)2022 Policy Brief: Charting a Course for Oregon's Energy Future (/energy/Data-and-Reports/Documents/2022-Biennial-Energy-Report.pdf#page=386)

(/oem/Documents/Oregon_Resilience_Plan_Final.pdf)Recommendations from the 2022 Biennial Energy Report (/energy/Data-and-Reports/Documents/2022-Biennial-Energy-Report.pdf#page=572) (/energy/Data-and-Reports/Documents/2022-Biennial-Energy-Report.pdf#page=386)

Oregon Climate Action Roadmap to 2030 & TIGHGER Project Report (<https://energyinfo.oregon.gov/blog/2023/4/6/oregon-global-warming-commission-publishes-roadmap-to-2030-to-guide-state-climate-action>)

Addressing Climate Change (/energy/energy-oregon/Pages/Climate-Change.aspx)

2023 Legislative Session Report (<https://static1.squarespace.com/static/59c554e0f09ca40655ea6eb0/t/64275b98de28d74ea4a96dc3/1680300956035/2023-Legislative-Report.pdf>)

Incentives (/energy/Incentives/Pages/default.aspx)

Energy Planning (/energy/energy-oregon/Pages/Energy-Planning.aspx)

(/energy/Data-and-Reports/Documents/OES-Project-Overview-Flyer-12-2024.pdf)

(/energy/Data-and-Reports/Documents/OES-Project-Overview-Flyer-12-2024.pdf)

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Reports/Documents/OES-Project-
Overview-Flyer-12-2024.pdf)Sign Up
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(/energy/Data-and-Reports/Documents/OES-Project-Overview-Flyer-12-2024.pdf)

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Enrolled House Bill 2193

Introduced and printed pursuant to House Rule 12.00. Presession filed (at the request of House Interim Committee on Energy and Environment)

CHAPTER

AN ACT

Relating to energy storage; and declaring an emergency.

Be It Enacted by the People of the State of Oregon:

SECTION 1. As used in sections 1 to 3 of this 2015 Act:

(1) "Electric company" means an electric company, as defined in ORS 757.600, that makes sales of electricity to 25,000 or more retail electricity consumers in this state.

(2) "Energy storage system" means a technology that is capable of retaining energy, storing the energy for a period of time and delivering the energy after storage.

(3)(a) "Procure" means to acquire by ownership a qualifying energy storage system or to acquire by contract the right to use the capacity of or the energy from a qualifying energy storage system.

(b) "Procure" includes the acquisition of ancillary services that are related to an acquisition described in paragraph (a) of this subsection.

(4) "Qualifying energy storage system" means an energy storage system included in a project that the Public Utility Commission authorizes for development under section 3 of this 2015 Act.

(5) "Retail electricity consumer" means a retail electricity consumer, as defined in ORS 757.600, that is located in this state.

SECTION 2. (1) If authorized under section 3 (3) of this 2015 Act, an electric company shall procure, on or before January 1, 2020, as part of a project described in section 3 of this 2015 Act, one or more qualifying energy storage systems that have the capacity to store at least five megawatt hours of energy.

(2)(a) The total capacity of qualifying energy storage systems procured under this section by any one electric company may not exceed one percent of the electric company's peak load for the year 2014.

(b) The Public Utility Commission may waive the limit described in paragraph (a) of this subsection if the commission determines, in consultation with the State Department of Energy, that a qualifying energy storage system is of statewide significance and one or more electric utilities, as defined in ORS 757.600, participates in procuring the qualifying energy storage system and shares the costs and benefits associated with procuring the qualifying energy storage system.

(3) An electric company may recover in the electric company's rates all costs prudently incurred by the electric company in procuring one or more qualifying energy storage systems under this section, including any above-market costs associated with procurement.

SECTION 3. (1) Not later than January 1, 2017, the Public Utility Commission shall by rule or order adopt guidelines for an electric company to use in submitting a proposal under subsection (2) of this section. In developing the guidelines, the commission shall:

(a) Examine the potential value of applying energy storage system technology, including:
(A) Deferred investment in generation, transmission or distribution of electricity;
(B) Reduced need for additional generation of electricity during times of peak demand;
(C) Improved integration of different types of renewable resources;
(D) Reduced greenhouse gas emissions;
(E) Improved reliability of electrical transmission or distribution systems;
(F) Reduced portfolio variable power costs; or
(G) Any other value reasonably related to the application of energy storage system technology.

(b) Consider ways in which to encourage electric companies to invest in different types of energy storage systems.

(c) Consider any other factor reasonably related to the procurement of qualifying energy storage systems.

(2)(a) Not later than January 1, 2018, an electric company shall submit one or more proposals to the commission for developing a project that includes one or more energy storage systems.

(b) Each proposal submitted under this subsection must include an evaluation of the potential to store energy in the electric company's electric system, including an analysis of:

(A) The electric company's current operations and the electric company's electric system data, including customer-side data, distribution data, transmission data and data related to existing energy storage systems, including any energy storage system developed as part of a pilot or demonstration project. The analysis shall be used to identify areas in the electric company's electric system where there may be opportunities to incentivize the value potentially derived from energy storage systems.

(B) How the addition of an energy storage system would complement proposed actions submitted pursuant to any plan submitted to the commission in which the electric company has proposed an integrated, least-cost combination of resources to meet the expected needs of the electric company's customers.

(c) Each proposal submitted under this subsection also must include a description of each proposed project. The description must include:

(A) Technical specifications for each project, including:

(i) The capacity of the project to store energy;

(ii) The location of the project;

(iii) A description of the electric company's electric system needs and the application that the energy storage system will fulfill as the basis for the project;

(iv) A description of the technology necessary to construct, operate and maintain the project, including a description of any data or communication system necessary to operate the project;

(v) A description of the types of services that the electric company expects the project to provide upon completion;

(vi) An analysis of the risk that the electric company will not be able to complete the project; and

(vii) Any other reasonable technical specification required by the commission pursuant to the guidelines adopted under subsection (1) of this section.

(B) The estimated cost of each project, including:

(i) The estimated capital cost of the project;

(ii) The estimated output cost of the project; and

(iii) The amount of grant moneys available to offset the cost of the project.

(C) The benefits of each project to the electric company's electric system, including:

(i) Projected in-state benefits to the electric system;
(ii) Projected regional benefits to the electric system; and
(iii) The potential benefits to the electric company's entire electric system if the electric company installs the energy storage system technology that is the basis for the project system-wide.

(D) An evaluation of the cost-effectiveness of each project, conducted in a manner established by the commission by rule or order.

(d) The information and analyses required to be submitted to the commission under this subsection may contain critical energy infrastructure information, trade secrets and other confidential research, development or commercial information the public disclosure of which could threaten the security and safety of an electric company's electric system or allow unfair competition or business advantages. The commission may not use or allow the use of the information and analyses for any purpose other than the purposes described in this section and, in order to protect the information:

(A) Shall determine the procedures under which a person may view the information and analyses; and

(B) Shall adopt a protective order that includes reasonable restrictions requested by an electric company in good faith on removing material from commission offices, not allowing copying or photographing of the material, not allowing electronic transmission of the material or only allowing limited viewing of the material in restricted areas.

(3)(a) The commission shall consider each proposal submitted under subsection (2) of this section and evaluate each proposal to determine whether the proposal:

(A) Is consistent with the guidelines adopted under subsection (1) of this section;

(B) Reasonably balances the value for ratepayers and utility operations that is potentially derived from the application of energy storage system technology and the costs of construction, operation and maintenance of energy storage systems; and

(C) Is in the public interest.

(b) After considering the factors described in paragraph (a) of this subsection, the commission may authorize an electric company to develop one or more projects that include one or more qualifying energy storage systems.

(4) If authorized to develop a project under subsection (3) of this section, the commission may require an electric company to develop the project in accordance with any competitive bidding guidelines prescribed by the commission.

SECTION 4. In the manner required by ORS 192.245, the Public Utility Commission shall report on the implementation of sections 1, 2 and 3 of this 2015 Act to the interim committees of the Legislative Assembly related to energy:

(1) On or before September 15, 2016; and

(2) On or before September 15, 2018.

SECTION 5. This 2015 Act being necessary for the immediate preservation of the public peace, health and safety, an emergency is declared to exist, and this 2015 Act takes effect on its passage.

Passed by House April 28, 2015

Repassed by House June 1, 2015

.....
Timothy G. Sekerak, Chief Clerk of House

.....
Tina Kotek, Speaker of House

Passed by Senate May 28, 2015

.....
Peter Courtney, President of Senate

Received by Governor:

.....M.,....., 2015

Approved:

.....M.,....., 2015

.....
Kate Brown, Governor

Filed in Office of Secretary of State:

.....M.,....., 2015

.....
Jeanne P. Atkins, Secretary of State



825 NE Multnomah Street, Suite 2000
Portland, Oregon 97232

December 2, 2024

VIA ELECTRONIC FILING

Public Utility Commission of Oregon
Attn: Filing Center
201 High Street SE, Suite 100
Salem, OR 97301-3398

Re: UM 1857—PacifiCorp's Compliance Filing – Energy Storage Pilot and Evaluation Plan Update

PacifiCorp d/b/a Pacific Power (PacifiCorp or the Company) submits for filing in compliance with Public Utility Commission of Oregon (Commission) Order No. 18-327, and modified by Order Nos. 19-242, 19-333, and 21-270, updated estimated benefits and costs associated with the Company's energy storage pilot programs. Confidential information in this filing is provided in accordance with General Protective Order No. 17-274.

Pilot Project 1—Energy Storage Solution

On April 2, 2018, PacifiCorp selected for Commission approval in this docket the two megawatt/six megawatt-hour (MWh) base case energy storage solution as the preliminary sizing for the proposal, as described in Section 4.0 of the Final Oregon Energy Storage Project Proposal document (Pilot Project 1). This sizing met the minimum threshold of five MWh as set forth by House Bill 2193, accommodates the historic outage characterization on the feeder, and presented the lowest risk option given the information available to PacifiCorp at the time. PacifiCorp now provides an additional update on the current status of this project.

The Company originally planned to construct this project on land near the Hillview Substation in Corvallis, Oregon. After an exhaustive search of available property with willing property owners, it was determined that the only viable land would result in the removal of at least one residence and displacement of the occupant. Following consultation with Commission staff, PacifiCorp restarted the search for available property looking at other locations both in Corvallis and across PacifiCorp's Oregon service territory. One location that is fed from the Lakeport Substation located in Klamath Falls, was identified as a good candidate that allows for all of the high-level use cases. The Company engaged in negotiations for the use of a portion of a vacant parcel of land on which the Company intends to acquire a termed exclusive easement. The easement was secured in September 2023.

The Owner's engineering is being provided by an external engineering firm and was procured through competitive bid and awarded at the end of 2018. The Owner's Engineer was selected based on lowest bid. The winning bid was for [Begin Confidential] [REDACTED] [End Confidential]. This cost is in addition to the internal engineering reviews and project management. The combined costs were originally estimated to be approximately \$60,000;

Docket UM 1857
Public Utility Commission of Oregon
December 2, 2024
Page 2

however, based on current estimates and awarded contracts, this portion of the project is now estimated to be \$255,000. The Owner's Engineers have completed the conceptual design, interconnection application, and permitting review. Following the initial reviews performed by the Owner's Engineer, it was deemed that the Company's internal engineering team could review the detailed designs for a lower cost, therefore these services were shifted to PacifiCorp's internal engineering teams.

The engineering, procurement, and construction (EPC) request for proposals issued in 2019 did not receive any qualified bid responses. As a result the EPC contract has been split into three contracts. The Engineering contract was awarded in December of 2019 for [Begin Confidential] [REDACTED] [End Confidential], which was in line with the updated total project estimates. The equipment vendor has been selected and the agreement executed in 2020 for approximately [Begin Confidential] [REDACTED] [End Confidential]. The Construction contract was competitively bid in Q4 of 2023 after design was completed and the generation interconnection approval granted. Based on the Q4 2023 construction bid, physical construction of the facility was expected to occur starting in December 2023 through April 2024, but completion has been delayed due to battery energy storage system (BESS) supplier contracting issues. The project is now planned to go into service by mid-2025. The project is currently two years behind the previous report in service dates of mid 2023 due to changes in the cyber security and communication requirements that required additional engineering, procurement, and renegotiations with the BESS supplier. The project is 75 percent constructed and ready for the BESS equipment once contract terms can be reached with the supplier.

This project is subject to the generation interconnection process. This review and acceptance process requires the project to apply for a position in the interconnection queue once property rights have been obtained. The Company submitted this project for generation interconnection review in 2020 and it was placed in the spring 2021 queue. Project approval and construction started in fall 2023 for commercial operation in spring 2025.

Finally, the cost of interconnecting the battery system to the distribution system was originally estimated at \$550,000 but is now estimated at \$609,000 based on the current design.

Pilot Project 2—Community Resiliency Pilot

In the stipulation filed in docket UM 1857 by PacifiCorp on July 18, 2018, and adopted by the Commission in Order No. 18-327 (September 4, 2018), PacifiCorp committed to developing a Community Resiliency Pilot (Pilot Project 2) to provide technical and financial assistance to study and deploy energy storage resources to facilities critical to emergency response or disaster recovery. The stipulation laid out a phased approach for Pilot Project 2, beginning with a consultant-led technical assistance concept resulting in a limited number of initial studies (Phase I), followed by financial assistance for the installation of energy storage resources for up to four critical facilities (Phase II).

In Order No. 18-327, the Commission authorized PacifiCorp to recover up to \$200,000 in Phase I of Pilot Project 2. Upon completion, PacifiCorp agreed to file a final Phase I report and a revised plan estimating the costs and identifying the anticipated benefits of expanding the Pilot Project 2 into Phase II.

On December 18, 2020, PacifiCorp filed its final Phase I report for the Pilot Project 2. That report contained several notable learnings:

- 1) Battery energy storage can reduce critical facility dependency on fuel deliveries and infrastructure corridors that provide relief services during disaster events, contributing to a more resilient back-up system than a standard back-up generator alone may provide.
- 2) There are limited funding opportunities to develop battery energy storage resources, and current rates do not incentivize energy storage. In the absence of an economic case to support battery energy storage adoption, the Pilot Project 2 suffered lower-than-expected participation and follow-through from initial conversations with many potential program participants.
- 3) Commercial facilities' adoption rates of battery energy storage systems in Oregon remain low, in part because the economics of battery energy storage are not competitive with the alternative fossil fuel back-up power options. Appropriately designed policy mechanisms—including incentives, grant funding programs, and beneficial tariff design—can encourage battery energy storage adoption and promote widespread resiliency benefits throughout Oregon.
- 4) As adoption of commercial-scale battery energy storage resources increases, PacifiCorp will need to develop its capabilities to effectively manage battery energy storage resources in order to harness the associated grid services benefits for its ratepayers.

Based on those learnings, PacifiCorp believed that an expanded community resiliency offering had the potential to offer an array of benefits to its critical facility customers and the communities they serve, its ratepayers, and the Oregon battery energy storage industry.

On August 26, 2021, Order No. 21-270 approved Phase II of PacifiCorp's Pilot Project 2. Outlined in the proposal were the intentions of the Company to provide up to 10 technical feasibility studies to leadership of critical facilities interested in learning more about how battery storage might increase resiliency at their site. Additionally, PacifiCorp was approved to make battery storage project development funding available during two competitive solicitation periods. Criteria would consider likelihood of project success, amount of funding requested, and diversity of project location and facility type. Applicants would be allowed to request grant funding of up to 100 percent of project cost. In exchange for grant funding, the customer would allow PacifiCorp to actively manage a portion of the battery system during normal facility

operations. Approval of up to \$200,000 was given for technical feasibility studies, as well as up to \$1,300,000 for the funding of on-site battery storage systems.

As per the requirements in Order 21-270, PacifiCorp held a stakeholder workshop on September 20, 2021. The topics covered included a general overview of the program, proposed timelines, identified research objectives, grant selection criteria and immediate next steps.

The first of two grant application submission windows was opened on October 11, 2021. The window was scheduled to close on January 14, 2022, but the Energy Trust of Oregon, speaking on behalf of facilities working to complete applications, requested the window remain open for an additional month. With Commission Staff approval, the application submission window remained open until February 18, 2022.

PacifiCorp received one application for grant funding during this first window. That application request was later rescinded, as the applicant had later determined the need for reallocation of internal funding sources.

The second grant application submission window opened on August 1, 2022, and closed on October 28, 2022. Two applications were submitted. Both applications were approved, but one project was later rescinded by its project manager. Grant funding for the second project will be awarded upon confirmed installation and interconnection of the battery system.

Technical feasibility studies have been provided on a “rolling” basis, beginning at the commencement of the initial grant application submission window. To date, ten studies have been provided to customers.

Upon award of the outstanding grant, PacifiCorp intends to sunset Pilot Project 2.

Additional Items

Since Pilot Project 1 is not yet in service, the Company is unable to provide a “a narrative of EIM benefits that have been achieved,” or a “quantitative evaluation of the costs and benefits of the ESS in Project #1 relative to all other ESSs operated by PacifiCorp, and a narrative discussion on whether any learnings from PacifiCorp’s other storage projects can be applied in Oregon” at this time.

Please direct any informal correspondence and questions regarding this filing to Cathie Allen Regulatory Affairs Manager, at (503) 813-5934.

Sincerely,



Matthew McVee
Vice President, Regulatory Policy and Operations

CERTIFICATE OF SERVICE

I certify that a true and correct copy of **PacifiCorp's Annual Update on Pilot Programs** was served on the parties listed below via electronic mail in compliance with OAR 860-001-0180.

Service List UM 1857

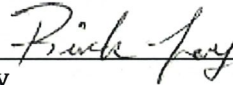
PACIFICORP	
PACIFICORP, DBA PACIFIC POWER 825 NE MULTNOMAH ST, STE 2000 PORTLAND, OR 97232 oregondockets@pacificorp.com	DUSTIN T TILL (C) PACIFICORP 825 NE MULTNOMAH ST STE 1800 PORTLAND OR 97232 dustin.till@pacificorp.com
CARLA SCARSELLA (C) PACIFICORP 825 NE MULTNOMAH ST STE 2000 PORTLAND, OR 97232 carla.scarsella@pacificorp.com	
STAFF	
JOHANNA RIEMENSCHNEIDER (C) PUC STAFF - DEPARTMENT OF JUSTICE BUSINESS ACTIVITIES SECTION 1162 COURT ST NE SALEM, OR 97301-4796 johanna.riemenschneider@doj.state.or.us	PETER KERNAN (C) PUBLIC UTILITY COMMISSION OF OREGON PO BOX 1088 SALEM, OR 97308 peter.kernan@puc.oregon.gov
KACIA BROCKMAN (C) PUBLIC UTILITY COMMISSION OF OREGON PO BOX 1088 SALEM OR 97308-1088 kacia.brockman@puc.oregon.gov	
AWEC	
TYLER C PEPPLER (C) DAVISON VAN CLEVE, PC 1750 SW HARBOR WAY STE 450 PORTLAND, OR 97201 tcp@dvclaw.com	

BORREGO SOLAR SYSTEMS INC	
RACHEL BIRD BORREGO SOLAR SYSTEMS INC 360 22ND ST STE 600 OAKLAND CA 94612 rbird@borregosolar.com	
OSS	
ANGELA CROWLEY-KOCH OREGON SOLAR + STORAGE INDUSTRIES ASSOCIATION (OSS) angela@oseia.org ; dockets@oseia.org	
OREGON CITIZENS' UTILITY BOARD	
OREGON CITIZENS' UTILITY BOARD 610 SW BROADWAY, STE 400 PORTLAND OR 97205 dockets@oregoncub.org	MICHAEL GOETZ (C) OREGON CITIZENS' UTILITY BOARD 610 SW BROADWAY STE 400 PORTLAND OR 97205 mike@oregoncub.org
ROBERT JENKS (C) OREGON CITIZENS' UTILITY BOARD 610 SW BROADWAY, STE 400 PORTLAND OR 97205 bob@oregoncub.org	
ENERGY TRUST OF OREGON	
JENI HALL ENERGY TRUST OF OREGON 421 SW OAK ST STE 300 PORTLAND OR 97204 jeni.hall@energytrust.org	ALEX NOVIE ENERGY TRUST OF OREGON 421 SW OAK ST. SUITE 300 PORTLAND OR 97204 alex.novie@energytrust.org
OREGON DEPARTMENT OF ENERGY	
PATRICK ROWE OREGON DEPARTMENT OF ENERGY 1162 COURT ST NE SALEM OR 97301 patrick.g.rowe@doj.state.or.us	
SHUTE MIHALY & WEINBERGER	
SKY STANFIELD SHUTE MIHALY & WEINBERGER 296 HAYES ST SAN FRANCISCO CA 94102 stanfield@smwlaw.com	JOSEPH PETTA SHUTE MIHALY & WEINBERGER 396 HAYES ST SAN FRANCISCO CA 94102 petta@smwlaw.com

Oregon Department of Justice	
KAYLIE KLEIN Oregon Department of Justice 1162 COURT STREET NE SALEM OR 97301 kaylie.klein@state.or.us	
CITY OF PORTLAND	
ANDRIA L JACOB CITY OF PORTLAND 1900 SW 4TH AVE, RM 7100 PORTLAND OR 97201 andria.jacob@portlandoregon.gov	
CREA	
GREGORY M. ADAMS (C) RICHARDSON ADAMS PLLC 515 N 27TH ST BOISE ID 83702 greg@richardsonadams.com	
ENERGY STORAGE ASSOCIATION	
NITZAN GOLDBERGER ENERGY STORAGE ASSOCIATION n.goldberger@energystorage.org	
EQ RESEARCH	
CHARLIE COGGESHALL EQ RESEARCH 1155 KILDAIRE FARM ROAD, STE. 202 CARY OR 27511 regtrackdsire@gmail.com	
OREGON CITIZENS UTILITY BOARD	
MICHAEL GOETZ (C) OREGON CITIZENS' UTILITY BOARD 610 SW BROADWAY STE 400 PORTLAND OR 97205 mike@oregoncub.org	ROBERT JENKS (C) OREGON CITIZENS' UTILITY BOARD 610 SW BROADWAY, STE 400 PORTLAND OR 97205 bob@oregoncub.org

OREGON CITIZENS' UTILITY BOARD 610 SW BROADWAY, STE 400 PORTLAND OR 97205 dockets@oregoncub.org	
OREGON DEPARTMENT OF ENERGY	
ADAM SCHULTZ (C) OREGON DEPARTMENT OF ENERGY 550 CAPITOL ST NE SALEM OR 97301 adam.schultz@energy.oregon.gov	WENDY SIMONS (C) OREGON DEPARTMENT OF ENERGY 550 CAPITOL ST NE 1ST FL SALEM OR 97301 wendy.simons@energy.oregon.gov
RENEWABLE NORTHWEST	
	RENEWABLE NORTHWEST 421 SW 6TH AVE., STE. 975 PORTLAND OR 97204 dockets@renewablenw.org

Dated this 2nd day of December, 2024.



 Rick Loy
 Coordinator, Regulatory Operations



Portland General Electric Company
121 SW Salmon Street • 1WTC0306 • Portland, OR 97204
portlandgeneral.com

September 2, 2021

Public Utility Commission of Oregon
Attn: Filing Center
201 High Street, S.E.
P.O. Box 1088
Salem, OR 97308-1088

**RE: PGE UM 1856 PGE Draft Storage Potential Evaluation
2021 Annual Energy Storage Update**

Pursuant to Public Utility Commission of Oregon (OPUC or Commission) Order No. 18-290, Portland General Electric Company (PGE) submits its third annual report on the progress of its energy storage proposal which includes: Baldock, Coffee Creek, Microgrid pilot, Port Westward 2 (PW2), Residential Storage pilot (called the “Smart Battery Pilot”), and the controls for the energy storage systems. During operation of the projects, PGE will submit comprehensive evaluations in the third, sixth, and tenth operating year, along with annual progress updates. The following report details each project and includes progress, challenges, and preliminary learnings, as available. As discussed further in this update, with the exception of the microgrid and Smart Battery pilots, several projects are delayed due to the COVID 19 pandemic and its business and social distancing consequences.

History of Energy Storage Docket

The Commission opened Docket No. UM 1751 in September 2015 to implement House Bill 2193, which requires Oregon electric companies (PGE and PacifiCorp) to submit proposals by January 1, 2018, to procure qualifying energy storage systems with capacity to store at least five megawatt hours of energy. PGE met this requirement and has procured 11 MWh of energy storage (Port Westward 2 and a Microgrid site Beaverton Public Safety Center) as of December 31, 2019.

PGE filed its energy storage proposal and final Energy Storage Potential Evaluation on November 1, 2017, which were reviewed in this docket. Order 18-290 partially approved and modified the stipulation and provided conditional approval on the following projects:

- **Energy Storage Potential Evaluation** – Prior to moving forward with any of the projects, PGE will submit a detailed written explanation of a plan to improve its energy storage modeling capability to estimate all energy storage benefits as directed in Order Nos. 17-118 and 17-375. This will be submitted to OPUC Staff (Staff) where they will evaluate and determine approval to allow PGE to move forward with all projects.
- **Baldock Mid-Feeder Project** – Submit a site analysis to Staff where they will evaluate and determine whether adequate evidence has been provided to allow PGE to move forward with the project.

- **Coffee Creek Substation Project** – Similar to Baldock, submit a site analysis for evaluation by Staff. In addition, PGE is to submit a justification for utility ownership.
- **Residential Storage Pilot** – Submit an addendum that details how PGE will optimize learnings and mitigate risks to Staff where they will evaluate and determine whether adequate evidence has been provided to allow PGE to move forward with the pilot.

2021 Annual Energy Storage Update

Baldock Mid-Feeder Energy Storage System

This project will develop and build a 2 MW, two-hour energy storage system adjacent to PGE's Baldock Solar facility and will be interconnected to the Canby-Butteville feeder. The final project energy rating (MWh) will be determined based on the proposal pricing received and space availability.

PGE has prepared the Request for Proposal (RFP) for this project, but due to economic conditions stemming from the COVID-19 pandemic, this project has been delayed to 2022. PGE still plans to issue the RFP in late 2021 for evaluation.

Coffee Creek Substation Energy Storage System

This project will develop and build a 17-20 MW, four-hour energy storage system sited and interconnected at PGE's Coffee Creek Substation. The final project rated capacity will be determined based on the proposal pricing received.

Due to economic conditions stemming from the COVID-19 pandemic, this project has been delayed to 2022. PGE still plans to reissue the RFP in late 2021 for revised pricing and re-evaluation.

Microgrid Pilot

This project will develop and build two microgrids and will serve either single customers or a subset of customers.

PGE and the City of Beaverton signed an agreement to deploy the first energy storage microgrid at the Beaverton Public Safety Center in 2019 under this pilot. The project consists of a 250 kW, four-hour battery owned and operated by PGE. The battery is paired with a 300 kW PV solar array owned by the customer, and a backup diesel generator also owned by the customer. Since being energized in September 2020, the distribution system serving the Beaverton Public Safety Center has experienced two outages: September 7, 2020 and October 5, 2020. On both occasions, the microgrid system provided emergency power to the site. However, the system performance was not as rapid as was desired. The problems were related to firmware within the battery system inverters. New firmware has been created by the manufacturer and is being installed on September 13, 2021. At that time, the system will be re-commissioned.

The battery has been dispatched to deliver bulk energy services, including portfolio resource optimization (demand response) and frequency response. The system had issues with availability that have largely been resolved and now provides frequency response reliably and demand response when requested.

PGE and the Oregon Military Department have signed an agreement to deploy the second energy storage microgrid at the Anderson Readiness Center under this pilot. This project consists of a 500 kW, two-hour battery owned & operated by PGE. PGE issued the RFP in February 2021. In June 2021 PGE awarded the contract and design and equipment procurement is currently underway. It is expected that this project will be energized in Q2 2022.

Both microgrid sites are designed to support community resiliency.

Port Westward 2 (Generation Kickstart) Energy Storage System

This project will develop and build a 5 MW, two-hour energy storage system at PGE's Port Westward 2 Generating Station (PW2). This energy storage system will be coupled with one of PW2's reciprocating engines. The project will enable the combined resource (i.e. the energy storage system and a PW2 reciprocating engine) to qualify as spinning reserve, even when the engine is not running.

The project design work was completed in November 2020 and the BESS equipment was delivered to site in December 2020. Construction and controls integration work has continued through August of 2021. Backfeed power will be available to the BESS in September 2021 to start the testing and commissioning process. The project is currently scheduled to be in service in October 2021.

Residential Storage Pilot

PGE's Smart Battery Pilot seeks to integrate up to 525 customer-owned residential storage units as a dispatchable resource providing grid services. During grid outages, the energy storage system provides back-up power to participating residences. In exchange for allowing PGE to operate the battery for grid services, a customer receives \$20 or \$40 per month. Customers within the Smart Grid Testbed are also eligible for an up-front rebate to encourage the density that will be needed to test locational benefits, and income qualified customers participating in the Energy Trust of Oregon's (ETO) Solar Within Reach program are also eligible for an up-front rebate so that PGE may better understand the needs of a diverse set of customers.

This was the first full year of the residential pilot since the Schedule 14 tariff became effective in August 2020. There are presently 50 customers enrolled in the pilot as of August 2021 with a total capacity of around 400 kW or 1MWh.

Operational Readiness

The previous update was filed a few weeks after the tariff approval of this project. Since the last filing PGE has achieved many tasks to be able to recruit, enroll, and dispatch customer owned batteries. A non-exhaustive list includes finalizing PGE's collaboration with the ETO as an implementation partner responsible for trade ally management and rebate payments; the ability

for PGE to provide customer on-bill credits, integration of this Pilot with the existing interconnection processes and software, marketing materials and customer-facing website, and the IT integration and customization of the Virtual Peaker software to be able to enroll customers and dispatch batteries. Additionally, staff procedures and training were needed as the Company interacts with customers and distributed energy storage in new ways.

Customer Recruitment and Outreach

PGE has conducted multiple outreach events to educate and invite customers to learn about the pilot, the benefits of energy storage systems and the rebates available to customers. In April 2021, PGE sent targeted marketing materials via email or post card to Smart Grid Test Bed customers who currently have solar or have been identified as being interested in a solar + battery solution. PGE also sent the same marketing materials to current solar customers and customers identified as being interested in a solar plus battery solution in PGE's service area. The attached documents are the marketing materials sent to customers.

PGE was initially meeting its recruitment goals primarily through the enrollment of customers with existing qualified devices, though uptake has slowed as PGE has captured most of these customers. While the Company continues to work on new ways to communicate with customers and has been in close partnership with our partners at the ETO on recruitment activities, the Covid pandemic, nationwide shortage of energy storage devices, and supply chain issues mean that new installations are slower than expected. PGE is optimistic that the extension of the state rebate (\$2,500 from ODOE), a potential ITC refresh (30% Federal tax credit), and ETO's planned Solarize campaigns within the Hillsboro and Milwaukie Test Beds can provide a boost to energy storage adoption and enrollment.

PGE also has information about the program on its website at portlandgeneral.com/smartbattery. The website provides details about the Smart Grid Test Bed incentives and the on-bill rewards available to all customers. Finally, the website provides a link to the ETO's website for customers interested in buying a storage system. Customers can submit a request to receive a bid from any of the trade allies working with ETO.

In July 2021 PGE launched the PGE Smart Battery Community in an effort to better engage current participants of the PGE Smart Battery Pilot. Also known as *Customer Conversations*, this platform is a market research online community (MROC) intended to help PGE better serve its customers by giving them a chance to talk to one of PGE's market researchers and pilot team through a series of discussions and activities. Community participants can interact with each other as well. This community is invitation-only and is monitored by a PGE market researcher. As of August 11, 2021, this community is comprised of 14 participants who have visited the community an average of three times, with the most frequent users interacting with the community 10 times since launching.

This platform is valuable because it allows the Storage & Resiliency Team to

- Better understand the desires, tensions, and motivations of the Pilot Participants
- Connect Pilot Participants to one another in an organic, engaging way
- More effectively evaluate real-time impacts of the Pilot

Dispatches and Technical Discovery

After surveying the residential battery landscape in 2019, PGE issued an RFI to residential battery manufacturers and of the respondents PGE qualified the following five Original Equipment Manufacturers (OEMs) for participation in the residential pilot: Tesla, Solar Edge, Generac, Sunverge, and Sonnen. These five OEMs were selected based on their products' market readiness, customer experience, technical capabilities, products' ease of installation and configuration, warranty, supply chain, product availability in the region, and ability to integrate their batteries into PGE's grid for PGE's control and operation.

In the summer of 2020, PGE procured and installed five batteries (one from each selected OEM) for testing, measurement, and experimental purposes. Concurrently, PGE began recruiting participants into the pilot. To connect the residential batteries to PGE's distribution systems, PGE selected two aggregation platforms for evaluation: Virtual Peaker and Kitu Systems. Virtual Peaker provides communication and controls for the residential batteries using custom proprietary APIs while Kitu systems uses standard IEEE DER communications protocol. PGE is interested in testing which of these two aggregation platforms presents a better opportunity for integration into PGE's operations.

Phase 1 of the Grid Edge testing was performed on PGE-owned batteries, located at PGE facilities. Prior to dispatching customer devices PGE tested all use cases and integration capabilities on the five test batteries, one for each of the represented brands on the qualified products list. This research was valuable to yield information about the use cases that the manufacturers would enable each device to perform and uncover any limitations to the grid services enabled to be dispatched by each manufacturer. The Phase 1 work also involved integrating PGE's DRMS software Virtual Peaker with PGE's local DERMs, to allow batteries to be dispatched automatically according to grid needs, rather than manually through the dispatch software.

Another Phase 1 activity was testing the accuracy of the inverter metrology output as compared to PGE's utility grade metering. PGE concluded that there is no significant difference between the data from the OEM inverter data and PGE's meter data. This information is an important finding for future development efforts, should PGE wish to implement a pay-for-performance model or make billing adjustments based on battery activity for any future iterations of the program.

Currently, all five battery OEMs prefer to communicate using custom APIs, while only two of the five OEMs, were able to support IEEE DER communication to PGE. As a result, all current and prospective participants of the pilot are being set up on the Virtual Peaker aggregation platform. As the IEEE DER communication standards continues to gain widespread adoption, PGE anticipates that the other battery OEMs will present opportunity to be integrated into Kitu Systems' aggregation platform.

On January 26, 2021 PGE conducted its first customer owned residential battery dispatch by requesting 50kW from enrolled customer batteries, thus kicking off Phase 2 of the dispatch of

customer devices. The call was scheduled from 7 to 9 AM. At the time the program had 18 participating customers who collectively contributed 56.3kW to PGE's grid. As seen in Figure 1, the participating devices responded to PGE's dispatch signal, but the resultant power curve was jagged, versus the desired flat output of power.

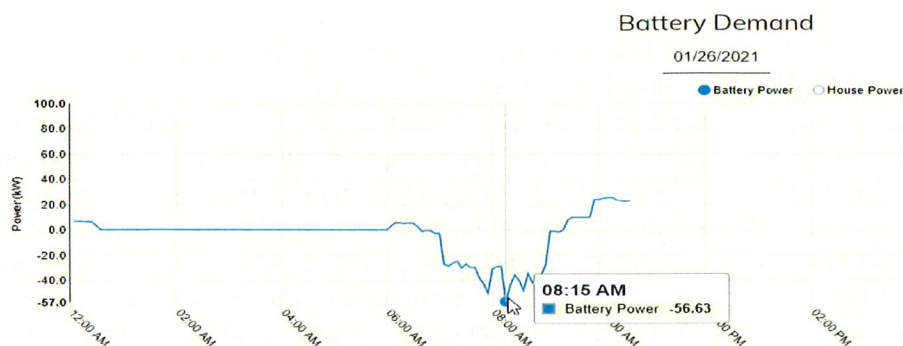


Figure 1

PGE has continued to dispatch the battery fleet alongside PGE's other demand response resources for weather related grid needs, including the unprecedented heat dome that occurred in June of 2021. The dispatch signal was revised and refined to be able to generate a smooth energy curve and provide a better customer experience. The total contribution of the battery fleet to PGE's grid since inception of the project is about 1 MW.

In addition to performing traditional demand response for generation capacity purposes, the PGE team has been methodically working through the other grid services outlined in the UM 1856 filing. Notably, PGE successfully demonstrated that residential customer batteries can perform fast frequency response, which the project team had not thought possible during development of the pilot. While thus far only tested with one PGE-owned test battery, the capability is a promising new value stream. Since fast frequency response is dispatched in response to a major grid disruption that cannot easily be tested PGE has reached out to Portland State University's power lab to coordinate for access to a grid simulator to perform further testing.

Looking into 2022 and beyond, the Grid Edge team will continue to work with PGE's software vendor Virtual Peaker on integration upgrades that will enable additional grid services like Volt/VAr and autonomous frequency response. Other software enhancements PGE would like to pursue include relative dispatch of the devices (currently PGE can only dispatch in absolute terms- for example, the desire would be able to ask for 50% of the available capacity, versus currently we could only ask for 2.5 kW from each customer); and updating the software to enable the batteries to continue to charge from solar power while on Standby mode.

PGE has also contracted with a third-party vendor to complete a data collection and performance analysis plan, and PGE looks forward to implementing this dispatch plan to ensure that relevant data and information is generated to be evaluated upon conclusion of the Pilot. Further work will also be done to standardize the onboarding process of new customers and the exercises that each

new customer will go through to ensure customers are receiving the correct monthly incentive and the functionality of their device.

Energy Storage Modeling Capability

On January 1, 2021, the Electric Power Research Institute (EPRI) completed its valuations of our 3 PGE-sided BESS projects (Baldock Mid-Feeder Project, Coffee Creek Substation Project, and Port Westward 2 Project) under UM 1856, with reports in the form of PowerPoint presentations. These valuations took into account locational operating restrictions or use cases and ran an evaluation of the stacked benefits of energy storage under those conditions using their StorageVET software. Through this process, it became clear that BESS projects have the highest value as generation capacity resources. There is also potential value in providing frequency regulation and Energy Imbalance Market (EIM) participation. Further, as expected, prioritizing locational use cases or restrictions has an impact on the overall quantifiable benefits of the system but may confer other benefits which are harder to quantify in dollar value, such as incremental decarbonization.

Please direct any questions regarding this filing to Chris Pleasant at (503) 464-2555. Please direct all formal correspondence and requests to the following email address pge.opuc.filings@pgn.com

Sincerely,

\s\ Robert Macfarlane

Robert Macfarlane
Manager, Pricing & Tariffs

cc: UM 1856 Service List

Smart Battery Pilot-Marketing Materials

Image No. 1 Postcard sent to Solar/Battery targets

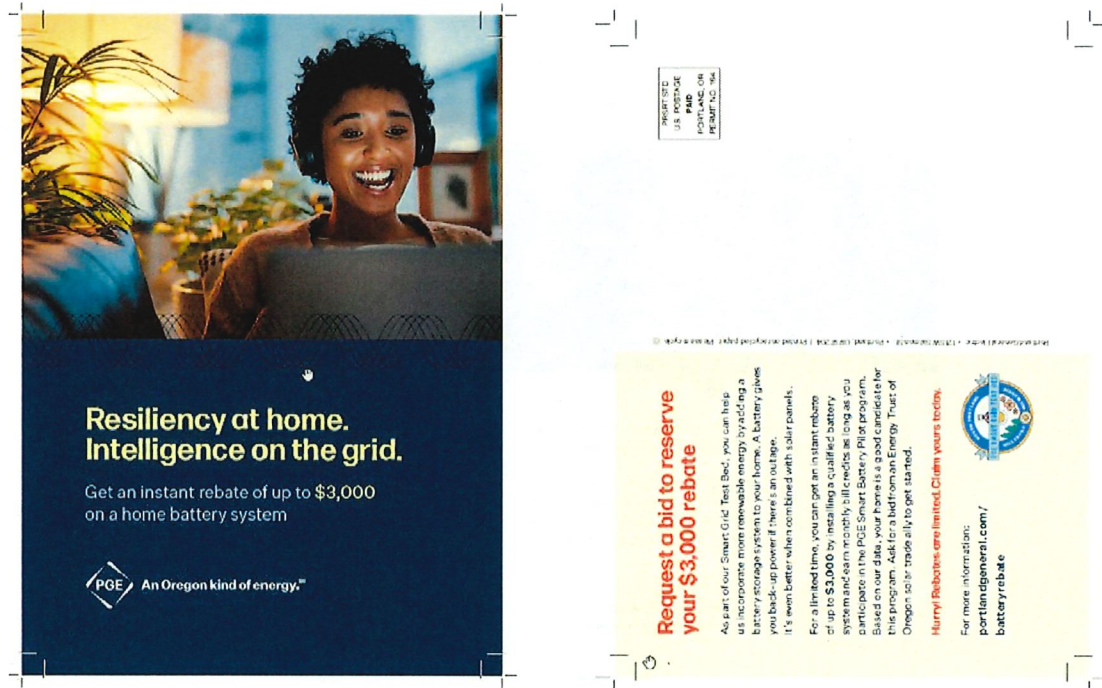


Image No. 2 Communication sent to Solar Customer.



Image No. 3 Communication sent via email to 40,310 residents in the Smart Grid Test Bed

[Sign in to your account](#)



Don't miss your chance
to save up to \$3,000

If you're thinking about adding a battery storage system to your home, don't miss your chance to get the biggest instant rebate available!

As part of our [Smart Grid Test Bed](#), you can get up to \$3,000 off your qualified battery system. But the number of rebates is limited, with 200 total for our test bed customers. These rebates will be split equally into three groups, with the earliest participants receiving a higher rebate amount.

- Participants in our first group (67) receive a \$3,000 rebate.
- Participants in our second group (67) receive a \$2,000 rebate.
- Participants in our third and final group (66) receive a \$1,000 rebate.

All rebates are first come, first served. To get the maximum amount available, start working with an Energy Trust of Oregon solar trade ally right away. They will let us know to reserve rebate funds for you while you're working on installing your system.

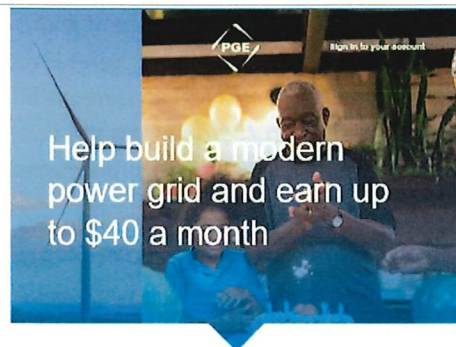
GET STARTED NOW



[View as a webpage](#)
[Privacy Policy](#) | [Manage Subscriptions](#)

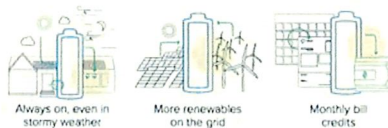
This email was sent by Portland General Electric,
121 SW Salmon St. Portland, OR, 97204-2977, US

Image No. 4 Communication sent via email to customers with batteries recently installed and expressed interest in the pilot.



As the owner of solar panels and a home battery storage system, you're already helping lead the way toward Oregon's clean energy future. Now you can get even more out of your system by joining the PGE Smart Battery Pilot.

Connect your battery to PGE and help us store renewable power from the grid for when it's needed. You'll be part of a modern grid that's cleaner, cheaper and more responsive.



By letting us store and use energy in your battery, you'll be helping keep costs low for everyone. We'll make sure you always have backup power in the event of an emergency or outage, and you'll earn \$20 to \$40 a month as a credit on your bill.

Signing up is easy

Just click on the Enroll Now button below and give us a little information about your battery. After we receive your information, we'll contact you to schedule a quick safety verification. Once the battery has been verified, you'll begin receiving your bill credit each month.

Thank you for helping us shape Oregon's clean energy future — we need you!

[ENROLL NOW](#)

[Want to know more?](#)

Smart Battery Website.

All of the information about the program can be found on our website www.portlandgeneral.com/smartbattery. This website was designed to provide information about the benefits of owning a Storage System, whether it is paired with a solar system or not, details about the Smart Grid Test Bed incentives, and the on-bill rewards available in all PGE's territory. The site also has a link to direct customers to the Energy Trust of Oregon website for customers interested in buying a StorageSystem to submit a request to receive a bid from any of the trade allies working with Energy Trust of Oregon.

Image No 5 PGE Smart Battery Website.

portlandgeneral.com/about/who-we-are/innovative-energy/smart-battery-pilot

Apps Scheduling Tools Learning

Reading list

Join the PGE Smart Battery Pilot

Help build Oregon's clean energy future and earn cash rewards

Home > About > ... > Smart Battery Pilot

What can a battery storage system do for you? You might be surprised.

- You can rely on back-up power if there's an outage.
- You can earn monthly credits as part of the PGE Smart Battery Pilot program.
- You'll get the most of your solar panels.
 - A battery lets you store the energy you generate during the day.
 - You can then use that renewable energy at night.

Right now, it's more affordable than ever to add a battery to your home. For a limited time, PGE is offering instant rebates of up to \$3,000 for customers in our Smart Grid Test Bed, or \$5,000 for customers participating in Solar Within Reach.

Interested? Start by asking for a quote from an Energy Trust of Oregon solar trade ally. It takes just a few minutes.

[Request a quote](#)

Always on, even in stormy weather

More renewables on the grid

Monthly bill credits

Feedback

Image No. 6 Hyperlink to Energy Trust of Oregon.

How the pilot works

- If you already have a battery energy storage system
- If you don't have battery storage
- Qualifying battery storage systems

Feedback

Get cash

You'll earn cash rewards for participating in the program:

- Earn \$20 a month if your battery can only charge from your solar system. Earn \$40 a month if your battery can charge from the PGE system and/or your solar.
- Up to 200 Smart Grid Test Bed customers will also receive an instant rebate of \$1,000 to \$3,000 toward the cost of installing a battery.* [Learn more.](#)
- Up to 25 income-qualified customers will receive a \$5,000 instant rebate toward the cost of installing a battery energy storage system when also participating in the Energy Trust's Solar Within Reach program.*

Have a battery? Email us

Need a battery? Get started!

[Hyperlink to Energy Trust of Oregon](#)

Image No. 7 Energy Trust of Oregon form to request a purchase and installation bid of a Storage System



Battery Pilot

You are taking the first step to participating in the **Portland General Electric (PGE) Smart Battery Pilot!** Energy Trust is working with PGE to connect you with a network of licensed and insured solar trade ally contractors experienced with the design and installation of both solar and home battery systems. In order to participate in the Smart Battery Pilot you must work with an approved solar trade ally, however you are not required to install solar. The trade ally contractors can provide you a bid to install a solar plus home battery storage system, add a home battery to an existing solar installation or install a standalone home battery without solar. Once you complete and submit this form, Energy Trust will match you with qualified solar trade ally contractors in your area based on the information you provided for you to choose from. The trade allies will:

- Assess the potential of your rooftop or property for solar power, if you are interested in pursuing a **solar + home battery storage installation**
- Provide a customized bid with estimated incentives, tax credits, and utility cost savings so you can see the net costs for your system
- Answer any questions you have about incentives and tax credits, equipment and installation, operation and maintenance

Let's get started!

This proposal is for my *

Home

