

The Oregon Department of Energy's Planning and Innovation team implements energy programs and activities to support the state's sustainable energy transition, make communities more resilient, and ensure the state is leading by example. We also provide technical assistance, data analysis, educational resources, and advice to support policy makers, local governments, energy stakeholders, and the general public in solving energy challenges and meeting Oregon's energy and climate goals.

In 2015, P&I developed a **Strategic Framework** to guide the team's work in supporting the agency's mission and energy leadership through 2019. The framework outlined P&I's activities and priorities divided into four core strategic areas: Demand-Side Management, Clean Power and Thermal Energy, Clean and Efficient Transportation, and Resilience and Sustainability.

Within each of the core areas, the team implemented energy programs, engaged with energy partners and the public, provided expertise and technical assistance, created tools and standards, and produced studies and plans to improve energy efficiency and use, support clean energy, and meet Oregon's energy and climate change goals.

Core Area 1 focused on efforts to use energy more efficiently, reduce energy use, and shift energy use off peak. ODOE deployed four strategies to advance demand-side management:

1. Lead by example through public building energy efficiency
2. Strengthen the residential and commercial energy efficiency market
3. Reduce the cost of energy for the industrial and agricultural sectors
4. Advance total system benefits of demand-side management

Core Area 1:
**Demand-Side
Management**

In addition to the specific accomplishments listed below, the Planning and Innovation Division helped Oregonians save energy by **providing technical assistance** and policy advice in state, regional, and national forums, such as the Northwest Power and Conservation Council's Regional Technical Forum and the National Association of State Energy Officials. ODOE's expertise enhanced the work of these organizations, provided an **important state perspective**, and enabled ODOE staff to bring lessons learned and best practices from other states and regions back to Oregon. In addition, ODOE partnered with other Oregon agencies, such as the Oregon Public Utility Commission and the Oregon Department of Transportation, to **provide energy expertise** in those agencies' dockets and rulemakings. Finally, P&I staff offered technical expertise to other ODOE programs, including **evaluating and inspecting projects** funded through energy incentive programs and energy facilities seeking site certificates.

Implementation of Governor's Executive Order 17-20 for State Buildings | With our partners, ODOE is creating new specifications that will require carbon-neutral designs in new State of Oregon buildings after January 1, 2022; developed a statewide plug load management strategy for state buildings; and developed procurement specifications for high-efficiency equipment in state buildings.

Established Voluntary Statewide Residential Energy Scoring System | For home energy scoring, ODOE earned a 2017 Certificate of Excellence and a 2019 Innovation Award from the U.S. Department of Energy for our leadership. We enacted statewide energy scoring rules and updated scorecards for residential scoring systems. ODOE also updated rules in 2016 to define a single calculation engine for scores and required licensure for home energy assessors. The City of Portland, using ODOE's example rule, enacted mandatory residential scoring in 2018 and requires a home energy score at the time of a real estate listing. In 2018, more than 8,700 Portland homes received a home energy score. Nine other cities are considering a HES program, including: Ashland, Beaverton, Bend, Corvallis, Eugene, Hillsboro, Hood River, Milwaukie, and Talent.

Supported Commercial Energy Reporting Systems | In the commercial sector, ODOE assisted the City of Portland in its efforts to enact mandatory commercial energy performance reporting in 2015, including public disclosure of building performance. ODOE also reached out to multiple jurisdictions to provide education on the benefits and best practices of energy performance benchmarking.

Advanced Oregon's Energy Codes to One of the Best in the Country | ODOE assisted the Building Codes Division in developing the 2017 residential energy code, which is among the highest-performing energy codes in the country, according to the U.S. Department of Energy. A commercial code update in 2019 and a residential code update in 2020 will advance the Oregon code even further.

Advanced Net Zero Buildings Energy Code | ODOE helped the Building Codes Division make progress toward advancing the energy code for residential buildings toward the track for zero-energy ready homes in 2020.

Advanced Appliance Energy Efficiency Standards | In a 2018 rulemaking, ODOE clarified appliance compliance registration and battery charger standards. In support of Executive Order 17-20, we conducted stakeholder outreach to gauge market readiness to upgrade and identify product categories for new standards. ODOE published a 2018 Report to the Governor, [Improved State Standards for Appliances](#), in which we identified 14 new appliance standards that would, by 2025: save the state 513 gigawatt hours of electricity, 674 billion Btus of natural gas, and 2,285 million gallons of water; reduce 192,000 metric tons of greenhouse gas emissions; and save Oregonians nearly \$85 million.

Co-authored the Ten-Year Plan: Reducing Energy Burden in Oregon Affordable Housing | ODOE, the Public Utility Commission, and Oregon Housing and Community Services worked together in 2018 to assess energy use in all affordable housing stock to inform a ten-year plan for increased efficiency. In addition to issuing a [report on the plan](#), the agencies also developed an [online assessment tool](#).

Public Purpose Charge (PPC) Schools Program Administration and Report | For the 2015-2017 biennium, ODOE's program facilitated 72 audits across 15 school districts, as well as 125 energy efficiency measures that saved 2.8 million kilowatt hours of electricity and nearly 250,000 therms of natural gas per year. This saves the schools more than \$487,000 per year. This program's accomplishments are described more fully in the [2015-16 Biennial PPC Report](#).

Industrial Energy Efficiency Self-Direct Program Administration and Report | In the 2015-2017 biennium, ODOE supported 14 projects in the Portland General Electric, Pacific Power, and Emerald People's Utility District service territories that saved 6.1 million kilowatt hours of electricity — thereby saving industrial customers \$336,000 per year. This program's accomplishments are described more fully in the [2015-16 Biennial PPC Report](#).

State Energy Efficient Design (SEED) Program Administration | ODOE administers the agency-level energy reporting program using the Portfolio Manager software, and creates annual energy scorecards for individual buildings. Between 2015-2018 the program saved the state over \$350,000 each year in energy costs from the nine buildings built during that period.

Co-Chairing the Grid-Interactive Efficient Buildings Multi-state Work Group | ODOE was selected to co-chair a national working group on Grid-interactive Efficient Buildings (GEB). The 14-state working group will explore GEB technologies and applications; identify opportunities and impediments (technical and non-technical); identify and express state priorities and interests; inform policy, planning, programs, and regulation; consider unregulated electric sector investments and implications; and advance GEB road map and pilot options.

National Energy Efficiency Registry Assistance | ODOE participated in a multi-state effort in 2016-17 that prepared a nationwide registry framework to support energy efficiency credits for compliance with the Federal Clean Power Plan. The resulting platform can be used to register energy efficiency savings for trading or for program validation.

Extended Energy Services to a New Agriculture Segment | ODOE created an online energy calculator for cannabis growers so they can estimate their annual energy use when they apply for a license, and to report actual annual energy use. ODOE used this data to create an energy and production profile of this new industry. ODOE also served on the legislative Task Force on Environmental Best Practices, and [helped produce a report](#) in September 2016.

Facilitated Irrigation District Energy Efficiency | ODOE worked with irrigation districts to install new energy efficient pumps and to save water. Three districts applied for and received ODOE Renewable Energy Development Grants for in-pipe hydro systems, which produce clean renewable energy.

Core Area 2 focused on enabling the responsible development of Oregon's energy resources, advancing clean energy projects, and improving the performance of transmission and distribution systems. ODOE deployed four strategies to advance clean power and thermal energy:

1. Enable a future electricity energy mix that will achieve Oregon's energy goals
2. Reduce the cost of integrating clean energy resources
3. Improve performance of the transmission and distribution system
4. Develop a thermal energy framework that will help achieve Oregon's energy goals

In addition to the specific accomplishments listed below, P&I staff provided **technical expertise and policy advice** to state, regional, and national partners to advance clean energy in Oregon. P&I worked with other ODOE programs and state agencies to help **implement their renewable energy programs**, including providing technical assistance to Business Oregon in the development of its Solar Development Incentive Program, contributing energy expertise to the utility planning activities at the Oregon Public Utility Commission, and evaluating and completing compliance actions for ODOE's Renewable Energy Development Grant program. To advance the strategy of **reducing the cost of clean energy resources** in Oregon through regional cooperation and coordination, P&I staff engaged with Energy Trust of Oregon and several regional conversations. For example, ODOE was a member of a 2019 steering committee of 11 western states working to assess market options and associated benefits of regional coordination and worked with other states through the Pacific Coast Collaborative to explore thermal decarbonization. ODOE staff also provided technical expertise and a statewide perspective to the Northwest Power and Conservation Council including **servicing on the Generating Resources Advisory Committee and the Natural Gas Advisory Committee** for the development of the 2021 Power Plan, and providing technical support to the Demand Response Advisory Committee, System Integration Forum, Regional Technical Forum, and Systems Analysis Advisory Committees.

Core Area 2:
Clean Power
and Thermal
Energy

Completed Renewable Natural Gas Inventory | In 2018, ODOE developed [an inventory of RNG assets](#) in the state, including identifying feedstocks, supply chains, and potential production costs. The first-of-its kind assessment demonstrates how Oregon can turn a persistent waste stream into useful energy, including homegrown transportation fuels. As part of this project, ODOE convened a diverse stakeholder advisory group to develop recommendations to advance RNG in the state, including elements that have been enacted into law.

Rural Energy Assistance | ODOE provided technical assistance to Three Sisters Irrigation District to develop a nearly 500 kW in-pipe (or in-conduit) hydropower demonstration project consisting of five different types of turbines to power irrigation pumping. The District subsequently successfully qualified for ODOE Renewable Energy Development Grants totaling \$286,000. When fully installed, the demonstration project will create energy and provide valuable information about the operating characteristics of the five different turbines that can be used in other parts of Oregon.

Developed Solar Dashboard | ODOE developed [an online dashboard](#) that provides information about solar in Oregon, including location and amount generated in the state over time. This tool is being used by the public, local governments, stakeholders, and legislators.

Awarded Solar Plus Grant | In 2016, an Oregon/Washington coalition (including ODOE) was awarded a \$2 million Solar Plus grant to equitably grow the solar market in the northwest. ODOE developed an outreach plan and conducted several workshops to inform electric utilities on energy storage and solar technologies and opportunities.

Awarded SunShot Low-Income Solar Grant | In 2016, a coalition of six states (including Oregon) and the Clean Energy States Alliance was awarded a \$1.7 million SunShot grant to develop strategies to bring solar to more low- and moderate-income residents. Using these strategies, and working with Energy Trust of Oregon, we have developed plans for eight organizations in Oregon to increase participation by low- and moderate-income residents. The next step of the grant is to work with these organizations to implement the plans.

Published Oregon's Electricity Resource Mix | ODOE compiles utility data to update [graphical web pages](#) showing the mix of resources used to serve the overall load in Oregon, and the load for each individual utility. The webpage also shows the electricity generating stations in Oregon by utility, identifies the resource mix used to provide unspecified market purchases, and shows the greenhouse gas emissions for utilities.

Renewable Portfolio Standard Program Administration | ODOE certified all Oregon electricity generation facilities that are eligible to earn Renewable Energy Certificates for compliance in the Oregon RPS. To date, we have certified 571 renewable generating units as eligible for the RPS. ODOE staff also participated in the Western Renewable Energy Generation Information System, an independent renewable energy tracking system, and chaired WREGIS from 2014 – 2017.

Green Energy Technology Program Administration | ODOE staff administered the 1.5% for Green Energy Technology program which requires new and significantly remodeled public buildings to invest in cost-effective solar, geothermal, woody biomass. During 2017 and 2018 we had 35 buildings participate in the program. In 2019 we worked with the legislature to improve the program, and ODOE conducted rulemaking to implement directives in HB 2486 (2019) that added energy efficiency and storage as eligible technologies.

Developed Small-Scale Community-Based Renewable Tool | ODOE coordinated with stakeholders to develop a tool that allows investor-owned utilities to assess scenarios to comply with the small-scale community-based renewable energy project goal outlined in SB 1547 (2016).

Created Thermal Renewable Energy Certificates (TRECs) for Industry | After engaging with a diverse group of stakeholders, ODOE successfully implemented SB 1547 (2016), which expanded the Renewable Portfolio Standard to include industrial projects that create thermal energy along with electricity. We worked with the Western Renewable Energy Generation Information System to certify facilities eligible for thermal renewable energy certificates.

Chaired the Portfolio Options Committee | ODOE staff chaired the committee, made up of representatives of local governments, public interest groups, and small residential customers, working to identify new renewable energy resources for Oregon’s investor-owned utilities’ voluntary renewable energy programs and provide input and recommendations to the Oregon Public Utility Commission.

Contributed to Combined Heat and Power (CHP) Report on Technical Potential | ODOE contributed to a [March 2016 report](#) by USDOE that identified the technical potential of CHP in the country, including 1,342 MW of CHP potential specifically in Oregon.

Core Area 3 focused on increasing demand for alternative transportation fuels and advancing projects to expand supply and infrastructure of alternative transportation fuels. ODOE deployed five strategies to advance clean and efficient transportation:

Core Area 3:
Clean and
Efficient
Transportation

1. Diversify the transportation fuel mix
2. Increase in-state alternative fuel production
3. Reduce fuel use in the transportation sector
4. Align regional, state and local transportation activities
5. Identify barriers and opportunities to advance alternative fuel transportation infrastructure

ODOE staff have worked to promote alternative transportation fuels and infrastructure in a number of ways, including the specific accomplishments below. In addition, ODOE **collects and analyzes alternative fuels data** across all transportation sectors and uses this information to **educate stakeholders and assess progress**. ODOE also uses this information and expertise to provide technical assistance to private and public fleets to inform their decisions on **adopting alternative fuels**. P&I staff provide technical expertise and policy advice on fuels to other state agencies, including helping the Oregon Department of Transportation in its implementation of the Sustainable Transportation Strategy and providing comments to Oregon Public Utility Commission proceedings on **transportation electrification and use of clean fuels credits**.

Created Electric Vehicle Cost Analysis Tool for State Agencies | ODOE collaborated with the Department of Administrative Services to develop a tool that calculates the lifecycle costs and long-term rate-of-return investments for electric vehicles, including the cost of the vehicle, electricity and fuel costs, and maintenance. The tool will allow agencies to make informed decisions that can lead to the purchase of more EVs for their fleets.

Developed Transit and School Bus Cost Analysis Tool | ODOE, in collaboration with the Oregon Department of Transportation, developed a tool for fleet managers to assess and compare the total lifecycle costs of alternative fuel buses, including battery electric, propane, compressed natural gas, and clean diesel technology. While still in beta-testing, the tool will allow fleet managers to make informed decisions that can lead to the purchase of alternative fuel vehicles.

Helping Schools Invest in EVs | SB 1044 (2019) authorized schools to use their existing public purpose charge money to conduct fleet audits, purchase or lease zero emission vehicles (including buses), and/or build charging stations. ODOE has developed guidance to help schools investigate and make EV investments.

EV Distribution Planning Mapping Assistance to Consumer-Owned Utilities | ODOE developed a method to map the number of electric vehicles charging in consumer-owned utilities’ territories, and is working with a first round of utilities to pilot this tool, which can help inform utility distribution planning efforts.

Electrify America Proposals | ODOE collaborated with the Oregon Department of Transportation, Department of Environmental Quality, and local governments to secure funding from Electrify America to install 15 fast charging EV stations with 41 chargers along I-5 and I-84 in Oregon. This is part of a national build-out of 2,000 fast chargers at 500 stations across America. In addition, by the end of 2019 Oregon had 629 charging stations with 1,641 chargers (306 of which are fast chargers).

Implemented Directives in Executive Order 17-21 | ODOE convenes and facilitates the Zero Emission Vehicle Interagency Working Group, a collaborative of State of Oregon agencies including the Oregon Departments of Energy, Environmental Quality, Transportation, and Administrative Services, and the Oregon Public Utility Commission to implement Governor Brown's Executive Order 17-21, focused on addressing barriers to EV adoption and helping Oregon reach the goal of at least 50,000 registered ZEVs on Oregon roads by the end of 2020 (Oregon is over halfway there). The ZEWIWG holds regular public meetings to hear from stakeholders about barriers to EV adoption and ideas to address them.

Developed the Go Electric Oregon Website | ODOE also launched goelectric.oregon.gov as a directive of EO 17-21. Go Electric Oregon is an educational website about zero emission vehicle adoption that includes information about vehicles, charging, incentives, and more.

West Coast Collaborative Alternative Fuels Infrastructure Corridor Coalition | ODOE provided expertise and guidance to the West Coast Collaborative to assess alternative fuel charging needs and opportunities for development along Oregon's Federal Highway Administration-Designated Alternative Fuels Corridors (I-5 and I-84), which will inform future statewide charging infrastructure planning.

Leadership on Clean Cities Initiative | ODOE participated as a board member, chair, and supporter of Columbia-Willamette Clean Cities Coalition, including providing technical support, data collection, and analysis to inform alternative fuel adoption and programs in state, private, and local fleets. ODOE also participated in community outreach events with Clean Cities, such as the Portland International Auto Show and fleet managers meetings.

Core Area 4 focused on evaluating future energy system needs in light of global climate change and natural disasters and conducting long term energy planning. ODOE deployed four strategies to advance resilience and sustainability:

1. Improve the resilience of Oregon's energy system
2. Assess potential climate change mitigation strategies
3. Incorporate analysis of climate co-benefits in energy planning and program development
4. Conduct long-term energy planning

Many of ODOE's programs reduce greenhouse gas emissions, even if their primary purpose is related to energy efficiency or renewable energy. In addition to **promoting clean and efficient energy use**, P&I staff helped inform efforts by local governments, state agencies, and the federal government become more **resilient to climate change and natural disasters**. At the state level, P&I staff provided technical support to the Carbon Policy Office and staff support to the governor-appointed **Oregon Global Warming Commission**, including providing logistical support and helping to draft the Commission's annual reports to the legislature. ODOE also redesigned and modernized the Commission's website.

Core Area 4:
**Resilience and
Sustainability**

Published the 2018 Biennial Energy Report | ODOE led an effort to establish a requirement for a new Biennial Energy Report to the Oregon Legislature. The “BER” is designed to be a resource for policymakers and other stakeholders. The inaugural report was published in 2018, and included chapters specifically on Climate Change and Resilience. It was the subject of the first House Energy and Environment Committee hearing in the 2019 session. It’s used as a reference by utility executives, legislators, stakeholders, local governments, and Members of Congress, and is available in 22 county libraries throughout Oregon.

Developed the Oregon Guidebook for Local Energy Resilience | ODOE authored a new resilience guidebook for Oregon’s consumer-owned utilities. The guidebook helps COU staff identify incremental actions they can take to improve business continuity planning, develop a framework to prioritize investments in distributed energy resources, and better understand the role local utilities play within the context of federal, state, and local emergency management planning. The guidebook includes best practices and checklists for taking action.

Coordinated a Response to the House Select Committee on the Climate Crisis | Coordinating among 15 fellow State of Oregon agencies and the Governor’s Office, ODOE developed a response to a request for information from the U.S. House Select Committee on the Climate Crisis on how Congress should address climate change. This effort will help ensure that Federal action on climate change reflects Oregon’s ideas, experience, and unique perspective.

Energy Storage Pilot Support | ODOE provided technical assistance and helped secure funding for the development of an energy storage pilot demonstration project through the Eugene Water & Electric Board. This project will increase local energy resilience by providing backup power to ensure Eugene residents will have access to water after an emergency.

Selected for a National Governor’s Association Policy Academy | ODOE was selected with our partner, Central Lincoln People’s Utility District, to participate in an NGA Policy Academy on Grid Modernization. The joint application emphasized the importance of improving local energy resilience and resulted in meaningful collaboration between ODOE and consumer-owned utilities.

Supported Oregon Actions for the Clean Power Plan | ODOE collaborated with the Oregon Department of Environmental Quality and the Oregon Public Utility Commission to develop Oregon’s plan to meet the requirements of the Clean Power Plan before it was repealed. ODOE provided detailed technical analysis and modelling to allow Oregon to choose the least cost path to meet the requirements.