

**BEFORE THE PLANNING DIVISION
FOR MARION COUNTY, OREGON**

**In the Matter of an Appeal by the
Applicant, Remington BESS, LLC of a
Decision by the Planning Director, dated
August 1, 2025, Denying the Application for
Administrative Review, Case No. 25-015**

**REMINGTON BESS, LLC
PREHEARING BRIEF**

I. INTRODUCTION

Remington BESS, LLC¹ (“Remington” or “Applicant”) appeals the Marion County Planning Director’s (“Planning Director”) August 1, 2025, decision denying the proposed battery energy storage system project (“BESS Project”) on 15 acres of Exclusive Farm Use (“EFU”) zoned land next to a PacifiCorp substation.² The Planning Director erred in concluding that the BESS Project is not a “utility facility necessary for public service” under Marion County Code (“MCC”) 17.136.040(I) and applicable Oregon statutes, and in determining that Remington failed to demonstrate reasonable alternatives for siting the project based on one or more of the factors set forth in Oregon Revised Statutes (“ORS”) 215.275(2).³

This appeal is about two things: whether a battery energy storage system (“BESS”) is a utility facility necessary for public service, and if the answer to that question is “yes,” whether the Applicant demonstrated that it considered reasonable alternatives and that the BESS Project must be sited in the EFU zone based on consideration of one or more of the factors set forth in ORS 215.275. Here, the answer to both of those questions is yes.

The Planning Director’s denial of the BESS Project is wrong for at least five reasons:

1. **The BESS is a Utility Facility.** The Planning Director failed to recognize that the BESS is a utility facility pursuant to ORS 215.283(1)(c). As detailed in this brief, the term “utility facility” has been broadly interpreted by Oregon courts to include any equipment

¹ RWE Clean Energy, LLC (“RWE”) is the parent company for the project applicant, Remington BESS, LLC.

² Administrative Review (“AR”) 25-015.

³ The relevant standards and definitions are set forth in state law at ORS 215.283(1) and ORS 215.275. The Marion County Code restates these requirements as they relate to utility facilities at MCC 17.36.040(I). Because the state statutes control, and local jurisdictions cannot add to or modify that framework, this brief references applicable state law throughout.

or apparatus that functions to perform or provide, in whole or in part, a service. *See Cox v. Polk County*, 174 Or App 332, 343–44, 25 P3d 970 (2001), *rev den*, 332 Or 558 (2001); *Keicher v. Clackamas County*, 175 Or App 633, 29 P3d 1155 (2001). BESS are essential for utilities to store generated power and release that power back to the grid. They are a key component of providing electrical service and are utility facilities.

2. **For BESS to be Necessary for Public Service, One Factor, Not All, Must be Satisfied.** The Planning Director misinterpreted and misapplied the “factors” in ORS 215.275 and MCC 17.136.040(I) that must be considered by the Applicant in assessing non-EFU alternative sites. The Planning Director treated the factors as “approval criteria” that each must be satisfied—an incorrect interpretation and application of the law. Instead, the Applicant needs to show only that considerations based on “one or more of the following factors” require siting the project on EFU land. Remington’s application is based on factors one, two, and three, which address technical and engineering feasibility, locational dependence, and the lack of available urban and nonresource lands. The other factors are not the basis of the application and should not be considered.
3. **Counties Cannot Add Local or Other Restrictions to the Approval Criteria for Uses Allowed Under ORS 215.283(1).** The Planning Director impermissibly imposed additional substantive criteria on the BESS Project—namely that BESS is prohibited in any zone in the County and that the farm impact test set forth in ORS 215.296 applies—an action prohibited for utility facilities necessary for public service under ORS 215.283(1)(c) and contrary to the express legislative set forth in ORS 215.296(1). The Oregon Supreme Court prohibits counties from applying local criteria or other non-statutory local restrictions to utility facilities necessary for public service: “[W]e conclude that the legislature intended that the uses delineated in ORS 215.213(1) be uses ‘as of right,’ which may not be subjected to additional local criteria.” *Brentmar v. Jackson County*, 321 Or 481, 496, 900 P2d 1030, 1038 (1995). Under *Brentmar*, the County is only authorized to apply the statutory provisions set forth in ORS 215.275. Further, ORS 215.296(1) clearly states that the farm impact test applies only to uses identified in ORS 215.283(2) and (4), and not uses allowed under subsection (1). Accordingly, the Planning Director’s application of additional review standards or criteria is prohibited. *Hanson v. Yamhill County*, State Land Use Board of Appeals (“LUBA”) No. 2024-065 (Final Opinion and Order) (Jan. 27, 2025).
4. **The Focus on Speculative Public Risks is Irrelevant.** The Planning Director spent much of the decision presenting speculative assertions about the risk and dangers of BESS to support the denial. This is impermissible for two reasons. First, “public health and safety” is one of the six factors under ORS 215.275 that can support a determination to allow a utility facility necessary for public service to be sited on EFU land, based upon consideration of whether the proposed utility use poses a significant risk such that it should not be located in more densely developed urban areas, and instead should be located on rural EFU lands. The Planning Director conflates the clear legislative intent of this factor by concluding, with no evidentiary support, that the BESS Project is so dangerous that it should not be sited on EFU land, turning the factor on its head. Instead, the Turner Fire District reviewed the application and provided technical comments about specific code standards that would apply, but expressed no concern about the BESS

Project and did not oppose its approval. Second, Remington has not relied upon the public health and safety factor to justify siting the BESS Project on EFU land; instead, Remington relies on the technical and engineering feasibility, and locational dependence and unavailability of urban/non-resource lands to support the finding that the BESS is a utility facility necessary for public service which requires an EFU location. ORS 215.275 does not require any consideration of potential public health or safety risks.

5. **The County's Ordinance Attempting to Ban BESS Does Not Apply to the BESS Project, Violates State Law as Applied to EFU Zoned Lands, and is Void as Applied to EFU Land.** To the extent the Planning Director's denial relies on County Ordinance 1480 (the "Ordinance"), which bans BESS in all County zone designations, that Ordinance is both invalid on its face as to EFU zoned land and does not apply to the current application. It is well established under Oregon law that when a County's EFU zoning code deviates from the statutory requirements in ways that conflict with the statute, the statute controls and the offending ordinance provisions are void. *See Hanson*, LUBA No. 2024-065; *Riggs v Douglas County*, 167 Or App 1, 9-10, 1 P3d 1042 (2000). Here, the County's outright ban of BESS conflicts with the plain language set forth in ORS 215.283(1) that utility facilities necessary for public service are allowed in EFU zones subject only to compliance with ORS 215.275. Consequently, this aspect of the County ordinance constitutes an impermissible additional local criterion or restriction. It is therefore void as contrary to applicable statutory requirements under the *Brentmar* ruling. *See Brentmar*, 321 Or 481. Second, under Oregon's statutory goal post standard set forth in ORS 215.427(3)(a), and the Planning Director's own interpretation provided via email and at the Ordinance adoption hearing,⁴ the approval or denial of the application shall be based solely on the standards or criteria in effect at the time the application was submitted. Since the application was submitted prior to the Ordinance's passage and deemed complete⁵ it simply cannot be applied by the Planning Director or the Hearing Officer to the subject application.

In summary, the BESS Project constitutes a utility facility necessary for public service under ORS 215.283(1)(c), and Remington's analysis and supporting evidence demonstrate Remington complied with ORS 215.275 to show that application of at least one of the statutory factors demonstrates that the BESS Project must be sited on EFU land. The Director's decision to deny the application misconstrued the applicable law and the Planning Director's findings are unsupported by substantial evidence. The Planning Director's denial should be reversed, and AR 25-015 should be approved on appeal.

⁴ *See Supra* Section II.C. ("these amendments don't affect th[e] application []. These amendments affect any application going forward, nothing that's currently in process.")

⁵ Although not explicitly stated by the Planning Director, the application had to have been deemed complete upon submittal since the Planning Director did not conclude otherwise and issued the decision without requesting additional information.

II. FACTUAL BACKGROUND AND CONTEXT

A. BESS Are Necessary Components of Oregon's Energy Infrastructure

Battery energy storage systems are a necessary and essential part of Oregon's energy infrastructure and future, especially as Oregon pursues ambitious renewable energy targets set by House Bill ("HB") HB 2021.⁶ To meet these targets, the Oregon legislature and the Oregon Department of Energy ("ODOE") require the integration and development of BESS. In response, electric utilities, like PacifiCorp and Portland General Electric, have cited the need for additional storage resources in their clean energy and integrated resource planning documents, in order to deliver clean energy to the grid. As detailed below, the BESS Project responds specifically to that need for PacifiCorp within its Willamette Valley Service Area.⁷

1. Oregon State Requirements for BESS

BESS facilities collect electric energy generated from energy sources (like the electrical grid, wind, solar, geothermal sources, etc.) and transmitted through the electrical grid, store that energy for a period of time in rechargeable batteries, and then release it back to the grid to provide electricity to residential and commercial users when needed most. *See* HB 4015 amending ORS 469.300(5) to define BESS. BESS expand the benefits of renewable resources that are generated intermittently (like solar energy produced in daytime hours), allowing the overall grid to make use of that energy at a time of higher residential demand (nighttime hours).⁸ Unlike electric generation resources that require ramp up and ramp down time, batteries can instantly dispatch the exact amount of electricity needed when demand rises.⁹

BESS are integral to Oregon's energy utility services because they provide flexibility and reliability to power systems, particularly as Oregon pursues "ambitious renewable energy targets and seeks reliable, resilient power solutions."¹⁰ According to ODOE, BESS are "key tool[s] to integrate renewable resources into the electricity grid."¹¹

Several Oregon laws recognize the importance of integrating storage solutions in order to increase the use of renewable electricity and improve resilience of the power grid. For example:

- HB 2193 requires electric companies to procure one or more qualifying energy storage systems that have capacity to store at least five megawatt ("MW") hours of energy to provide reliable energy supplies. As summarized by the Oregon Legislature: "One of the distinctive characteristics of the electric power sector is that the amount of electricity that can be generated is relatively fixed over short periods of time, although demand for electricity fluctuates throughout the day. Electricity storage devices can manage the

⁶ The text of HB 2021 is attached as Exhibit 1. The text of HB 4015 is attached as Exhibit 2.

⁷ *See* Appendix A (Remington Alternatives Analysis) which describes this service area.

⁸ *See* Exhibit 3 - Grid Reliability 101, American Clean Power (February 2024).

⁹ *See id.*

¹⁰ Exhibit 4 - Overview of Battery Energy Storage Systems for the May 16, 2025 EFSC Meeting (May 2, 2025), also available at: <https://www.oregon.gov/energy/facilities-safety/facilities/Council%20Meetings/2025-05-16-EFSC-Item-C-Staff-Report-Battery-Storage-Technology-Overview.pdf>

¹¹ *See* Exhibit 5 - Energy Storage, Oregon Dep of Energy, Safety & Resiliency, also available at: <https://www.oregon.gov/energy/safety-resiliency/Pages/Energy-Storage.aspx>.

amount of power required to supply customers at times when need is greatest, which is during peak load. Many renewable energy sources, most notably solar and wind, produce intermittent power. Energy storage is one option to provide more reliable energy supplies.”¹²

- **HB 2021** requires retail electricity providers to reduce greenhouse gas emissions associated with electricity sold to Oregon consumers to 80% below baseline emissions levels by 2030, 90% below baseline emissions levels by 2035 and 100% below baseline emissions levels by 2040. To meet these ambitious targets, ODOE developed an energy strategy for Oregon, which specifically emphasizes the need for integrated storage solutions: “Investments in electricity generation, transmission, distribution, *and storage facilities* are critical to meeting Oregon’s economy wide clean energy goals. In the near term, this means planning for and investing in resources that can be built quickly, including distributed technologies like solar, *storage*, demand-side flexibility, and utility-scale resources *wherever they can be connected to electric grids*.”¹³

2. Electrical Utilities Need BESS

In an effort to meet these statewide targets, electrical utilities, like PacifiCorp and Portland General Electric, have incorporated the use of energy storage systems, including BESS, into their integrated resource planning and clean energy planning. Overall to meet HB 2021 emission reduction goals, PacifiCorp anticipates needing 11,838 MW of new proxy resources to serve Oregon customers’ energy and capacity needs, including 3,835 MW of storage resources.¹⁴

PacifiCorp’s 2025 Integrated Resource Plan (“IRP”), and resulting Situs Requests for Proposals (“RFPs”), affirm this need.¹⁵ The 2025 Oregon Situs RFP, which was approved by Oregon’s Public Utilities Commission and is the means by which PacifiCorp must procure resources described in the IRP, specifically calls for energy storage resources, including at least 509 megawatts of new 4-hour lithium-ion battery storage resources needed in PacifiCorp’s Oregon service territory by the end of 2029.¹⁶ The BESS Project is designed to respond to this need by providing 199 megawatts of 4-hour duration storage and by coming online before December 2029.¹⁷

¹² Exhibit 6 - HB 2193A, House Committee on Energy and Environment, 2015 Regular Session, Final Measure Summary (Apr. 21, 2015).

¹³ Exhibit 7 - ODOE, Oregon Energy Strategy, Draft for Public Comment (Aug. 2025) at 18, also available at: <https://www.oregon.gov/energy/Data-and-Reports/Documents/DRAFT-Oregon-Energy-Strategy.pdf>.

¹⁴ See Exhibit 8 - PacifiCorp, Oregon 2023 Clean Energy Plan (“CEP”), dated May 31, 2023, at 12 (PacifiCorp has been attempting to procure over 2 GW of renewable, non-emitting, or storage resources), also available at: https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificpower/about/2023_Oregon_Clean_Energy_Plan_October.pdf; Exhibit 8(a) - PacifiCorp, Clean Energy Plan Engagement Series Meeting, August 20, 2025 (2025 CEP: Key Findings) at Slide 13; Exhibit 8(b) – PacifiCorp, Oregon Clean Energy Planning Supplement, Docket No. LC 82 (Apr. 1, 2024) at 4.

¹⁵ Exhibit 9 - PacifiCorp Integrated Resource Plan (“IRP”) (Mar. 31, 2025) at 243, 245 stating PacifiCorp’s 2025 preferred portfolio includes “significant storage resources,” also available at: <https://www.pacificorp.com/energy/integrated-resource-plan.html>

¹⁶ Exhibit 10 - PacifiCorp 2025 Oregon Situs Request for Proposals (“RFP”) (Oct. 13, 2025) at 5, also available at: <https://www.pacificorp.com/suppliers/rfps/2025-oregon-situs-rfp.html>

¹⁷ See Appendix A (Remington Alternatives Analysis).

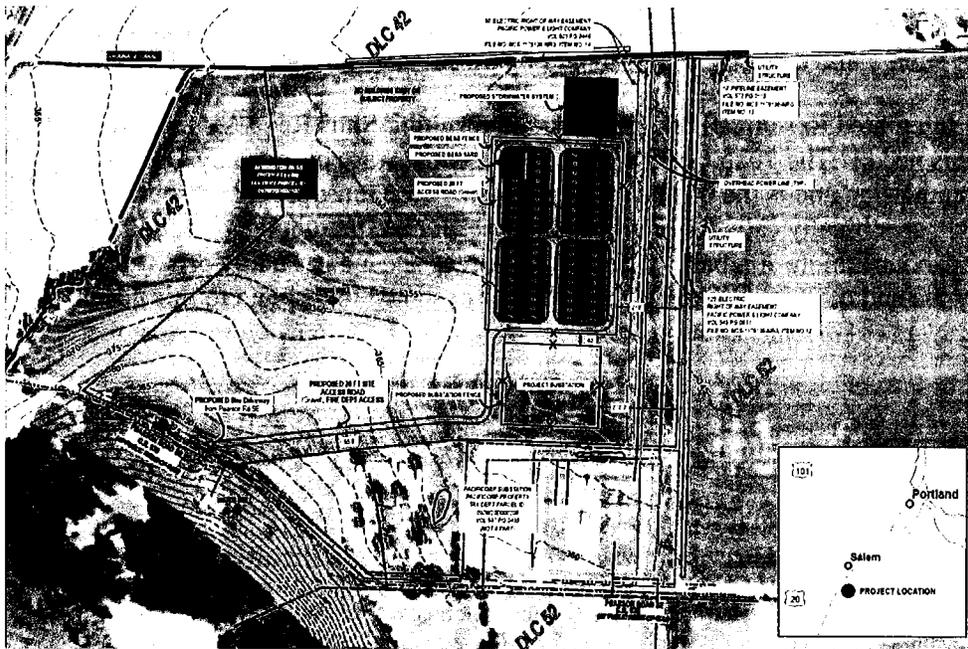
In sum, the State of Oregon recognizes that BESS are utility facilities that are necessary for the operation of the modern grid and essential to achieving the state’s renewable energy targets. These state laws and policies demonstrate that BESS are utility facilities necessary for public service.

B. PacifiCorp Needs Battery Storage, and the BESS Project Will Deliver

As described above, the BESS Project responds to PacifiCorp’s need for additional storage resources as outlined in its CEP, IRP and Situs RFPs. The BESS Project will consist of battery containers, transformers, inverters, transmission lines, and associated infrastructure and will deliver electricity to the PacifiCorp transmission system, particularly to the Willamette Valley Service Area. It will interconnect with the existing Parrish Gap Substation (referred to as the point of interconnection or “POI”) immediately to the south of the proposed project area.¹⁸

Electricity from the BESS Project will be collected at the collector substation on site.¹⁹ The energy will then be transmitted from the collector substation to the POI, and subsequently into an existing PacifiCorp-owned transmission line.²⁰ The BESS Project would have a total electrical output capacity of approximately 199 MW (AC).²¹

Figure 1: Remington BESS Project Site Plan²²



¹⁸ Exhibit 11(a) and (b) - Remington BESS, Administrative Land Use Review Application and Statement (“Application”) prepared by Remington BESS, LLC, dated June 2025, at 5, 9 (Figure 2). See also Exhibit 12 (Site Plan); Appendix A.

¹⁹ Exhibit 11(b) at 7 (Section 2.2). See also Appendix A at 1-2.

²⁰ Exhibit 11(b) at 7 (Section 2.2). See also Appendix A at 1-2.

²¹ Exhibit 11(b) at 6 (Section 2.1). See also Appendix A at 1.

²² Exhibit 12 (Remington Site Plan).

C. The BESS Project Fulfills Project Objectives and Specific Siting Criteria

The BESS Project fulfills general and specific project objectives necessary to provide battery energy storage services to the PacifiCorp electrical grid in PacifiCorp's Willamette Valley Service Area. Remington developed a detailed Alternatives Analysis to evaluate which sites in the Willamette Valley Service Area would meet the project objectives and siting criteria. Remington's Alternatives Analysis is attached as Appendix A.

As described in the Remington Alternatives Analysis, in addition to the general objective of providing storage for electricity for grid balancing purposes, specific Remington project objectives include:

- Responding to the eligibility and scoring criteria in PacifiCorp's 2025 Oregon Situs RFP such that the project will be commercially viable with PacifiCorp as the offtaker;
- Connecting to a PacifiCorp-owned substation in PacifiCorp's Willamette Valley Service Area;
- Building a storage capacity of at least 199 MW of BESS;
- Providing enhanced grid reliability, resiliency, and stability;
- Enabling integration of renewable energy resources into the grid and avoid rolling blackouts or loss of power;
- Maximizing the existing system's capability and improve PacifiCorp's ability to serve growing customer loads while reducing the risk of voltage collapse;
- Furthering the ability to provide peak shaving and load management;
- Supporting and defraying infrastructure costs to the transmission system;
- Providing backup electrical support to the grid that supports disaster recovery and critical infrastructure continuity services; and
- Assisting Oregon in meeting its greenhouse gas emissions reduction goals of 80% by 2030, 90% by 2035, and 100% by 2040, as required by Oregon's Clean Energy Bill (HB 2021).

The BESS Project was sited at the current location based on Remington's analysis of the above project objectives, together with specific siting criteria for RWE BESS projects. The siting criteria are detailed more fully in the Remington Alternatives Analysis and include the following:

- Location: within PacifiCorp's Willamette Valley Service Area.
- Proximity to Point of Interconnection (i.e., a utility-owned substation): Within 1 mile of a PacifiCorp-owned substation to account for utility crossing, franchise, encroachment

and easement agreements, engineering complexity, and power loss through transmission lines (note that for BESS, power must travel in both directions, in and out of the facility via project transmission lines).

- Substation voltage class and transfer capacity: 115kV or higher substation with “available transfer capacity,” meaning the specific substation can accept the Project’s power within the proposed timeframe (in this case, by the end of 2029).
- Land availability: A minimum of 15 contiguous acres of available land in order to site at least 199 MW of storage capacity (1 acre per 20 MW), plus 2 acres for a project substation and 3 acres to account for access roads, zoning-related setback requirements, environmental buffers, and the ability to increase project capacity by up to 40 additional megawatts. Setting aside land for future expansion is an industry-standard practice where feasible due to the favorable economies of scale for increasing capacity at existing sites compared to new sites. “Available” land is defined as land that could feasibly be leased or purchased for use as a BESS facility, as further described in Appendix A.
- Feasible network upgrades: Network upgrades are the developer-funded, utility-constructed upgrades to PacifiCorp’s facilities that would be necessary to allow the project to connect to the grid. These can consist of new breakers at the point of interconnection (PacifiCorp substation), new or extended transmission lines to create the grid capacity to charge and/or discharge storage resources, and other necessary equipment upgrades. Each project that enters the PacifiCorp interconnection queue and goes through a System Impact Study is assigned network upgrades based on the utility’s assessment of what is needed to accommodate the project. The feasibility of network upgrades can be measured in time and cost.
 - Timing: PacifiCorp (and any other affected utility systems) requires enough time to design, permit, procure equipment for, and install the necessary network upgrades. Procurement (i.e., purchasing and receiving equipment) can be one of the longest-lead time portions of this process due to the high demand for and limited production capacity of breakers, transformers, poles, and other equipment that often must be ordered several years in advance of delivery. The PacifiCorp 2025 OR Situs RFP includes a criterion of having a guaranteed commercial operation date on or before December 31, 2029. Therefore, the chosen Point of Interconnection must not require network upgrades that cannot be completed by mid-2029.
 - Cost: Interconnection at the chosen PacifiCorp substation does not result in Network Upgrade costs that would render the project financially infeasible. For the purposes of this analysis, RWE considered Network Upgrade costs above \$20 million to be prohibitive.
- Lack of slopes: slopes less than 15% to avoid substantial technical challenges, permitting challenges, and construction costs for ground disturbance, leveling (cut and fill), stabilization, and shoring to accommodate the BESS foundations. Developing BESS on

steep slopes results in loss of topsoil, substantially longer site preparation time, potential instability, and increased noise, dust, and risk of erosion.

- Lack of wetlands or other water features: within the project area, no regulated wetlands, water features, or environmentally critical areas that would impede development, reduce the available land, and could result in project impacts.
- Zoning: land use zoning allows for the permitting of utility facilities.
- Access: sufficient site access is available, including the ability to deliver construction equipment, BESS modules, utility poles, and other equipment without creating the need for substantial road construction.
- Avoids interference with existing utility easements: due to ground clearance needs, height constraints, inability to cross private and public lands, and space constraints.

D. Remington's Project Objectives and Siting Criteria Require the BESS Project to Be Sited at the Parrish Gap Substation

In light of the foregoing objectives and criteria, Remington evaluated potential sites for the development of the BESS Project. As described in detail in Appendix A, to identify potential BESS project locations, Remington first identified eligible PacifiCorp-owned substations within the utility's Willamette Valley Service Area. Remington focused on this service area due to information about demand, grid balancing, and anticipated transmission upgrades provided by the utility in its IRPs (2025 and previous years' IRPs) and additional available transfer capacity ("ATC") analyses performed by RWE, Remington's parent company. The ATC analysis aggregates data from a variety of sources regarding substation capacity, ownership, prior studies, and other relevant data that helps RWE collect and analyze data about substations, ultimately providing information about the likelihood of available transfer capacity at any given substation. *See Appendix A for more details.*

PacifiCorp's transmission system in the Willamette Valley is non-contiguous with its system in Washington and Central Oregon, connected only by transmission lines owned by other utilities. To store energy located within the Willamette Valley Service Area, the BESS Project has to be located within the same area. *See Appendix A, Maps 1 and 7.* Locating storage outside of the area would trigger "wheeling" charges (charges for transferring, or "wheeling," electricity through lines owned by other utilities). *See Appendix A at 6.* It would also increase the transmission line loss, which is the loss of electricity from the system as it is carried over long distances. *Id.*

To identify viable sites that met both project objectives and siting criteria, Remington used queries of numerous databases, reviewed transmission studies available from PacifiCorp, and conducted other desktop and field research. Remington initially identified 30 PacifiCorp-owned substations with 115kV or higher within the study area. The additional ATC analyses then narrowed this list of eligible substations to 6 that may have available transfer capacity. Using the list of 6 substations developed based on the ATC analysis, Remington then used GIS mapping to apply filters and narrow eligible BESS Project sites based on the siting criteria explained above,

for example, land with appropriate zoning within 1 mile of the eligible substations. See Appendix A, Maps 1 to 6. With the siting criteria and project objectives applied, only the Remington Parrish Gap site is feasible.

The table below summarizes Remington’s analysis of potential alternative sites, which is provided in more detail in Appendix A.

Table 1: Substation Summary and Remington Analysis²³

Substation Name	Voltage Class	County	Analysis
Parrish Gap	230 kV	Marion	No non-EFU lands meet the siting criteria. One R-AR zoned parcel within 1 mile of Parrish Gap Substation met land size requirements, but topography showed slopes greater than 15%.
Jefferson	115 kV	Marion	No non-EFU parcels within 1 mile of the Jefferson Substation met the land size and availability, and/or lack of water features requirements.
Diamond Hill	230 kV	Linn	No non-EFU zoning within 1 mile of the Diamond Hill Substation.
Fry	230 kV	Linn	No non-EFU zoning within 1 mile of the Fry Substation.
Calapooya & Brownsville	230 kV 115 kV	Linn	No non-EFU parcels (or potential assemblage of parcels) within 1 mile of the substations met the land size and land availability requirements.

III. PROCEDURAL HISTORY

A. Marion County Approved a Similar BESS Project in 2024

On June 18, 2024, roughly a year prior to the submittal of the current AR 25-015 application, the Marion County Planning Director approved a very similar BESS project, also owned by RWE, on a 32-acre parcel in the Special Agriculture (“SA”) zone (the “Swift Project”).²⁴ See Exhibit 13, Administrative Review Case No. 24-009.²⁵ For that project, the Planning Director determined the BESS qualified as a “utility facility necessary for public service” under MCC 17.36.040(I). *Id.* The only apparent basis for the Planning Director’s opposite finding here relies on the aforementioned Ordinance now banning BESS. As described in more detail below, this basis provides no legal support for the Director’s decision as the Ordinance is inapplicable to EFU lands under the Oregon Supreme Court ruling in *Brentmar* and pursuant to ORS 215.427(3)(a).

²³ See Appendix A for the full analysis.

²⁴ The SA zone similarly allows utility facilities necessary for public service as a nonfarm use and applies the same criteria. MCC 17.137.040(I).

²⁵ Exhibit 13, AR 24-009, is also available at: <https://www.co.marion.or.us/PW/Planning/Documents/AR24-009.pdf>.

B. Remington Prepared the Current BESS Project Application in 2025

Subsequent to that approval, Remington began preparing the current application, targeting submission in June 2025. Remington participated in regular conversations with the Planning Director and staff regarding the preparation of submittal materials. In early March 2025, the County expressed no concern during the pre-application for the BESS Project, and County staff instructed Remington to submit the BESS Project in the same fashion the Swift Project application was submitted.

On June 30, 2025, Remington filed the current application for Administrative Review under MCC 17.36.040(I) to construct and operate the BESS Project.²⁶ The BESS Project will be situated on 15 acres of land located in the County on land zoned EFU.²⁷

C. In June 2025, Remington Learned the County Planned to Ban BESS

On June 25, 2025, Remington learned through media reports that Marion County was proposing a code amendment to ban BESS facilities from being sited in all zones within the County.²⁸ Neither Remington nor the property owner received notice of this proposed amendment, and after months of preparation, they were shocked to hear the news.²⁹ By the time the relevant stakeholders were aware of the proceedings, the public record had closed and the parties were unable to submit formal written comments concerning the Ordinance.

In a July 10, 2025, email, the Planning Director wrote that the County did not provide notice to the property owner or Remington of the proposed amendments because “the amendments don’t affect the BESS already approved on [the] property, nor the recent application” submitted for the BESS Project.³⁰

On July 9, 2025, the Marion County Board of County Commissioners (“Board”) considered the proposed code amendments banning BESS in all zones, which it adopted that day as Ordinance 1480.³¹ MCC Title 16 (Marion County Urban Zone Code) and MCC Title 17 (Marion County Rural Zone Code) were amended to read:

Notwithstanding any other provision in code, a commercial battery energy storage system, which uses batteries to store electrical energy for use on the electrical grid, is not allowed in any zone. This prohibition does not apply to personal battery storage systems that do not primarily store power for public use or sale.

²⁶ See Exhibit 11.

²⁷ Notice of Decision in this case, Administrative Review Case No. 25-015 (“Decision” or “Denial”) at 1.

²⁸ See Exhibit 14 - Marion County Board of Commissioner’s Agenda Review Form, *also available at*: https://www.co.marion.or.us/BOC/Documents/2025%20Current%20Board%20Session/7_PW_%20Sched%20Ordin%20Adpt_Battery%20Energy%20Storage%20Systems.pdf. On April 15th, 2025, the Marion County Board of County Commissioners held a work session to discuss BESS facilities within the County.

²⁹ Exhibit 15, Letter from C. Gispert to Marion County Board of Commissioners dated July 9, 2025.

³⁰ Exhibit 16, Email from Brandon Reich to John Lewis, July 10, 2025, forwarded by Cristina Gispert.

³¹ Exhibit 17, LA 25-001, Legislative Amendment, Administrative Ordinance No. 1480 related to battery energy storage systems in the Marion County Urban and Rural Zone Codes Chapters 16 and 17.

Remington provided comments in opposition at the Board's July 9 meeting. Remington also provided oral comments at the hearing, expressing concern that as a project applicant and on behalf of the property owner, no notice had been provided.³²

The Planning Director, who ultimately issued the application denial in the instant case, presented oral testimony which expressly assured the Board that the BESS Project would not be subject to Ordinance, referring to the property owner:

He also has an application in. We received it last week for a different site, and these amendments don't affect that application either. These amendments affect any application going forward, nothing that's currently in process.³³

The Planning Director's representation that the BESS Project application would not be affected by the legislation appeared to induce passage by the Board, and Remington reasonably relied upon the assurance that its application would not be affected by the newly enacted ordinance. But that comfort was short lived given the following contradictory findings in the Planning Director's denial, issued three weeks later, stating:

The Marion County Board of Commissioners signed Ordinance 1480 on July 9th, 2025, in order to add clarifying sections of text in chapters 16 and 17 of the MCC that outright prohibit BESSs. These sections of code were added for clarification only, because BESSs were not permitted under any section of code prior to July 9th, 2025.

The applicant was made aware of the County's determination but still chose to apply for an administrative review to construct a BESS under the erroneous classification of a utility facility necessary for public service. There is no way to approve a BESS in Marion County and therefore the application must be denied.³⁴

In sum, despite the Planning Director's initial comments, the Planning Director still applied the Ordinance to deny Remington's Application. As noted above, the Planning Director's conclusion as to the applicability of the Board's action clearly is contrary to established law.

D. The County Denied the BESS Project and Remington Appealed

On August 1, 2025, the Planning Director denied Remington's application concluding that due to the passage of the Ordinance, BESS are not "utilities facilities" and there is not any other use they could fall under, therefore they are not allowed in any zone. The County further determined that even if BESS were to be allowed, the BESS Project does not qualify because Remington failed to satisfy applicable utility facility "necessity" criteria. Denial at 3.

³² See Exhibit 15.

³³ Exhibit 18 - Board of Commissioners for Marion County July 9, 2025 Meeting Transcribed at 3.

³⁴ Denial at 3.

On August 14, 2025, Remington timely filed the Notice of Appeal in this case under ORS 215.417 and MCC 17.115.110 identifying six legal errors, including that:

- The Decision was legally incorrect and inconsistent with applicable law, including by misinterpreting and misapplying the factors in MCC 17.136.040(I), ORS 215.275(2), and Oregon Administrative Rules (“OAR”) 660-033-0130(16) regarding utility facilities necessary for public service;
- The Decision was legally incorrect and inconsistent with applicable law, including ORS Ch. 215, Statewide Planning Goal 3, and interpreting case law, including but not limited to *Brentmar*, 321 Or 481;
- The Decision was factually incorrect and not supported by substantial evidence;
- The Decision incorrectly concludes that BESS cannot be utility facilities necessary for public service;
- The Decision incorrectly concludes that the BESS Project could not satisfy one or more of the factors in MCC 17.136.040(I); and
- The Decision improperly applies of ORS 215.296.

The Notice of Appeal is attached as Exhibit 19.

After the appeal was filed, Planning Department staff told Remington that the reason for the denial was the Ordinance. In the course of corresponding with the Remington and Remington’s counsel regarding scheduling this appeal hearing, the Planning Department staff stated plainly to Remington’s counsel that the Ordinance was the central rationale for denying the BESS Project, telling Remington that it would lose before the Hearings Officer and the Board because BESS “are not allowed in any zone in Marion County:”

With all due respect for you guys, there is no path to approval here and any preparation afforded by postponing the hearing won’t change that. The BOC is going to affirm their own interpretation that BESS are not in our code and are not allowed in any zone in Marion County. The HO will affirm the staff decision because it is correct. This process we are engaged in leads to an appeal of the County decision to the state land use board of appeals (LUBA).³⁵

The Planning Director’s focus in denying the application seems to have been on the County’s Ordinance prohibiting BESS in all zones within the County.

The sections that follow detail why this conclusion is legally incorrect and should be reversed.

³⁵ Exhibit 20 - Email from Associate Planner, John Speckman dated October 8, 2025.

IV. ARGUMENT

This section describes the applicable statutory criteria that apply to siting a utility facility on EFU land in Oregon, then applies that framework to the BESS Project. The heart of the issue is whether a BESS is a utility facility (yes), and whether Remington has demonstrated that there are no reasonable alternatives outside of the EFU zone to site the BESS Project (it has). This section then speaks to the limitations on counties to regulate utility facilities on EFU land, and describes why the Ordinance (banning BESS in all of Marion County) is void as it applies to EFU land.

A. Relevant Utility Facility Statutory Criteria

Two statutes are most relevant to the Hearing Officer's review of this case. First, ORS 215.283(1)(c) allows for "[u]tility facilities necessary for public service" to be sited on EFU-zoned land.³⁶ Generally, land that a county has designated as an EFU zone under its comprehensive land use plan is to be used exclusively for farm use, unless otherwise provided by specific statutes, such as here. *See* ORS 215.203(1); *Sprint PCS v. Washington County*, 186 Or. App 470, 481, 63 P3d 1261 (2003) (utility facilities are permitted uses on EFU lands because they advance public utility service needs.). "Utility facilities necessary for public service" are allowed uses as of "right" subject solely to ORS 215.275 and counties may not impose additional criteria beyond the applicable statutes. *Brentmar*, 321 Or at 483. The key question, then, is whether the BESS Project is a "utility facility necessary for public service." Subsection IV.B of this brief addresses why BESS are utility facilities.

Second, ORS 215.275 tells us how to determine whether a project is a utility facility that is "necessary for public service." Subsection (1) says that a utility facility is "necessary" for public service if the facility "must be sited in an exclusive farm use zone in order to provide the service," and subsection (2) sets out the "factors" which must be considered to demonstrate that a utility facility is "necessary." The heart of Subsection (2) is that it requires showing that "reasonable alternatives" to siting on EFU land were considered, but that, because of one of six factors enumerated in the statute, it nevertheless was necessary to site the utility facility on EFU land. Subsection IV.C of this brief addresses in detail why the BESS Project satisfies the alternatives analysis requirement.

The relevant portion of ORS 215.275 states as follows:

(2) To demonstrate that a utility facility is necessary, an applicant...must show that reasonable alternatives have been considered and that the facility must be sited in an exclusive farm use zone due to one or more of the following factors:

(a) Technical and engineering feasibility;

(b) The proposed facility is locationally dependent. A utility facility is locationally dependent if it must cross land in one or

³⁶ Note that the difference between ORS 215.213(1)(c) and ORS 215.283(1)(c) is whether the County has adopted marginal lands system prior to 1993; however, the statutory language is the same for utility facilities. Because Marion County did not adopt a marginal lands system prior to 1993, ORS 215.283 applies.

more areas zoned for exclusive farm use in order to achieve a reasonably direct route or to meet unique geographical needs that cannot be satisfied on other lands;

(c) Lack of available urban and nonresource lands;

(d) Availability of existing rights of way;

(e) Public health and safety; and

(f) Other requirements of state or federal agencies.

ORS 215.275(2); *see also* OAR 660-033-0130(16) implementing ORS 215.275.

The provisions of ORS 215.275 strike a balance between the need to site utility facilities on EFU land and the legislative policy to preserve farmland. *Sprint PCS*, 186 Or App at 475. The six factors in ORS 215.275(2) are intended to provide a “roadmap to courts and county hearings officers for what they are to consider and what not to consider when defining necessity.” *Id.* at 476. When deciding whether it is necessary to site a public utility facility on EFU land, local governments must analyze any alternatives based on ORS 215.275. *Id.* They may not import additional policy considerations into their analysis. *Id.*

The two statutes combined tell us that two things are required to site a project on EFU land: (1) the facility is a “utility facility” and (2) reasonable alternatives were considered, but due to one or more of the factors—not all—the facility needs to be sited on EFU land. ORS 215.283(1)(c) and ORS 215.275 together with OAR 660-033-0130(16), are incorporated in the MCC at MCC 17.136.040(I).

B. The BESS Project Fits Within the Broad General Category of “Utility Facility”; The County Erred by Finding Otherwise

The Planning Director incorrectly concluded that the BESS Project is not a “utility facility necessary for public service.” The Planning Director provides no legal authority for this conclusion, apart from the Board’s own and wholly unsubstantiated interpretation that BESS were not expressly contemplated by the Legislative or the LCDC in ORS 215.283(1) or OAR 660.033, respectively. That interpretation is not only inconsistent with applicable case law; it is beyond the County’s interpretive authority, as described below.

1. Oregon Courts interpret “utility facility” broadly to include any equipment or apparatus that functions to perform a service

Although the term “utility facility” is not defined in Oregon state statute or rule, Oregon courts interpret the statutory phrase to encompass a broad, general category of utility facilities that function or perform or provide a public utility service need. *See Keicher*, 175 Or App 633; *Cox*, 174 Or App at 343–44. The Planning Director’s decision ignores this well-established precedent.

The Oregon Court of Appeals in *Cox* broadly described “utility facilities” as follows:

“[U]tility facility,” as used in ORS 215.283(1)(d), [] mean[s] *equipment or apparatus*, whether standing alone or as part of a structure, *that functions to perform or provide, in whole or in part, a service such as* the production, transmission, *delivery* or furnishing of *electricity* or natural gas, the purification of drinking water, or the treatment of solid or liquid waste. The equipment comprising the facility need not be extensive or complex; in addition, the facility may include ancillary or off-site equipment such as transmission lines. See, e.g., ORS 215.283(1)(L) (referring to the “placement of utility facilities overhead and in the subsurface of public roads and highways”). However, at a minimum, the facility must include some equipment or apparatus that itself performs the relevant production, transmission or similar function or service.” 174 Or App at 343–44.

Stated another way, “a project or site in which equipment or apparatus that is present...performs the critical functions that constitute a service at issue” are utility facilities within the meaning of ORS 215.283(1).

Oregon courts and LUBA have acknowledged a broad range of facilities that qualify as “utility facilities,” for example:

- Cell towers, while owned by private companies, are still utility facilities. *McCaw Communications v. Marion County*, 96 Or App 552, 773 P2d 779 (1989) and *Sprint PCS*, 186 Or App at 475 (cellular communication facilities provide a “...a public service...” and thus are an eligible “utility facility”).
- Radio transmission towers are “utility facilities necessary for public service.” *Meland v. Deschutes County*, LUBA No. 83-086 (Jan. 25, 1984) (Final Order) (citing 41 Op Atty Gen 77, 81 (1981) which found the same as radio towers “supply the public with a commodity or service of public consequence or need”).
- A 12-mile transmission line which transmitted energy from a single wind turbine electrical generator to the grid (as opposed to serving multiple generators) qualified as a “utility facility.” *WKN Chopin, LLC v. Umatilla County*, LUBA No. 2012-016 (July 11, 2012) (Final Order).

2. Legislative history supports an inclusive reading

This interpretation is consistent with available legislative history. No evidence indicates the Legislature intended “utility facilities necessary for public service” to exclude technology like a BESS, as the County has done here. “Utility facilities necessary for public service” have been permitted as nonfarm uses in farm zones since the original bill’s inception in 1963.

The first provisions that allowed for the establishment of nonfarm uses within farm zones were provided for in ORS 215.213 (enacted pursuant to Senate Bill (“SB”) 129 and HB 1230).³⁷ ORS 215.283(1)(d) was later adopted verbatim in 1983, specifically applying to nonmarginal county lands. ORS 215.213(1) and ORS 215.283(1) are identical.

³⁷ Exhibit 21 – Second House Amendment to Senate Bill 129 by Unanimous Consent (May 28, 1963).

In enacting ORS 215.213, and in discussing why “utility facilities” were included in the bill, the legislature left the list open ended. Testimony at the committee hearing explained that the utility facility language was intended to capture “*such things as* power substations or transformer substations *and so on*,” which sometimes were sited in rural areas. *See* House Committee on Local Government Hearing, May 28, 1963, Audio Recording of Hearing at 51:25.³⁸ The Land Conservation and Development Council (“LCDC”) agreed at its July 20, 2001, public hearing regarding implementation of ORS 215.275 through administrative rule under OAR 660-033-0130(16). LCDC explained: “utility facility...has been in the statute since 1963 and is intended to cover a wide range of utility things, such as cell towers, sewer lines, [and] booster stations.”³⁹

Further, in discussing the legislative history of ORS 215.283(1) specifically, the Oregon Supreme Court took judicial notice of the interpretation provided by the Energy Facility Siting Council’s Assistant Attorney General stating:

When those statutes were first adopted, there were five categories of non-farm use that were allowed on farm land. One of those five categories was utility facilities necessary for public service. So, at the very outset in the farm use laws of Oregon we had this provision allowing utility facilities on farm land[.] Then, about 10 years later, the legislature amended—made the first of many subsequent amendments to those statutes, and * * * one of the things they did was divide up the utility facility category [and] create [] two subcategories. One was for power plants, they made that a conditional use[.] * * * We believe what that history shows is general [legislative] intent * * * to use [ORS] 215.283(1)(d) as what I would call *a general category for utility facilities*, and then they’ve created a number of specific subcategories for particular types of utility facilities.”

Save Our Rural Oregon v. Energy Facility Siting Council, 339 Or 353, 384, 121 P3d 1141 (2005) (emphasis added).

The BESS Project is the type of facility contemplated by the foregoing cases. Not only do the BESS equipment and facilities function to perform the service of storage and delivery of electricity, but as described in detail in Section II.A above, BESS are an increasingly critical element of the state’s energy infrastructure. The Oregon Legislature, ODOE, and electric utilities alike have acknowledged BESS are an essential part of achieving Oregon’s clean energy goals and mandates. BESS supply the public with a necessary electrical storage and delivery service that is integral to the larger grid, and here to the PacifiCorp grid, the Parrish Gap substation (as the POI) and related transmission (both indisputably utility facilities). The BESS Project would provide 199 MW of 4-hour duration storage, which PacifiCorp and the state of Oregon have both stated on numerous occasions is necessary for future electricity use, grid reliability, and to meet ambitious state clean energy goals.⁴⁰ *Supra* Section II.A. These are critical public utility service functions.

³⁸ We are prepared to provide the audio recording upon request.

³⁹ Exhibit 22 at 5 (Statement of Ron Eber, LCDC Rural Lands Specialist at the time, responding to questions from Commissioner McRobert).

⁴⁰ 41 Op Atty Gen 77, 81 (1981), 1981 WL 15226 (Aug. 19, 1981) (A use is a “utility facility” under ORS 215.213(d) (currently codified as 215.213(c)) if it supplies the public with a commodity or service of public

In sum, the Director’s decision includes no interpretive analysis or reference to established case law, and the decision of denial is inconsistent with such appellate rulings. Denial at 3, Conclusion 7.

C. The BESS Project Satisfies the ORS 215.275 Siting Criteria

Once it is established that a facility is a “utility facility,” the question becomes whether it is necessary to site that facility on EFU land. The Legislature provided the sole framework for making this determination in ORS 215.275, as described in the Section IV.A above, and the County must use this framework to evaluate the BESS Project. When determining whether it is necessary to site a public utility facility on EFU land, local governments must analyze any non-EFU alternatives based solely on ORS 215.275. They may not import additional policy considerations into their analysis. *Sprint PCS*, 186 Or App at 476.

This Section IV.C. describes the characteristics of an alternatives analysis, shows how the County misapplied ORS 215.275(2), and shows why the BESS Project satisfies one or more of the factors ORS 215.275.

1. The scope of the alternatives analysis is defined by the Applicant’s business objectives that advance the goal of providing service

While non-EFU alternative sites must be considered, Oregon courts and LUBA have imposed constraints on the scope of alternatives that must be considered. *See Sprint PCS*, 186 Or App 470.

Key constraints include the following:

- Only sites outside of EFU land must be considered. *Id.* at 479 (“reasonable alternatives” refers to reasonable alternative sites to EFU land”).
- Costs of a project on an alternative site may be considered, but not land costs, and costs cannot be the only factor. *Id.*
- The applicant’s reasonable business objectives that advance the goal of providing utility service define the scope of the alternatives to be considered. *Id.*

Remington’s Alternatives Analysis (Appendix A) describes its key business objectives and identifies specific siting criteria that flow from those objectives, guiding how BESS sites are evaluated. For example, key objectives include connecting to a PacifiCorp-owned substation in the Willamette Valley Service Area with 115 kV higher of available transfer capacity. *See Supra* Section II.C; Appendix A.

Friends of Marion County (“FOMC”) and the County make much of the map submitted by FOMC of Portland General Electric substations, arguing that it shows that the BESS Project could have been located outside of EFU zones. But a core business objective of the Remington

consequence or need and is so impressed with a public interest that it comes within the field of public regulation, and “as such is a public utility within the broad meaning of the term.”)

BESS Project, and one that is essential to providing utility service, is that the BESS be sited adjacent to a *PacifiCorp* substation to help address the utility needs of PacifiCorp. Put simply, PGE substations are irrelevant to this application. Taking FOMC’s assertion to its logical conclusion would mean so long as one utility had a substation outside of EFU land with capacity for a BESS, then no other utility could have battery storage next to a substation in EFU. This is an illogical outcome that stems from an erroneous application of the alternatives analysis. Here, a key siting criterion for the BESS Project is the ability to connect to a PacifiCorp substation in order to provide battery storage to PacifiCorp. Portland General Electric substations are irrelevant to the analysis.

2. The County misapplied ORS 215.275(2), treating the factors as criteria

The County erred by treating the *factors* in ORS 215.275(2) as “approval criteria” that must each be satisfied. After each of the factors, the County stated “the proposal did not meet this criterion,” showing that it misunderstood that Remington only needs to meet *one* of the six factors. Here, not only did the County improperly import various additional policy considerations into its analysis, it also misinterpreted and misapplied the factors in MCC 17.136.040(I), ORS 215.275(1) and (2), and OAR 660-033-0130(16).

3. Remington meets three of the factors to demonstrate necessity under ORS 215.275(2)

ORS 215.275(2) sets out what an applicant must prove in order to demonstrate that a utility facility is necessary. An applicant must show that “reasonable alternatives have been considered” and that the facility “must be sited in an exclusive farm use zone due to one or more of [six] factors.” ORS 215.275(2). Textually, the factors set out in ORS 215.275(2) serve to define the focus of the applicant’s “consideration” of non-EFU alternatives “necessary” to reject reasonable alternatives. *Sprint PCS*, 186 Or App at 476.

Here, the record demonstrates that Remington considered reasonable non-EFU alternatives to the current location and the use of EFU lands, however, at least three of the statutory factors nevertheless required it to locate the facility in an EFU zone. *See* Appendix A.

a. Technical and engineering feasibility

Siting BESS projects involve numerous technical and engineering considerations, the most important of which here is the proximity to a substation with available capacity to interconnect to the grid within the proposed service area. Remington’s technical analysis demonstrates the BESS must be located within one mile of the Parrish Gap substation in order to provide the BESS service to PacifiCorp within the Willamette Valley Service Area. *See* Appendix A at 5–8.

The BESS Project must be sited within 1 mile to account for various crossing agreements, procurement lead times for project infrastructure like utility poles, and power loss in transmission lines as power from BESS must be able to travel in and out of the facility. Appendix A at 3–4. The BESS Project substation also must have “available transfer capacity” of 115kV or higher to accept the BESS Project’s power with feasible network upgrades that can be implemented within the PacifiCorp’s required timeframe (here by 2029). Appendix A at 4.

Based on these technical and engineering considerations, the Remington site adjacent to the Parrish Gap Substation is the only feasible location that could accommodate these criteria and meet PacifiCorp's timing requirements. Appendix A at 4–8.

b. Locationally dependent

The BESS is locationally dependent. A utility facility is locationally dependent if it must cross land in one or more areas zoned for exclusive farm use in order to achieve a reasonably direct route or to meet unique geographical needs that cannot be satisfied on other lands. OAR 660-033-0130(16).

Here, unique geographical needs of the project cannot be satisfied in other locations. Similar to above, no other sites could accommodate a minimum of 15 contiguous acres of land within 1 mile of a substation within PacifiCorp's transmission system in the Willamette Valley Service Area with available capacity of 115kV or higher. As described above, the BESS is not standalone and must be sited within 1 mile of a substation with available transfer capacity in order to allow for the requisite energy to flow back and forth to support that substation.

Further, PacifiCorp's transmission system in the Willamette Valley is non-contiguous with its system in Washington and Central Oregon. It is connected only by transmission lines owned by other utilities. To store energy located within the Willamette Valley Service Area, the BESS Project must be located within this same area. Locating storage outside of this area would trigger "wheeling" charges (charges for transferring, or "wheeling," electricity through lines owned by other utilities such as Portland General Electric or Bonneville Power Administration), as well as increase the transmission line loss, which is the loss of electricity from the system as it is carried over long distances.

c. Lack of available urban and non-resource lands

As detailed further in Appendix A, no urban or non-resource lands are available that meet the project objectives and siting criteria.

4. The County conflated the public health and safety factor, but the BESS Project is not using that factor

"Public health and safety" is another one of the six factors under ORS 215.275(2) that can allow a utility facility necessary for public service be sited in an EFU zone. This factor speaks to uses that come with significant risk such that they should not be located in more populated, urban areas. However, Remington does not argue that the BESS Project needs to be sited on EFU lands for public health and safety reasons. Instead, as outlined above, Remington relies on the technical, engineering and locational factors to support the finding that the BESS Project needs to be sited in EFU here.

Still, much of the Planning Director's Decision focuses on speculative reasons for why the BESS Project is dangerous or harmful, and therefore should not be allowed in EFU. *See Denial* at 5. The County misconstrues and misapplies this factor. ORS 215.275 does not require any showing regarding potential public health or safety risks and those considerations are not relevant to the

ORS 215.275 inquiry. The County is simply not permitted to import such unsubstantiated considerations into its review. *Brentmar*, 321 Or. at 496. And even if it could (which it cannot), the allegations are unsupported. Remington demonstrated and can provide further evidence at hearing that BESS systems are designed such that the chances of fire are nearly zero and mitigation is in place in the event those systems fail. BESS are designed in accordance with the national, state and local code standards, and are equipped with emergency response plans in place for the unlikely event of fire.⁴¹ Further, the applicable fire district here, Turner Fire District, commented on the BESS Project, but the comments did not oppose the BESS Project. It instead listed Oregon Fire Code provisions that the BESS Project will need to comply with.⁴²

5. Remington properly considered costs as one of many factors in siting the BESS Project

In supporting an alternatives analysis, costs related to non-EFU sites may be considered, they just cannot be the only consideration. ORS 215.275(3); OAR 660-033-0130(16)(a)(B). Contrary to the County’s determination, cost was not the sole deciding factor in selecting the location for the BESS Project. Denial at 6. As described above and throughout Appendix A, the BESS Project objectives and siting criteria were crucial to the site selection, and cost of potential network upgrades to alternative sites was one of many factors considered.

D. The County’s Authority is Limited to Applying ORS 215.275, so the Farm Impacts Test Does Not Apply

In addition to the errors described above, the County improperly required Remington to address the requirements of MCC 17.136.060(A)(1) (the “farm impacts test”). However, that test does not apply here and the County is precluded from considering standards, criteria or such policies external to ORS 215.275.

The farm impacts test requires a showing that “the use will not force a significant change in, or significantly increase the cost of, accepted farm or forest practices on surrounding lands devoted to farm or forest use.” *Id.* This code section is derived from ORS 215.296. But ORS 215.296 only applies to uses allowed under ORS 215.213(2) or ORS 215.283(4). Neither are at issue here. A “utility facility necessary for public service” is allowed as of right under ORS 215.283(1). Therefore, the statutory criteria under ORS 215.296 simply does not apply. The County is prohibited from expanding applicability of the criteria under ORS 215.296 beyond subsection (2). *See Brentmar*, 321 Or 481. As detailed by the Court in *Brentmar*, uses delineated in ORS 215.213(1) or ORS 215.283(1) are uses “as of right,” which are not subject to additional local criteria. And, in such cases of direct conflict with a statute, the code is invalid and statute controls. *See Hanson*, LUBA No. 2024-065.

But, even if the farm impacts test did apply, the BESS Project does not force a significant change in accepted farm or forest practices on surrounding lands devoted to farm or forest use, nor

⁴¹ *See* Exhibit 11(b) at 10-11, Section 2.4 (Safety).

⁴² *See* Fire Marshal Comments Letter for Administrative Review 25015, submitted to the County via email July 24, 2025.

would it significantly increase the cost of accepted farm or forest practices on surrounding lands devoted to farm or forest use.

E. The Ordinance Banning BESS is Invalid as to EFU Land and Does Not Apply

Underlying the Planning Director's denial is its reliance on the Ordinance banning BESS to conclude that BESS are not utility facilities and are not allowed in any County zone. In fact, the Ordinance appears to be the primary, if not sole, basis for the non-facility interpretation. As demonstrated herein, the Ordinance is unlawful and void on its face as applied to EFU land. It also does not apply to the current application, for the reasons set forth below.

First, it is well established under Oregon law that when a county's EFU zoning code deviates from the statutory requirements in ways that conflict with the statute, the statute controls and the offending ordinance provisions are void. *See Hanson*, LUBA No. 2024-065 (citing *Riggs*, 167 Or App at 9-10) ("Although counties adopt their own EFU zones, the EFU zone is a creature of statute. In cases where a county's EFU zone deviates from the statutory EFU zone in ways that conflict with the statute, the statute controls."). Therefore, in this context, local law implements state law, and no deference is afforded to the county's interpretation. *Id.* None should be afforded here.

Here, the County's ban of BESS as authorized utility facilities on EFU lands under the Ordinance conflicts with the plain language set forth in ORS 215.283(1) and 215.275 and related appellate rulings. The County is not authorized to impose additional local criteria beyond the statute. *Brentmar*, 321 Or at 483. This is all the more true when applied to a utility facility that meets one or more of the factors set out in ORS 215.275. The County's actions as to EFU lands are void.

Second, even if the Ordinance is valid as applied to EFU land, under Oregon's statutory goal post standard (ORS 215.427(3)(a)), and the County's own interpretation provided via email and at the Ordinance adoption hearing, the approval or denial of the application must be based on the standards or criteria in effect at the time the application was submitted. Remington's application was submitted prior to the Ordinance's passage and deemed complete within 180 days thereafter.

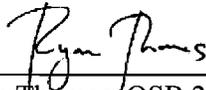
The Ordinance simply does not apply to the County's review and final action.

V. CONCLUSION

The BESS Project is a utility facility that is necessary for public service. Remington demonstrated that the project must be sited in the EFU zone at the proposed location based on consideration of reasonable alternatives and the factors set forth in ORS 215.275. The Director's decision to deny the application misconstrued the law and the County's findings are unsupported by substantial evidence. The denial should be reversed, and AR 25-015 should be approved on appeal.

DATED: October 31, 2025

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Enrolled House Bill 2021

Sponsored by Representatives MARSH, PHAM, Senators BEYER, DEMBROW; Representatives ALONSO LEON, CAMPOS, CLEM, DEXTER, FAHEY, GRAYBER, HELM, HOLVEY, HUDSON, KOTEK, KROPF, NERON, NOSSE, POWER, REARDON, REYNOLDS, SALINAS, SCHOUTEN, SMITH WARNER, VALDERRAMA, WILDE, Senators GELSER, PATTERSON

CHAPTER

AN ACT

Relating to clean energy; creating new provisions; amending ORS 469A.005, 469A.205, 469A.210, 757.247, 757.603, 757.646 and 757.649; repealing ORS 469A.062; and prescribing an effective date.

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

CLEAN ENERGY TARGETS

SECTION 1. Definitions. As used in sections 1 to 15 of this 2021 Act:

(1) "Baseline emissions level" means:

(a) For an electric company, the average annual emissions of greenhouse gas for the years 2010, 2011 and 2012 associated with the electricity sold to retail electricity consumers as reported under ORS 468A.280, or rules adopted pursuant thereto.

(b) Except as provided in paragraph (c) of this subsection, for an electricity service supplier, 0.428 metric tons of carbon dioxide equivalent per megawatt-hour associated with the electricity sold by the electricity service supplier to retail electricity consumers as reported under ORS 468A.280, or rules adopted pursuant thereto.

(c) For an electricity service supplier that is first certified under ORS 757.649 on or after the effective date of sections 1 to 15 of this 2021 Act, the baseline emissions level defined in paragraph (b) of this subsection shall be adjusted downward in the certification of the electricity service supplier under ORS 757.649 to a level that:

(A) Reflects the continual progress made by other electricity service suppliers toward meeting the clean energy targets set forth in section 3 of this 2021 Act, as demonstrated under section 5 (3) of this 2021 Act; and

(B) Prevents the creation of a competitive disadvantage among electricity service suppliers.

(2) "Community-based renewable energy" means one or more renewable energy systems that interconnect to utility distribution or transmission assets and may be combined with microgrids, storage systems or demand response measures, or energy-related infrastructure that promotes climate resiliency or other such measures, and that:

(a) Provide a direct benefit to a particular community through a community-benefits agreement or direct ownership by a local government, nonprofit community organization or federally recognized Indian tribe; or

(b) Result in increased resiliency or community stability, local jobs, economic development or direct energy cost savings to families and small businesses.

(3) "Electric company," "electricity service supplier" and "electric utility" have the meanings given those terms in ORS 757.600.

(4) "Environmental justice" means equal protection from environmental and health hazards and meaningful public participation in decisions that affect the environment in which people live, work, learn, practice spirituality and play.

(5) "Environmental justice communities" includes communities of color, communities experiencing lower incomes, tribal communities, rural communities, coastal communities, communities with limited infrastructure and other communities traditionally underrepresented in public processes and adversely harmed by environmental and health hazards, including seniors, youth and persons with disabilities.

(6) "Greenhouse gas" has the meaning given that term in ORS 468A.210.

(7) "Nonemitting electricity" means electricity, including hydroelectricity, that is generated and may be stored in a manner that does not emit greenhouse gas into the atmosphere.

(8) "Retail electricity consumer" means a retail electricity consumer, as defined in ORS 757.600, that is serviced by a retail electricity provider and located in this state.

(9) "Retail electricity provider" means an electric company or electricity service supplier.

SECTION 2. Policy. It is the policy of the State of Oregon:

(1) That retail electricity providers rely on nonemitting electricity in accordance with the clean energy targets set forth in section 3 of this 2021 Act and eliminate greenhouse gas emissions associated with serving Oregon retail electricity consumers by 2040;

(2) That electricity generated in a manner that produces zero greenhouse gas emissions also be generated, to the maximum extent practicable, in a manner that provides additional direct benefits to communities in this state in the forms of creating and sustaining meaningful living wage jobs, promoting workforce equity and increasing energy security and resiliency;

(3) That, under existing federal and state law, the state engages in meaningful consultation with federally recognized Indian tribes. This includes consultation on the siting, permitting and construction of new energy facilities as defined in ORS 469.300, and new projects subject to the policy specified in 18 C.F.R. 2.1c, prior to such actions that are likely to adversely impact designated sites of archeological significance as defined in ORS 358.905, or properties of traditional, cultural and religious importance under the National Historical Preservation Act and the 36 C.F.R. 800 implementing regulation; and

(4) That implementation of sections 1 to 15 of this 2021 Act be done in a manner that minimizes burdens for environmental justice communities.

SECTION 3. Clean energy targets. (1) A retail electricity provider shall reduce greenhouse gas emissions, measured for an electric company as greenhouse gas emissions reported under ORS 468A.280, and measured for an electricity service supplier as greenhouse gas emissions per megawatt-hour as reported under ORS 468A.280, to the extent compliance is consistent with sections 1 to 15 of this 2021 Act, by the following targets:

(a) By 2030, 80 percent below baseline emissions level.

(b) By 2035, 90 percent below baseline emissions level.

(c) By 2040, and for every subsequent year, 100 percent below baseline emissions level.

(2) Nothing in sections 1 to 15 of this 2021 Act may be construed as establishing a standard that requires a retail electricity provider to track electricity to end use retail customers.

SECTION 4. Clean energy plans; electric companies. (1) An electric company shall develop a clean energy plan for meeting the clean energy targets set forth in section 3 of this 2021 Act concurrent with the development of each integrated resource plan.

(2) The electric company shall submit the clean energy plan to the Public Utility Commission and the Department of Environmental Quality.

(3)(a) A clean energy plan must be based on or included in an integrated resource plan filing made no earlier than January 1, 2022, and filed no later than 180 days after the integrated resource plan is filed, or developed within an integrated resource planning process and incorporated into the integrated resource plan filed with the commission.

(b) Notwithstanding paragraph (a) of this subsection, a clean energy plan developed by a multistate jurisdictional electric company must be based on or contained in other information developed consistent with a cost-allocation methodology approved by the commission.

(4) A clean energy plan must:

(a) Incorporate the clean energy targets set forth in section 3 of this 2021 Act;

(b) Include annual goals set by the electric company for actions that make progress towards meeting the clean energy targets set forth in section 3 of this 2021 Act, including acquisition of nonemitting generation resources, energy efficiency measures and acquisition and use of demand response resources;

(c) Include a risk-based examination of resiliency opportunities that includes costs, consequences, outcomes and benefits based on reasonable and prudent industry resiliency standards and guidelines established by the Public Utility Commission;

(d) Examine the costs and opportunities of offsetting energy generated from fossil fuels with community-based renewable energy;

(e) Demonstrate the electric company is making continual progress within the planning period towards meeting the clean energy targets set forth in section 3 of this 2021 Act, including demonstrating a projected reduction of annual greenhouse gas emissions; and

(f) Result in an affordable, reliable and clean electric system.

(5) Actions and investments proposed in a clean energy plan may include the development or acquisition of clean energy resources, acquisition of energy efficiency and demand response, including an acquisition required by ORS 757.054, development of new transmission and other supporting infrastructure, retirement of existing generating facilities, changes in system operation and any other necessary action.

(6) The commission shall ensure that an electric company demonstrates continual progress as described in subsection (4)(e) of this section and is taking actions as soon as practicable that facilitate rapid reduction of greenhouse gas emissions at reasonable costs to retail electricity consumers.

SECTION 5. Emissions verification; compliance. (1)(a) For the purposes of verifying emissions and determining compliance with the clean energy targets set forth in section 3 of this 2021 Act, the Department of Environmental Quality shall determine:

(A) For each electric company, the electric company's baseline emissions level; and

(B) For each retail electricity provider, the amount of emissions reduction necessary for the retail electricity provider to meet the clean energy targets set forth in section 3 of this 2021 Act.

(b) The department shall use the method of measuring greenhouse gas emissions set forth in ORS 468A.280 to verify the projected greenhouse gas emissions reductions forecasted in a clean energy plan of an electric company or the information provided by an electricity service supplier under subsection (3) of this section.

(c) The department shall report the department's findings under paragraph (b) of this subsection to the Public Utility Commission and the electric company seeking acknowledgment of a clean energy plan by the commission.

(2) The Public Utility Commission shall acknowledge the clean energy plan if the commission finds the plan to be in the public interest and consistent with the clean energy targets set forth in section 3 of this 2021 Act. In evaluating whether a plan is in the public interest, the commission shall consider:

(a) Any reduction of greenhouse gas emissions that is expected through the plan, and any related environmental or health benefits;

(b) The economic and technical feasibility of the plan;

- (c) The effect of the plan on the reliability and resiliency of the electric system;
- (d) Availability of federal incentives;
- (e) Costs and risks to the customers; and
- (f) Any other relevant factors as determined by the commission.

(3) In addition to the emissions report required under subsection (4) of this section, an electricity service supplier shall report to the commission:

(a) An estimate of annual greenhouse gas emissions associated with electricity sold by the electricity service supplier to retail electricity consumers for the current year and following three years;

(b) Annual goals set by the electricity service supplier for actions described under paragraph (c)(A) of this subsection, including a projected reduction of annual greenhouse gas emissions associated with the electricity sold to retail electricity consumers by the electricity service supplier;

(c) Other information necessary, as determined by the commission, to demonstrate the electricity service supplier's anticipated ability to meet the clean energy targets set forth in section 3 of this 2021 Act, including:

(A) Actions to make continual progress toward meeting the clean energy targets that are consistent with providing affordable, reliable, and clean electricity service; and

(B) Anticipated actions to facilitate rapid reductions of greenhouse gas emissions at reasonable costs to retail electricity consumers served by the electricity service supplier; and

(d) The commission shall review the information supplied by an electricity service supplier under this subsection for the purposes of determining whether the electricity service supplier is making continual and reasonable progress toward compliance with the clean energy targets set forth in section 3 of this 2021 Act.

(4)(a) A retail electricity provider shall report annual greenhouse gas emissions associated with the electricity sold to retail electricity consumers by the retail electricity provider to the Department of Environmental Quality in the manner set forth under ORS 468A.280, or rules adopted pursuant thereto.

(b) The Public Utility Commission shall use the greenhouse gas emissions reported to the department under paragraph (a) of this subsection and provided to the commission to determine whether or not the retail electricity provider has met the clean energy targets set forth in section 3 of this 2021 Act.

SECTION 6. Utility Community Benefits and Impacts Advisory Group. (1) An electric company that files a clean energy plan under section 4 of this 2021 Act shall convene a Community Benefits and Impacts Advisory Group. The members of the electric company's Community Benefits and Impacts Advisory Group will be determined by the electric company with input from stakeholders that represent the interests of customers or affected entities within the electric company's service territory. Members must include representatives of environmental justice communities and low-income ratepayers and may include representatives from other affected entities within the electric company's service territory.

(2)(a) The electric company shall develop, in consultation with the Community Benefits and Impacts Advisory Group, a biennial report that assesses the community benefits and impacts of the electric company and shall file the biennial report with the Public Utility Commission. The biennial report must include a description of the following:

(A) Energy burden and disconnections for residential customers and disconnections for small commercial customers;

(B) Opportunities to increase contracting with businesses owned by women, veterans or Black, Indigenous, or People of Color;

(C) Actions within environmental justice communities within the electric company's service territory intended to improve resilience during adverse conditions or facilitate investments in the distribution system, including investments in facilities that generate non-emitting electricity;

(D) Distribution of infrastructure or grid investments and upgrades in environmental justice communities in the electric company's service territory, including infrastructure or grid investments that facilitate the electric company's compliance with the clean energy targets set forth in section 3 of this 2021 Act;

(E) Social, economic or environmental justice cobenefits that result from the electric company's investments, contracts or internal practices;

(F) Customer experience, including a review of annual customer satisfaction surveys;

(G) Actions to encourage customer engagement; and

(H) Other items as determined by the electric company and the electric company's Community Benefits and Impacts Advisory Group.

(b) The electric company may engage the Community Benefits and Impacts Advisory Group to advise on other matters, including but not limited to:

(A) The development and equitable implementation of a clean energy plan as determined in section 4 of this 2021 Act;

(B) The development and equitable implementation of a distribution system plan;

(C) Equitable contracting practices; and

(D) Best practices and strategies for reducing energy burden and disconnections in the electric company's service territory.

(3) The commission shall establish a process for an electric company to contemporaneously recover the cost associated with the development of biennial reports and the costs associated with compensation or reimbursement for time and travel of members of a Community Benefits and Impacts Advisory Group.

SECTION 7. Treatment of generation resources; greenhouse gas emissions accounting. For the purposes of determining compliance with sections 1 to 15 of this 2021 Act, electricity shall have the emission attributes of the underlying generating resource.

SECTION 8. Determining compliance with clean energy targets. (1)(a) In determining whether a retail electricity provider has complied with the clean energy targets set forth in section 3 of this 2021 Act, the Public Utility Commission shall take into consideration unplanned emissions in excess of the amount projected in an electric company's clean energy plan submitted under section 4 of this 2021 Act or the information provided by an electricity service supplier under section 5 (3) of this 2021 Act, to the extent:

(A) The emissions are in excess of the clean energy targets set forth in section 3 of this 2021 Act;

(B) Generation of electricity from nonemitting resources forecasted to meet electricity demand is less than expected, including variability in the generation, transmission, constraints or other causes; and

(C) The additional emissions are from the generation of electricity necessary to meet load.

(b) A retail electricity provider that continues to be out of compliance with the clean energy targets set forth in section 3 of this 2021 Act for more than 12 months as a result of unplanned emissions as described in paragraph (a)(A) to (C) of this subsection shall include a detailed plan on how the retail electricity provider will return to compliance as soon as practicable, subject to approval by the commission, for an electric company, in a subsequent clean energy plan or, for an electricity service supplier, in a subsequent submission to the commission under section 5 (3) of this 2021 Act.

(2) Greenhouse gas emissions associated with electricity acquired from net metering of customer resources or a qualifying facility under the terms of the Public Utility Regulatory Policies Act shall be excluded from the determination of the retail electricity provider's total greenhouse gas emissions.

(3) For purposes of determining whether a retail electricity provider has complied with the clean energy targets set forth in section 3 of this 2021 Act, electricity, other than unspecified market power, purchased from the Bonneville Power Administration for delivery

to retail electricity consumers shall be deemed to have the Bonneville Power Administration asset controlling supplier emission factor reported to the Department of Environmental Quality under ORS 468A.280, or rules adopted pursuant thereto.

(4)(a) For an electric company subject to ORS 469A.052, the commission shall initiate a process to update the avoided costs calculated pursuant to ORS 758.525 for a qualifying facility under ORS 758.505 to ensure avoided costs accurately reflect the characteristics of generators that contribute to compliance with sections 1 to 15 of this 2021 Act.

(b) The process initiated by the commission under paragraph (a) of this subsection may commence no sooner than two calendar years before the calendar year identified in the electric company's acknowledged integrated resource plan that shows the electric company will meet or exceed the requirements described in ORS 469A.052 (1)(h) and must conclude no later than the calendar year identified in the acknowledged integrated resource plan that shows the electric company will meet or exceed the requirements described in ORS 469A.052 (1)(h).

SECTION 9. Reliability pause. (1) Upon its own motion or at the request of an electric company, the Public Utility Commission may open an investigation pursuant to ORS 756.515 (1) to determine whether to grant a temporary exemption to an electric company's compliance with one or more of the requirements of ORS 469A.052 or a clean energy plan adopted pursuant to sections 1 to 15 of this 2021 Act.

(2) The commission may grant a temporary exemption if compliance:

(a) Conflicts with or compromises an electric company's obligation to comply with mandatory reliability standards set by the North American Electric Reliability Corporation;

(b) Violates or significantly impairs a resource adequacy requirement or recommendation of a multistate, regional or national entity;

(c) Violates or significantly impairs an electric company's ability to comply with a Balancing Authority Area declaration of an energy emergency alert under categories 1 through 3, as designated by the North American Electric Reliability Corporation, or successor categories adopted after the effective date of this 2021 Act;

(d) Results, regardless of best efforts to secure cost-effective nonemitting energy resources or funding for energy efficiency and conservation, in the provision of service at other than fair and reasonable rates; or

(e) Otherwise compromises the power quality or integrity of an electric company's system.

(3) An electric company making a request under this section shall submit to the commission an application that includes:

(a) An explanation of how compliance results in one or more of the issues described under subsection (2) of this section;

(b) A description of how a temporary exemption from compliance with one or more of the requirements of ORS 469A.052 or a clean energy plan adopted pursuant to sections 1 to 15 of this 2021 Act will avoid the issues identified under paragraph (a) of this subsection; and

(c) A plan to achieve full compliance with the requirements of ORS 469A.052 or a clean energy plan adopted pursuant to sections 1 to 15 of this 2021 Act, including an estimate of the time needed to achieve full compliance.

(4) In applying for a temporary exemption under this section, an electric company has the burden of demonstrating that the company's compliance will likely result in one or more of the issues described under subsection (2) of this section.

(5) If, after investigation, the commission determines that compliance with one or more of the requirements of ORS 469A.052 or a clean energy plan adopted pursuant to sections 1 to 15 of this 2021 Act will, more likely than not, result in one or more of the issues described under subsection (2) of this section, the commission shall:

(a) Issue an order exempting the electric company from one or more of the requirements of ORS 469A.052 or a clean energy plan adopted pursuant to sections 1 to 15 of this 2021 Act

for a length of time sufficient to allow the electric company to achieve full compliance in a manner that does not result in one or more of the issues described under subsection (2) of this section.

(b) Direct the electric company to take specific actions to remedy the potential issue or issues identified in the order.

(c) Direct the electric company to file within six months from the date the order is issued, or within a length of time determined by the commission to be reasonable, a report on the company's progress toward achieving full compliance with the requirements of ORS 469A.052 or a clean energy plan adopted pursuant to sections 1 to 15 of this 2021 Act.

(6) An order issued under subsection (5) of this section may not impose a penalty but may require the use of alternative compliance rates or payments, if applicable, as provided in ORS 469A.180 during the period of time a temporary exemption is in effect.

(7) An electric company may request an extension of a temporary exemption granted under this section. The electric company shall include in the company's request for an extension the same information required under subsection (3) of this section and shall have the burden of proof described under subsection (4) of this section.

(8) The commission shall provide the same opportunity to an electricity service supplier as provided an electric company under this section to receive a temporary exemption from compliance with one or more of the requirements of ORS 469A.052 or 469A.065 or sections 1 to 15 of this 2021 Act, or extension of such a temporary exemption, based on comparable procedures and criteria, to the extent the procedures and criteria under this section apply to an electricity service supplier as applied to an electric company under this section.

(9) The commission may grant an electric company or electricity service supplier a temporary exemption that is comparable to a temporary exemption granted to another electric company or electricity service supplier without conducting a separate investigation under subsection (1) of this section, if the commission determines that the conditions that resulted in the granted temporary exemption holds for the electric company or electricity service supplier.

(10) Nothing in this section is intended to permanently relieve an electric company or electricity service supplier of the obligation to comply with the requirements of ORS 469A.052 or 469A.065 or sections 1 to 15 of this 2021 Act.

SECTION 10. Cost cap for electric companies. (1) An electric company or an organization that represents broad customer interests and that has a written agreement with an electric company pursuant to ORS 757.072 may request that the Public Utility Commission open an investigation to provide accounting for investments made, costs incurred or forecasted costs estimated by the electric company for the purpose of compliance with sections 1 to 15 of this 2021 Act. In making a request under this section, the petitioner shall provide information regarding the investments or costs sufficient to determine whether the investments or costs contribute to compliance with sections 1 to 15 of this 2021 Act.

(2)(a) The commission shall provide parties to the proceeding with the procedural rights described in ORS 756.500 to 756.610, including the opportunity to develop an evidentiary record, conduct discovery, introduce evidence, conduct cross-examination and submit written briefs and oral arguments.

(b) The petitioner shall have the burden of showing, by a preponderance of the evidence, that the investment or cost contributes to compliance with sections 1 to 15 of this 2021 Act.

(c) The commission shall issue a written order with findings on the evidentiary record development in the proceeding.

(d) Except as provided under ORS 756.610, a determination by the commission that an investment or cost contributes to compliance with sections 1 to 15 of this 2021 Act is final and may not be reexamined.

(3) Upon determining that an investment or cost of an electric company contributes to compliance with sections 1 to 15 of this 2021 Act, the commission shall determine the actual

or anticipated rate impact for the investment or cost on the same basis and with the same treatment for similarly situated investments or costs in the most recently approved general rate case or other relevant rate making proceeding. The commission shall use the actual or anticipated rate impact of each investment or cost to calculate the cumulative rate impact and shall:

(a) Cumulatively calculate the rate impact caused by all investments or costs that have been the subject of a proceeding pursuant to this section, and must be included in calculation for the time period that the investment or cost would affect rates, as adjusted by any change in net costs expected or foreseeable at the time of inclusion;

(b) Make any adjustments to the cumulative rate impact if the initial rate treatment was calculated on the basis of forecasted rate impact;

(c) Allow parties to the proceeding to propose alternative rate or accounting treatment of the investment or cost to limit the potential rate impact of the investment or cost; and

(d) Utilize cost allocation methodologies for attributing rate impacts of investments or costs for multistate electric companies.

(4) Upon a determination that the actual or anticipated cumulative rate impact calculated under subsection (3) of this section exceeds six percent of the annual revenue requirement for a year, the commission shall provide an exemption from further compliance with the requirements of sections 1 to 15 of this 2021 Act. An exemption must be:

(a) Narrowly tailored to otherwise give full force and effect to the requirements of sections 1 to 15 of this 2021 Act that can be complied with without regard to the cumulative rate impact; and

(b) Limited in duration to only such time as is necessary to allow for additional investments and actual or forecasted costs to be made or incurred without exceeding the cumulative rate impact.

(5) A determination by the commission made under this section shall have no effect on and may not be used as collateral or presumptive evidence in any other proceeding that determines rate recovery of the investment or cost, including in a general rate case or in a proceeding under ORS 469A.120.

(6) The commission may, on its own motion pursuant to ORS 756.515, open a proceeding under this section and direct an electric company to make a filing described under subsection (1) of this section.

SECTION 11. Cost cap for electricity service suppliers. The Public Utility Commission shall provide the same opportunity to an electricity service supplier as provided an electric company under section 10 of this 2021 Act to receive a comparable exemption from further compliance with the requirements of sections 1 to 15 of this 2021 Act. A comparable exemption shall be provided based on comparable procedures and criteria, to the extent the procedures and criteria apply to an electricity service supplier as applied to an electric company under section 10 of this 2021 Act and adjusted to reflect applicable differences between electricity service suppliers and electric companies.

SECTION 12. Early compliance; incentive. In furtherance of the clean energy targets set forth in section 3 of this 2021 Act, the Public Utility Commission may apply a performance incentive for early compliance with one or more of the clean energy targets.

SECTION 13. No modification to Renewable Portfolio Standards. The requirements of sections 1 to 15 of this 2021 Act do not replace or modify the requirements of ORS 469A.005 to 469A.210.

SECTION 14. Rules. (1) The Public Utility Commission may adopt rules as necessary to implement sections 1 to 15 of this 2021 Act.

(2) The commission shall review and identify costs incurred by electric companies for obligations not similarly imposed on electricity service suppliers to comply with sections 1 to 15 of this 2021 Act that retail electric consumers served by electricity service suppliers may avoid by obtaining electric power through direct access and ensure that the identified

costs are recovered from all retail electricity consumers, are calculated and recovered on the basis of electricity consumption and bear a direct relationship to costs borne by retail electricity consumers served by electric companies.

SECTION 15. Electricity market participation. (1)(a) The Legislative Assembly finds that existing and future electricity markets will play a critical role in the transformation of the electric sector to nonemitting sources, as well as enabling load serving entities to reduce costs and serve load reliably by accessing resource and load diversity.

(b) The Legislative Assembly further finds that accounting and compliance frameworks designed to further the State of Oregon's policy objectives should support and be consistent with efforts to enhance the access to and scope of existing and potential future electricity markets.

(c) Acknowledging the inherently regional and multistate nature of electricity markets, the State of Oregon should coordinate and collaborate with other states to achieve the goal of aligning accounting methodologies where possible while also ensuring market rules do not undermine state policy objectives.

(d) Over time, the evolution of regional wholesale electricity markets may necessitate the modification of existing accounting and compliance rules to ensure the benefit of market participation are preserved.

(2) The Department of Environmental Quality may periodically review and update its calculation under ORS 468A.280 of the greenhouse gas emissions rates assigned to unspecified power purchases and purchases of power dispatched by centralized market operators to reflect the current resource mix and associated emissions of such purchases. The department shall ensure that the calculation of emissions rates under this section takes into account the potential for the energy imbalance market and other centralized market operations across a wide geographic area to increase the availability of nonemitting resources to serve load in the state.

SECTION 16. ORS 469A.062 is repealed.

SECTION 17. Sections 1 to 15 of this 2021 Act do not apply to an electric company, as defined in ORS 757.600, that serves electricity to 25,000 or fewer retail electricity consumers, as defined in ORS 757.600, located in this state.

STUDY ON SMALL SCALE RENEWABLE ENERGY PROJECTS

SECTION 18. (1) The State Department of Energy shall convene a work group to examine opportunities to encourage development of small scale and community-based renewable energy projects in this state that contribute to economic development and local energy resiliency. The work group shall include:

- (a) One state representative appointed by the Speaker of the House;
- (b) One senator appointed by the President of the Senate; and
- (c) Individuals who represent:
 - (A) Renewable energy developers;
 - (B) Investor-owned electric utilities in this state;
 - (C) Consumer-owned utilities in this state;
 - (D) Electricity service suppliers;
 - (E) Residential, commercial and industrial rate payers;
 - (F) Cities and counties;
 - (G) Tribal governments;
 - (H) Business Oregon;
 - (I) The Department of Land Conservation and Development;
 - (J) The renewable energy workforce;
 - (K) Environmental justice communities;
 - (L) The Public Utility Commission;

(M) The Public Purpose Fund Administrator described in ORS 470.555; and
(N) The Bonneville Power Administration.

(2) The work group shall study and examine:

(a) Potential barriers to project development in both investor-owned and consumer-owned utility service territory, including land use, local and state utility regulations, transmission capacity, contracts or obligations under the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 2601 et seq.), implementation and costs or financing;

(b) Potential economic benefits of small-scale renewable energy projects;

(c) Potential contributions of small-scale renewable energy projects to local energy resiliency;

(d) Access and ownership opportunities for low-income communities, Black, Indigenous and People of Color communities, tribal communities and rural and coastal communities with limited infrastructure;

(e) Opportunities for diverse models of ownership by local governments, nonprofit organizations and cooperatives of community members;

(f) Potential rate impacts; and

(g) Potential legislation that could encourage development of small scale and community-based renewable energy projects in this state.

(3) Members of the work group shall comply with requests from the State Department of Energy for data related to the work group's study and work under this section.

(4) The State Department of Energy shall submit a report describing the current status and trends for small scale and community-based renewable energy development in this state based on the findings made under subsection (2) of this section and may include recommendations to an interim committee of the Legislative Assembly related to energy no later than September 30, 2022.

SECTION 19. Section 18 of this 2021 Act is repealed on December 15, 2022.

CUSTOMER SUPPORTED RENEWABLES

SECTION 20. ORS 757.603 is amended to read:

757.603. [(1)(a)] (1) Except as provided in this [subsection] **section**, an electric company shall provide all retail electricity consumers that are connected to the electric company's distribution system with a regulated, cost-of-service rate option.

[(b)] (2)(a) The Public Utility Commission by order may waive the requirement [of paragraph (a) of this subsection] **in subsection (1) of this section** for any retail electricity consumer other than residential electricity consumers and small commercial electricity consumers.

(b) [Before] **Prior** to ordering a waiver under this [paragraph] **subsection**, the commission [shall] **may** conduct such studies as the commission deems necessary and **shall** provide notice and opportunity for public comment and hearings **regarding the proposed waiver**.

(c) The commission may order a waiver under this [paragraph] **subsection** if the commission finds, based on [an] **the** evidentiary record developed through **the conducted studies**, public comment and hearings, that a market exists in which retail electricity consumers subject to the waiver are able to:

(A) Purchase supplies of electricity adequate to meet the needs of the retail electricity consumers;

(B) Obtain multiple offers for electricity supplies within a reasonable period of time;

(C) Obtain reliable supplies of electricity; and

(D) Purchase electricity at prices that are not unduly volatile and that are just and reasonable.

[(2)] (3) Each electric company shall provide each [residential] **retail** electricity consumer that is connected to its distribution system **and whose electricity demand at any point of delivery is less than 30 kilowatts** a portfolio of rate options. The portfolio of rate options shall include at least the following options:

- (a) A rate that reflects significant new renewable energy resources;
- (b) A market-based rate; and
- (c) If the commission finds, through public comment and hearing or through market research conducted by the electric company, that demand is sufficient to justify the rate, a rate option for electricity associated with a specific renewable energy resource, including solar photovoltaic energy.

[(3)(a)] (4) The commission shall regulate the cost-of-service rate option under subsection (1) of this section and the portfolio of rate options under [subsection (2) of] this section. The commission:

(a) Shall reasonably ensure that the costs, [and] risks and benefits of serving each option are reflected in the rates for each option, and such rates may include a monthly flat rate or charge in addition to usage.

(b) [The commission] May prohibit or otherwise limit the use of a cost-of-service rate by retail electricity consumers who have been served through direct access[, and].

(c) May limit switching among the portfolio of rate options and the cost-of-service rate [by residential electricity consumers].

(5)(a) As used in this subsection, "government" means a city, county, irrigation district, ditch improvement district, water control district, or government of a federally recognized Indian tribe in Oregon.

(b) An electric company may file, as part of a portfolio of rate options required under this section and if agreed to in coordination with one or more governments to meet adopted renewable and nonemitting energy goals, a program of rates or charges that reflect the cost of an electric company program to serve retail electricity consumers within the boundaries of those governments with electricity:

(A) Derived from new or existing renewable energy resources or nonemitting energy resources, including supply and demand-side resources; or

(B) Paired with unbundled renewable energy certificates, as defined in ORS 469A.005, from new or existing renewable energy resources.

(c) The commission may approve a rate or charge under this subsection if:

(A) The government attests that the coordination required under paragraph (b) of this subsection occurred and the electric company includes the attestation in the filing for a program of rates or charges;

(B) The government enacts or adopts an ordinance, charter provision, resolution or other regulation requiring that retail electricity consumers within the boundaries of the government must, as determined during the coordination required by paragraph (b) of this subsection and conducted in accordance with this paragraph, be served with renewable energy resources or nonemitting energy resources, including at the option of the government, resources such as:

(i) Energy from community-based resources, including solar photovoltaic, storage, microgrids, irrigation district-owned projects, in-pipe hydroelectric, or micro-hydroelectric, that provide community cobenefits, such as:

(I) Community stability;

(II) Community reinvestment;

(III) Ownership by a nonprofit organization or renewable energy cooperative that represents an environmental justice community;

(IV) Ownership by the government;

(V) Disaster resiliency;

(VI) Water savings;

(VII) Species protection;

(VIII) Direct cost savings to customers; or

(IX) Local economic development and jobs; and

(ii) Renewable and nonemitting energy resources acquired through government specified procurement criteria which may include goals for local or diverse ownership;

- (C) The ordinance, charter provision, resolution or other regulation specifies that:
- (i) All eligible retail electricity consumers served within the boundaries of the government are placed on the rate schedule by the electric company, upon commission approval, but have an opportunity to decline to be served by the rate option; and
 - (ii) Retail electricity consumers within the boundaries of the government that are connected to the distribution system and whose electricity demand at any point of delivery is greater than 30 kilowatts may choose to be placed on the rate schedule, if the electric company determines that electricity demand at the consumer's point of delivery is greater than 30 kilowatts because of additional demand resulting from electrification of transportation or other services, including electric vehicle charging stations, after the effective date of this 2021 Act;
- (D) The ordinance, charter provision, resolution or other regulation includes protections, such as subsidies or bill payment assistance, for low-income retail electricity consumers affected by the rates or charges and provides that these protections are paid for solely by retail electricity consumers within the boundaries of the government;
- (E) The electric company has included in the program provisions to minimize the shifting of costs from retail electricity consumers to other customers who do not participate;
- (F) The ordinance, charter provision, resolution or other regulation sets forth the duration of the program; and
- (G) The electric company utilizes commission-approved procurement processes, to the extent those processes apply, and the procurement criteria agreed to with the government in subparagraph (B)(ii) of this paragraph.
- (d) After the electric company receives approval to serve retail electricity consumers within the boundaries of the government according to the program of rates or charges adopted pursuant to this subsection, the electric company must:
- (A) Prior to commencing the program, receive acknowledgement from the government to proceed with the program as approved by the commission and, if the government declines to proceed, shall file to suspend the rates and charges under the program;
 - (B) Include information on its monthly bills to participating retail electricity consumers identifying the program's cost;
 - (C) Provide notice to participating retail electricity consumers of any change in rate for participation in the program; and
 - (D) Provide an annual report to the commission and participating governments summarizing the program activities in the prior calendar year.
- (e) The commission shall allow the electric company, for purposes of the new or existing renewable energy resources or nonemitting energy resources that serve the program of rates or charges adopted pursuant to this subsection:
- (A) To own the facilities or use power purchase agreements.
 - (B) To recover part or all of the costs associated with the resources that serve the program, including costs associated with resources described in subparagraph (A) of this paragraph, from all retail electricity consumers not served by an electricity service supplier, if:
 - (i) The electric company can demonstrate that above-market or incremental costs of those resources have been paid for by program participants;
 - (ii) An integrated resource plan conducted by the electric company shows an energy or capacity need and the company demonstrates that such resources are capable of meeting that need, in whole or in part;
 - (iii) The electric company will use the resources to meet a renewable portfolio standard imposed by ORS 469A.052;
 - (iv) The resources help the electric company comply with section 3 of this 2021 Act; or
 - (v) All customers will otherwise benefit from inclusion of the costs in rates collected from all customers.

(C) To collect moneys from participating retail electricity consumers in excess of the cost of service and defer revenues or costs associated with the program for the purposes of making future investments in resources or renewable energy certificates to serve program participants and for the purposes of protecting nonparticipating retail electricity consumers should the government end its participation in the program.

(D) To recover the costs associated with the resources that serve the program, including costs associated with resources described in subparagraph (A) of this paragraph, from retail electricity consumers within the boundaries of the government other than those served by electricity service suppliers, if the government ends its participation in the program and the costs are not otherwise recoverable under subparagraph (B) of this paragraph.

(6) Nothing in subsection (3) of this section prohibits an electric company from providing retail electricity consumers that are connected to its distribution system and whose electricity demand at any point of delivery is greater than 30 kilowatts a portfolio of rate options.

(7) Notwithstanding the exemption to ORS 757.600 to 757.691 provided by ORS 757.601 (3), an electric company serving fewer than 25,000 customers in this state may propose a program for approval by the commission if the program meets the criteria specified in this section.

SECTION 21. ORS 469A.205 is amended to read:

469A.205. (1) Electric utilities shall allow retail electricity consumers to elect a green power rate. A significant portion of the electricity purchased or generated by a utility that is attributable to moneys paid by retail electricity consumers who elect the green power rate must be qualifying electricity, and the utility must inform consumers of the sources of the electricity purchased or generated by the utility that is attributable to moneys paid by consumers who elect the green power rate. The green power rate shall reasonably reflect the costs of the electricity purchased or generated by the utility that is attributable to moneys paid by retail electricity consumers who elect the green power rate. All prudently incurred costs associated with the green power rate are recoverable in a green power rate offered by an electric company.

(2) Any qualifying electricity procured by an electric utility to provide electricity under a green power rate under subsection (1) of this section or ORS 757.603 [(2)(a)] (3)(a) may not be used by the utility to comply with the requirements of a renewable portfolio standard.

(3) The provisions of subsection (1) of this section do not apply to electric companies that are subject to ORS 757.603 [(2)(a)] (3)(a).

(4) An electric utility may comply with the requirements of subsection (1) of this section by contracting with a third-party provider.

SECTION 22. ORS 757.247 is amended to read:

757.247. (1) The Public Utility Commission may authorize a public utility, upon application of the utility, to file and place into effect a tariff schedule establishing rates or charges for the cost of energy resource measures provided to an individual property owner or customer pursuant to an agreement entered into between the individual property owner or customer and the public utility. Energy resource measures provided under this section may include:

(a) The installation of renewable energy generation facilities on the property of property owners or the premises of customers;

(b) The implementation of energy conservation measures, including measures that are not cost-effective;

(c) The installation of equipment or devices or the implementation of measures that enable demand reduction, peak load reduction, improved integration of renewable energy generation or more effective utilization of energy resources;

(d) Loans for the purposes described in paragraphs (a) to (c) of this subsection; and

(e) Direct payments to third parties for the purposes described in paragraphs (a) to (c) of this subsection.

(2) Subject to the agreement entered into between the individual property owner or customer and the public utility, a tariff schedule placed into effect under this section may include provisions for:

(a) The payment of the rates or charges over a period of time;

(b) Except as provided in subsection (5) of this section, a reasonable rate of return on any investment made by the public utility;

(c) The application of any payment obligation to successive owners of the property to which the energy resource measure is attached or to successive customers located at the premises to which the energy resource measure is attached; and

(d) The application of the payment obligation to the current property owner or customer alone, secured by methods agreed to by the property owner or customer and the public utility.

(3) Application of a tariff schedule under this section is subject to approval by the commission.

(4) If a payment obligation applies to successive property owners or customers as described in subsection (2)(c) of this section, a public utility shall record a notice of the payment obligation in the records maintained by the county clerk under ORS 205.130. The commission may prescribe by rule other methods by which the public utility shall notify property owners or customers of such payment obligations.

(5) A public utility may use moneys obtained through a rate established under ORS 757.603 [(2)(a)] (3)(a) to provide a renewable energy generation facility to a property owner or customer under this section. A public utility may not charge interest to a property owner or customer for a renewable energy generation facility acquired with moneys obtained through a rate established under ORS 757.603 [(2)(a)] (3)(a).

(6) Agreements entered into and tariff schedules placed into effect under this section are not subject to ORS 470.500 to 470.710, 757.612 or 757.689.

SECTION 23. ORS 757.646 is amended to read:

757.646. (1) The duties, functions and powers of the Public Utility Commission shall include developing policies to eliminate barriers to the development of a competitive retail market *[structure]* **between electricity service suppliers and electric companies.** The policies shall be designed to mitigate the vertical and horizontal market power of incumbent electric companies[,] **and** prohibit preferential treatment, or the appearance of such treatment, *[of]* **by the incumbent electric companies toward** generation or market affiliates *[and determine the electricity services likely to be competitive]*. The commission may require an electric company acting as an electricity service supplier do so through an affiliate.

(2) The commission shall establish by rule a code of conduct for electric companies and their affiliates to protect against market abuses and anticompetitive practices. The code shall, at a minimum:

(a) Require an electric company and any affiliate that shares the same name and logo to disclose to all consumers the relationship between the company and affiliate and to clarify that the affiliate is not the same as the electric company and that in order to receive service from the company a consumer does not have to purchase the services of the affiliate;

(b) Prohibit preferential access by an electric company affiliate to confidential consumer information;

(c) *[Prohibit]* **Minimize** cross-subsidization between competitive operations and regulated operations, including the use of electric company personnel and other resources;

(d) Prohibit joint marketing activities and exclusive referral arrangements between an electric company and its affiliates;

(e) Provide the commission with all necessary access to books and records;

(f) Require electric companies to make regular compliance filings; and

(g) Require fair treatment of all competitors by a distribution utility.

(3) An electric company shall provide the commission access to all books and records necessary for the commission to monitor the electric company and its affiliate relationships. The commission

shall require an electric company biannually to file a report detailing compliance with this subsection.

(4) Notwithstanding subsection (1) of this section, the commission shall ensure that policies developed to mitigate the vertical and horizontal market power of incumbent electric companies do not limit or delay electric companies from offering programs or services or making prudent investments in furtherance of the clean energy targets established by section 3 of this 2021 Act or a program established under ORS 757.603 (5), or that otherwise aid in reducing statewide emissions of greenhouse gases consistent with state policies, including ORS 283.398 and 468A.205.

SECTION 24. ORS 469A.005 is amended to read:
469A.005. As used in ORS 469A.005 to 469A.210:

(1) "Acquires service territory" does not include an acquisition by a city of a facility, plant, equipment or service territory within the boundaries of the city, pursuant to ORS 225.020 or city charter, if the city:

(a) Already owns, controls or operates an electric light and power system for supplying electricity to the inhabitants of the city and for general municipal purposes;

(b) Provides fair, just and reasonable compensation to the electric company whose service territory is acquired that:

(A) Gives consideration for the service territory rights and the cost of the facility, plant or equipment acquired and for depreciation, fair market value, reproduction cost and any other relevant factor; and

(B) Is based on the present value of the service territory rights and the facility, plant and equipment acquired, including the value of poles, wires, transformers and similar and related appliances necessarily required to provide electric service; and

(c) Pays any stranded costs obligation established pursuant to ORS 757.483.

(2) "Banked renewable energy certificate" means a bundled or unbundled renewable energy certificate that is not used by an electric utility or electricity service supplier to comply with a renewable portfolio standard in a calendar year, and that is carried forward for the purpose of compliance with a renewable portfolio standard in a subsequent year.

(3) "BPA electricity" means electricity provided by the Bonneville Power Administration, including electricity generated by the Federal Columbia River Power System hydroelectric projects and electricity acquired by the Bonneville Power Administration by contract.

(4) "Bundled renewable energy certificate" means a renewable energy certificate for qualifying electricity that is acquired:

(a) By an electric utility or electricity service supplier by a trade, purchase or other transfer of electricity that includes the renewable energy certificate that was issued for the electricity; [or]

(b) By an electric utility by generation of the electricity for which the renewable energy certificate was issued; or

(c) By an electricity service supplier by retirement by an electric company where the renewable energy certificate satisfied paragraph (a) or (b) of this subsection prior to such retirement and was retired on behalf of the electricity service supplier on behalf of a retail electricity consumer that pays transition adjustments to the electric company.

(5) "Compliance year" means the calendar year for which the electric utility or electricity service supplier seeks to establish compliance with the renewable portfolio standard applicable to the electric utility or electricity service supplier in the compliance report submitted under ORS 469A.170.

(6) "Consumer-owned utility" means a municipal electric utility, a people's utility district organized under ORS chapter 261 that sells electricity or an electric cooperative organized under ORS chapter 62.

(7) "Distribution utility" has the meaning given that term in ORS 757.600.

(8) "Electric company" has the meaning given that term in ORS 757.600.

(9) "Electric utility" has the meaning given that term in ORS 757.600.

- (10) "Electricity service supplier" has the meaning given that term in ORS 757.600.
- (11) "Qualifying electricity" means electricity described in ORS 469A.010.
- (12) "Renewable energy source" means a source of electricity described in ORS 469A.025.
- (13) "Retail electricity consumer" means a retail electricity consumer, as defined in ORS 757.600, that is located in Oregon.
- (14) "Unbundled renewable energy certificate" means:
- (a) A renewable energy certificate for qualifying electricity that is acquired by an electric utility or electricity service supplier by trade, purchase or other transfer without acquiring the electricity that is associated with the renewable energy certificate; or
- (b) **A renewable energy certificate that is sold to a retail electricity consumer without selling, on a non-cost-of-service basis, the electricity associated with the renewable energy certificate to the retail electricity consumer.**

PROVIDING INFORMATION ABOUT CLEAN ENERGY PROGRAMS TO CUSTOMERS AND THE PUBLIC

SECTION 25. ORS 757.649 is amended to read:

757.649. (1)(a) A person or other entity shall not act as an electricity service supplier unless the person or entity is certified by the Public Utility Commission. The commission, by rule, shall establish standards for certification of persons or other entities as electricity service suppliers in this state. The rules shall, at a minimum, address:

(A) The ability of the person or entity to meet the person's or entity's obligation to provide electricity services pursuant to direct access; and

(B) The ability of the person or entity to comply with applicable consumer protection laws.

(b) The commission may require an electricity service supplier to provide a bond or other security.

(c) The commission may establish a fee, not to exceed \$500, for initial certification and annual recertification of electricity service suppliers.

(d) The commission, at any time, may revoke an electricity service supplier's certification for failure to comply with applicable statutes and rules.

(e) The commission may require an electricity service supplier to provide information necessary to ensure compliance with ORS 757.612. The commission shall ensure the privacy of all information and the protection of any proprietary information provided.

(f) The commission shall require an electricity service supplier to publicly disclose a summary of the aggregated energy supply mix and associated emissions of the power sources that serve the direct access retail electricity consumers of the electricity service supplier, or such other aggregated information comparable to information provided by electric companies to retail electricity consumers as the commission may require.

(2) Every electric utility shall maintain the integrity of its transmission facilities and distribution system and provide safe, reliable service to all retail electricity consumers. Nothing in ORS 757.600 to 757.667 or 757.669 to 757.687 shall reduce or diminish the statutory or contractual obligations of electric utilities to maintain the safety and reliability of their transmission facilities and distribution system and other infrastructure and equipment used to deliver electricity.

(3) The commission for electric companies, or the governing body for other electric utilities, shall adopt rules, ordinances, policies and service quality standards designed to maintain a reliable, safe and efficient distribution system. The commission shall regulate electrical safety regarding generation, transmission, substation and distribution facilities for electric utilities and other electrical system owners and operators as provided under ORS 757.035.

(4) Every bill to a direct access retail electricity consumer from an electricity service supplier shall contain at least:

(a) The rate and amount due for each service or product that the retail electricity consumer is purchasing and other price information necessary to facilitate direct access, as determined by the commission;

(b) The rates and amounts of state and local taxes or fees, if any, imposed on the retail electricity consumer;

(c) The amount of any public purpose charge or credit;

(d) The amount of any transition charge or transition credit; and

(e) Power source and environmental impact information necessary to ensure that all consumers have useful, reliable and necessary information to exercise informed choice, as determined by the commission.

(5)(a) A retail electricity consumer of an electric company shall receive, upon request, a separate bill from every individual electricity service supplier that provides products or services to the retail electricity consumer. If a retail electricity consumer of an electric company does not request separate bills, or a consolidated bill from an electricity service supplier as provided in paragraph (c) of this subsection, the electric company shall consolidate the bills for all electricity services into a single statement, and electricity service suppliers shall provide to the electric company the information necessary to prepare a consolidated statement.

(b) The requirement for bill consolidation by an electric company shall continue through December 31, 2001, after which time the commission may waive the requirement if the waiver results in effective billing procedures for retail electricity consumers.

(c) Upon the request of a retail electricity consumer of an electric company, an electricity service supplier shall consolidate the bills for all electricity services into a single statement, and electric utilities and other electricity service suppliers shall provide to the billing electricity service supplier any information necessary to prepare a consolidated statement.

(d) For retail electricity consumers of an electric company, the commission shall adopt by rule provisions relating to the failure of a consumer to make full payment on a consolidated bill. The rules shall address collection of payments, service disconnection and reconnection, and the allocation of costs associated with collection, disconnection and reconnection. A distribution utility shall be solely responsible for actual disconnection and reconnection.

RESPONSIBLE CONTRACTOR LABOR STANDARDS

SECTION 26. (1) As used in this section:

(a) "Apprentice" and "apprenticeable occupation" have the meanings given those terms in ORS 660.010.

(b) "Apprenticeship training program" means the total system of apprenticeship that a particular local joint committee, as defined in ORS 660.010, operates, including the local joint committee's registered standards and all other terms and conditions for qualifying, recruiting, selecting, employing and training apprentices in an apprenticeable occupation.

(c) "Construction" includes on-site and off-site construction and fabrication and covers 30 days after project completion.

(d) "Large-scale project" means a renewable energy generation, sequestration or storage facility with a capacity rating of 10 megawatts or greater.

(e) "Minority individual" and "woman" have the meanings given those terms in ORS 200.005.

(f) "Repower" means replacement of enough of the original generation equipment or components to make an original energy generation facility equivalent to a new facility, such that at least 80 percent of the fair market value of the facility derives from new generation equipment or components installed as part of the replacement project.

(g) "Veteran" has the meaning given that term in ORS 408.225.

(2) A person who constructs or repowers a large-scale project sited in this state shall, at the time of contract finalization for development of the project or execution of a contract

for delivery of energy from the project, provide a signed attestation or declaration stating to the best of their knowledge and belief, subject to penalty of perjury as described in ORS 162.065, that during all periods of construction all contractors and subcontractors working on the construction or repowering project will:

(a) Participate in an apprenticeship program registered with the State Apprenticeship and Training Council and with graduation rates equal to or higher than the national average for each respective trade in a manner consistent with the respective apprenticeship training programs, such that 15 percent of the total work hours on a given large-scale project is performed by workers in apprenticeable occupations;

(b) Establish and execute a plan for outreach, recruitment and retention of women, minority individuals, veterans and people with disabilities to perform work under the contract, with the aspirational target of having at least 15 percent of total work hours performed by individuals in one or more of those groups;

(c) Have policies in place that are designed to limit or prevent workplace harassment and discrimination and that promote workplace diversity, equity and inclusion for communities who have been underrepresented in the clean energy sector, including women, veterans and Black, Indigenous and People of Color;

(d) Demonstrate good faith with meeting the requirements described in paragraphs (a) to (c) of this subsection by providing documented and verifiable information including:

(A) Internet addresses of employment advertisements or job announcements;

(B) Dates, times, Internet addresses and attendance lists of a prejob conference with apprenticeship, preapprenticeship and workforce providers in construction;

(C) Contacts requesting workers with an apprenticeship program approved by the Bureau of Labor and Industries including the date, time, telephone contact, email contact and whether a response was provided within 48 hours of the request; and

(D) Contacts requesting workers from a union hall including the date, time, telephone contact, email contact and whether a response was provided within 48 hours of the request;

(e) Maintain a license and good standing to perform the work and remain eligible to receive a contract or subcontract for public works under ORS 279C.860;

(f) Materially demonstrate a history of material compliance in the previous seven years, or provide available history for new businesses, with the rules and other requirements of state agencies with oversight regarding workers' compensation, building codes and occupational safety and health;

(g) Materially demonstrate a history of compliance, in the previous seven years, or provide available history for new businesses, with federal and state wage and hour laws; and

(h) Provide quarterly reporting and recordkeeping to the project owner or electric utility and respond to records requests and verification.

(3) In addition to the requirements in subsection (2) of this section, a person constructing or repowering a large-scale project shall require all contractors and subcontractors working on the construction or repowering project to:

(a) Pay the area wage standard for an hour's work in the same trade or occupation in the locality where the labor is performed. Area wage standard includes the calculation of wages and fringe benefits per trade and locality and will be treated as standards defined in ORS 279C.800 et seq.

(b) Offer health care and retirement benefits to the employees performing the labor on the project.

(c) Provide quarterly reporting and recordkeeping to the project owner or electric utility and respond to records requests and verification.

(4) A person constructing or repowering a large-scale project shall provide the attestation or declaration and good faith effort documentation described in subsection (2) of this section to the State Department of Energy within 30 days from the date construction begins and provide notice of such delivery to the purchaser of the project or of the energy

from the project. In addition to the requirements described in subsection (2) of this section, an attestation must include the following information:

- (a) The megawatt capacity and physical footprint in acres of the project;
- (b) The geographic location of the project;
- (c) The estimated workforce requirements of the project;
- (d) A collated list of good faith effort documentation; and
- (e) A description of any policies in place for ensuring the person meets the requirements in this section.

(5)(a) In lieu of providing an attestation or declaration described in subsection (2) of this section, a person may provide a copy of a project labor agreement, if a project labor agreement is used on the large-scale project and shall be exempted from the requirements described in subsection (2) of this section.

(b) As used in this subsection, "project labor agreement" means a prehire collective bargaining agreement as described in 29 U.S.C. 158 (f) that establishes the terms and conditions of employment for a specific construction project or contract.

(c) A project labor agreement may include additional provisions that:

(A) Prohibit discrimination based on race, national origin, religion, gender, sexual orientation, political affiliation or membership in a labor organization in hiring and dispatching workers for the project.

(B) Permit qualified contractors and subcontractors to bid for and be awarded work on the project without regard to whether they are otherwise parties to a collective bargaining agreement.

(C) Permit and promote qualified business enterprises owned by women, minorities, veterans and disadvantaged individuals without regard to whether the individuals are otherwise parties to a collective bargaining agreement.

(D) Guarantee against work stoppages, strikes, lockouts and similar disruptions of the project.

(6)(a) The department shall retain an attestation or declaration filed with the department in a manner consistent with the department's record retention policies.

(b) Notwithstanding any provisions of ORS 192.345 or 192.355, an attestation or declaration provided to the department pursuant to this subsection is subject to public records disclosure and the department shall provide a copy of the attestation or declaration upon request.

(c) An attestation or declaration filed under this section is for reporting purposes only and the department may not use an attestation or declaration to investigate, regulate or enforce matters addressed in the attestation or declaration.

SECTION 27. The obligation to provide an attestation or declaration pursuant to section 26 of this 2021 Act applies to large-scale project contracts finalized or executed on or after the effective date of this 2021 Act.

NATURAL GAS PLANTS

SECTION 28. Notwithstanding ORS 469.320 and 469.405, the Energy Facility Siting Council may not:

(1) Issue a site certificate for a new generating facility that produces electric power from fossil fuels, including natural gas, petroleum, coal or any form of solid, liquid or gaseous fuel derived from such material, unless the council determines that a new generating facility will generate only nonemitting electricity as defined in section 1 of this 2021 Act; or

(2) Approve the amendment of a site certificate for an energy facility described under subsection (1) of this section that was granted prior to the effective date of this 2021 Act in a manner that would significantly increase the gross carbon dioxide emissions that are reasonably likely to result from the operation of the energy facility.

COMMUNITY RENEWABLE ENERGY PROJECT GRANT PROGRAM

SECTION 29. Definitions. As used in sections 29 to 32 of this 2021 Act:

(1) "Community renewable energy project" means one or more renewable energy systems, storage systems, microgrids or energy-related infrastructures that promote energy resilience, increase renewable energy generation or renewable energy storage capacity and provide a direct benefit to a particular community in the form of increased community energy resilience, local jobs, economic development or direct energy costs savings to families and small businesses.

(2) "Community energy resilience" means the ability of a specific community to maintain the availability of energy needed to support the provision of energy-dependent critical public services to the community following nonroutine disruptions of severe impact or duration to the state's broader energy systems.

(3) "Community energy resilience project" means a community renewable energy project that includes utilizing one or more renewable energy systems to support the energy resilience of structures or facilities that are essential to the public welfare.

(4) "Consumer-owned utility" means a municipal electricity utility, a people's utility district organized under ORS chapter 261 that sells electricity or an electric cooperative organized under ORS chapter 62.

(5) "Energy resilience" means the ability of energy systems, from production through delivery to end-users, to withstand and restore energy delivery rapidly following nonroutine disruptions of severe impact or duration.

(6) "Planning costs" means the costs related to planning paid by an applicant described under section 30 of this 2021 Act.

(7) "Project cost" means the actual cost of the acquisition, construction and installation of a renewable energy system incurred by an applicant described under section 30 of this 2021 Act for the system, before considering utility incentives.

(8) "Public body" means a public body as defined in ORS 174.109.

(9) "Qualifying community" means a community that qualifies as an environmental justice community as defined in section 1 of this 2021 Act.

(10) "Renewable energy system" includes:

(a) A system that uses biomass, solar, geothermal, hydroelectric, wind, landfill gas, biogas or wave, tidal or ocean thermal energy technology to produce energy.

(b) One or more energy storage systems paired with an existing or newly constructed system described in paragraph (a) of this subsection.

(c) One or more vehicle charging stations paired with an existing or newly constructed system described in paragraph (a) of this subsection.

(d) Microgrid enabling technologies, including microgrid controllers and any other related technologies needed to electrically isolate a community energy resilience project from the electric grid so that the project is capable of operating independently from the electric grid.

SECTION 30. Grants for community renewable energy projects; application; standards; rules. (1) The Community Renewable Investment Program is established for the purpose of:

(a) Offsetting the cost of planning and developing community renewable energy projects;

(b) Making community renewable energy projects economically feasible for qualifying communities;

(c) Promoting small-scale renewable energy projects; and

(d) Providing direct benefits to communities across this state in the form of increased community energy resilience, local jobs, economic development or direct energy cost savings to families and small businesses.

(2)(a) A federally recognized Oregon Indian tribe, public body or consumer-owned utility may submit to the State Department of Energy an application for grant moneys from the

Community Renewable Investment Fund established under section 33 of this 2021 Act for the purpose of planning or developing a community renewable energy project.

(b) An applicant may partner with a federally recognized Oregon Indian tribe, public body, nonprofit entity, private business with a business site in this state or owner of rental property in this state, but a grant for an approved application will only be awarded and released to an applicant that is a federally recognized Oregon Indian tribe, public body or consumer-owned utility. Any federally recognized Oregon Indian tribe, public body, nonprofit entity, private business or owner of rental property that partners with the applicant must be listed in the application.

(c) An application must be drafted in consultation with electric utilities that have customers in the communities covered by a community renewable energy project that is in the application and regional stakeholders for the purpose of ensuring feasibility.

(3) An application for a grant for planning a community renewable energy project must demonstrate that the planning:

(a) Is for a project located in this state but outside a city with a population of 500,000 or more;

(b) Will be completed within six months of execution of the performance agreement or a reasonable time frame if good cause to extend the deadline is demonstrated as determined by rule;

(c) Will result in a proposal for developing a community renewable energy project; and

(d) Incorporates feedback from:

(A) Members of qualifying communities served by the community renewable energy project;

(B) Businesses located in the communities served by the community renewable energy project;

(C) Electric utilities that have customers in the communities served by the community renewable energy project; and

(D) Other regional stakeholders.

(4)(a) An application for a grant for developing a community renewable energy project must be on a form prescribed by the department and contain:

(A) A detailed description of the project's systems and the systems' operation;

(B) Information showing that the project's systems will operate as represented in the application and, if the project is for producing electricity, remain in operation for at least five years or for at least a period of time established by the Director of the State Department of Energy by rule;

(C) The anticipated total project cost;

(D) Information on the number and types of jobs directly connected to the awarding of the grant that will be:

(i) Created by the project; and

(ii) Sustained throughout construction, installation and operation of the project;

(E) Information demonstrating that the project will comply with applicable state and local laws and regulations and obtain required licenses and permits;

(F) Information demonstrating that the project will be located in and benefit a community in this state but outside a city with a population of 500,000 or more; and

(G) Any other information the director considers necessary to determine whether the project is in compliance with sections 29 to 32 of this 2021 Act and any applicable rules or standards adopted thereunder.

(b) An application for developing a community renewable energy project must demonstrate that the project:

(A) Is located in this state but outside a city with a population of 500,000 or more;

(B) Will begin construction within 12 months of execution of the performance agreement and be completed within 36 months of execution of the performance agreement or a reasonable time frame if good cause to extend the deadline is demonstrated as determined by rule;

(C) Results in increased community energy resilience, local jobs, economic development or direct energy cost savings to families and small businesses;

(D) Complies with applicable state and local laws and regulations and has the required licenses and permits;

(E) Does not exceed 20 megawatts of nameplate capacity, if the project is for generating renewable energy; and

(F) Will operate for at least five years, if the project is for producing electricity, or for at least a period of time established by the director by rule.

(5) Upon receipt of an application submitted under this section, the department shall review and determine whether the applicant is eligible to receive a grant from the Community Renewable Investment Program established under this section. The department may approve an application if the department finds that:

(a) The planning or development proposal meets the requirements listed in subsection (3) or (4) of this section;

(b) The proposal meets the standards described in subsection (10) of this section;

(c) The proposal meets any standards adopted by rule under subsection (11) of this section;

(d) The proposal is technically feasible; and

(e) Any federally recognized Oregon Indian tribe, public body, private business or owner of rental property partnered with the applicant is listed in the application.

(6)(a) The department shall issue separate opportunity announcements for each calendar interval that funding is available for the following categories:

(A) Planning a community renewable energy project that qualifies as a community energy resilience project;

(B) Developing a community renewable energy project that qualifies as a community energy resilience project;

(C) Planning a community renewable energy project that does not qualify as a community energy resilience project; and

(D) Developing a community renewable energy project that does not qualify as a community energy resilience project.

(b) Upon receiving an application, the director shall determine whether the application is for a community renewable energy project that qualifies as a community energy resilience project based on the definition of "community energy resilience project" in section 29 of this 2021 Act and any applicable rules adopted under this section.

(7)(a) The department shall allocate, out of the initial moneys appropriated for the Community Renewable Investment Program under section 34 of this 2021 Act:

(A) 50 percent or more for grants to be awarded for planning or developing community renewable energy projects that qualify as community energy resilience projects.

(B) 50 percent or more for grants to be awarded for planning or developing community renewable energy projects that primarily serve one or more qualifying communities.

(b) The department shall allocate, out of any subsequent and additional moneys appropriated to the Community Renewable Investment Program, percentage amounts for grants in a manner consistent with paragraph (a) of this subsection.

(c) After two years of issuing announcements of available funding opportunities from the initial moneys appropriated to the Community Renewable Investment Program and after consultation with the Advisory Committee on Community Renewable Investment described in section 32 of this 2021 Act, the department may, by rule, reallocate the percentage of available funds across project categories.

(8) The department shall review and competitively score applications separately for each funding opportunity announcement.

(9) If the department approves an application under this section, the department and the applicant may enter into a performance agreement that meets the requirements set forth in section 31 of this 2021 Act.

(10) In approving applications and awarding grant moneys, the department shall prioritize planning and development proposals that:

- (a) Include community energy resilience projects.
- (b) Demonstrate significant prior investments in energy efficiency measures at the project location or will result in aggregate improvements to demand response capabilities.
- (c) Are for projects located in qualifying communities across the state.
- (d) When applicable, are for projects constructed in part or in whole by disadvantaged business enterprises, emerging small businesses or businesses that are owned by minorities, women or disabled veterans.
- (e) Include inclusive hiring and promotion policies for workers working on the projects.
- (f) Incorporate equity metrics developed in coordination with the Environmental Justice Task Force established by ORS 182.538 for evaluating the involvement of and leadership by people of low income, Black, Indigenous or People of Color, members of tribal communities, people with disabilities, youth, people from rural communities and people from otherwise disadvantaged communities in the siting, planning, designing or evaluating of the proposed community renewable energy projects.
- (g) Help the applicants achieve goals included in the applicants' natural hazard mitigation plans as approved by the Federal Emergency Management Agency.

(11) The department shall adopt rules, in consultation with Business Oregon, to carry out sections 29 to 32 of this 2021 Act. The rules must:

- (a) Define the planning and project costs eligible to be covered by a grant provided under section 31 (1) and (2) of this 2021 Act.
- (b) Adopt a methodology to identify qualifying communities and assess the geographic diversity of the approved planning and development projects compared with the other planning and development project applications for which grants have been requested in each opportunity announcement.
- (c) Establish guidelines for significant, unforeseeable or uncontrollable delays that will constitute good cause for extending the time lines agreed upon in performance agreements.

(12) The department may adopt rules capping the amount of grant funds that may be paid to individual consultants and contractors in each round of funding opportunity announcements if the department finds such limitations necessary to ensure broad distribution of funds and opportunity for emerging small businesses as defined in ORS 200.005.

SECTION 31. Performance agreements; requirements. (1)(a) A performance agreement for planning a community renewable energy project entered into between the State Department of Energy and an applicant under section 30 (9) of this 2021 Act must provide, at a minimum:

(A) A grant in an amount described in paragraph (b) of this subsection that covers up to 100 percent of the reasonable planning costs including, but not limited to, costs associated with:

- (i) Consulting fees.
- (ii) Load analysis.
- (iii) Siting, excluding property acquisition.
- (iv) Ensuring code compliance.
- (v) Interconnection studies.
- (vi) Transmission studies.
- (vii) Other reasonable expenditures made in the community renewable energy project planning process as determined by the department by rule.

(B) A grant may not be used to cover any fixed costs the applicant would incur in the applicant's normal course of business such as existing staff salaries or overhead costs.

(C) The department may recover grant moneys if a project fails to abide by the performance agreement or if planning is not completed within six months of execution of the performance agreement or a reasonable time frame if good cause to extend the deadline is demonstrated as determined by rule.

(b) The department may establish differing limits on the maximum amount of grants for planning community renewable energy projects based on the scope and attributes of the planning applications not to exceed an amount of \$100,000 per grant.

(c) Notwithstanding paragraph (a) of this subsection, the department may provide a grant that covers up to 100 percent of the reasonable planning costs only if the application demonstrates the planning proposal is for a community renewable energy project that:

(A) If for producing energy:

(i) Will make use of an adequately available renewable energy resource to produce the energy;

(ii) Has a specific market for the energy; and

(iii) Will reasonably and efficiently connect or transmit the energy to the specific community identified in the application under section 30 (3) of this 2021 Act; or

(B) If for increasing energy resilience:

(i) Will increase the energy resilience of a specific structure or facility or collection of structures or facilities essential to the public welfare; and

(ii) Will provide energy resilience benefits to the specific structure or facility or to the collection of structures or facilities.

(2) A performance agreement for developing a community renewable energy project entered into between the State Department of Energy and an applicant under section 30 (9) of this 2021 Act must provide, at a minimum:

(a) For a community renewable energy project that qualifies as a community energy resilience project, a grant that covers up to 100 percent of the project cost not to exceed \$1 million. The department shall reduce the grant amount, if the grant combined with other incentives and grants received by the applicant exceeds 100 percent of the total costs associated with the project.

(b) For a community renewable energy project that does not qualify as a community energy resilience project, a grant that covers up to 50 percent of the project cost not to exceed \$1 million. The department shall reduce the grant amount, if the grant combined with other incentives and grants received by the applicant exceeds 100 percent of the total costs associated with the project.

(c) The department may release up to 30 percent of the grant moneys provided for in a performance agreement, not to exceed 30 percent of project cost, upon entering into a performance agreement with an applicant for developing a community renewable energy project, with the remaining grant moneys to be released upon project completion under the terms of the performance agreement, if upon entering the performance agreement the applicant demonstrates having:

(A) Taken meaningful steps to seek site control, including but not limited to an option to lease or purchase the site or an executed letter of intent or exclusivity agreement to negotiate an option to lease or purchase the site;

(B) Filed a request for interconnection with a host utility or appropriate transmission provider; and

(C) Met any other requirements provided by the department by rule, such as filing a request for a power purchase or net metering agreement.

(d) The department may recover grant moneys if:

(A) The project fails to abide by the performance agreement;

(B) The project fails to begin construction within 12 months of execution of the performance agreement or a reasonable time frame if good cause to extend the deadline is demonstrated as determined by rule; or

(C) The project is not completed within 36 months of execution of the performance agreement or a reasonable time frame if good cause to extend the deadline is demonstrated as determined by rule.

(3) The department shall gather information from grantees necessary to evaluate indicators of success as determined by rule.

SECTION 32. Advisory committee. The Director of the State Department of Energy may appoint an Advisory Committee on Community Renewable Investment to provide consultation on the implementation of sections 29 to 32 of this 2021 Act. A committee appointed under this section shall consist of:

- (1) A member of the Environmental Justice Task Force;
- (2) A representative of Business Oregon;
- (3) A representative of electric companies;
- (4) A representative of consumer-owned utilities;
- (5) A representative from an organization that represents community renewable energy development;
- (6) A representative from a federally recognized Oregon Indian tribe;
- (7) Three representatives of local government to represent the interests of counties, cities and special districts;
- (8) Representatives from nongovernmental organizations that represent communities of low income or disadvantaged households; and
- (9) Representatives from relevant state and federal emergency management or response agencies.

SECTION 33. Community Renewable Investment Fund; uses. (1) The Community Renewable Investment Fund is established in the State Treasury, separate and distinct from the General Fund. Interest earned by the Community Renewable Investment Fund shall be credited to the fund. The fund consists of:

- (a) Moneys appropriated or otherwise transferred to the fund by the Legislative Assembly;
- (b) Moneys received from federal, state or local sources;
- (c) Gifts, grants or other moneys contributed to the fund; and
- (d) Other amounts deposited in the fund from any source.

(2) Moneys in the fund are continuously appropriated to the State Department of Energy for the purpose of providing grants to applicants approved under section 30 of this 2021 Act.

(3) The department may use reasonable amounts from the fund necessary, but no more than 10 percent of the fund, to administer the Community Renewable Investment Program described in section 30 of this 2021 Act.

(4) The Director of the State Department of Energy shall submit a biennial report to the Legislative Assembly in the manner provided by ORS 293.640 regarding the expenditures of moneys deposited in the Community Renewable Investment Fund and status of ongoing projects funded by the moneys, including but not limited indicators of program success.

(5) Upon the expenditure of all grant moneys in the Community Renewable Investment Fund or four years from the effective date of this 2021 Act, whichever occurs earlier, the director shall submit a report to the Legislative Assembly regarding the expenditures of moneys deposited in the Community Renewable Investment Fund and status of ongoing projects that have received moneys from the fund, including but not limited to indicators of program success.

SECTION 34. Appropriations. In addition to and not in lieu of any other appropriations, there is appropriated to the State Department of Energy, for the biennium beginning July

1, 2021, out of the General Fund, the amount of \$50,000,000 for deposit into the Community Renewable Investment Fund established in section 33 of this 2021 Act.

SECTION 35. Department of Energy; other funds limitation. Notwithstanding any other law limiting expenditures, the amount of \$26,960,291 is established for the biennium beginning July 1, 2021, as the maximum limit for payment of expenses by the State Department of Energy for community renewable energy project grants from the Community Renewable Investment Fund established by section 33 of this 2021 Act.

SECTION 36. Operative date. (1) Sections 30 and 31 of this 2021 Act become operative on January 1, 2022.

(2) The State Department of Energy may take any action before the operative date specified in subsection (1) of this section that is necessary to enable the department to exercise, on or after the operative date specified in subsection (1) of this section, all of the duties, functions and powers conferred on the department by sections 30 and 31 of this 2021 Act.

SMALL-SCALE RENEWABLE ENERGY PROJECTS

SECTION 37. ORS 469A.210 is amended to read:

469A.210. (1) The Legislative Assembly finds that community-based renewable energy projects, including but not limited to marine renewable energy resources that are either developed in accordance with the Territorial Sea Plan adopted pursuant to ORS 196.471 or located on structures adjacent to the coastal shorelands, are an essential element of this state's energy future.

(2) For purposes related to the findings in subsection (1) of this section, by the year [2025] 2030, at least [eight] 10 percent of the aggregate electrical capacity of all electric companies that make sales of electricity to 25,000 or more retail electricity consumers in this state must be composed of electricity generated by one or both of the following sources:

(a) Small-scale renewable energy projects with a generating capacity of 20 megawatts or less that generate electricity utilizing a type of energy described in ORS 469A.025; or

(b) Facilities that generate electricity using biomass that also generate thermal energy for a secondary purpose.

(3) Regardless of the facility's nameplate capacity, any single facility described in subsection (2)(b) of this section may be used to comply with the requirement specified in subsection (2) of this section for up to 20 megawatts of capacity.

MISCELLANEOUS

SECTION 38. Notwithstanding any other law limiting expenditures, the limitation on expenditures established by section 1 (1), chapter _____, Oregon Laws 2021 (Enrolled House Bill 5032), for the biennium beginning July 1, 2021, as the maximum limit for payment of expenses from fees, moneys or other revenues, including Miscellaneous Receipts, but excluding lottery funds and federal funds, collected or received by the Public Utility Commission, for the utility program, is increased by \$1,867,217, for the implementation of this 2021 Act.

SECTION 39. The unit and section captions used in this 2021 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 2021 Act.

SECTION 40. This 2021 Act takes effect on the 91st day after the date on which the 2021 regular session of the Eighty-first Legislative Assembly adjourns sine die.

Passed by House June 25, 2021

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

.....
Tina Kotek, Speaker of House

Passed by Senate June 26, 2021

.....
Peter Courtney, President of Senate

Received by Governor:

.....M.,....., 2021

Approved:

.....M.,....., 2021

.....
Kate Brown, Governor

Filed in Office of Secretary of State:

.....M.,....., 2021

.....
Shemia Fagan, Secretary of State

CHAPTER 25

AN ACT

HB 4015

Relating to battery energy storage systems; creating new provisions; amending ORS 469.300, 469.320, 469.373, 469.409, 469.503, 469.504 and 498.502; and prescribing an effective date.

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

**BATTERY ENERGY STORAGE SYSTEM
(Energy Facility Siting Council)**

SECTION 1. ORS 469.300 is amended to read: 469.300. As used in ORS 469.300 to 469.563, 469.590 to 469.619, 469.930 and 469.992, unless the context requires otherwise:

(1) "Applicant" means any person who makes application for a site certificate in the manner provided in ORS 469.300 to 469.563, 469.590 to 469.619, 469.930 and 469.992.

(2) "Application" means a request for approval of a particular site or sites for the construction and operation of an energy facility or the construction and operation of an additional energy facility upon a site for which a certificate has already been issued, filed in accordance with the procedures established pursuant to ORS 469.300 to 469.563, 469.590 to 469.619, 469.930 and 469.992.

(3) "Associated transmission lines" means new transmission lines constructed to connect an energy facility to the first point of junction of such transmission line or lines with either a power distribution system or an interconnected primary transmission system or both or to the Northwest Power Grid.

(4) "Average electric generating capacity" means the peak generating capacity of the facility divided by one of the following factors:

- (a) For wind facilities, 3.00;
- (b) For geothermal energy facilities, 1.11; or
- (c) For all other energy facilities, 1.00.

(5) "Battery energy storage system" means an energy storage system that, other than for personal, noncommercial use:

- (a) Collects energy from the electric grid or an energy generation facility;
- (b) Uses rechargeable batteries to retain and store the energy for a period of time; and
- (c) Discharges the energy after storage to provide electricity when needed.

[(5)] (6) "Combustion turbine power plant" means a thermal power plant consisting of one or more fuel-fired combustion turbines and any associated waste heat combined cycle generators.

[(6)] (7) "Construction" means work performed on a site, excluding surveying, exploration or other activities to define or characterize the site, the cost of which exceeds \$250,000.

[(7)] (8) "Council" means the Energy Facility Siting Council established under ORS 469.450.

[(8)] (9) "Department" means the State Department of Energy created under ORS 469.030.

[(9)] (10) "Director" means the Director of the State Department of Energy appointed under ORS 469.040.

[(10)] (11) "Electric utility" means persons, regulated electrical companies, people's utility districts, joint operating agencies, electric cooperatives, municipalities or any combination thereof, engaged in or authorized to engage in the business of generating, supplying, transmitting or distributing electric energy.

[(11)(a)] (12)(a) "Energy facility" means any of the following:

(A) An electric power generating plant with a nominal electric generating capacity of 25 megawatts or more, including but not limited to:

- (i) Thermal power;
- (ii) Combustion turbine power plant; or
- (iii) Solar thermal power plant.

(B) A nuclear installation as defined in this section.

(C) A high voltage transmission line of more than 10 miles in length with a capacity of 230,000 volts or more to be constructed in more than one city or county in this state, but excluding:

(i) Lines proposed for construction entirely within 500 feet of an existing corridor occupied by high voltage transmission lines with a capacity of 230,000 volts or more;

(ii) Lines of 57,000 volts or more that are rebuilt and upgraded to 230,000 volts along the same right of way; and

(iii) Associated transmission lines.

(D) A solar photovoltaic power generation facility using more than:

(i) 240 acres located on high-value farmland as defined in ORS 195.300;

(ii) 2,560 acres located on land that is predominantly cultivated or that, if not cultivated, is predominantly composed of soils that are in capability classes I to IV, as specified by the National Cooperative Soil Survey operated by the Natural Resources Conservation Service of the United States Department of Agriculture; or

(iii) 3,840 acres located on any other land.

(E) A pipeline that is:

(i) At least six inches in diameter, and five or more miles in length, used for the transportation of crude petroleum or a derivative thereof, liquefied natural gas, a geothermal energy form in a liquid state or other fossil energy resource, excluding a pipeline conveying natural or synthetic gas;

(ii) At least 16 inches in diameter, and five or more miles in length, used for the transportation of natural or synthetic gas, but excluding:

(I) A pipeline proposed for construction of which less than five miles of the pipeline is more than 50 feet from a public road, as defined in ORS 368.001; or

(II) A parallel or upgraded pipeline up to 24 inches in diameter that is constructed within the same right of way as an existing 16-inch or larger

pipeline that has a site certificate, if all studies and necessary mitigation conducted for the existing site certificate meet or are updated to meet current site certificate standards; or

(iii) At least 16 inches in diameter and five or more miles in length used to carry a geothermal energy form in a gaseous state but excluding a pipeline used to distribute heat within a geothermal heating district established under ORS chapter 523.

(F) A synthetic fuel plant which converts a natural resource including, but not limited to, coal or oil to a gas, liquid or solid product intended to be used as a fuel and capable of being burned to produce the equivalent of two billion Btu of heat a day.

(G) A plant which converts biomass to a gas, liquid or solid product, or combination of such products, intended to be used as a fuel and if any one of such products is capable of being burned to produce the equivalent of six billion Btu of heat a day.

(H) A storage facility for liquefied natural gas constructed after September 29, 1991, that is designed to hold at least 70,000 gallons.

(I) A surface facility related to an underground gas storage reservoir that, at design injection or withdrawal rates, will receive or deliver more than 50 million cubic feet of natural or synthetic gas per day, or require more than 4,000 horsepower of natural gas compression to operate, but excluding:

(i) The underground storage reservoir;

(ii) The injection, withdrawal or monitoring wells and individual wellhead equipment; and

(iii) An underground gas storage reservoir into which gas is injected solely for testing or reservoir maintenance purposes or to facilitate the secondary recovery of oil or other hydrocarbons.

(J) An electric power generating plant with an average electric generating capacity of 50 megawatts or more if the power is produced from geothermal or wind energy at a single energy facility or within a single energy generation area.

(b) "Energy facility" does not include a hydroelectric facility or an energy facility under paragraph (a)(A)(iii) or (D) of this subsection that is established on the site of a decommissioned United States Air Force facility that has adequate transmission capacity to serve the energy facility.

[(12)] (13) "Energy generation area" means an area within which the effects of two or more small generating plants may accumulate so the small generating plants have effects of a magnitude similar to a single generating plant of 35 megawatts average electric generating capacity or more. An "energy generation area" for facilities using a geothermal resource and covered by a unit agreement, as provided in ORS 522.405 to 522.545 or by federal law, shall be defined in that unit agreement. If no such unit agreement exists, an energy generation area for facilities using a geothermal resource shall be the area that is within two miles, measured from the electrical generating equipment of the facility, of an existing or proposed geothermal electric power gen-

erating plant, not including the site of any other such plant not owned or controlled by the same person.

[(13)] (14) "Extraordinary nuclear occurrence" means any event causing a discharge or dispersal of source material, special nuclear material or by-product material as those terms are defined in ORS 453.605, from its intended place of confinement off-site, or causing radiation levels off-site, that the United States Nuclear Regulatory Commission or its successor determines to be substantial and to have resulted in or to be likely to result in substantial damages to persons or property off-site.

[(14)] (15) "Facility" means an energy facility together with any related or supporting facilities.

[(15)] (16) "Geothermal reservoir" means an aquifer or aquifers containing a common geothermal fluid.

[(16)] (17) "Local government" means a city or county.

[(17)] (18) "Nominal electric generating capacity" means the maximum net electric power output of an energy facility based on the average temperature, barometric pressure and relative humidity at the site during the times of the year when the facility is intended to operate.

[(18)] (19) "Nuclear incident" means any occurrence, including an extraordinary nuclear occurrence, that results in bodily injury, sickness, disease, death, loss of or damage to property or loss of use of property due to the radioactive, toxic, explosive or other hazardous properties of source material, special nuclear material or by-product material as those terms are defined in ORS 453.605.

[(19)] (20) "Nuclear installation" means any power reactor, nuclear fuel fabrication plant, nuclear fuel reprocessing plant, waste disposal facility for radioactive waste, and any facility handling that quantity of fissionable materials sufficient to form a critical mass. "Nuclear installation" does not include any such facilities that are part of a thermal power plant.

[(20)] (21) "Nuclear power plant" means an electrical or any other facility using nuclear energy with a nominal electric generating capacity of 25 megawatts or more, for generation and distribution of electricity, and associated transmission lines.

[(21)] (22) "Person" means an individual, partnership, joint venture, private or public corporation, association, firm, public service company, political subdivision, municipal corporation, government agency, people's utility district, or any other entity, public or private, however organized.

[(22)] (23) "Project order" means the order, including any amendments, issued by the State Department of Energy under ORS 469.330.

[(23)(a)] (24)(a) "Radioactive waste" includes all material which is discarded, unwanted or has no present lawful economic use, and contains mined or refined naturally occurring isotopes, accelerator produced isotopes and by-product material, source material or special nuclear material as those terms are defined in ORS 453.605.

(b) "Radioactive waste" does not include:

(A) Materials identified by the council by rule as presenting no significant danger to the public health and safety.

(B) Uranium mine overburden or uranium mill tailings, mill wastes or mill by-product materials as those terms are defined in Title 42, United States Code, section 2014, on June 25, 1979.

[(24)] (25) "Related or supporting facilities" means any structure, proposed by the applicant, to be constructed or substantially modified in connection with the construction of an energy facility, including associated transmission lines, reservoirs, storage facilities, intake structures, road and rail access, pipelines, barge basins, office or public buildings, and commercial and industrial structures. "Related or supporting facilities" does not include geothermal or underground gas storage reservoirs, production, injection or monitoring wells or wellhead equipment or pumps.

[(25)] (26) "Site" means any proposed location of an energy facility and related or supporting facilities.

[(26)] (27) "Site certificate" means the binding agreement between the State of Oregon and the applicant, authorizing the applicant to construct and operate a facility on an approved site, incorporating all conditions imposed by the council on the applicant.

[(27)] (28) "Thermal power plant" means an electrical facility using any source of thermal energy with a nominal electric generating capacity of 25 megawatts or more, for generation and distribution of electricity, and associated transmission lines, including but not limited to a nuclear-fueled, geothermal-fueled or fossil-fueled power plant, but not including a portable power plant the principal use of which is to supply power in emergencies. "Thermal power plant" includes a nuclear-fueled thermal power plant that has ceased to operate.

[(28)] (29) "Transportation" means the transport within the borders of the State of Oregon of radioactive material destined for or derived from any location.

[(29)] (30) "Underground gas storage reservoir" means any subsurface sand, strata, formation, aquifer, cavern or void, whether natural or artificially created, suitable for the injection, storage and withdrawal of natural gas or other gaseous substances. "Underground gas storage reservoir" includes a pool as defined in ORS 520.005.

[(30)] (31) "Utility" includes:

(a) A person, a regulated electrical company, a people's utility district, a joint operating agency, an electric cooperative, municipality or any combination thereof, engaged in or authorized to engage in the business of generating, transmitting or distributing electric energy;

(b) A person or public agency generating electric energy from an energy facility for its own consumption; and

(c) A person engaged in this state in the transmission or distribution of natural or synthetic gas.

[(31)] (32) "Waste disposal facility" means a geographical site in or upon which radioactive waste is held or placed but does not include a site at which radioactive waste used or generated pursuant to a license granted under ORS 453.635 is stored temporarily, a site of a thermal power plant used for the temporary storage of radioactive waste from that plant for which a site certificate has been issued pursuant to this chapter or a site used for temporary storage of radioactive waste from a reactor operated by a college, university or graduate center for research purposes and not connected to the Northwest Power Grid. As used in this subsection, "temporary storage" includes storage of radioactive waste on the site of a nuclear-fueled thermal power plant for which a site certificate has been issued until a permanent storage site is available by the federal government.

SECTION 2. ORS 469.320 is amended to read:

469.320. (1) Except as provided in subsections (2) and (5) of this section, no facility shall be constructed or expanded unless a site certificate has been issued for the site thereof in the manner provided in ORS 469.300 to 469.563, 469.590 to 469.619, 469.930 and 469.992. No facility shall be constructed or operated except in conformity with the requirements of ORS 469.300 to 469.563, 469.590 to 469.619, 469.930 and 469.992.

(2) A site certificate is not required for:

(a) An energy facility for which no site certificate has been issued that, on August 2, 1993, had operable electric generating equipment for a modification that uses the same fuel type and increases electric generating capacity, if:

(A) The site is not enlarged; and

(B) The ability of the energy facility to use fuel for electricity production under peak steady state operating conditions is not more than 200 million Btu per hour greater than it was on August 2, 1993, or the energy facility expansion is called for in the short-term plan of action of an energy resource plan that has been acknowledged by the Public Utility Commission of Oregon.

(b) Construction or expansion of any interstate natural gas pipeline or associated underground natural gas storage facility authorized by and subject to the continuing regulation of the Federal Energy Regulatory Commission or successor agency.

(c) An energy facility, except coal and nuclear power plants, if the energy facility:

(A) Sequentially produces electrical energy and useful thermal energy from the same fuel source; and

(B) Under average annual operating conditions, has a nominal electric generating capacity:

(i) Of less than 50 megawatts and the fuel chargeable to power heat rate value is not greater than 6,000 Btu per kilowatt hour;

(ii) Of 50 megawatts or more and the fuel chargeable to power heat rate value is not greater than 5,500 Btu per kilowatt hour; or

(iii) Specified by the Energy Facility Siting Council by rule based on the council's determination relating to emissions of the energy facility.

(d) Temporary storage, at the site of a nuclear-fueled thermal power plant for which a site certificate has been issued by the State of Oregon, of radioactive waste from the plant.

(e) An energy facility as defined in ORS 469.300 [(11)(a)(G)] (12)(a)(G), if the plant also produces a secondary fuel used on site for the production of heat or electricity, if the output of the primary fuel is less than six billion Btu of heat a day.

(f) An energy facility as defined in ORS 469.300 [(11)(a)(G)] (12)(a)(G), if the facility:

(A) Exclusively uses biomass, including but not limited to grain, whey, potatoes, oilseeds, waste vegetable oil or cellulosic biomass, as the source of material for conversion to a liquid fuel;

(B) Has received local land use approval under the applicable acknowledged comprehensive plan and land use regulations of the affected local government and the facility complies with any statewide planning goals or rules of the Land Conservation and Development Commission that are directly applicable to the facility;

(C) Requires no new electric transmission lines or gas or petroleum product pipelines that would require a site certificate under subsection (1) of this section;

(D) Produces synthetic fuel, at least 90 percent of which is used in an industrial or refueling facility located within one mile of the facility or is transported from the facility by rail or barge; and

(E) Emits less than 118 pounds of carbon dioxide per million Btu from fossil fuel used for conversion energy.

(g) A standby generation facility, if the facility complies with all of the following:

(A) The facility has received local land use approval under the applicable acknowledged comprehensive plan and land use regulations of the affected local government and the facility complies with all statewide planning goals and applicable rules of the Land Conservation and Development Commission;

(B) The standby generators have been approved by the Department of Environmental Quality as having complied with all applicable air and water quality requirements. For an applicant that proposes to provide the physical facilities for the installation of standby generators, the requirement of this subparagraph may be met by agreeing to require such a term in the lease contract for the facility; and

(C) The standby generators are electrically incapable of being interconnected to the transmission grid. For an applicant that proposes to provide the physical facilities for the installation of standby generators, the requirement of this subparagraph may be met by agreeing to require such a term in the lease contract for the facility.

(3) The Energy Facility Siting Council may review and, if necessary, revise the fuel chargeable to power heat rate value set forth in subsection (2)(c)(B) of this section. In making its determination,

the council shall ensure that the fuel chargeable to power heat rate value for facilities set forth in subsection (2)(c)(B) of this section remains significantly lower than the fuel chargeable to power heat rate value for the best available, commercially viable thermal power plant technology at the time of the revision.

(4)(a)(A) Any person who proposes to construct or enlarge an energy facility and who claims an exemption under subsection (2)(a), (c) or (f) of this section from the requirement to obtain a site certificate shall request the Energy Facility Siting Council to determine whether the proposed facility qualifies for the claimed exemption.

(B) The council may not require a person who operates or proposes to construct or enlarge an energy facility to request that the council determine whether the proposed facility qualifies for exemption under subsection (2)(g) of this section.

(b) The council shall make its determination within 60 days after the request for exemption is filed. An appeal from the council's determination on a request for exemption shall be made under ORS 469.403, except that the scope of review by the Supreme Court shall be the same as a review by a circuit court under ORS 183.484. The record on review by the Supreme Court shall be the record established in the council proceeding on the exemption.

(5) Notwithstanding subsection (1) of this section, a separate site certificate shall not be required for:

(a) Transmission lines, **battery energy storage systems**, storage facilities, pipelines or similar related or supporting facilities, if such related or supporting facilities are addressed in and are subject to a site certificate for another energy facility;

(b) Expansion within the site or within the energy generation area of a facility for which a site certificate has been issued, if the existing site certificate has been amended to authorize expansion; or

(c) Expansion, either within the site or outside the site, of an existing council certified surface facility related to an underground gas storage reservoir, if the existing site certificate is amended to authorize expansion.

(6) If the substantial loss of the steam host causes a facility exempt under subsection (2)(c) of this section to substantially fail to meet the exemption requirements under subsection (2)(c) of this section, the electric generating facility shall cease to operate one year after the substantial loss of the steam host unless an application for a site certificate has been filed in accordance with the provisions of ORS 469.300 to 469.563.

(7) As used in this section:

(a) "Standby generation facility" means an electric power generating facility, including standby generators and the physical structures necessary to install and connect standby generators, that provides temporary electric power in the event of a power outage and that is electrically incapable of being interconnected with the transmission grid.

(b) "Total energy output" means the sum of useful thermal energy output and useful electrical energy output.

(c) "Useful thermal energy" means the verifiable thermal energy used in any viable industrial or commercial process, heating or cooling application.

(8)(a) If the developer of a facility elects, or the governing body of the local government after consulting with the developer elects, to defer regulatory authority to the Energy Facility Siting Council, the developer of a facility shall obtain a site certificate, in the manner provided in ORS 469.300 to 469.563, 469.590 to 469.619, 469.930 and 469.992, for a facility that, notwithstanding the definition of "energy facility" in ORS 469.300, is:

(A) An electric power generating plant with an average electric generating capacity of less than 50 megawatts produced from wind energy at a single energy facility or within a single energy generation area;

(B) An associated transmission line; [or]

(C) A battery energy storage system; or

[(C)] (D) A solar photovoltaic power generation facility that is not an energy facility as defined in ORS 469.300 [(11)(a)(D)] (12)(a)(D).

(b) An election by a developer or a local government under this subsection is final.

(c) An election by a local government under this subsection is not a land use decision as defined in ORS 197.015.

(d) A local government may not make an election under this subsection after a permit application has been submitted under ORS 215.416 or 227.175.

CONFORMING AMENDMENTS

SECTION 3. ORS 469.503 is amended to read:

469.503. In order to issue a site certificate, the Energy Facility Siting Council shall determine that the preponderance of the evidence on the record supports the following conclusions:

(1) The facility complies with the applicable standards adopted by the council pursuant to ORS 469.501 or the overall public benefits of the facility outweigh any adverse effects on a resource or interest protected by the applicable standards the facility does not meet.

[(2)] (2)(a) If the energy facility is a fossil-fueled power plant, the energy facility complies with any applicable carbon dioxide emissions standard adopted by the council or enacted by statute. Base load gas plants shall comply with the standard set forth in *[subsection (2)(a) of this section]* **paragraph (b) of this subsection.** Other fossil-fueled power plants shall comply with any applicable standard adopted by the council by rule pursuant to *[subsection (2)(b) of this section]* **paragraph (c) of this subsection.** *[Subsections (2)(c) and (d) of this section]* **Paragraphs (d) and (e) of this subsection** prescribe the means by which an applicant may comply with the applicable standard.

[(a)] (b) The net carbon dioxide emissions rate of the proposed base load gas plant shall not exceed 0.70 pounds of carbon dioxide emissions per kilowatt hour of net electric power output, with carbon dioxide emissions and net electric power output measured on a new and clean basis. Notwithstanding the foregoing, the council may by rule modify the carbon dioxide emissions standard for base load gas plants if the council finds that the most efficient stand-alone combined cycle, combustion turbine, natural gas-fired energy facility that is commercially demonstrated and operating in the United States has a net heat rate of less than 7,200 Btu per kilowatt hour higher heating value adjusted to ISO conditions. In modifying the carbon dioxide emission standard, the council shall determine the rate of carbon dioxide emissions per kilowatt hour of net electric output of such energy facility, adjusted to ISO conditions, and reset the carbon dioxide emissions standard at 17 percent below this rate.

[(b)] (c) The council shall adopt carbon dioxide emissions standards for other types of fossil-fueled power plants. Such carbon dioxide emissions standards shall be promulgated by rule. In adopting or amending such carbon dioxide emissions standards, the council shall consider and balance at least the following principles, the findings on which shall be contained in the rulemaking record:

(A) Promote facility fuel efficiency;

(B) Promote efficiency in the resource mix;

(C) Reduce net carbon dioxide emissions;

(D) Promote cogeneration that reduces net carbon dioxide emissions;

(E) Promote innovative technologies and creative approaches to mitigating, reducing or avoiding carbon dioxide emissions;

(F) Minimize transaction costs;

(G) Include an alternative process that separates decisions on the form and implementation of offsets from the final decision on granting a site certificate;

(H) Allow either the applicant or third parties to implement offsets;

(I) Be attainable and economically achievable for various types of power plants;

(J) Promote public participation in the selection and review of offsets;

(K) Promote prompt implementation of offset projects;

(L) Provide for monitoring and evaluation of the performance of offsets; and

(M) Promote reliability of the regional electric system.

[(c)] (d) The council shall determine whether the applicable carbon dioxide emissions standard is met by first determining the gross carbon dioxide emissions that are reasonably likely to result from the operation of the proposed energy facility. Such determination shall be based on the proposed design of the energy facility. The council shall adopt site certificate conditions to ensure that the predicted carbon dioxide emissions are not exceeded on a new and clean basis. For any remaining emissions reduction necessary to meet the applicable standard,

the applicant may elect to use any of subparagraphs (A) to (D) of this paragraph, or any combination thereof. The council shall determine the amount of carbon dioxide or other greenhouse gas emissions reduction that is reasonably likely to result from the applicant's offsets and whether the resulting net carbon dioxide emissions meet the applicable carbon dioxide emissions standard. For purposes of determining the net carbon dioxide emissions, the council shall by rule establish the global warming potential of each greenhouse gas based on a generally accepted scientific method, and convert any greenhouse gas emissions to a carbon dioxide equivalent. Unless otherwise provided by the council by rule, the global warming potential of methane is 23 times that of carbon dioxide, and the global warming potential of nitrous oxide is 296 times that of carbon dioxide. If the council or a court on judicial review concludes that the applicant has not demonstrated compliance with the applicable carbon dioxide emissions standard under subparagraphs (A), (B) or (D) of this paragraph, or any combination thereof, and the applicant has agreed to meet the requirements of subparagraph (C) of this paragraph for any deficiency, the council or a court shall find compliance based on such agreement. **For purposes of this paragraph, the applicable carbon dioxide emissions standards are:**

(A) The facility will sequentially produce electrical and thermal energy from the same fuel source, and the thermal energy will be used to displace another source of carbon dioxide emissions that would have otherwise continued to occur, in which case the council shall adopt site certificate conditions ensuring that the carbon dioxide emissions reduction will be achieved.

(B) The applicant or a third party will implement particular offsets, in which case the council may adopt site certificate conditions ensuring that the proposed offsets are implemented but shall not require that predicted levels of avoidance, displacement or sequestration of greenhouse gas emissions be achieved. The council shall determine the quantity of greenhouse gas emissions reduction that is reasonably likely to result from each of the proposed offsets based on the criteria in sub-subparagraphs (i) to (iii) of this subparagraph. In making this determination, the council shall not allow credit for offsets that have already been allocated or awarded credit for greenhouse gas emissions reduction in another regulatory setting. In addition, the fact that an applicant or other parties involved with an offset may derive benefits from the offset other than the reduction of greenhouse gas emissions is not, by itself, a basis for withholding credit for an offset. **The criteria required under this subparagraph shall be:**

(i) The degree of certainty that the predicted quantity of greenhouse gas emissions reduction will be achieved by the offset;

(ii) The ability of the council to determine the actual quantity of greenhouse gas emissions reduction resulting from the offset, taking into con-

sideration any proposed measurement, monitoring and evaluation of mitigation measure performance; and

(iii) The extent to which the reduction of greenhouse gas emissions would occur in the absence of the offsets.

(C) The applicant or a third party agrees to provide funds in an amount deemed sufficient to produce the reduction in greenhouse gas emissions necessary to meet the applicable carbon dioxide emissions standard, in which case the funds shall be used as specified in paragraph [(d)] (e) of this subsection. Unless modified by the council as provided below, the payment of 57 cents shall be deemed to result in a reduction of one ton of carbon dioxide emissions. The council shall determine the offset funds using the monetary offset rate and the level of emissions reduction required to meet the applicable standard. If a site certificate is approved based on this subparagraph, the council may not adjust the amount of such offset funds based on the actual performance of offsets. After three years from June 26, 1997, the council may by rule increase or decrease the monetary offset rate of 57 cents per ton of carbon dioxide emissions. Any change to the monetary offset rate shall be based on empirical evidence of the cost of offsets and the council's finding that the standard will be economically achievable with the modified rate for natural gas-fired power plants. Following the initial three-year period, the council may increase or decrease the monetary offset rate no more than 50 percent in any two-year period.

(D) Any other means that the council adopts by rule for demonstrating compliance with any applicable carbon dioxide emissions standard.

[(d)] (e) If the applicant elects to meet the applicable carbon dioxide emissions standard in whole or in part under paragraph [(c)(C)] (d)(C) of this subsection, the applicant shall identify the qualified organization. The applicant may identify an organization that has applied for, but has not received, an exemption from federal income taxation, but the council may not find that the organization is a qualified organization unless the organization is exempt from federal taxation under section 501(c)(3) of the Internal Revenue Code as amended and in effect on December 31, 1996. The site certificate holder shall provide a bond or comparable security in a form reasonably acceptable to the council to ensure the payment of the offset funds and the amount required under subparagraph (A)(ii) of this paragraph. Such security shall be provided by the date specified in the site certificate, which shall be no later than the commencement of construction of the facility. The site certificate shall require that the offset funds be disbursed as specified in subparagraph (A) of this paragraph, unless the council finds that no qualified organization exists, in which case the site certificate shall require that the offset funds be disbursed as specified in subparagraph (B) of this paragraph.

(A) The site certificate holder shall disburse the offset funds and any other funds required by sub-subparagraph (ii) of this subparagraph to the qualified organization as follows:

(i) When the site certificate holder receives written notice from the qualified organization certifying that the qualified organization is contractually obligated to pay any funds to implement offsets using the offset funds, the site certificate holder shall make the requested amount available to the qualified organization unless the total of the amount requested and any amounts previously requested exceeds the offset funds, in which case only the remaining amount of the offset funds shall be made available. The qualified organization shall use at least 80 percent of the offset funds for contracts to implement offsets. The qualified organization shall assess offsets for their potential to qualify in, generate credits in or reduce obligations in other regulatory settings. The qualified organization may use up to 20 percent of the offset funds for monitoring, evaluation, administration and enforcement of contracts to implement offsets.

(ii) At the request of the qualified organization and in addition to the offset funds, the site certificate holder shall pay the qualified organization an amount equal to 10 percent of the first \$500,000 of the offset funds and 4.286 percent of any offset funds in excess of \$500,000. This amount shall not be less than \$50,000 unless a lesser amount is specified in the site certificate. This amount compensates the qualified organization for its costs of selecting offsets and contracting for the implementation of offsets.

(iii) Notwithstanding any provision to the contrary, a site certificate holder subject to this subparagraph shall have no obligation with regard to offsets, the offset funds or the funds required by sub-subparagraph (ii) of this subparagraph other than to make available to the qualified organization the total amount required under paragraph [(c)] (d) of this subsection and sub-subparagraph (ii) of this subparagraph, nor shall any nonperformance, negligence or misconduct on the part of the qualified organization be a basis for revocation of the site certificate or any other enforcement action by the council with respect to the site certificate holder.

(B) If the council finds there is no qualified organization, the site certificate holder shall select one or more offsets to be implemented pursuant to criteria established by the council. The site certificate holder shall give written notice of its selections to the council and to any person requesting notice. On petition by the State Department of Energy, or by any person adversely affected or aggrieved by the site certificate holder's selection of offsets, or on the council's own motion, the council may review such selection. The petition must be received by the council within 30 days of the date the notice of selection is placed in the United States mail, with first-class postage prepaid. The council shall approve the site certificate holder's selection unless it finds that the selection is not consistent with criteria es-

tablished by the council. The site certificate holder shall contract to implement the selected offsets within 18 months after commencing construction of the facility unless good cause is shown requiring additional time. The contracts shall obligate the expenditure of at least 85 percent of the offset funds for the implementation of offsets. No more than 15 percent of the offset funds may be spent on monitoring, evaluation and enforcement of the contract to implement the selected offsets. The council's criteria for selection of offsets shall be based on the criteria set forth in paragraphs [(b)(C) and (c)(B)] (c)(C) and (d)(B) of this subsection and may also consider the costs of particular types of offsets in relation to the expected benefits of such offsets. The council's criteria shall not require the site certificate holder to select particular offsets, and shall allow the site certificate holder a reasonable range of choices in selecting offsets. In addition, notwithstanding any other provision of this section, the site certificate holder's financial liability for implementation, monitoring, evaluation and enforcement of offsets pursuant to this subsection shall be limited to the amount of any offset funds not already contractually obligated. Nonperformance, negligence or misconduct by the entity or entities implementing, monitoring or evaluating the selected offset shall not be a basis for revocation of the site certificate or any other enforcement action by the council with respect to the site certificate holder.

(C) Every qualified organization that has received funds under this paragraph shall, at five-year intervals beginning on the date of receipt of such funds, provide the council with the information the council requests about the qualified organization's performance. The council shall evaluate the information requested and, based on such information, shall make any recommendations to the Legislative Assembly that the council deems appropriate.

[(e)] (f) As used in this subsection:

(A) "Adjusted to ISO conditions" means carbon dioxide emissions and net electric power output as determined at 59 degrees Fahrenheit, 14.7 pounds per square inch atmospheric pressure and 60 percent humidity.

(B) "Base load gas plant" means a generating facility that is fueled by natural gas, except for periods during which an alternative fuel may be used and when such alternative fuel use shall not exceed 10 percent of expected fuel use in Btu, higher heating value, on an average annual basis, and where the applicant requests and the council adopts no condition in the site certificate for the generating facility that would limit hours of operation other than restrictions on the use of alternative fuel. The council shall assume a 100 percent capacity factor for such plants and a 30-year life for the plants for purposes of determining gross carbon dioxide emissions.

(C) "Carbon dioxide equivalent" means the global warming potential of a greenhouse gas reflected in units of carbon dioxide.

(D) "Fossil-fueled power plant" means a generating facility that produces electric power from natural gas, petroleum, coal or any form of solid, liquid or gaseous fuel derived from such material.

(E) "Generating facility" means those energy facilities that are defined in ORS 469.300 [(11)(a)(A), (B) and (D)] (12)(a)(A), (B) and (D).

(F) "Global warming potential" means the determination of the atmospheric warming resulting from the release of a unit mass of a particular greenhouse gas in relation to the warming resulting from the release of the equivalent mass of carbon dioxide.

(G) "Greenhouse gas" means carbon dioxide, methane and nitrous oxide.

(H) "Gross carbon dioxide emissions" means the predicted carbon dioxide emissions of the proposed energy facility measured on a new and clean basis.

(I) "Net carbon dioxide emissions" means gross carbon dioxide emissions of the proposed energy facility, less carbon dioxide or other greenhouse gas emissions avoided, displaced or sequestered by any combination of cogeneration or offsets.

(J) "New and clean basis" means the average carbon dioxide emissions rate per hour and net electric power output of the energy facility, without degradation, as determined by a 100-hour test at full power completed during the first 12 months of commercial operation of the energy facility, with the results adjusted for the average annual site condition for temperature, barometric pressure and relative humidity and use of alternative fuels, and using a rate of 117 pounds of carbon dioxide per million Btu of natural gas fuel and a rate of 161 pounds of carbon dioxide per million Btu of distillate fuel, if such fuel use is proposed by the applicant. The council may by rule adjust the rate of pounds of carbon dioxide per million Btu for natural gas or distillate fuel. The council may by rule set carbon dioxide emissions rates for other fuels.

(K) "Nongenerating facility" means those energy facilities that are defined in ORS 469.300 [(11)(a)(C)] (12)(a)(C) and (E) to (I).

(L) "Offset" means an action that will be implemented by the applicant, a third party or through the qualified organization to avoid, sequester or displace emissions.

(M) "Offset funds" means the amount of funds determined by the council to satisfy the applicable carbon dioxide emissions standard pursuant to paragraph [(c)(C)] (d)(C) of this subsection.

(N) "Qualified organization" means an entity that:

(i) Is exempt from federal taxation under section 501(c)(3) of the Internal Revenue Code as amended and in effect on December 31, 1996;

(ii) Either is incorporated in the State of Oregon or is a foreign corporation authorized to do business in the State of Oregon;

(iii) Has in effect articles of incorporation that require that offset funds received pursuant to this section are used for offsets that require that decisions on the use of the offset funds are made by a decision-making body composed of seven voting

members of which three are appointed by the council, three are Oregon residents appointed by the Bullitt Foundation or an alternative environmental nonprofit organization named by the body, and one is appointed by the applicants for site certificates that are subject to paragraph [(d)] (e) of this subsection and the holders of such site certificates, and that require nonvoting membership on the body for holders of site certificates that have provided funds not yet disbursed under paragraph [(d)(A)] (e)(A) of this subsection;

(iv) Has made available on an annual basis, beginning after the first year of operation, a signed opinion of an independent certified public accountant stating that the qualified organization's use of funds pursuant to this statute conforms with generally accepted accounting procedures except that the qualified organization shall have one year to conform with generally accepted accounting principles in the event of a nonconforming audit;

(v) Has to the extent applicable, except for good cause, entered into contracts obligating at least 60 percent of the offset funds to implement offsets within two years after the commencement of construction of the facility; and

(vi) Has to the extent applicable, except for good cause, complied with paragraph [(d)(A)(i)] (e)(A)(i) of this subsection.

(3) Except as provided in ORS 469.504 for land use compliance and except for those statutes and rules for which the decision on compliance has been delegated by the federal government to a state agency other than the council, the facility complies with all other Oregon statutes and administrative rules identified in the project order, as amended, as applicable to the issuance of a site certificate for the proposed facility. If compliance with applicable Oregon statutes and administrative rules, other than those involving federally delegated programs, would result in conflicting conditions in the site certificate, the council may resolve the conflict consistent with the public interest. A resolution may not result in the waiver of any applicable state statute.

(4) The facility complies with the statewide planning goals adopted by the Land Conservation and Development Commission.

SECTION 4. ORS 469.504 is amended to read:

469.504. (1) A proposed facility shall be found in compliance with the statewide planning goals under ORS 469.503 (4) if:

(a) The facility has received local land use approval under the acknowledged comprehensive plan and land use regulations of the affected local government; or

(b) The Energy Facility Siting Council determines that:

(A) The facility complies with applicable substantive criteria from the affected local government's acknowledged comprehensive plan and land use regulations that are required by the statewide planning goals and in effect on the date the application is submitted, and with any Land Conser-

vation and Development Commission administrative rules and goals and any land use statutes that apply directly to the facility under ORS 197.646;

(B) For an energy facility or a related or supporting facility that must be evaluated against the applicable substantive criteria pursuant to subsection (5) of this section, that the proposed facility does not comply with one or more of the applicable substantive criteria but does otherwise comply with the applicable statewide planning goals, or that an exception to any applicable statewide planning goal is justified under subsection (2) of this section; or

(C) For a facility that the council elects to evaluate against the statewide planning goals pursuant to subsection (5) of this section, that the proposed facility complies with the applicable statewide planning goals or that an exception to any applicable statewide planning goal is justified under subsection (2) of this section.

(2) The council may find goal compliance for a facility that does not otherwise comply with one or more statewide planning goals by taking an exception to the applicable goal. Notwithstanding the requirements of ORS 197.732, the statewide planning goal pertaining to the exception process or any rules of the Land Conservation and Development Commission pertaining to an exception process goal, the council may take an exception to a goal if the council finds:

(a) The land subject to the exception is physically developed to the extent that the land is no longer available for uses allowed by the applicable goal;

(b) The land subject to the exception is irrevocably committed as described by the rules of the Land Conservation and Development Commission to uses not allowed by the applicable goal because existing adjacent uses and other relevant factors make uses allowed by the applicable goal impracticable; or

(c) The following standards are met:

(A) Reasons justify why the state policy embodied in the applicable goal should not apply;

(B) The significant environmental, economic, social and energy consequences anticipated as a result of the proposed facility have been identified and adverse impacts will be mitigated in accordance with rules of the council applicable to the siting of the proposed facility; and

(C) The proposed facility is compatible with other adjacent uses or will be made compatible through measures designed to reduce adverse impacts.

(3) If compliance with applicable substantive local criteria and applicable statutes and state administrative rules would result in conflicting conditions in the site certificate or amended site certificate, the council shall resolve the conflict consistent with the public interest. A resolution may not result in a waiver of any applicable state statute.

(4) An applicant for a site certificate shall elect whether to demonstrate compliance with the statewide planning goals under subsection (1)(a) or (b) of

this section. The applicant shall make the election on or before the date specified by the council by rule.

(5) Upon request by the State Department of Energy, the special advisory group established under ORS 469.480 shall recommend to the council, within the time stated in the request, the applicable substantive criteria under subsection (1)(b)(A) of this section. If the special advisory group does not recommend applicable substantive criteria within the time established in the department's request, the council may either determine and apply the applicable substantive criteria under subsection (1)(b) of this section or determine compliance with the statewide planning goals under subsection (1)(b)(B) or (C) of this section. If the special advisory group recommends applicable substantive criteria for an energy facility described in ORS 469.300 or a related or supporting facility that does not pass through more than one local government jurisdiction or more than three zones in any one jurisdiction, the council shall apply the criteria recommended by the special advisory group. If the special advisory group recommends applicable substantive criteria for an energy facility as defined in ORS 469.300 [(11)(a)(C)] (12)(a)(C) to (E) or a related or supporting facility that passes through more than one jurisdiction or more than three zones in any one jurisdiction, the council shall review the recommended criteria and determine whether to evaluate the proposed facility against the applicable substantive criteria recommended by the special advisory group, against the statewide planning goals or against a combination of the applicable substantive criteria and statewide planning goals. In making its determination, the council shall consult with the special advisory group and shall consider:

(a) The number of jurisdictions and zones in question;

(b) The degree to which the applicable substantive criteria reflect local government consideration of energy facilities in the planning process; and

(c) The level of consistency of the applicable substantive criteria from the various zones and jurisdictions.

(6) The council is not subject to ORS 197.180 and a state agency may not require an applicant for a site certificate to comply with any rules or programs adopted under ORS 197.180.

(7) On or before its next periodic review, each affected local government shall amend its comprehensive plan and land use regulations as necessary to reflect the decision of the council pertaining to a site certificate or amended site certificate.

(8) Notwithstanding ORS 34.020 or 197.825 or any other provision of law, the affected local government's land use approval of a proposed facility under subsection (1)(a) of this section and the special advisory group's recommendation of applicable substantive criteria under subsection (5) of this section shall be subject to judicial review only as provided in ORS 469.403. If the applicant elects to comply with subsection (1)(a) of this section, the

provisions of this subsection shall apply only to proposed projects for which the land use approval of the local government occurs after the date a notice of intent or an application for expedited processing is submitted to the State Department of Energy.

(9) The State Department of Energy, in cooperation with other state agencies, shall provide, to the extent possible, technical assistance and information about the siting process to local governments that request such assistance or that anticipate having a facility proposed in their jurisdiction.

SECTION 5. ORS 498.502 is amended to read:

498.502. (1) Subject to and consistent with the federal Endangered Species Act of 1973 (P.L. 93-205, 16 U.S.C. 1531 et seq.) and notwithstanding any provision of ORS 496.171 to 496.182:

(a) If a person applies for a permit, license, authorization or other form of permission required by law from a state agency for a proposed action that may affect core area habitat of sage grouse, the person may file with the State Department of Fish and Wildlife, at any time before or after the commencement of the relevant permitting, licensing, authorization or other form of permission process, a report that uses the best scientific and commercial data available to provide a description of the proposed action and its possible effects on the habitat.

(b) The report described in this section must describe the core area habitat of sage grouse affected by the proposed action, specify whether the habitat is essential and irreplaceable and provide proposals for off-site mitigation or a mitigation bank.

(c)(A) Within 60 days after the filing of the report described in this section, the department shall evaluate whether the proposals specified in the report result in a net loss of either the quality or quantity of sage grouse habitat and provide a net benefit to the quality or quantity of sage grouse habitat.

(B)(i) If the department concludes that the proposals specified in the report do not result in a net loss of either the quality or quantity of sage grouse habitat and do provide a net benefit to the quality or quantity of sage grouse habitat, the department shall issue an order finding that the core area habitat of sage grouse affected by the proposed action is not irreplaceable. The department may not thereafter reverse or modify the order except pursuant to a judgment of a court.

(ii) If the department concludes that the proposals specified in the report result in a net loss of either the quality or quantity of sage grouse habitat and do not provide a net benefit to the quality or quantity of sage grouse habitat, a person affected by the action may request a contested case hearing before the State Fish and Wildlife Commission, to be conducted as provided in ORS chapter 183.

(2) The provisions of this section apply to a site certificate for an energy facility described in ORS 469.300 [(11)(a)(F)] (12)(a)(F), but do not apply to a site certificate for any other facility under the provisions of ORS 469.300 to 469.563.

(3) The commission may adopt rules to carry out the provisions of this section.

SECTION 6. ORS 469.373 is amended to read:

469.373. (1) Notwithstanding the expedited review process established pursuant to ORS 469.370, an applicant may apply under the provisions of this section for expedited review of an application for a site certificate for an energy facility if the energy facility:

(a) Is a combustion turbine energy facility fueled by natural gas or is a reciprocating engine fueled by natural gas, including an energy facility that uses petroleum distillate fuels for backup power generation;

(b) Is a permitted or conditional use allowed under an applicable local acknowledged comprehensive plan, land use regulation or federal land use plan, and is located:

(A) At or adjacent to an existing energy facility;

or (B)(i) At, adjacent to or in close proximity to an existing industrial use; and

(ii) In an area currently zoned or designated for industrial use;

(c)(A) Requires no more than three miles of associated transmission lines or three miles of new natural gas pipelines outside of existing rights of way for transmission lines or natural gas pipelines; or

(B) Imposes, in the determination of the Energy Facility Siting Council, no significant impact in the locating of associated transmission lines or new natural gas pipelines outside of existing rights of way;

(d) Requires no new water right or water right transfer;

(e) Provides funds to a qualified organization in an amount determined by the council to be sufficient to produce any required reduction in emissions as specified in ORS 469.503 [(2)(c)(C)] (2)(d)(C) and in rules adopted under ORS 469.503 for the total carbon dioxide emissions produced by the energy facility for the life of the energy facility; and

(f)(A) Discharges process wastewater to a wastewater treatment facility that has an existing National Pollutant Discharge Elimination System permit, can obtain an industrial pretreatment permit, if needed, within the expedited review process time frame and has written confirmation from the wastewater facility permit holder that the additional wastewater load will be accommodated by the facility without resulting in a significant thermal increase in the facility effluent or without requiring any changes to the wastewater facility National Pollutant Discharge Elimination System permit;

(B) Plans to discharge process wastewater to a wastewater treatment facility owned by a municipal corporation that will accommodate the wastewater from the energy facility and supplies evidence from the municipal corporation that:

(i) The municipal corporation has included, or intends to include, the process wastewater load from

the energy facility in an application for a National Pollutant Discharge Elimination System permit; and

(ii) All conditions required of the energy facility to allow the discharge of process wastewater from the energy facility will be satisfied; or

(C) Obtains a National Pollutant Discharge Elimination System or water pollution control facility permit for process wastewater disposal, supplies evidence to support a finding that the discharge can likely be permitted within the expedited review process time frame and that the discharge will not require:

(i) A new National Pollutant Discharge Elimination System permit, except for a storm water general permit for construction activities; or

(ii) A change in any effluent limit or discharge location under an existing National Pollutant Discharge Elimination System or water pollution control facility permit.

(2) An applicant seeking expedited review under this section shall submit documentation to the State Department of Energy, prior to the submission of an application for a site certificate, that demonstrates that the energy facility meets the qualifications set forth in subsection (1) of this section. The department shall determine, within 14 days of receipt of the documentation, on a preliminary, nonbinding basis, whether the energy facility qualifies for expedited review.

(3) If the department determines that the energy facility preliminarily qualifies for expedited review, the applicant may submit an application for expedited review. Within 30 days after the date that the application for expedited review is submitted, the department shall determine whether the application is complete. If the department determines that the application is complete, the application shall be deemed filed on the date that the department sends the applicant notice of its determination. If the department determines that the application is not complete, the department shall notify the applicant of the deficiencies in the application and shall deem the application filed on the date that the department determines that the application is complete. The department or the council may request additional information from the applicant at any time.

(4) The State Department of Energy shall send a copy of a filed application to the Department of Environmental Quality, the Water Resources Department, the State Department of Fish and Wildlife, the State Department of Geology and Mineral Industries, the State Department of Agriculture, the Department of Land Conservation and Development, the Public Utility Commission and any other state agency, city, county or political subdivision of the state that has regulatory or advisory responsibility with respect to the proposed energy facility. The State Department of Energy shall send with the copy of the filed application a notice specifying that:

(a) In the event the council issues a site certificate for the energy facility, the site certificate will bind the state and all counties, cities and political subdivisions in the state as to the approval of the

site, the construction of the energy facility and the operation of the energy facility, and that after the issuance of a site certificate, all permits, licenses and certificates addressed in the site certificate must be issued as required by ORS 469.401 (3); and

(b) The comments and recommendations of state agencies, counties, cities and political subdivisions concerning whether the proposed energy facility complies with any statute, rule or local ordinance that the state agency, county, city or political subdivision would normally administer in determining whether a permit, license or certificate required for the construction or operation of the energy facility should be approved will be considered only if the comments and recommendations are received by the department within a reasonable time after the date the application and notice of the application are sent by the department.

(5) Within 90 days after the date that the application was filed, the department shall issue a draft proposed order setting forth:

(a) A description of the proposed energy facility;

(b) A list of the permits, licenses and certificates that are addressed in the application and that are required for the construction or operation of the proposed energy facility;

(c) A list of the statutes, rules and local ordinances that are the standards and criteria for approval of any permit, license or certificate addressed in the application and that are required for the construction or operation of the proposed energy facility; and

(d) Proposed findings specifying how the proposed energy facility complies with the applicable standards and criteria for approval of a site certificate.

(6) The council shall review the application for site certification in the manner set forth in subsections (7) to (10) of this section and shall issue a site certificate for the facility if the council determines that the facility, with any required conditions to the site certificate, will comply with:

(a) The requirements for expedited review as specified in this section;

(b) The standards adopted by the council pursuant to ORS 469.501 (1)(a), (c) to (e), (g), (h) and (L) to (o);

(c) The requirements of ORS 469.503 (3); and

(d) The requirements of ORS 469.504 (1)(b).

(7) Following submission of an application for a site certificate, the council shall hold a public informational meeting on the application. Following the issuance of the proposed order, the council shall hold at least one public hearing on the application. The public hearing shall be held in the area affected by the energy facility. The council shall mail notice of the hearing at least 20 days prior to the hearing. The notice shall comply with the notice requirements of ORS 197.797 (2) and shall include, but need not be limited to, the following:

(a) A description of the energy facility and the general location of the energy facility;

(b) The name of a department representative to contact and the telephone number at which people may obtain additional information;

(c) A statement that copies of the application and proposed order are available for inspection at no cost and will be provided at reasonable cost; and

(d) A statement that the record for public comment on the application will close at the conclusion of the hearing and that failure to raise an issue in person or in writing prior to the close of the record, with sufficient specificity to afford the decision maker an opportunity to respond to the issue, will preclude consideration of the issue, by the council or by a court on judicial review of the council's decision.

(8) Prior to the conclusion of the hearing, the applicant may request an opportunity to present additional written evidence, arguments or testimony regarding the application. In the alternative, prior to the conclusion of the hearing, the applicant may request a contested case hearing on the application. If the applicant requests an opportunity to present written evidence, arguments or testimony, the council shall leave the record open for that purpose only for a period not to exceed 14 days after the date of the hearing. Following the close of the record, the department shall prepare a draft final order for the council. If the applicant requests a contested case hearing, the council may grant the request if the applicant has shown good cause for a contested case hearing. If a request for a contested case hearing is granted, subsections (9) to (11) of this section do not apply, and the application shall be considered under the same contested case procedures used for a non-expedited application for a site certificate.

(9) The council shall make its decision based on the record and the draft final order prepared by the department. The council shall, within six months of the date that the application is deemed filed:

- (a) Grant the application;
- (b) Grant the application with conditions;
- (c) Deny the application; or
- (d) Return the application to the site certification process required by ORS 469.320.

(10) If the application is granted, the council shall issue a site certificate pursuant to ORS 469.401

and 469.402. Notwithstanding subsection (6) of this section, the council may impose conditions based on standards adopted under ORS 469.501 (1)(b), (f) and (i) to (k), but may not deny an application based on those standards.

(11) Judicial review of the approval or rejection of a site certificate by the council under this section shall be as provided in ORS 469.403.

SECTION 7. ORS 469.409 is amended to read:

469.409. Any site certificate holder that is required by its site certificate or by law to demonstrate need for the facility shall instead demonstrate compliance with the carbon dioxide emissions standard applicable to the type of facility subject to the site certificate before beginning construction. Such a demonstration shall be made as an amendment to the site certificate. Notwithstanding ORS 469.405 or any council rule, if the site certificate holder proceeds pursuant to ORS 469.503 [(2)(c)(A)] (2)(d)(A) or (C), or both, the Energy Facility Siting Council shall not conduct a contested case hearing on such amendment and the council's order shall not be subject to judicial review. Any dispute about the site certificate holder's demonstration of compliance with the applicable carbon dioxide emissions standard shall be settled through binding arbitration.

CAPTIONS

SECTION 8. The unit captions used in this 2024 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 2024 Act.

EFFECTIVE DATE

SECTION 9. This 2024 Act takes effect on the 91st day after the date on which the 2024 regular session of the Eighty-second Legislative Assembly adjourns sine die.

Approved by the Governor March 27, 2024
 Filed in the office of Secretary of State March 27, 2024
 Effective date June 6, 2024

Grid Reliability 101

Clean energy will keep America’s aging electric grid—the system of wires, electricity generators, and operators that delivers electricity—reliable through rising power demand and extreme weather events.

What Is ‘Grid Reliability’?

Grid reliability is the electric grid’s ability to continue operating, even in unexpected conditions. Key components of grid reliability include:

Operational Reliability



Ability to Respond to Real-Time Demand

How easily can grid operators balance supply and demand in real time?

Resilience



Ability to Withstand and Bounce Back from Extreme Events

Can the grid withstand disruptive events and quickly restore power after a blackout?

Resource Adequacy



Enough Spare Capacity

Does the grid have enough supply to meet demand everywhere under reasonably foreseeable circumstances?

System Stability



Adequate Flow of Electricity

Can all parts of the grid maintain enough voltage through system disturbances?

Why Do We Need Grid Reliability?

Maintaining a functioning power system is crucial to saving lives and powering the economy – both under normal circumstances and in the event of extreme weather, natural disasters, or other unforeseen events. A reliable electric grid is essential for America’s economy and energy security.

What Challenges Is Our Grid Facing?

Our electric grid is more than a century old and badly in need of modernization. Many of the cables, towers, substations, and other components are 50-70 years old and past their useful lives.

These outdated and stressed systems have left our grid vulnerable to blackouts during extreme weather events such as drought, extended heatwaves, wildfires, and extreme cold conditions. Research suggests that these weather events are expected to become more common and more intense due to climate change¹, and our current grid will struggle to withstand these new extremes.

Can Clean Energy Affect Grid Reliability?

Clean energy sources improve grid reliability. During times of both average and peak electricity demand, clean energy plays an increasingly important role in stabilizing the grid.

Widescale incorporation of utility-scale wind, solar, offshore wind and energy storage into the grid improves its resilience against extreme weather and heat waves². In many parts of the country, clean energy resources regularly serve most of customer demand for electricity without any reliability issues.

- For example, the Southwest Power Pool (SPP), operating the power grid for most of the Great Plains, has at times obtained more than 90% of its electricity from renewable sources and on average generates more than a third of its electricity from wind sources.³

Across the nation, wind, solar and storage already provide over 15% of our electricity needs⁴.

Forecasting the availability of wind and solar has become increasingly accurate, so changes in the output of wind and solar have become highly predictable in a way that other resources are not; this provides grid operators with enough time to bring other units online during an emergency.

1 https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Chapter11.pdf
 2 <https://www.sciencedaily.com/releases/2021/05/210511123634.htm>
 3 <https://www.spp.org/news-list/spp-sets-regional-records-for-renewable-energy-production/>
 4 <https://cleanpower.org/market-report-2022/>



Grid-scale battery storage strengthens grid reliability by storing energy and instantly dispatching the exact amount of electricity needed when demand rises – a level of precision that existing electricity generators cannot match. Additionally, storage can be charged during periods of high renewable energy and discharged when the wind isn't blowing and the sun isn't shining, allowing for the seamless integration of clean power resources.

Energy storage also serves as back-up power for individual homes, businesses, communities, and the broader grid system to minimize and prevent power outages and service interruptions from extreme weather.

What is Needed to Improve Grid Reliability?

Transmission and energy storage are especially important for grid reliability.

New electricity transmission lines help us access a diverse set of renewable sources of electricity often located long distances away from load centers, while energy storage helps to smooth out fluctuations in output. During peak hours, there is typically substantial wind and solar availability somewhere in the country – but without transmission, customers may not be able to access it. The ability to transfer more electricity (transfer capacity) bolsters energy supply for the grid, ensuring that consumers have access to reliable power when and where they need it.

Energy storage solutions can capture and store energy generated from clean sources and deploy it during times of peak demand, maximizing the benefits of clean energy and minimizing outages.

Should We Add More Clean Energy to the Grid?

A grid powered by clean energy ensures a diverse, reliable electricity supply in a cost-effective manner for millions of Americans. It reduces the uncertainty posed by new extreme weather events and other challenges.

- **Clean energy directly benefits consumers by keeping electricity rates low⁵ and offering protection from market volatility**, as those resources do not expose customers to high fluctuating fuel prices.
- **Clean energy also provides an alternative to electricity generators that produce particulate and carbon pollution**, improving human health outcomes and reducing climate change-related extreme weather incidents that strain the grid.
- **Adding more clean energy to the grid diversifies our generation sources**, mitigating future weather-related power losses and keeping the lights on for American families and businesses.
 - And when extreme weather events *do* occur, like the recent heat waves in Texas⁶ and California⁷, or winter storm Elliott⁸, we've witnessed wind, solar, battery storage, and transmission provide critical energy to the grid.

The continued deployment of clean energy is not just beneficial but *necessary* for a sustainable, reliable and efficient power grid.



5 https://mc-cd8320d4-36a1-40ac-83cc-3389-cdn-endpoint.azureedge.net/-/media/Files/IRENA/Agency/Publication/2023/Aug/IRENA_Renewable_power_generation_costs_in_2022.pdf

6 <https://cleanpower.org/resources/clean-energy-keeps-texas-grid-resilient-during-heatwave/>

7 <https://www.energy.ca.gov/news/2023-08/data-show-clean-power-increasing-fossil-fuel-decreasing-california>

8 <https://www.pjm.com/-/media/markets-ops/winter-storm-elliott/faq-winter-storm-elliott.ashx>



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To: Energy Facility Siting Council

From: Thomas Jackman, Rules Coordinator

Date: May 2, 2025

Subject: Agenda Item C, Overview of Battery Energy Storage Systems for the May 16, 2025 EFSC Meeting

OVERVIEW

This report provides a comprehensive overview of Battery Energy Storage Systems (BESS) for the Oregon Energy Facility Siting Council (EFSC), highlighting EFSC's jurisdictional authority and recent legislative updates introduced by House Bill 4015 (2024). It reviews current utility-scale battery storage projects approved or operational across Oregon, discusses the predominant technologies, including lithium-ion and emerging alternatives, and identifies key issues surrounding safety, reliability, environmental impacts, and lifecycle management. The report also examines forthcoming technological advancements and their implications for future siting considerations.

EFSC JURISDICTION FOR BATTERY STORAGE & HB 4015 (2024)

In Oregon, EFSC traditionally oversees large energy generation projects (wind, solar, etc.) that meet certain thresholds. Until recently, standalone BESS was not even described in statute, although applicants have included battery storage as related and supporting facility components associated with EFSC jurisdictional projects. House Bill 4015, passed in 2024, addressed this gap by defining BESS in statute and allowing developers to opt-in to EFSC review for battery-only projects. Effective January 1, 2025, HB 4015 amended ORS 469.300(5) to define a "battery energy storage system" as a facility that stores and later discharges energy using rechargeable batteries (excluding personal, non-commercial systems). It also added ORS 469.320(8), giving developers (or local governments, in consultation with developers) the choice to have a standalone BESS reviewed through EFSC rather than solely through county processes.

Importantly, HB 4015 clarified that if a BESS is built in conjunction with another EFSC-jurisdictional energy facility (e.g. a solar farm), it does not require a separate site certificate – it can be permitted as a "related or supporting facility" under the primary project's certificate, although that was already the practice. However, the bill did not automatically authorize BESS in local land use zones (like Exclusive Farm Use land), so standalone projects still face land use consistency hurdles if county codes don't explicitly allow battery storage. Presumably, in Exclusive Farm Use zone lands they would be reviewed as a "utility facility necessary for public

service”¹ which is a Type 1 review and only allows requirements that are specifically included with or referenced by that use.

Overall, HB 4015 expanded EFSC’s purview to include large BESS projects, clarified their review under state standards while retaining local land use authority unless delegated.

UTILITY-SCALE BESS PROJECTS IN OREGON (APPROVED & OPERATIONAL)

Utility-scale battery projects in Oregon have grown alongside wind and solar developments. Many have been proposed as hybrid facilities (battery plus generation), and a few are now operating. Below is a summary of notable approved or operational BESS projects:

- **Port Westward (Columbia County)** – A 6 MW lithium-ion system, built as part of PGE’s Port Westward gas plant site, became one of Oregon’s first grid-scale batteries (approved via a site certificate amendment). It uses modular container units (44 ft long) on a compact pad (0.2 acres) and has been operational for several years.
- **Pachwáywit Fields (Gilliam County)** – Formerly Montague Solar, this 162 MW solar farm includes a 100 MW BESS (lithium-ion). The battery, composed of over 100 containerized units, is co-located with the solar arrays on 6.5 acres. Operational since April 2023, it’s Oregon’s largest solar-linked battery, providing up to 4 hours of energy to help meet PGE’s peak demand.
- **Wheatridge Renewable Energy Facility (Morrow County)** – A wind/solar hybrid project (300 MW wind + 50 MW solar) that also includes a 30 MW battery system. The battery uses 41 container units (each 36 ft by 12 ft) and was one of the first large batteries deployed with a wind farm in the U.S. This facility became operational in 2021.
- **Bakeoven Solar (Wasco County)** – A 100 MW battery approved as part of the 303 MW Daybreak/Bakeoven solar complex. It will consist of containerized lithium-ion units (40 ft shipping containers) occupying 8 acres. This project is under construction – the deadline to complete construction is April 24, 2026.
- **Nolin Hills (Umatilla County)** – A wind + solar farm that received approval for a 120 MW battery (likely lithium-ion). The design calls for 240 shipping containers of batteries dispersed across the site. This project is approved, but not yet built.
- **Obsidian Solar Center (Lake County)** – A solar farm that includes a 50 MW battery. Notably, it plans to use vanadium flow battery, discussed below, instead of lithium-ion, with 134 large tank units proposed. The flow battery would spread over 25 acres, but offers longer duration storage. The project is approved, however the developer recently asked for a three-year extension, with a proposed construction commencement deadline of February 25, 2028.
- **Madras Solar (Jefferson County)** – A solar project approved in 2021, this facility recently received approval from EFSC to add up to 63 MW of storage. After seeking an extension, it has a construction commencement deadline of June 25, 2027.
- **Wagon Trail Solar (Morrow County)** – A 500 megawatt solar project with a proposed **2,000 MW** of battery energy. The developer has until September 20, 2027 to comply with applicable preconstruction conditions and begin construction on the facility.
- **Sunstone Solar (Morrow County)** was recently approved with **500–1200 MW** of battery power and up to 7,200 MW hours of capacity. The developer has until November 18,

¹ ORS 215.213 or 215.281(1)(c)

2027, to comply with applicable pre-construction site certificate conditions and begin construction.

- **Other Approved BESS** – Several other EFSC-approved facilities also have battery additions, including: **West End Solar** (70 MW battery), **Stateline Wind** (50 MW battery) and **Summit Ridge Wind/Solar** (up to 201 MW battery planned).
- **Proposed BESS:**
 - **Buckley Solar** in Sherman County would be 1,200 MW solar with 1,200 MW of battery storage.
 - PacifiCorp’s **Sunrise** project in Morrow County would consist of a 800 MW solar facility and an 800 MW BESS.
 - The **Deschutes Solar and Battery Energy Storage** project in Wasco County would consist of a 1,000 MW solar facility with a 1,000 MW BESS.

Local utilities are also contracting standalone storage (PGE, for instance, has announced plans for hundreds of MW of battery storage)². Oregon’s first major standalone BESS, Salem Smart Power Center (5MW), came online in 2013. Now with EFSC’s optional pathway, developers of large standalone batteries (perhaps > 50–100 MW) have the choice to seek a state site certificate, which could standardize review of issues like fire safety and the environmental impacts of these installations.

BATTERY TECHNOLOGIES FOR UTILITY-SCALE STORAGE

While lithium-ion (or Li-ion) batteries have the lion’s share of grid storage on the market today, several other technologies have emerged or are on the horizon which are either cheaper, safer, longer lasting, or some combination of those three. What follows is a summary of these technologies.

Lithium-Ion Batteries (Li-ion)



Over 90% of large-scale battery capacity in the U.S. uses lithium-ion chemistry³. Li-ion batteries have high energy density (compact size) and fast response, ideal for 1–4 hour storage needs.

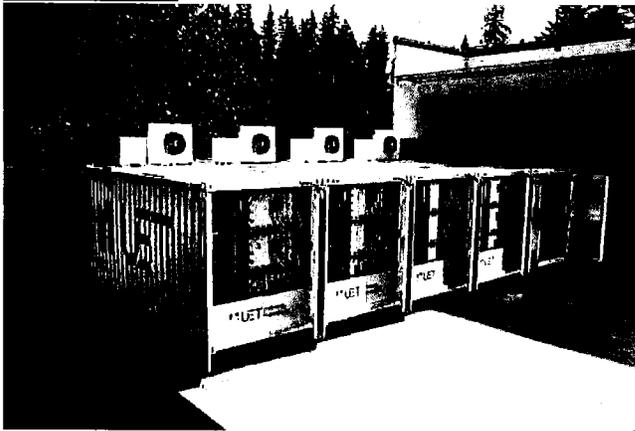
² <https://investors.portlandgeneral.com/news-releases/news-release-details/portland-general-electric-announces-first-quarter-2025-results>

³ <https://www.eia.gov/todayinenergy/detail.php?id=63025>

Most grid batteries use thousands of Li-ion cells packaged into modules, then racks, housed in containers or cabinets.

Physically, a utility Li-ion BESS often looks like rows of 20 or 40-foot shipping containers placed on concrete pads with inverters and a step-up transformer nearby. Each container might hold several MWh of batteries. For example, a 100 MW/400 MWh facility might require dozens of container units spread over a few acres. Li-ion systems are typically modular and scalable, making them popular for projects ranging from 1 MW to several hundred MW. Common chemistries include NMC (nickel manganese cobalt) and LFP (lithium iron phosphate). LFP batteries are increasingly favored for large BESS due to better fire safety (lower risk of thermal runaway) and avoidance of cobalt, which is largely sourced from Congo, often using less than ideal methods. LFP batteries have slightly lower energy density than NMC, but enjoy longer cycle life (exceeding 3,000 cycles compared to just 1,000 to 2,000 cycles for Li-ion).

Flow Batteries



Flow battery systems (e.g. vanadium redox flow batteries) store energy in liquid electrolytes held in large tanks, which are pumped through a reactor stack to charge and discharge the battery. This design allows the power (MW) and energy (MWh) capacity to be scaled independently – simply build bigger tanks for more duration and utilize more tanks for greater power. Flow batteries have a significantly lower energy density than lithium-ion batteries, so they occupy more space per MWh. A typical flow battery plant might resemble a tank farm or warehouse building but offer very long cycle life – over 20 years with minimal degradation and inherent safety, because there is no risk of thermal runaway.

In Oregon, flow batteries are not yet common, but as noted above, the Obsidian Solar Center plans to use a flow battery. Other demonstration projects in the U.S. (California, etc.) are already in use, proving flow technology is viable for multi-hour storage. Flow batteries are well-suited for longer durations (4–12+ hours), however their footprint tends to be larger – for instance, a 50 MW/200 MWh vanadium flow system could need several tens of acres.

A benefit of a flow battery is that it can fully discharge to 0% without damage and have almost unlimited cycling capability, making them ideal for daily deep-cycle (0 to 100 and back to 0) use and long-duration load shifting. Regulatory interest in flow batteries is growing as they can provide seasonal storage without the raw material constraints of Li-ion. The primary

component (vanadium) is more abundant, and the electrolytes can be reused and recycled relatively easily.

Emerging Alternatives

Beyond Li-ion and vanadium flow, a few other battery types are on the horizon for utility scale:

- **Sodium-Ion Batteries** – A *next-generation* technology closely watched in 2024–2025. Sodium-ion batteries replace lithium with sodium, which is cheaper and more abundant. Companies like CATL have developed prototype sodium-ion cells with around 160 Wh/kg energy density (approaching lithium iron phosphate levels). These batteries are safer, with a nonflammable electrolyte, and perform better in cold temperatures. The drawback of this battery type is their slightly lower energy density and cycle life, at least for now. Stationary storage is a prime candidate for sodium-ion adoption (since weight/volume are less critical than for EVs). Industry experts predict sodium-ion batteries will start appearing in grid projects in the late 2020s once production scales up – potentially in combination with Li-ion (hybrid systems where sodium batteries provide bulk energy and lithium provides high power).
- **Solid-State Batteries** – Still in R&D, solid-state batteries replace the liquid electrolyte of Li-ion with a solid material (ceramic, etc.), enabling use of pure lithium metal anodes. They promise much higher energy density and improved safety (non-flammable). Companies are aiming for solid-state battery commercialization later this decade, primarily for EVs. If successful, utility-scale packs could follow, offering more compact storage or lower cooling needs. But currently no large solid-state BESS exists; this is a future watch item for EFSC as the technology evolves.
- **Iron-Air Batteries** – An ultra long-duration concept being pioneered by firms like Form Energy. These are not electrochemical cells in containers, but rather modular tanks that use iron, water, and air to store energy via reversible rusting. Iron-air batteries can theoretically provide 100+ hours of storage at very low cost, but with slow response (more for multi-day shifting than fast grid services). Form Energy is building a 10 MW/1000 MWh (100-hr) pilot in Minnesota slated for 2025. If that succeeds, Oregon might see interest in such multi-day storage for resiliency. The footprint is large (they resemble water treatment plants) and power density is low, so they complement rather than replace Li-ion: e.g. Li-ion for daily cycling, iron-air for extreme events or seasonal needs.
- **Zinc-Based Batteries** – Includes zinc-bromine flow batteries and zinc hybrid cathode batteries (like Eos Energy’s Znyth technology). Zinc batteries are attractive due to cheap, non-toxic materials. Eos’s systems, for example, use a water-based zinc chemistry in modular tank units for 3–4 hour storage. Several projects in California are testing these. They operate at ambient conditions and are non-flammable. Oregon’s Sunstone Solar applied for and received permission to use lithium or zinc for its 1200 MW battery plan and Wagon Trail Solar recently requested the ability to convert a portion of its BESS (up to 15MWs) to Zinc-bromide, indicating developers are considering zinc as an alternative if it proves viable at scale.

In summary, lithium-ion remains the workhorse for almost all near-term projects – thanks to its maturity and declining costs – but EFSC should be aware of these alternatives. Flow batteries could play a role in providing longer-duration storage without the fire risks of Li-ion. And emerging chemistries (sodium-ion, solid-state, metal-air, zinc) may become relevant within the

next decade, especially if they alleviate supply chain or safety concerns. Each technology comes with different physical footprints and siting implications – e.g. tank-based systems may need larger, flat sites; Li-ion container farms need access for maintenance and cooling; high-temperature batteries might need added safety buffers, etc. We turn to those key issues and concerns now.

KEY ISSUES AND CONCERNS WITH UTILITY-SCALE BESS

Deploying large battery systems raises several siting and operational concerns that EFSC and other regulators must consider:

Safety & Fire Risk

Battery facilities, especially Li-ion, carry a risk of thermal runaway and fire. Incidents have occurred globally – for instance, the Moss Landing BESS in California (300+ MW) experienced overheating events that took it offline in 2021–2022. In 2024, a thermal runaway resulted in a large fire at the same facility, incinerating all 300MW of battery capacity, but did not spread to nearby structures. Li-ion battery fires can be difficult to extinguish and emit toxic fumes. The good news is that the Moss Landing facility was one-of-a-kind, conceived and designed in 2018 before modern safety standards were adopted for large grid batteries. Battery safety standards have been updated multiple times since it was built.

Mitigation involves robust fire suppression systems (clean agent or water spray), thermal monitoring, and spacing of units to prevent cascade fires. Codes like NFPA 855 now provide standards for indoor/outdoor battery installations (e.g. maximum energy per enclosure, required fire separation distances, fire suppression requirements, etc.). Thermal management, such as sufficient HVAC cooling for containers, is also critical to prevent overheating.

Oregon’s facilities often are sited in remote areas, reducing public safety risk, but emergency responders still need training for BESS incidents. EFSC should be aware of industry safety standards (UL 9540A testing for battery racks, etc.) and the need for coordination with local fire authorities to ensure sufficient local response capabilities.

Reliability & Degradation

Unlike a substation, batteries are active devices that degrade with use. Li-ion batteries typically lose capacity over time – perhaps 1–2% per year depending on usage. For example, after 10 years, a BESS might have only 80% of its original capacity. Developers usually oversize the system or plan augmentation, such as adding new battery modules mid-life, to ensure the output meets the contract requirements over a project’s life. EFSC might see proposals where a 100 MW facility is built with 110 MW of batteries, expecting to use that headroom as cells age. Round-trip efficiency is another factor – Li-ion is about 85–90% efficient and these losses generate heat and degrade the cells. Flow batteries have lower efficiency (70–80%) but no significant degradation over tens of thousands of cycles. Ensuring that the project can meet performance and not create reliability issues on the grid (e.g. dropping out early due to degradation) is an operational concern. To address these concerns, utilities often require guarantees in contracts for capacity over a certain term.

Lifecycle & Recycling

Large-scale batteries have finite lifespans (around 10–15 years for Li-ion modules). What happens at end-of-life is a growing concern, but recycling programs for Li-ion are ramping up – there is a growing industry that aims to recycle and recover materials like lithium, cobalt, nickel, and copper from spent cells, reducing the environmental impact of disposal.

Oregon will want to ensure decommissioning plans include safe removal and recycling or disposal of battery systems. Site certificates require a decommissioning bond could potentially factor in battery recycling costs, as the salvage value of used battery metals is potentially significant and could offset some decommissioning expenses as recycling markets mature.

Supply Chain Constraints

Rapid growth in BESS deployment has raised concerns about the supply chain for critical materials. Li-ion batteries rely on minerals like lithium, cobalt, nickel, graphite. Globally, battery manufacturing is concentrated – over 80% of battery cell production capacity is in China⁴. This concentration has helped drive down costs but also poses supply risks as geopolitical or trade issues could affect prices and availability. Projects could face delays due to shortages of cells or components, which occurred in 2022–2023 when global lithium prices spiked.

The industry is responding by expanding manufacturing in the U.S. (thanks in part to incentives in the 2022 Inflation Reduction Act) and diversifying chemistries (like shifting to LFP, which uses no cobalt/nickel). Still, raw material mining and processing constraints are real – lithium and graphite processing are bottlenecks. EFSC doesn't directly control these upstream issues, but it's relevant in weighing the sustainability of a project. Using alternative chemistries (sodium, zinc, iron) could alleviate some supply pressures if those become commercially viable.

Environmental & Land Use Impacts

Compared to many energy facilities, BESS have a relatively small physical footprint, but there are still environmental factors. Large battery sites may require grading of land, installation of concrete pads or buildings, and perimeter fencing – all of which disturb soil and habitat. Visual impacts are generally low profile (the containers are usually <10 ft tall), and noise is minor (fans or HVAC units on containers produce a hum when cooling is needed). However, noise from inverters or cooling systems could be a concern if near residences. BESS can contain hazardous materials such as electrolytes, so spill containment and hazardous waste plans are important – especially for flow batteries, which have large volumes of liquid electrolyte (though typically in secure tanks).

For Li-ion, the hazard is mostly in fire scenario rather than leakage, as discussed above.

Grid Integration & Operations

Large BESS change how the grid operates. A key concern is ensuring they charge and discharge in a manner that supports reliability. At the local level, battery charging (which draws power) might impact transmission or create new peak loads if not managed. Most utility-scale batteries are operated under contract with a utility and provide services such as frequency regulation, capacity, etc. For EFSC, one relevant issue is making sure any new transmission or substation upgrades needed for the BESS are accounted for. Also, batteries can respond rapidly to grid

⁴ <https://insideevs.com/news/711990/how-china-became-global-battery-manufacturing-leader/>

signals, which is a benefit, but if there's a control malfunction it could cause abrupt swings – thus control systems and compliance with interconnection requirements (like IEEE 1547, etc.) are examined. Reliability standards (NERC) now include battery storage as assets that must meet certain performance in contingencies. EFSC's process will likely incorporate ODOE and utility input to verify that a proposed BESS won't adversely affect grid stability (except in the positive ways intended).

The good news for all of the above (although it can make review more challenging) is that industry learning curves are steep – each year brings improvements in battery safety (better cooling, fire suppression, battery chemistries with lower risk) and in asset management (smarter battery management systems to extend life).

CONCLUSION

Battery Energy Storage Systems are rapidly becoming essential infrastructure as Oregon pursues ambitious renewable energy targets and seeks reliable, resilient power solutions. While Li-on technology remains dominant in current projects, ongoing advancements in battery chemistries and storage solutions promise to diversify options, enhance performance, and address safety, supply chain, and environmental concerns.

EFSC's potential for jurisdiction under HB 4015 provides an important mechanism for thorough oversight of these facilities, ensuring that battery projects approved across Oregon meet rigorous standards for public safety, environmental stewardship, and grid reliability. As the landscape of utility-scale energy storage evolves, EFSC will play a pivotal role in guiding responsible and sustainable deployment that aligns with Oregon's energy future.

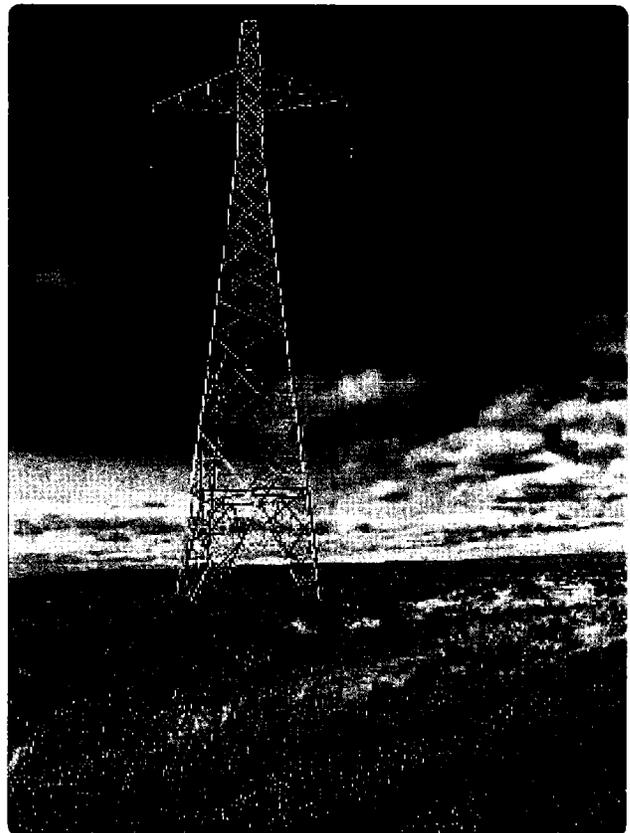
Energy Storage

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)
(<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

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Seventy-Eighth Oregon Legislative Assembly - 2015 Regular Session
STAFF MEASURE SUMMARY
House Committee On Energy and Environment

MEASURE: HB 2193 A
CARRIER: Rep. Holvey

Fiscal: Has minimal fiscal impact

Revenue: No Revenue Impact

Action Date: 04/21/15

Action: Do Pass As Amended And Be Printed Engrossed.

Meeting Dates: 03/17, 04/21

Vote:

Yeas: 9 - Bentz, Boone, Heard, Helm, Holvey, Johnson, Reardon, Vega Pederson, Weidner

Prepared By: Beth Patrino, Committee Administrator

WHAT THE MEASURE DOES:

Defines “energy storage system” as technology capable of retaining energy, storing energy for period of time and delivering energy after storage. Defines “electric company” as company with sales of electricity to retail customers in amount that equals three percent or more of all retail electricity sales. If authorized by Public Utility Commission (PUC), directs electric company to procure one or more qualifying energy storage system with capacity to store at least five megawatt hours of electricity on or before January 1, 2020. Restricts total capacity of storage system procured by one company to less than one percent of company’s 2014 peak load; authorizes PUC to waive limit under specified circumstances. Allows energy company to recover in rates all cost prudently incurred in procuring one or more energy storage systems. Not later than January 1, 2017, directs PUC to adopt guidelines for submittal of proposals by energy companies. Not later than January 1, 2018, directs energy companies to submit to PUC one or more proposals for developing project that includes one or more energy storage systems. Establishes proposal requirements and PUC evaluation criteria. Prohibits PUC from using or allowing use of information and analyses submitted with proposal to be used for other purpose and, to protect information, directs PUC to determine procedures under which person may view information and analyses and adopt protective order that includes reasonable restrictions requested by utility. Directs PUC to report to interim legislative committees related to energy by September 15, 2016 and September 15, 2018. Declares emergency, effective upon passage.

ISSUES DISCUSSED:

- Benefits of energy storage
- Funding for energy storage systems
- Existing barriers to development of energy storage systems

EFFECT OF COMMITTEE AMENDMENT:

Replaces measure.

BACKGROUND:

Energy storage technology includes batteries, flywheels, compressed air energy storage, thermal, and pumped hydro-power. Individual energy storage projects augment electric grid by capturing excess electrical energy during periods of low demand and storing it in other forms until needed on an electric grid. The energy is later converted back to its electrical form and returned to the grid as needed.

One of the distinctive characteristics of the electric power sector is that the amount of electricity that can be generated is relatively fixed over short periods of time, although demand for electricity fluctuates throughout the day. Electricity storage devices can manage the amount of power required to supply customers at times when need

is greatest, which is during peak load. Many renewable energy sources, most notably solar and wind, produce intermittent power. Energy storage is one option to provide more reliable energy supplies.

If authorized by the Public Utility Commission, House Bill 2193A would direct electric companies to procure qualifying energy storage systems with a specified capacity by 2020 and allow the company to recover in rates the cost of procurement.

**Enrolled
House Bill 2193**

Introduced and printed pursuant to House Rule 12.00. Pre-session 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:

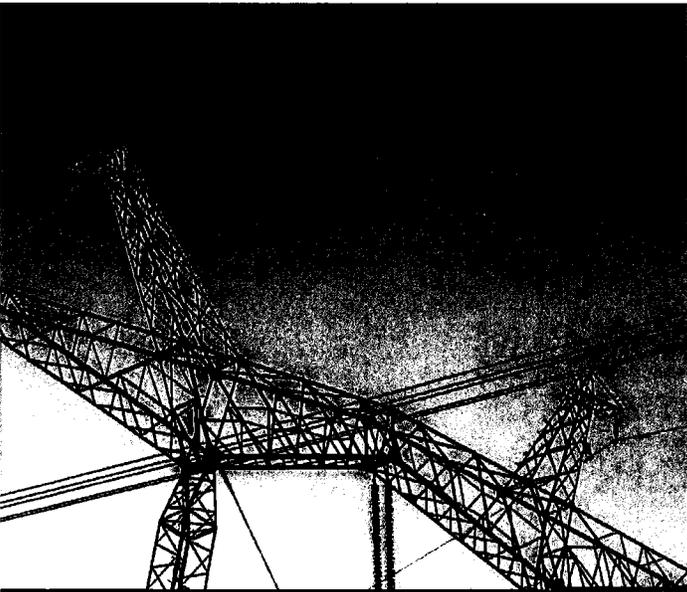
.....M.,....., 2015

.....
Kate Brown, Governor

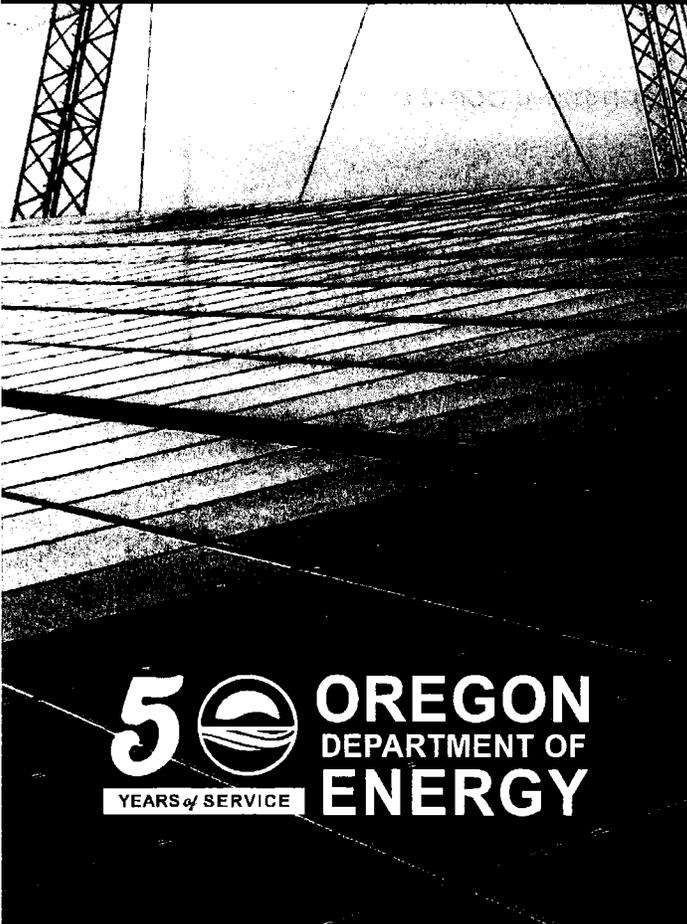
Filed in Office of Secretary of State:

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

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



OREGON ENERGY STRATEGY



DRAFT for Public
Comment

by the
**OREGON
DEPARTMENT OF
ENERGY**

August 2025





This document presents **draft policy recommendations for the Oregon Energy Strategy**.

HB 3630 directed the Oregon Department of Energy to develop a state energy strategy that identifies "pathways to achieving the state's energy policy objectives." The strategy must "recommend legislation or changes to policy necessary to implement the state energy strategy."

ODOE seeks input on these draft recommendations to inform our finalization of the report, due to the Governor and Legislature by November 1, 2025.

Please provide input through ODOE's online comment portal by **5 p.m. on September 22, 2025**.

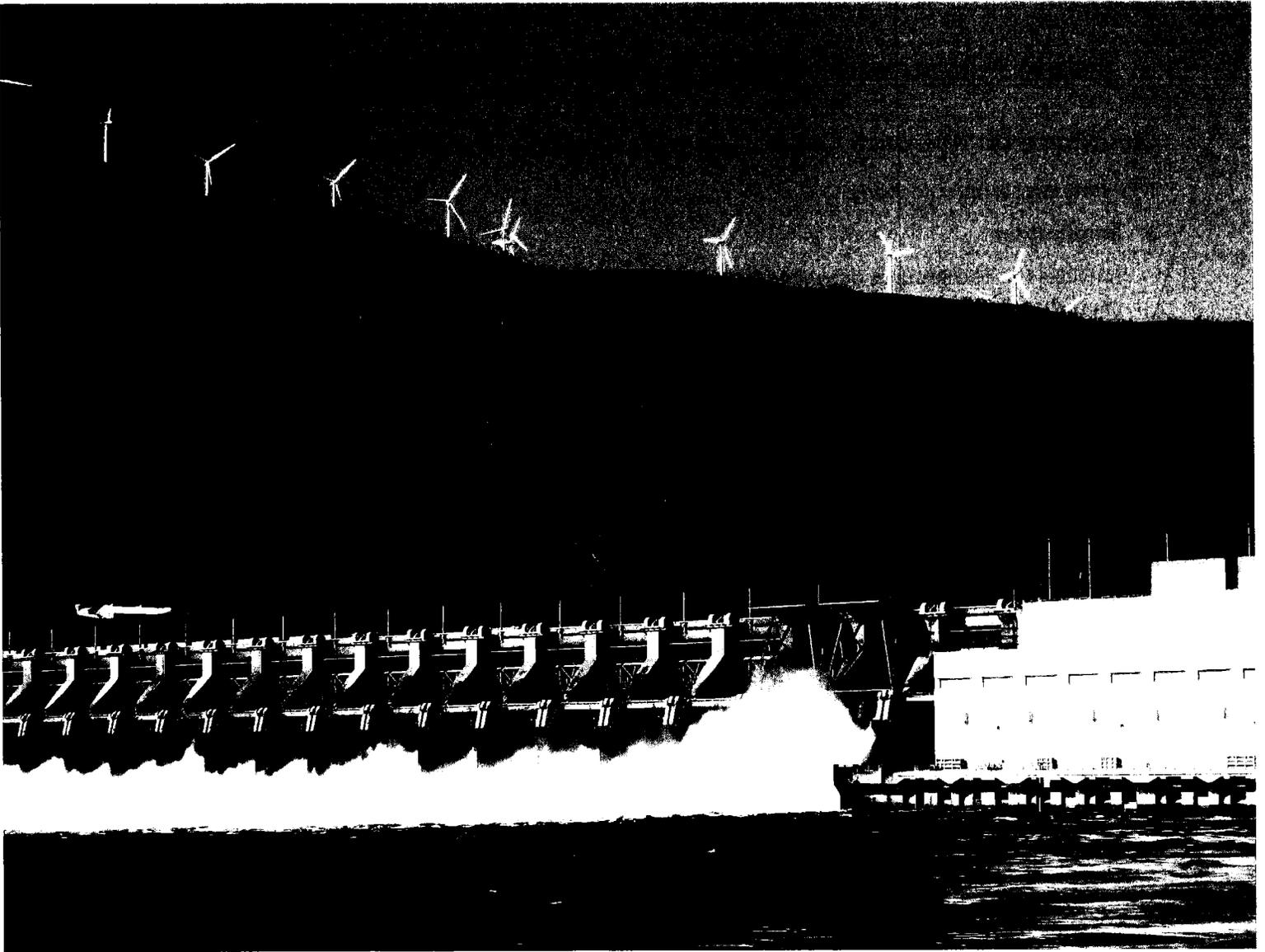
<https://odoe.powerappsportals.us/en-US/energy-strategy/>

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LIST OF ACRONYMS AND ABBREVIATIONS

aMW	Average Megawatts
BPA	Bonneville Power Administration
BPS	Building Performance Standards
COU	Consumer-owned Utility
CPP	Climate Protection Program
DEQ	Oregon Department of Environmental Quality
DLCD	Oregon Department of Land Conservation and Development
EQC	Oregon Environmental Quality Commission
EV	Electric Vehicle
GHG	Greenhouse Gases
HB	House Bill
IIJA	Infrastructure Investment and Jobs Act (2021)
IOU	Investor-owned Utility
IRA	Inflation Reduction Act (2022)
kWh	Kilowatt Hour
MHD	Medium- and Heavy-Duty
MWh	Megawatt Hours
ODOE	Oregon Department of Energy
ODOT	Oregon Department of Transportation
OHCS	Oregon Housing and Community Services
OPUC	Oregon Public Utility Commission
ORESA	Oregon Renewable Energy Siting Assessment
ORS	Oregon Revised Statute
PV	Photovoltaic
RUC	Road Usage Charge
SB	Senate Bill
VMT	Vehicle Miles Traveled
ZEV	Zero-emission Vehicle



Introduction

Guidance for the Draft Oregon Energy Strategy Recommendations

This draft has six main sections:

1. Introduction

Provides the background, describes the process to develop the energy strategy, and provides the context and challenges in which the Oregon Energy Strategy is being developed.

2. Five Pathways to Guide Oregon

Introduces five pathways that, together, set the direction for Oregon's Energy Strategy. These pathways are meant to inform and align policies and actions to meet our energy policy objectives of clean, reliable, and affordable energy. Pathways are meant to be long-lived and represent a stable framework for action over time.

3. Policies to Deploy the Pathways

Describes policies to advance Oregon's Energy Strategy. Policies are directional, and along with pathways are meant to guide actions and decisions over time.

4. Nine Federally Recognized Tribes: Feedback and Themes

Emphasizes the importance of consultation and engagement with Tribes in Oregon's energy transition and summarizes key themes that ODOE has heard that are informing the energy strategy.

5. An Equity and Justice Framework for Decisionmaking and Program Implementation

Presents a framework that demonstrates how legislators, agencies, and implementers can create just and equitable outcomes when developing energy policies, actions, and outcomes. Serves to guide meaningful involvement with those who have been historically and are currently excluded from decisionmaking processesⁱ to ensure Oregon's energy policies meet the needs of all Oregonians by understanding and tailoring policies to the needs of specific communities.

6. Legislative and Policy Actions

Describes near-term actions to advance Oregon's Energy Strategy, organized by sector (transportation, buildings, industry, electricity, fuels, and cross-cutting).

Why an Energy Strategy?

Energy is the foundation of modern life. It powers cars, heats homes, and supports our economy. Building and maintaining energy infrastructure requires investment, and that infrastructure affects local communities, cultural resources, and the environment. The energy sector is responsible for most of Oregon's greenhouse gas emissions, which negatively affect air quality and public health.¹ These effects have disproportionately impacted some more than others — environmental justice communities in particular — and continue to do so today.ⁱⁱ

In Oregon, the transportation sector is responsible for 37 percent of energy use, followed by industry (27 percent), households (21 percent), and commercial (15 percent) sectors. The largest source of energy to

ⁱ As defined in Oregon House Bill 4077

ⁱⁱ HB 4077 defines "environmental justice community" and defines frames the work of the Environmental Justice Task Force. <https://olis.oregonlegislature.gov/liz/2022R1/Downloads/MeasureDocument/HB4077/Enrolled>.

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power these sectors is transportation fuels like gasoline and diesel (36 percent), electricity (32 percent), and direct use fuels including natural gas, biomass, and other fuels (31 percent). Much of this energy comes from fossil fuels. Oregon also benefits from clean sources of energy, including hydropower, which generates about a third of Oregon’s electricity, as well as wind and solar energy, biomass, biodiesel, and ethanol.²

The cost of inaction on climate change is already being felt by Oregonians.³ While climate change is occurring through emissions globally, Oregon policy makers have understood the opportunity for the state’s economic growth in clean energy and technology. Oregon policymakers have enacted laws, programs, and regulations to support a shift to cleaner, more sustainable sources of energy. Some of these policies have been in place for decades, while others have been enacted recently. Together, Oregon’s energy policies are transforming the energy system toward clean energy to power our homes, transportation systems, businesses, and industry. Yet until now, Oregon has not had a clear vision for how the various pieces come together. In 2022, the Oregon Department of Energy published its *Biennial Energy Report* and in it identified the need for a state energy strategy that can take an economywide look at available resources, technologies, and energy needs, and develop a shared vision for the state.⁴

There have been many developments since that publication. Oregon ramped up programs to support Oregon households and businesses in adopting new technologies, enabled by new policies and federal support. These included programs such as the Oregon Clean Vehicle Rebate Program, Community Renewable Energy Grant Program, and County Energy Resilience Grant Program. Federal incentives encouraged renewable energy development, electric vehicle adoption, and transmission expansion. At the same time, Oregon and the region have seen rapid development of tech loads, including data centers, which exacerbates concerns over electric system resource adequacy and reliability.⁵ Oregon faces a housing and homelessness crisis requiring accelerated construction of housing to meet the needs of Oregonians.⁶ Customers are feeling the pinch of inflation and higher energy rates.^{7 8 9} Wildfires and extreme weather are affecting public health, electricity system operations, and utilities’ ability to finance necessary investments.¹⁰



ODOE’s Community Renewable Energy Grant Program supports projects like this community solar installation in Ontario, OR.

Since January 2025, rapid and aggressive federal policy shifts have reduced federal support for these efforts and threatened or cut future funding for Oregon’s policies and the programs supporting uptake of clean, modern technologies across the state. State budget constraints – in some cases linked to federal policy changes – have reduced state resources available to support the clean energy transition. Many programs that support achieving the state’s energy goals are on pause or have an uncertain funding future.

These changes make state leadership and action more important than ever. The energy transition requires an understanding of today’s needs and challenges and a vision of how to steer near-term decisions to achieve long-term outcomes. Oregon’s long-term vision includes a high quality of life, strong economy, and responsible stewardship of natural and working lands, waters, and cultural resources. These outcomes rely on successfully navigating a transition from fossil fuels to clean sources of energy in our electricity, transportation, buildings, industry, and agriculture sectors while maintaining energy

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affordability and reliability. They rely on successfully advancing equity and inclusion of environmental justice communities to ensure that they are not disproportionately burdened by new energy development and can benefit from the clean energy transition. Meeting our goals requires a recognition that addressing Oregon’s energy needs will have a footprint, so they should include a commitment to seeking least-regrets solutions wherever possible while working to maximize benefits.

The Process

In 2023, HB 3630¹¹ directed the Oregon Department of Energy to develop a state energy strategy and to submit a final report to the Governor and Legislature by November 1, 2025. That report must: (1) summarize the state energy strategy and pathways to achieving the state’s energy policy objectives; (2) describe the department’s engagement process and how perspectives informed the energy strategy; and (3) recommend legislation or changes to policy necessary to implement the state energy strategy.



HB 3630 does not define Oregon’s “energy policy objectives.” However, it includes criteria that require consideration for how Oregon meets its clean energy policy objectives while protecting affordability and reliability. This includes meeting the goals in HB 2021, the Climate Protection Program, and in Executive Order 20-04.^{12 13 14} There are many other policies driving Oregon’s energy transition. While the energy strategy does not list or serve to interpret the nuances of Oregon’s many energy policies, the modeling and public engagement considered statutory targets and goals, and aimed to support consistency and compliance with existing law.

This document presents a draft of pathways to achieving Oregon’s energy policy objectives and legislative and policy recommendations. It summarizes the process undertaken to develop the pathways and recommendations, including the technical analysis and engagement to inform pathways and policies. The final Oregon Energy Strategy will include a more detailed description of the engagement process and how engagement informed the final energy strategy, and may elaborate on additional themes in this document informed by public comment.

ODOE welcomes comments on any elements presented in this document.

Oregon’s Energy Strategy has been informed by a robust public engagement process. This included information sharing and comments about technical modeling from May 2024 – December 2024 (Phase 1), followed by engagement to inform development of the policy recommendations from February 2025 – May 2025 (Phase 2). Through these phases, ODOE sought and incorporated input regarding the data and assumptions of the energy strategy; perspectives on policy priorities, challenges, and opportunities from a diverse range of interests and backgrounds; and comments from members of the Advisory Group, Inter-Agency Steering Group, Working Groups, and the public. ODOE has published a comprehensive summary of the input received during Phase 1 of the strategy development and will publish a comprehensive summary of Phase 2 along with the final report. Copies of public comments and recordings from public meetings are available on ODOE’s website.

**Submit comments on
this Draft Oregon
Energy Strategy by
September 22 through
ODOE’s online
comment portal.**

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Table 1: Oregon Energy Strategy Engagement Opportunities

Tribal Engagement	Government-to-Government outreach and engagement with the nine federally recognized Tribes in Oregon to ensure tribal perspectives informed the energy strategy.
Advisory Group	Group of experts that advised ODOE throughout the process and helped inform decisions. Group represented diverse perspectives and lived experiences across the state.
Focus Area Working Groups (Phase 1)	Eight Focus Area Working Groups informed early development of the strategy, and particularly key assumptions and scenarios for the model.
Policy Working Groups (Phase 2)	Five Policy Working Groups included subject matter experts to dive into specific topics and identify gaps and needs to inform policy recommendations that built on previous analysis.
Interagency Steering Group	Representatives from the Oregon Departments of Energy, Land Conservation and Development, Transportation, Environmental Quality, and State Lands; Oregon Public Utility Commission; Business Oregon; the Governor’s office; and other agencies provided agency perspectives and guidance to develop a statewide energy strategy.
Public Listening and Information Sessions	Public forums held to provide updates on the process and gather broad views from across the state to inform the strategy.

The technical analysis (the focus of Phase 1) involved numerous opportunities to provide input and evaluate the assumptions that went into the energy pathways modeling, to tailor the alternatives analyzed by the pathways modeling to provide the most useful insights to inform policy discussions, and to shape the complementary analyses. Phase 1 public input resulted in numerous adjustments to modeling assumptions and alternative scenario design and informed the focus of the complementary analyses. Phase 1 started in May 2024 and culminated with the [presentation of the modeling results](#) in a public informational session on January 31, 2025. The modeling results were further evaluated and discussed in the Policy Working Groups in Phase 2.

Through Phase 2, ODOE held 17 [Policy Working Group](#) meetings, four [Advisory Group](#) meetings, four Inter-Agency Steering Group meetings, three [public forums](#), and three [information sessions](#) to share technical modeling results and inform ODOE’s policy drafting. Phase 2 policy discussions built on key findings from the modeling and data on current trends. Materials and recordings of these meetings are available on [ODOE’s website](#). Phase 2 policy discussions informed ODOE’s development and structuring of the energy strategy and the draft recommendations by providing diverse perspectives from across Oregon on barriers to meeting our state’s energy policy objectives, opportunities to overcome these barriers, and potential policy solutions.

ODOE’s consultation with the [Inter-Agency Steering Group](#) and individual agencies was used to advance inter-agency alignment and to ensure that recommendations build on, and are complementary to, existing state policies and processes.

ODOE also reached out to the nine federally recognized Tribes in Oregon through formal government-to-government letters, staff-to-staff discussion, individual in-person or virtual meetings with Tribal leaders and staff, and presentations through the [Legislative Commission on Indian Services](#) and cluster groups. While ODOE continues government-to-government outreach and requests for consultation, where appropriate, ODOE has heard important themes that include: advancing tribal energy sovereignty and

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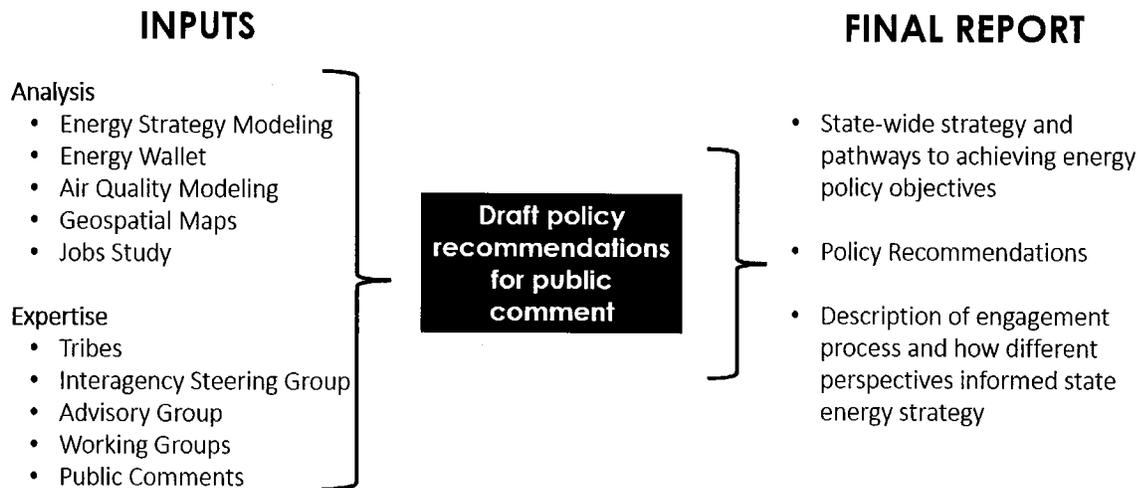
self-determination, ensuring equitable access to decision-making processes, ensuring energy affordability and energy access for Tribal members, securing stable and culturally responsive funding mechanisms, including dedicated Tribal set-asides in state funding programs, and integrating Traditional Ecological Knowledge into energy and climate planning.

A full summary of the engagement process and public comments will be available as part of the final report submitted to the Governor and Legislature by November 1, 2025.

HB 3630 charges ODOE with the task of identifying pathways to achieving Oregon’s energy policy objectives and developing policy recommendations to help advance Oregon’s Energy Strategy. The bill further directs ODOE to update the energy strategy over time to reflect current information, data analysis, and state energy policy objectives. Energy policies and technologies are evolving quickly, which will necessitate an adaptive strategy that can adjust to address new barriers and challenges while also incorporating new opportunities that arise. ODOE recommends updating the Energy Strategy every four years to enable it to have a near-term, actionable focus, and to provide opportunities for updates and course corrections over time to keep Oregon on track to meet its long-term energy policy objectives.

The analysis includes the Energy Strategy Modeling as well as complementary analyses listed in the figure below. It draws on professional and lived expertise of Oregonians from across the state. Comments on this draft report will provide additional insights to inform ODOE as ODOE finalizes the report to the Governor and Legislature.

Figure 1: Process for Developing Policy Recommendations and Final Report





Five Pathways to Guide Oregon

Following the technical analysis/modeling and public engagement, ODOE proposes five pathways that together represent the direction Oregon needs to take to meet its energy policy objectives – including an energy transition that will deliver clean, reliable, and affordable energy to all Oregonians. These pathways have been optimized to account for the direction that achieves a least-cost economy-wide trajectory over time while supporting reliability, affordability, and seeking to reduce costs while maximizing benefits. Implementation of each pathway must consider burdens and benefits to environmental justice communities, applying an equity lens to prevent further disproportionate impacts to historically and currently marginalized communities.



1. Energy Efficiency. Advance energy efficiency across buildings, industry, and transportation sectors, including by expanding access to and appeal of multimodal transportation options, to deliver the benefits of a more efficient energy system.



2. Electrification. Increase electrification of end uses across the economy, including in transportation, buildings, and industry, while incorporating measures to safeguard reliability and support affordability.



3. Clean Electricity. Invest in clean electricity infrastructure to maintain reliability and promote load flexibility to reduce system costs.



4. Low-Carbon Fuels. Advance the use of low-carbon fuels in the hardest-to-electrify end uses to achieve GHG emissions reductions while maintaining industry competitiveness and a reliable electricity grid.



5. Resilience. Strengthen resilience across all levels of the energy system, including utilities, communities, and customers, enhancing Oregon’s ability to adapt to climate change and mitigate other risks.

These five pathways should not be viewed as distinct or independent areas of activity, but as interrelated components of a cohesive strategy. They are interconnected and mutually reinforcing, building on each other and interacting in complex ways. The first pathway, **energy efficiency**, is essential to reduce energy demand as much as possible, trimming the size of the overall energy “pie” that must be served by clean energy sources. Energy efficiency is a least-cost resource that can lower energy costs for consumers while supporting reliability. The second pathway, **electrification**, involves adoption of electric technologies to replace fossil fuels in many end uses, including transportation and space heating in buildings. It is also a powerful energy efficiency measure because many electric technologies are much more energy efficient than their fossil fuel counterparts. The third pathway, **clean electricity**, is expected to increasingly be the backbone of our energy system. As many end-uses electrify, the modeling conducted for the energy strategy found that the electricity system must grow significantly to meet increased demand. This elevates the need to build transmission, generation, and distribution infrastructure. The fourth pathway, **low-carbon fuels**, is essential in areas where in the near or longer term, electrification is not feasible and where low-carbon fuels are needed to support electricity system reliability. Finally, it is important to consider **resilience** across all these areas, ensuring that as measures are undertaken to mitigate climate change, opportunities to strengthen resilience are captured.

Pathways Modeling and Technical Analysis

The modeling conducted by the consultants to the Oregon Energy Strategy — Clean Energy Transition Institute (CETI) and Evolved Energy Research (Evolved) — examined potential pathways to reach Oregon’s energy and climate objectives while maintaining reliability across the energy system. ODOE worked with the consultants to develop the model using an analysis of existing policies, energy and integrated resource plans, energy-related studies and data analysis, and state energy policy objectives.ⁱⁱⁱ

A key component of the analysis was development of a least-cost “Reference” pathway that incorporated high levels of energy efficiency and electrification of end-uses. This pathway was then compared to several others to help understand the implications of different choices. In other words, rather than focus on what *more* might be needed to go beyond current trends – which if continued out to 2050 will fall short of meeting our energy policy objectives – the model focused on different *options to meet our objectives*.

Each alternative scenario changed a key element or assumption of the Reference Scenario and held everything else constant. This helped to isolate the impact of the change and draw out lessons learned. Much of the Phase 1 engagement focused on how to define a least-cost Reference pathway as a point of comparison for the other scenarios.

Changes to scenarios^{iv} included things like exploring lower levels of energy efficiency and electrification to test the hypothesis that, based on evaluation of other studies, these would be key elements for ensuring Oregon’s energy transition is on the least-cost pathway. This exercise resulted in a deeper understanding of interactions across the transportation, buildings, industrial, and electricity sectors in Oregon, and reinforced the importance of energy efficiency and electrification as key components of a least-cost pathway to economy-wide decarbonization. It also provided valuable insights into the direction the state must take to achieve its energy policy objectives.

These takeaways establish important directional insights. As ODOE engaged with the Advisory and Policy Working Groups, the process turned from the “what” (what is needed to meet our energy policy objectives?) to the “how” (how do we act to meet our goals?).

To inform this discussion, ODOE worked with our consultants to develop additional, complementary analyses to more deeply inform policy discussions. The energy pathways modeling looked at effects on

ⁱⁱⁱ See [OES-CETI-EER-Technical-Approach-to-Modeling.pdf](#), Sections E (Current Policy Assessment) and F (Data Approach) for more details.

^{iv} There were six alternative scenarios and four sensitivities that we modeled.

The six scenarios are:

1. Delayed Energy Efficiency and Building Electrification (Delayed EE & BE);
2. Delayed Transportation Electrification (Delayed TE);
3. Limited Demand Response (Ltd DR);
4. Limited Utility-Scale Electricity Generation in Oregon (Ltd Gen);
5. High Distributed Energy Resources + Limited Transmission (High DER + Ltd Tx); and
6. Alternative Flexible Resources (Alt Flex Res).

The four sensitivities are:

- 0a. No Change in VMT in Reference Scenario;
- 0b. 50% Lower Tech Load Growth in Reference Scenario;
- 0c. No Advanced Clean Trucks Regulation in Delayed Transportation Electrification Alternative Scenario; and
- 5a. No Change in VMT in High Distributed Energy Resources + Limited Transmission Scenario.

The results of the energy pathways analysis are available at <https://www.oregon.gov/energy/Data-and-Reports/Documents/2025-OES-Technical-Report.pdf>

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Oregon's economy as a whole but could not specify how different employment sectors, businesses, or households may be individually affected. The complementary analyses aimed to fill some of these gaps.

The Environmental Justice and Equity Working Group continued to meet between Phases 1 and 2 to inform the first three analyses listed below. They provided insights into the needs of environmental justice communities and perspectives on how to frame the analysis to inform policies. The analyses were then shared more broadly for public input. These analyses included:

- A household energy wallet analysis.
- Air quality modeling and associated public health impacts analysis.
- Geospatial mapping.
- A study of employment effects.

The household energy wallet^v analysis served to better illuminate the benefits and challenges to five different sample Oregon households of adopting electric vehicles and efficient electric heat pumps when their old car or heater needs replacing. Parameters for five sample households were developed through engagement with the Environmental Justice and Equity working group, and with broader public input. The analysis considered adoption of these new technologies across different housing types, climates, and under a range of electricity and gas prices.

The analysis concluded that for the five sample households evaluated, electric vehicle and heat pump adoption generated significant reductions in energy use. However, while some households also saw cost savings, this was not the case for everyone. Electric vehicles were likely to deliver cost savings for most households, while heat pumps delivered bill savings in some, but not all, circumstances. Several factors affected access and affordability to efficient electric cars and heating in the analysis. These include the upfront cost of new technologies, electricity and natural gas prices, and access to at-home charging. The type of building stock (single versus multi-family) also mattered. For gas heated homes, the switch to an efficient electric heat pump was often more expensive when different electricity and gas costs were modeled, though the need for air conditioning and lower electricity costs were found to improve its cost-effectiveness. Through the engagement process, ODOE heard that barriers such as affordability, living in rental housing, and access to clean technologies were particularly likely to affect Tribes, low-income, rural, and coastal communities.

The Policy Working Groups provided further detail and context to inform policy recommendations around adoption of efficient electric technologies.

The air quality modeling evaluated changes in energy demand and supply alongside corresponding changes in air pollutant emissions. This data was entered into the U.S. Environmental Protection Agency's Co-Benefits Risk Assessment, or COBRA model, to evaluate how changes in emissions of harmful air pollutants affect public health and health costs. In particular, reductions in air pollution can help prevent health conditions like respiratory and cardiovascular diseases and benefit some of the most vulnerable populations, including communities of color, pregnant women, older adults, children, and people who work outdoors.^{15 16} The analysis found significant health benefits associated with achieving Oregon's emission and clean energy targets. The benefits were relatively similar across scenarios from the energy sector modeling and translated into between \$6.3 billion to \$14.1 billion in cumulative benefits by 2050 from reduced mortality, fewer hospital admissions, and fewer missed workdays.

^v View the Household Energy Wallet in the Complementary Analysis Technical Report.

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ODOE worked with our consultants to develop a series of maps representing important economic, environmental, and social considerations to help support an equitable clean energy transition.^{vi} These maps can be used to assess the potential effects of energy policy options on different communities and help inform more equitable policy development.

The jobs analysis built on the economywide energy strategy modeling, identifying the scale of job growth minus job losses (net jobs) that might be expected across the seven scenarios investigated. The jobs analysis suggests that Oregon stands to realize significant net gains in energy jobs by achieving its energy policy objectives. There was significant net total job growth across all scenarios, with net job gains in the electricity, buildings, and fuels sectors consistently outpacing net job losses in the transportation sector.

The Reference Scenario resulted in a total of roughly 12,900 more aggregate jobs across the four energy sectors in 2035 compared to 2024. Employment gains are most pronounced in the electricity sector while employment losses are most pronounced in the transportation sector. Looking across scenarios, the jobs analysis suggests a range of approximately 10,700 to 18,200 jobs could be gained in the electricity sector through 2035, and a range of approximately 6,700 and 7,500 jobs could be displaced from the transportation sector by 2035. With respect to the transportation sector, while employment in charging stations, vehicle manufacturing, and wholesale trade parts subsectors are expected to grow, these gains are expected to be outstripped by job losses in the fueling stations and vehicle maintenance subsectors. In considering these effects, the idea of co-locating charging stations at existing gas stations could be explored as a possible strategy to mitigate job losses in the fueling station subsector.

The Reference Scenario resulted in a total of 12,852 more aggregate jobs across the four energy sectors in 2035 compared to 2024.

The technical analysis estimates similar levels of net job growth in both Eastern and Western Oregon by 2035: roughly 6,500 jobs east of the Cascades and roughly 6,400 jobs to the west. This amounts to a 33 percent increase in energy sector jobs compared to 2024 in Eastern Oregon and a 5 percent increase in jobs in Western Oregon. This reflects a different starting point, with Western Oregon having roughly 10 times more energy sector jobs in 2024 than Eastern Oregon. This means that relative to western Oregon, eastern Oregon is expected to see markedly larger job growth as a percentage of its 2024 baseline employment in the fuels and electricity sectors, highlighting a potential need for location-based workforce development strategies in order for rural communities to take full advantage of these employment opportunities.

Additional occupation-level analysis was conducted for the Reference Scenario. This modeling suggests that electricians, construction laborers, and HVAC and refrigeration mechanics and installers are the three occupations likely to see the greatest numbers of new employees by 2035. This additional analysis also estimated job growth across three wage tiers, namely: Below a Living Wage: less than \$33/hour; At a Living Wage: \$33-\$48/hour; Above a Living Wage: more than \$48/hour. Jobs were estimated to grow across all wage tiers with the distribution of energy sector jobs across wage tiers remaining essentially unchanged in 2035.^{vii}

Throughout the engagement process and in considering recommendations, ODOE focused on both quantitative and qualitative data. The modeling provided information on pathways to meeting the state's clean energy objectives reliably and at least-cost economy-wide. Further technical analysis provided

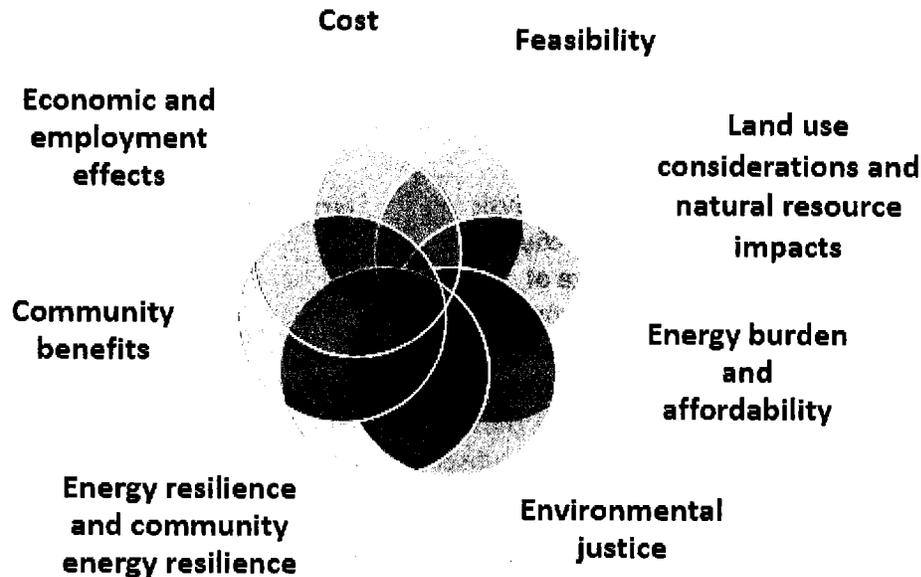
^{vi} View the [Geospatial Mapping in the Complementary Analysis Technical Report](#).

^{vii} View [Jobs Analysis Presentation](#). ODOE will publish jobs analysis technical reports to accompany the final energy strategy.

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insights into effects on household affordability, air quality, and employment. However, there are broader considerations that go beyond the ability of these analytical tools that address the many interactions between energy-related actions and broader areas of public interest. HB 3630 directs ODOE to evaluate these other areas in identifying pathways to achieving Oregon’s energy policy objectives. Figure 2 illustrates additional considerations in applying the pathways from the modeling to define specific pathways, policies, and actions.

Figure 2: Key Considerations in Determining Benefits and Risks of Actions



In evaluating the complex interactions between the energy sector and these considerations, it is critical to identify approaches that maximize benefits while minimizing risk. Processes must be equitable and follow the four pillars of energy justice described in the [Equity and Environmental Justice Framework](#) section to reduce disparities and bring along communities who have been left behind. Investing in the energy transition requires a recognition of areas where trade-offs exist and to navigate choices with as much information and transparency as possible. For example, tensions frequently exist between development of needed energy infrastructure and protection of natural and working lands, waters, and ecosystems. The energy transition is an economic transition, and will create shifts in job and career opportunities and losses. In developing pathways, policies, and actions, ODOE has worked to recognize these tensions and to seek solutions that maximize positive effects while minimizing and mitigating negative impacts.

The Five Pathways



1. Energy Efficiency. Advance energy efficiency across buildings, industry, and transportation sectors, including by expanding access to and appeal of multimodal transportation options, to deliver the benefits of a more efficient energy system.

Energy efficiency must be the starting point for how we address the energy transition. The less energy we use, the less we need to produce and deliver. This saves households and businesses money, promotes reliability, and reduces the costs of the energy transition economy wide.^{viii} In the energy strategy Reference Scenario, energy efficiency, including from electrification, brought overall energy demand in 2050 down to 22 percent below 2024 levels. Energy efficiency means getting the same level of service (heating, cooling, comfort) using less energy. In households this can reduce energy bills and energy burden, while in businesses it can reduce operating costs, making Oregon businesses more competitive. At the same time, the initial investment in a more energy efficient technology may pose a barrier for households and businesses, requiring support to realize savings.

There are many other reasons to support energy efficiency. It can avoid the need for more energy infrastructure, relieving pressure on our natural and working lands, waters, and ecosystems. It can improve health, create jobs, and reduce energy burden. Energy efficiency has traditionally focused on improving the performance of buildings and appliances, often treating transportation policy as a separate domain. But to meet economy-wide decarbonization goals, we need to broaden our understanding of energy efficiency. Reducing vehicle miles traveled cuts energy use by reducing the length of car trips and shifting travel to more energy efficient modes where feasible. In this way, VMT reduction and supportive land use are powerful forms of energy efficiency – delivering the same or better access and mobility with less total energy consumption. Supporting compact, connected communities can further advance energy efficiency in transportation and buildings, improve public health through increased participation in active transportation such as walking, biking, and rolling, and reduce energy burden through decreased energy costs.



2. Electrification. Increase electrification of end uses across the economy, including in transportation, buildings, and industry, while incorporating measures to safeguard reliability and support affordability.

Electrification is a powerful energy efficiency and greenhouse gas reduction measure. In the energy strategy modeling Reference Scenario, which represented the least-cost scenario modeled, electrifying on-road transportation alone reduced economy-wide energy demand by 27 percent thanks to the significantly higher efficiency of electric motors compared to internal combustion engines. In the buildings sector, electrification is the largest driver of household energy savings and – when paired with complementary measures like weatherization and efficient lighting – can reduce energy consumption in households by 47 percent.^{ix} Electrification also has the potential to deliver substantial GHG emissions

^{viii} The Northwest Power and Conservation Council calculates that, from 1978 through 2023, the region has saved 7,865 MW through energy savings – enough to power seven Seattles. This has avoided 25 million metric tons of CO2 and saved \$5 billion from avoided energy consumption. <https://www.nwcouncil.org/energy/energy-topics/energy-efficiency/>.

^{ix} <https://www.oregon.gov/energy/Data-and-Reports/Documents/2025-OES-Technical-Report.pdf#page=108>

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reductions now and in the coming decades because Oregon’s electric grid already produces fewer emissions than many fuels and is expected to get even cleaner as more renewable energy is added to the system. Delaying electrification in transportation and buildings leads to significantly higher economy-wide decarbonization costs. However, this does not always translate to reduced energy bills for individual households, and requires consideration of affordability when implementing electrification measures. Finally, while the modeling demonstrates the benefits of early electrification, public engagement and additional analysis underscore the need for a carefully managed transition – one that accounts for all key considerations, including ambitious decarbonization goals, grid reliability, upfront and ongoing affordability, equitable access, and additional benefits like cleaner air and improved cooling in homes. The concept of “strategic electrification,” elaborated later in this document, is an approach to advancing electrification while working to account for these other crucial considerations.



3. Clean Electricity. Invest in clean electricity infrastructure to maintain reliability and promote load flexibility to reduce system costs.

Electricity is a key fuel for Oregon, and its importance will only grow in the coming decades. Even though Oregon’s statewide electricity mix is a significant source of greenhouse gas emissions today, many electric-powered technologies, such as electric vehicles, are already more energy efficient and ultimately lower emitting than their non-electric counterparts.⁴ Over the coming decades, clean electricity has the potential to reduce emissions by replacing fossil fuels across many end uses. Investments in electricity generation, transmission, distribution, and storage facilities are critical to meeting Oregon’s economy-wide clean energy goals. In the near term, this means planning for and investing in resources that can be built quickly, including distributed technologies like solar, storage, demand-side flexibility, and utility-scale resources wherever they can be connected to electric grids. Efforts to plan for and build transmission must accelerate to enable more clean resources to supply growing loads, and over time, emerging technologies will need to reach maturity to meet higher levels of electric demand.

Even with aggressive cost mitigation, investments in clean energy infrastructure will impose higher costs on customers because of the scale of needed investment in a relatively short amount of time. By 2030, the modeling indicated that electricity demand could increase approximately 40 percent, primarily due to tech loads like data centers. This load growth is uncertain. Yet even if only half the modeled tech load shows up by 2030, Oregon’s electricity demand could still increase over 25 percent by 2030. By 2050, the modeling indicated that the portion of Oregon’s total energy needs supplied by electricity could more than double.^x This will mean deploying additional resources, including those that can provide firm power in the long-term. In-state development can be expected to provide jobs and support economic growth, but may also have negative effects, including potentially burdening environmental justice communities and competing with other priorities like agriculture and conservation. Policies and processes must apply an equity lens and work to minimize these negative effects while maximizing opportunities. Distributed energy resources like rooftop solar with battery storage and microgrids are clean resources with low land and water impact that can alleviate some of these effects while supporting household and community resilience. Demand flexibility can further reduce costs and environmental burdens by shifting demand off peak, limiting the need to construct additional power plants, and taking full advantage of variable renewable generation when it is available. This involves electricity customers – from large businesses to residential households – supporting the power system in the form of batteries, water heaters, and other

^x <https://www.oregon.gov/energy/Data-and-Reports/Documents/2025-OES-Technical-Report.pdf#page=28>

electric uses. Utility business models, markets, and incentive mechanisms must aim to identify and leverage this potential while compensating customers for their role in becoming part of “virtual power plants.”



4. Low-Carbon Fuels. Advance the use of low-carbon fuels in the hardest-to-electrify end uses to achieve GHG emissions reductions while maintaining industry competitiveness and a reliable electricity grid.

Today, fossil and low-carbon fuels play a critical role in providing energy for transportation, heating homes and businesses, producing electricity, and powering our industries. These include gasoline, diesel, natural gas, biomass, propane, and other fuels. Most are fossil-based and emit greenhouse gases. To achieve the least cost path to meeting the state’s greenhouse gas reduction goals, most fossil fuel consumption will need to be replaced by clean electricity consumption through a strategic electrification approach that solves for affordability and reliability. Zero- or low- carbon fuels will play a strategic role where electrification is not feasible; however, based on available data and technology projections, they are expected to remain limited and costly. In the least cost pathway modeled in the Reference Scenario, fuel use across the economy declined by 70 percent by 2050. Vehicle electrification was identified as a more cost-effective strategy than producing large volumes of low-carbon fuels to power transportation.

While fuel volume is predicted to decline, fuels will be critical to providing essential energy services for the foreseeable future. For these reasons, it will be important to advance the use of low-carbon fuels over time in strategic sectors, including aviation, rail, and marine transport, long-haul trucking, agriculture and off-road equipment, and high-heat industrial processes, such as steel, cement, and chemical refining, as well as for power sector reliability. Low-carbon fuels present a potential economic opportunity for Oregon to use waste feedstocks, such as woody biomass, to develop in-state production, or as part of industrial symbiosis to enhance access to the fuels by Oregon industry and transportation, providing a long-term competitive advantage.



5. Resilience. Strengthen resilience across all levels of the energy system, including utilities, communities, and customers, enhancing Oregon’s ability to adapt to climate change and mitigate other risks.

To successfully navigate the energy transition, Oregon must incorporate measures that mitigate vulnerabilities to the energy system, including growing risks due to climate change and ongoing hazards such as earthquakes, wildfires, windstorms, and winter storms identified in Oregon’s Energy Security Plan. The changing climate is being felt in Oregon today. Extreme events are increasing in intensity, straining our energy systems and economy and threatening public health and safety. This includes strains on our hydropower system, transmission and distribution networks, and on homes and businesses. Available data¹⁷ and comments from external engagement indicate a need to strengthen resilience across the energy system, create community-level solutions, and help adapt the built environment to better protect people from extreme weather, wildfires, and wildfire smoke.

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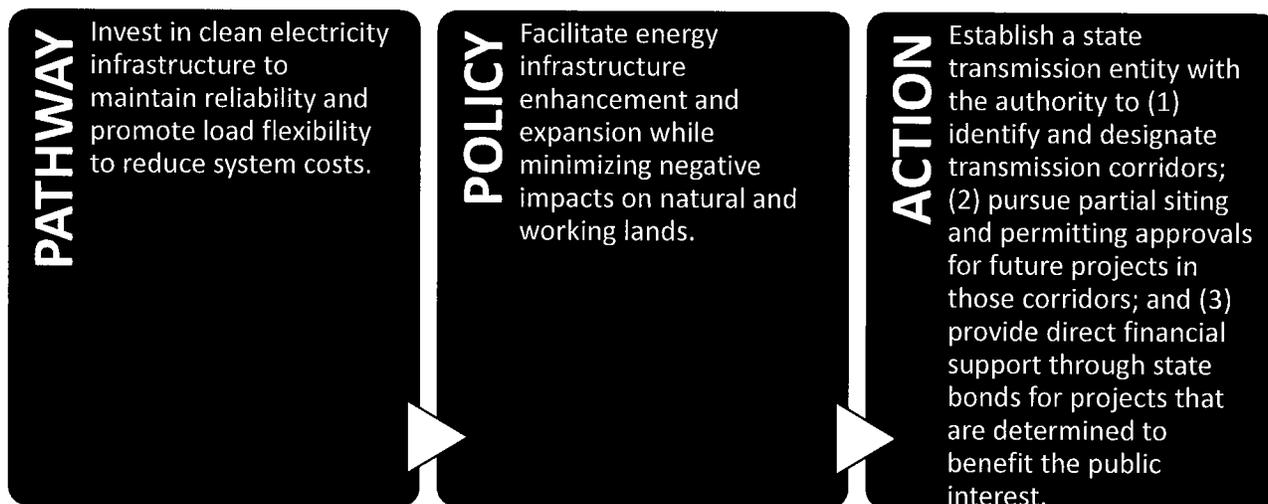
These five pathways serve to set a shared direction for our state. That shared direction must recognize the interactions between each pathway, and work to improve visibility, planning, and coordination to capture synergies and reduce the risk of inefficiencies or siloed approaches. A shared approach must also be adaptable to change. Our climate goals extend to 2040 and 2050 – a time period during which technologies will evolve and different policy approaches will offer opportunities to learn from experience. HB 3630 directs ODOE to periodically update the Energy Strategy to reflect current information, data analysis, and state energy policy objectives. ODOE recommends updating the strategy every four years to track progress and recommend actions to ensure that the pathways and policies remain on track.

Organization of Pathways → Policies → Actions

The pathways provide a foundation to align on the direction we must advance to meet our energy policy objectives. Policies and actions further define potential efforts to implement the energy strategy. Together, the Energy Strategy recommendations are structured as **pathways → policies → actions**.

- Pathways define direction that Oregon needs to pursue to meet our energy policy objectives, and are meant to guide decisions over time.
- Policies build on the pathways and provide more detail to inform near-term actions and decisions over time.
- Actions are near-term legislative and policy recommendations that focus on the next four years, addressing existing barriers and needs while delivering progress on the pathways and policies.

Figure 3: Example of a Pathway, Policy, and Action



In advancing these recommendations, it is imperative to ensure that legislators, agencies, and others responsible for crafting and implementing policy consult with Tribes and engage meaningfully with environmental justice communities and those who are disproportionately affected or left behind by energy policies. The Equity and Justice Framework is a guide to inform policymaking and implementation and should be applied across all pathways, policies, and actions related to energy. While the framework has been structured to address the effects of energy-related policies, it applies broader concepts related to best practices that aim for inclusive processes and outcomes in policymaking and implementation.



Policies to Deploy the Pathways

While the pathways work together to define high-level direction for the state, more specificity helps to set a framework for action. This section presents the policies that advance the five pathways and provide a long-term framework for the development of specific actions. The italicized parentheticals provide a short-hand reference to each policy, which are used in subsequent sections. When considering the following policies, legislators, agencies, and implementors should use the five steps described in the Equity and Justice Framework to best determine beneficial processes and outcomes to communities.



1. Energy Efficiency. Advance energy efficiency across buildings, industry, and transportation sectors, including by expanding access to and appeal of multimodal transportation options, to deliver the benefits of a more efficient energy system.

POLICIES
1a. Deliver energy efficiency and conservation improvements in existing and new residential and small commercial buildings to align with state decarbonization goals. Prioritize programs to serve low- and moderate- income and energy burdened households. (<i>Buildings efficiency</i>)
1b. Evaluate and promote opportunities to improve energy efficiency in large commercial and industrial sectors. (<i>Large commercial and industrial efficiency</i>)
1c. Prioritize policies and increase support for programs that expand access to multimodal transportation options – including public transit, biking, and walking infrastructure – and promote development patterns that make it easier and more appealing for people to live, work, and access services without relying on a personal vehicle. (<i>Expand access to and appeal of multimodal transportation options</i>)

1a. Deliver energy efficiency improvements in existing and new residential and small commercial buildings to align with state decarbonization goals. Prioritize programs to serve low- and moderate- income and energy burdened households.

Reducing energy consumption in residential and commercial buildings is key to meeting Oregon’s climate goals and minimizing costs. In 2022, existing buildings were responsible for more than 36 percent of the total energy consumed in Oregon,² 54 percent of Oregon’s greenhouse gas emissions, and were responsible for over 40 percent of Oregon energy expenditures.¹⁸ These energy expenditures are a significant burden, with many Oregon households having to spend more than 10 percent of their total income on home energy consumption.¹⁹ As Oregon constructs new buildings to address the housing crisis and meet housing demand over time, it will be essential to capture all efficiency opportunities, including in building envelope and through efficient electric heating and cooling technologies. Smaller units in compact developments are an efficient type of housing, and land use policies should ensure that these are an option for Oregonians.

Need for Policies

Oregon is a national leader in residential and commercial energy efficiency,^{xi} but more work is needed to overcome upfront cost barriers, expand access to information, ensure a sufficient supply of skilled labor, and help all Oregonians lower their energy bills. Energy efficiency measures in buildings include weatherization, lighting, more efficient appliances, and passive technologies like shading and cool roofs. Oregon must continue to advance building energy codes and Building Performance Standards to support lower-carbon new and existing buildings, while also decarbonizing existing small commercial and residential buildings. It is also important that when appliances or equipment break, they are replaced with high-efficiency models. This means building on existing programs and standards, including ratepayer-funded programs in utility service areas across the state and state-funded programs like the Healthy Homes Grant Program and ODOE’s heat pump incentive programs. This also means working with

^{xi} For example, Oregon ranks ninth on the ACEEE State Energy Efficiency Scorecard.

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Tribal governments in delivering energy efficiency improvements to tribal members as well as building out the network of community-based organizations to support energy efficiency in low- and moderate-income and energy burdened households. Finally, energy efficiency policy should prioritize electrification and shifting electricity use to off-peak times and hours of high renewable capacity to ensure alignment with a least-cost economy-wide pathway to decarbonization. For example, while a consumer with an older natural gas appliance may gain energy efficiency improvements by purchasing a new, more efficient model, shifting to an electric appliance can generate even greater energy savings and its carbon footprint will shrink over time as the electricity system decarbonizes.

Risks and Barriers

Delivering energy efficiency improvements relies on actions of thousands of Oregon households and businesses. Navigating available information is challenging. Most people are not experts in energy efficient technologies or where to look for funding or financing support.^{xii} The contractors who install technologies or weatherize homes require continuing training to expand their expertise, inform their investments in new technology, and help customers make informed decisions. Widespread adoption of energy efficient technologies requires understanding and overcoming the various and unique challenges that Tribes, renters, landlords, and businesses face.

One key barrier is that higher upfront investment may be needed to lower monthly bills in the long-term. Small businesses may require support to make upfront investments in energy efficient technologies. Energy burdened households who would most benefit from permanent bill reductions are at highest risk of being excluded from opportunities to weatherize their home or install the most energy efficient technology because of the high upfront cost. Without access to grants or financing, the most efficient technology is less accessible, and buildings may require other repairs before energy efficiency measures can be implemented. Renters have limited opportunities to implement investments in the homes they occupy and may face higher rent when improvements are made. The loss of federal funding and policies supporting energy efficiency risk slowing progress on energy efficiency at a time that acceleration is needed. This can exacerbate energy burden, hindering one of the fastest ways to relieve load growth, creating uncertainty for businesses and workers engaged in providing energy efficiency services. It also reinforces the importance of ratepayer-funded energy efficiency programs across Oregon's utility service areas.

1b. Evaluate, promote, and allocate funding to opportunities to improve energy efficiency in large commercial and industrial sectors.

Oregon's large commercial and industrial entities are a crucial contributor to jobs and activity in the state's economy. These entities account for 27 percent of total energy consumed in Oregon, about 34 percent of greenhouse gas emissions, and almost 29 percent of energy expenditures in our state.^{20 21} Energy efficiency can reduce energy waste and help businesses reduce their energy costs, improving the competitiveness of Oregon's industries while advancing our climate objectives. This may include custom measures unique to industries or collaborative process design such as industrial symbiosis that serve to optimize the use of energy by reducing waste and sharing resources through co-location of processes across businesses. Energy efficiency may also reduce emissions from local pollutants, particularly when

^{xii} Oregon has developed a site to provide information on available incentives across Oregon: <https://incentives.oregon.gov/>

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combined with process or material efficiency, thereby reducing the negative environmental effects on neighboring communities.

Need for Policies

Oregon has policies and programs in place to encourage energy efficiency improvements in large commercial and industrial sectors. These include the Climate Protection Program, which sets decarbonization objectives for fuel suppliers and will set emissions goals requirements for energy-intensive, trade-exposed industries by 2027. The Large Electric Consumer Public Purpose Program allows some of Oregon’s largest electricity users in Portland General Electric and Pacific Power service areas to invest a portion of their public purpose charge on self-directed energy conservation and renewable projects on their sites. Industries will continue to need support to identify and access low-carbon solutions for their businesses to comply with these goals. The Building Performance Standard is an important mechanism to drive energy efficiency in large commercial buildings.^{xiii}

Energy efficiency improvements in commercial and industrial sectors often need to be tailored to the specific function, technologies, and processes of a facility. In addition to the policies listed above, identifying and implementing energy efficiency measures may require additional technical expertise, evaluation of savings opportunities, and tailor-made solutions. It is also essential that energy efficiency measures consider electric and hybrid electric technologies wherever possible and save costly low-carbon fuels for the hardest-to-electrify applications. State policies and regulatory targets can set industry expectations and establish a runway for the adoption of new technologies so businesses know what is coming and can plan for it.

Risks and Barriers

Large commercial and industrial energy users have much larger energy loads and use a broader range of processes and technologies than households and small businesses. For example, a data center, food processing facility, and cement manufacturer will all require very different expertise and solutions to improve energy efficiency. Businesses must overcome various challenges, including informational barriers, technical challenges, and high capital costs.

Investment in new energy efficient equipment often has a higher upfront cost. All businesses face financial pressure, and investments in efficiency measures need to result operating cost savings to pay back the investments within a reasonable time frame to be considered. Investment in nascent technologies or fuels may involve taking on new risks, and may temporarily disrupt a manufacturing process or change it. Improvements in industrial efficiency may result in job displacement as some processes are automated or require different skills and training. This has the potential to lead to greater social inequity as some communities may not have access to the training and experience needed to adjust to the new equipment or process.

1c. Prioritize policies and increase support for programs that expand access to multimodal transportation options – including public transit, biking, and walking infrastructure – and promote development patterns that make it easier and more

^{xiii} BPS is Oregon’s policy addressing energy use and emissions from existing commercial buildings, which account for nearly 20 percent of energy use in Oregon, based on ASHRAE Standard 100-2024 and Oregon-specific amendments. Building performance standards differ from building codes (which apply to the construction or renovation of buildings) as they regulate buildings’ operational energy use.

appealing for people to live, work, and access services without relying on a personal vehicle.

Reducing the overall amount of driving, particularly in urban areas, is critical to achieving Oregon’s clean energy goals at the lowest possible cost while maximizing potential benefits. The transportation sector is the state’s largest source of greenhouse gas emissions, accounting for 35 percent of total emissions in 2023. That same year, Oregonians spent \$11.2 billion on transportation fuels – more than half of all energy expenditures in the state and more than all other forms of energy combined.²

The energy strategy modeling finds that reducing per-capita vehicle miles traveled in light-duty vehicles represents a critical least-cost measure to reduce greenhouse gas emissions. A modeled failure to achieve Oregon’s VMT reduction targets proved to be the second costliest among all pathways analyzed. Expanding access to a variety of transportation options (often referred to as multimodal options), including through increased transit service and closing critical gaps in local bicycle and pedestrian networks, reduces pressure on the energy system, cuts air pollution, improves public health, and offers more reliable, affordable mobility – reducing dependence on personal vehicles and saving people money.

Need for Policies

Oregon has long been a national leader in land use and transportation planning, effectively managing urban growth and expanding mobility options, while preserving rural lands. However, achieving the state’s goal for a 20 percent reduction in light-duty VMT per capita by 2050²² will require greater investment and a stronger prioritization of multimodal transportation infrastructure.

Reducing reliance on single-occupancy vehicle trips requires a rethinking of how we fund, design, and build our transportation, housing, and land use systems. Stable, climate-aligned funding is essential to expand diverse, low-carbon mobility options and to create neighborhoods where walking, biking, and transit are safe, convenient, and desirable. To get there, state agencies must work closely with planners, developers, tribal transit programs, and local governments to support denser, transit- friendly development in urban and suburban areas and make it easier to access jobs, essential services, and recreation without relying on long car trips. Oregon already has several strong policies and programs designed to support these goals – including Climate Friendly and Equitable Communities, Safe Routes to School, Great Streets, and the Statewide Transportation Improvement Fund – but funding and resources for implementation remain insufficient to meet the scale of current needs.

Oregon must also work with rural communities to understand their unique transportation needs and identify opportunities to expand access to transportation options, recognizing that rural Oregonians often drive longer distances and live farther apart than those in urban areas, especially outside town centers. By centering people and climate in transportation investments, Oregon can strengthen community well-being while driving down emissions.

Risks and Barriers

Identifying funding for programs that expand access to multimodal transportation options in Oregon is challenging, in part due to a historical imbalance in transportation spending that has long prioritized highways and car-centric infrastructure. This legacy makes it politically difficult to reallocate resources toward modes that some still view as secondary or less traditional. Constitutional restrictions on how fuel tax revenues are used further constrain available funding sources. Additionally, multimodal projects often require complex coordination across agencies and jurisdictions and can face community resistance if not well-aligned with local needs or priorities. For example, rural communities face distinct transportation challenges, including greater distances between destinations and operational

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requirements that can make traditional public transportation less feasible. Safety concerns also present a barrier, both in terms of the need for well-designed, protected infrastructure for walking and biking, and ensuring personal security and comfort for riders on public transportation – especially for women, youth, seniors, and historically and currently marginalized populations.



2. Electrification. Increase electrification of end uses across the economy, including in transportation, buildings, and industry, while incorporating measures to safeguard reliability and support affordability.

POLICIES
2a. Advance and expand efforts to electrify transportation, with a focus on removing barriers to ensure the state meets its zero-emission vehicle goals. <i>(Electrify transportation)</i>
2b. Facilitate and accelerate the interconnection of EV charging infrastructure and related distribution system upgrades to enable faster deployment, lower costs and complexity, and improve grid readiness. <i>(Distribution system readiness for EVs)</i>
2c. Promote strategic electrification across the residential, commercial, and industrial sectors by aligning policies and investment to deliver affordable, reliable, and clean energy. <i>(Strategic electrification)</i>

2a. Advance and expand efforts to electrify transportation, with a focus on removing barriers to ensure the state meets its zero-emission vehicle goals.

Near-term transportation electrification is critical to achieving Oregon’s clean energy goals – and delaying action will drive up both costs and emissions. Oregon has established a strong policy foundation to accelerate near-term adoption of zero emission vehicles, notably through the Advanced Clean Cars II and Advanced Clean Trucks rules. While these rules are facing challenges at the federal and state level, modeling shows they are critical to advancing vehicle electrification – and support the most cost-effective pathway to a clean energy transition. Electrifying transportation not only cuts emissions but brings broad economic and public health benefits^{xiv}: lowering energy costs for most households, keeping more energy dollars in-state, reducing harmful air pollution, and creating a fleet of batteries that can serve as a flexible grid resource.

Need for Policies

Achieving Oregon’s climate and energy goals will require a fundamental transformation of the transportation sector centered on a rapid shift to zero-emission vehicles.

To accelerate the transition and create a stable funding source for Oregon’s roads, the state must decouple transportation revenue from fossil fuel consumption. Current transportation funding is dependent on a gas and diesel tax and thus an inherent incentive to continue fossil fuel consumption. A more sustainable, technology-neutral revenue stream that better reflects actual road wear and tear regardless of vehicle fuel type is needed. A Road Usage Charge – a mileage based user fee that charges

^{xiv} <https://www.oregon.gov/energy/Data-and-Reports/Documents/2025-OES-Complementary-Analysis-Tech-Report.pdf#page=5>.

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drivers based on miles driven rather than fuel consumed – is one alternative approach gaining traction in Oregon and across the country.

Oregon must also dramatically increase the availability, accessibility, and reliability of zero-emission vehicle charging and fueling infrastructure, with solutions tailored to renters, homeowners, multi-family housing, ride-hailing drivers, and fleet operators. Targeted support is needed for fleet owners navigating the complex and often costly transition to zero emission technologies, as well as more information on technology readiness and feasibility that is grounded in the real-world operating needs of Oregon fleets.

By aligning infrastructure, incentives, and funding mechanisms with its climate goals, Oregon can turn its ZEV policy commitments into widespread, equitable adoption on the ground.

Risks and Barriers

Achieving rapid electrification will require removing persistent barriers that continue to hinder progress. While electric vehicles offer long-term savings through lower fueling and maintenance costs,^{xv} their higher upfront cost continues to be a major hurdle – especially as federal grants and tax credits are rolled back. The erosion of federal support at a time when electrification must accelerate to meet climate goals threatens to slow adoption and widen the gap between those who can afford to transition to EVs and those who cannot.

As Oregon works to expand the availability, accessibility, and reliability of public EV charging, it must address the needs of rural drivers and those without access to at-home charging, ensuring they have convenient, affordable options to power their vehicles. Commercial and public fleets also face significant informational and operational barriers to adopting EVs, including uncertainty around vehicle availability, range, and suitability for specific use cases. In sectors like long-haul freight, further evaluation is needed to determine where and when electrification can realistically meet business needs.

Widespread transportation electrification will also require a substantial expansion of electricity generation and upgrades to the electric grid to support new demand. The success of this transition is closely tied to the ability to scale the electricity system (Pathway 3), including sustained investments in clean energy and a reliable, resilient grid.

2b. Facilitate and accelerate the interconnection of EV charging infrastructure and related distribution system upgrades to enable faster deployment, lower costs and complexity, and improve grid readiness.

Charging station installations will need to ramp up quickly to support growing numbers of electric vehicles.^{xvi} Deployment of charging stations requires close coordination with local utilities to identify sites where sufficient distribution capacity exists to avoid or defer costly grid upgrades. While utilities have traditionally handled upgrade requests on a case-by-case basis, the expected surge in demand from EV charging – as well as other electrification technologies – requires a shift toward a more proactive, streamlined, and scalable planning approach.

^{xv} View the [Household Energy Wallet analysis](#). The Natural Resource Defense Council has evaluated several studies that look at the cost of purchasing and driving an electric vehicle compared to an internal combustion engine vehicle. [Electric vs. Gas Cars: Is It Cheaper to Drive an EV?](#)

^{xvi} For more information on the current state of charging infrastructure in Oregon, see the [2025 Biennial Zero Emission Vehicle Report](#) (coming September 2025).

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Need for Policies

Until recently, the electricity and transportation systems operated in silos, with little need for shared data, coordinated planning, or aligned policies. But as electric vehicles become more common on Oregon's roads, the two systems are becoming increasingly interdependent. Oregon has taken important steps toward integration – for example, requiring investor-owned utilities to submit transportation electrification plans to the Oregon Public Utility Commission every three years.²³ However, greater data sharing and cross-sector alignment are needed. As EV adoption accelerates, it is critical to understand where the grid has sufficient capacity to support new charging infrastructure and help guide efficient siting decisions for both public and private investments. In addition, Oregon must proactively coordinate planning across agencies and utilities to ensure the distribution grid can accommodate new demand while maintaining reliability and minimizing long-term costs for ratepayers.

Risks and Barriers

In many areas, the existing electric distribution system lacks the capacity to handle the growing EV load. This challenge is particularly acute at large sites – such as multi-family housing, fleet depots, and fast charging stations – which place intense, localized demand on the grid. Meeting these needs often requires locating sites with existing available capacity, which is not always feasible or known in advance, or undertaking costly and time-consuming grid upgrades. Compounding this issue, current distribution system planning processes are often too slow and fragmented to keep pace with the scale and urgency of this rapid growth.

2c. Promote strategic electrification across residential, commercial, and industrial sectors to align policies and investment to deliver affordable, reliable, and clean energy.

The energy strategy modeling demonstrated that aggressive electrification of end-uses is essential to least-cost economy-wide decarbonization. Strategic electrification – also referred to as beneficial electrification – is a guiding framework for advancing electrification while supporting affordability and reliability. For electrification to be considered strategic, it must advance one of the following areas without adversely affecting the others: (1) benefits consumers over the long run; (2) enables better grid management; and (3) reduces negative environmental impacts.^{24 25} Consideration of grid management must account for resource adequacy needs, including the effects on load growth.

Need for Policies

While Oregon has set targets to reduce carbon emissions from electricity, transportation, and direct-use fuels, there is no state guidance on the role of electrification in achieving carbon emission reduction goals that take into account interactions between these sectors. There is also no electrification target for buildings, apart from a statutory target for the state to have 500,000 heat pumps by 2030.²⁶ It is important to build on the insights from the energy strategy modeling and other economy-wide studies to more clearly define an electrification pathway for the sectors and applications most able to electrify.

Applying a strategic electrification lens to inform policies to promote building, commercial, and industrial electrification can ensure that the transition will be structured to benefit consumers and the grid. It can help inform key policies including buildings performance standards, energy codes, appliance standards, OPUC planning processes and ratemaking, ratepayer- and publicly- funded programs, and zoning and planning. Together with the Equity and Justice Framework, it can help focus policies and programs to overcome barriers to adoption of the most energy efficient electric technologies among environmental

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justice populations, including heat pumps for space heating and cooling and heat pump water heaters. It can inform programs that educate households and businesses about their energy use, how their buildings compare to other similar buildings, and what they can do to reduce energy use.

Risks and Barriers

While electrification is essential to achieving least-cost economy-wide emission reductions and maximizing energy efficiency, it poses several challenges. First, the electricity system is already constrained and will need to expand to accommodate new loads as they electrify. Second, while efficient electric heat pumps generate energy savings, they may not always generate financial savings for consumers. The energy wallet analysis found that factors affecting affordability included the type of housing, type of heating technology being replaced, household cooling needs, and the relative cost of electricity and gas.^{xvii} Some households – and energy burdened households in particular – may require support to transition from a natural gas or other fossil fuel reliant system to an electric heat pump. Heat pumps can increase winter peak loads, requiring additional electricity system investments. To maximize heat pump operations, homes may require additional weatherization measures, increasing the amount of initial investment needed. Fuel switching from natural gas to electric heat pumps erodes natural gas utility revenues, raising questions about how business models might adapt to a low-carbon future. Over time, as fewer customers remain on natural gas distribution networks, the costs of maintaining the network will fall on fewer customers, potentially raising bills and increasing energy burden in gas-dependent households. There is also a risk of stranded assets, and a need to manage retirement of parts of natural gas distribution systems that otherwise may require costly upgrades.



3. Clean Electricity. Invest in clean electricity infrastructure to maintain reliability and promote load flexibility to reduce system costs.

POLICIES
3a. Facilitate energy infrastructure enhancement and expansion while avoiding, minimizing, and mitigating negative impacts on natural and working lands. <i>(Utility-scale and distributed energy resources)</i>
3b. Enable consumers to support grid needs by shifting the timing of electricity consumption for flexible loads like EVs or water heaters. <i>(Load flexibility)</i>
3c. Consult and engage with Tribes to understand their concerns around energy development and to identify opportunities where state policies, funding, and programs can support tribal priorities while minimizing the effects of development on environmental and cultural resources. <i>(Tribal consultation and engagement)</i>
3d. Collaborate with neighboring states and regional entities to address Oregon’s needs as part of a regional grid. <i>(Regional engagement)</i>

3a. Facilitate energy infrastructure enhancement and expansion while avoiding, minimizing, and mitigating negative impacts on natural and working lands.

^{xvii} See the [Household Energy Wallet analysis](#).

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There is not currently sufficient transmission capacity, generating resources, or storage to reliably power Oregon's future electricity needs, particularly if new data centers come online as quickly as forecasted. Planning for and building utility-scale projects must be a priority. This is particularly critical when considering that utility-scale projects often take years to complete the necessary siting, planning, permitting, acquisition of equipment and materials, engineering, construction, and interconnection processes. Opportunities to expedite these processes, for example by reducing duplication and implementing efficiencies, should be pursued. Grid enhancing technologies can also help improve efficiencies of existing transmission lines. While Oregon will always rely on a combination of in-state and out-of-state resources, it is important to recognize that there are benefits to in-state development. These include energy sector jobs and broader economic growth as businesses gain access to electricity to power their activities.

In addition to utility-scale resources, it is important to build distributed energy resources, which are often more costly to build per kilowatt hour generated, but can typically be constructed more quickly, provide important resilience benefits (especially when paired with battery storage), and typically have fewer effects on natural and cultural resources. Pursuing smaller utility-scale batteries and other resources like co-located generation in some areas can also mitigate the need to build new lines when strategically deployed to areas that act as bottlenecks in the transmission system. Failure to develop sufficient resources will not only threaten system reliability and hinder progress toward Oregon's clean energy objectives but will inhibit economic development and discourage new businesses from entering the state.

Need for Policies

State guidance and support is needed to expeditiously navigate the need for more resources, while recognizing that existing siting and permitting processes are intended to provide consultation and engagement with affected communities and carefully consider development benefits and burdens on communities, the environment, and cultural resources. The need for development must be carefully balanced against these competing priorities to mitigate the environmental and community impact by resource development. Other barriers include determining how to fairly allocate costs for transmission projects and mitigating affordability concerns from new investments.^{xviii}

Oregon has some existing programs and policies that incentivize development of community-scale or smaller resources. For example, the Oregon Department of Energy's Community Renewable Energy Grant Program provides grants for planning and developing community renewable energy and energy resilience projects. At least half of the grant funds are awarded for projects that serve environmental justice communities, such as communities of color, lower-income communities, and rural communities.²⁷ In addition, ORS 469A.210 sets a goal for community-based renewable energy projects to comprise at least 10 percent of the aggregate electrical capacity for large investor-owned utilities by 2030. In other programs, set-asides, formula, or block grants for Tribal governments have been effective, particularly in the housing and community development space, and could be effective in supporting development of distributed renewable energy. It is important to build on these and other policies over time to ensure continued growth of customer- and community- owned resources, and to expand access to historically and currently underserved communities and areas at highest risk for outages. Currently, these programs

^{xviii} For example, the Committee on Regional Electric Power Cooperation (CREPC) Transmission Collaborative, a joint committee of the Western Interstate Energy Board (WIEB) and the Western Conference of Public Service Commissioners (WCPSC), is working on bringing states together to help identify cost allocation frameworks to help advance transmission development in the region. <https://www.westernenergyboard.org/crepc-transmission-collaborative/>.

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are at risk due to lack of state funding. Utility investments are likely to support some smaller-scale projects, but other funding will be necessary to capture the value of resilience benefits and other benefits to local communities.

Risks and Barriers

One of the greatest risks to reliability and meeting Oregon’s clean energy goals is that new resources will not be constructed quickly enough to accommodate the pace of rising demand and to meet HB 2021 targets for the state’s biggest utilities and electricity service suppliers. Even where projects already have permits and site certificates, barriers remain to get projects built, including interconnection and supply chain challenges. Cuts in federal funding and changing regulations have reduced support for renewable resources, and tariffs are increasing the costs of materials. These actions threaten to further delay clean energy projects at a time that investment and construction needs to ramp up.

While speedy action is critical, it is important to minimize and mitigate potential negative impacts on tribal cultural resources, affected communities, natural and working lands, and waters. This requires identifying not only barriers but potential benefits of particular types of developments, such as local economic development or ways to mitigate effects through agrivoltatics. These potential benefits include local economic development, strengthened resilience, and environmental and public health benefits of a shift to low-carbon resources.

3b. Enable consumers to support grid needs by shifting the timing of electricity consumption for flexible loads like water heaters or EVs.

Renewable resources like wind and solar generate electricity variably, meaning that their output will fluctuate with the availability of wind and sun. New electric loads like electric vehicles and heat pump water heaters have some flexibility in when they need to draw electricity from the grid. As more variable renewable resources and more flexible electric end uses enter the system, it is important to capture the opportunities to align electricity demand with supply availability. This might mean, for example, charging a car, home battery, or pre-heating water during times of low system demand or high renewables output. It can save money by reducing peak demand and taking full advantage of available resources across the day and night. Changing the time of electricity consumption can also relieve pressure on the hydroelectric system and protect fish.²⁸ More specifically, strategically managed vehicle and battery charging, including options like workplace and off-peak home charging, can maximize the benefits of clean energy while reducing the strain on the grid. In buildings, electric water heaters, space heating, and cooling can all be managed flexibly to provide comfort while supporting the grid. Commercial and industrial electricity loads can also shift some of their operating hours and activate backup energy systems.

Need for Policies

Historically, Bonneville Power Administration has led the way in providing flexibility to the Northwest power market through its marketing of hydroelectric power and its occasional requests to customers to provide demand response by delaying power consumption, primarily to large industrial customers like aluminum smelters. Demand response programs for other retail customers have not historically been a priority because of the hydro system’s ability to provide abundant peak power, but that ability may no longer be sufficient. With growing electric loads and an increasing share of variable renewable resources, it will be important for policies to help align demand patterns with broader energy system needs. Examples might include continued evolution of utility regulation for investor-owned utilities and

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guidance from BPA for consumer-owned utilities to encourage utilities to offer time-of-use rates, promote managed charging or vehicle-to-grid programs, automation, or other enabling mechanisms to motivate and compensate consumers for their flexibility. It may also include technical assistance for utilities across Oregon to identify least-cost methods to align electrification of flexible loads with system operations.

Risks and Barriers

Load flexibility ultimately depends on the abilities and actions of end-use consumers, like households and businesses. Not all consumers have the ability to shift the timing of their consumption, particularly those who may lack access to automated technologies, like smart thermostats. Poorly designed or implemented load flexibility policies could unfairly burden these consumers. Conversely, there is a risk that those consumers least able to shift their consumption could be left behind as they are unable to take advantage of policies that reward load flexibility, including financial incentives from utilities or others. Any new policy to promote load flexibility must be designed with these equity concerns in mind. While these risks are significant, it should also be recognized that failing to enable load flexibility will significantly increase costs and impose other negative effects for all consumers. Load flexibility is an opportunity to mitigate the need to build new resources, which lowers costs and reduces effects on natural and working lands, cultural resources, and nearby communities. Utility action is needed to create mechanisms and incentives for load shifting. However, investor-owned utility business models continue to benefit more from capital investments in infrastructure than from investments in programs like demand response and virtual power plants. Consumer-owned utilities may face contractual barriers with Bonneville Power Administration that limit their ability to realize benefits or savings, even if load flexibility could benefit BPA's regional system. Finally, customers may not know about programs, or may not trust that they are worth participating in.

3c. Consult and engage with Tribes to understand their concerns around energy development and to identify opportunities where state policies, funding, and programs can support tribal priorities while minimizing the effects of development on environmental and cultural resources.

Indigenous Tribes and Bands have been with the lands that we inhabit today throughout Oregon and the Northwest since time immemorial and continue to be a vibrant part of Oregon today. Engagement and formal consultation with Tribes must be an essential component of policy development and implementation. Specifically, renewable energy and transmission line projects may need permits or approval from a tribal agency/Tribe. In addition, it is imperative to follow consultation requirements related to federal and state actions and their effects on Tribes, their resources, and potential treaty rights. This is particularly important in the context of building clean energy infrastructure because of the potential benefits and risks that these projects carry, and the need to ensure that past harms and injustices are not repeated. It is important to understand Tribes' concerns around energy development and to identify opportunities where state policies, funding, and programs can support tribal priorities. Identifying opportunities to advance tribal energy sovereignty can further help align with Oregon's goals of clean energy, resilience, and reliability.

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Need for Policies

As explained in 3a and 3b, policies are needed to advance construction of needed electricity infrastructure and to enhance demand flexibility on the power system. As policies, programs, and projects are developed, it is critical to engage Tribes in their development and implementation.

Tribal consultation requirements stem from the federal government's trust responsibility to 574 federally recognized Tribes — in particular, consulting with Tribes on federal actions or decisions, such as permits for proposed energy projects, that affect them and may affect their lands, resources, or cultural resources. In addition, Oregon law requires state agencies to maintain government-to-government relations with the nine federally-recognized Tribes in Oregon by identifying programs that affect Tribes and including representatives of Tribes in developing programs.²⁹ While consulting with Tribes is critical for many aspects of the energy strategy, consultation on issues affecting the shared electricity grid is highlighted here as a key opportunity.

Tribal engagement should not, however, be limited to formal requirements or specific programs or projects, but be an ongoing process to build relationships and understanding to better identify areas of cooperation and concern. Many Tribes in Oregon have voiced concerns for various types of projects, including utility scale solar, floating offshore wind, and high voltage transmission lines. Through consultation, proposed project designs have a stronger opportunity to avoid negative impacts to natural and cultural resources that are vital to a particular Tribe's traditional and current cultural practices. At the same time, many tribes have concerns about the effects of climate change and recent extreme weather on natural and cultural resources, which have motivated development of plans, taskforces, or committees to consider clean energy and energy sovereignty. There is interest in exploring partnerships with Tribes and tribal ownership of energy projects so that that the Tribe can receive revenue and build wealth for their communities. There is a need to work with each Tribe to identify opportunities where state policies, funding, and programs can support tribal priorities while minimizing the effects of development on environmental and cultural resources.

Risks and Barriers

Failing to consult and engage meaningfully with Tribes raises a risk of perpetuating historical inequities as well as disrupting a Tribe's current cultural practices. The state must comply with formal notice requirements, and in parallel work with tribal staff, as appropriate, to understand a Tribe's priorities and opportunities to address their concerns, interests, and needs when advancing policies, programs, or projects. Failing to work with Tribes on proposed projects also creates legal risk to the projects. Working with Tribes on energy projects may require support and time to ensure there is an understanding of the project, its potential effects, and whether the tribe has an opportunity to benefit from the project.

3d. Collaborate with neighboring states and regional entities to address Oregon's needs as part of a regional grid.

Oregon imports and exports electricity from across the western region as part of an interconnected electricity system. Oregon is also part of the Bonneville Power Administration's service area, which covers four states and is federally operated. Energy infrastructure, particularly transmission lines, may require action from multiple sovereigns, such as Tribal governments, the federal government, and state governments to be permitted, developed, and operated. Cross-jurisdictional coordination is also important to the efficient use of clean energy infrastructure, which can reduce costs while improving reliability. The state should engage appropriately with other sovereigns to facilitate cross-jurisdictional

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coordination and collaboration. This engagement is essential to advocate for Oregon's interests, to maintain consistency between regional and state policies, and to advance priorities like transmission development that often rely on cooperation across utilities and jurisdictions.

Several initiatives are underway that will strengthen regional ties in how the electricity system is managed; these initiatives deserve support but also require close scrutiny. Considering the billions of dollars the West has saved through the real-time electricity market since 2014, much work is underway to further progress toward an organized electricity market. Presently, two day-ahead markets are under development: Southwest Power Pool's Markets+ and the California Independent System Operator's Extended Day Ahead Market. The Western Resource Adequacy Program is establishing resource adequacy requirements that many Oregon utilities are obligated to meet. Work to construct much-needed interstate transmission lines continues, including through the Western Transmission Expansion Coalition.

Need for Policies

The power sector is a highly regulated one. Each state has its own regulations governing in-state utility activity, while the federal government regulates interstate activity (largely transmission). In the case of consumer-owned utilities, they have their own governance structures and are also largely reliant on federal power from BPA.

Currently, the regional power marketplace is dominated by long-term bilateral contracts and long-term contract-based transmission rights. Other parts of the country have organized wholesale marketplaces, where a single independent entity dispatches resources efficiently to meet all participants' needs, and utilities and developers have increased transparency and information. Without such centralized organization, the Northwest power market has higher transactional and operational costs that ultimately increase costs for utility consumers. Since 2014, the Western Energy Imbalance Market has offered a centralized marketplace for real-time power sales, which has saved Oregon utilities millions of dollars.³⁰ However real-time power sales are only a small portion of marketplace transactions. Organized markets for short-term power sales do not address marketplace barriers like transmission rights and utilization.

Utilities in the region are moving toward more organized power markets to reduce costs and improve reliability. This is essential to more efficiently utilize existing infrastructure and to benefit from geographic and resource diversity across the region. As the power sector decarbonizes, this regional diversity will become increasingly important. A more diversified supply mix can take advantage of different weather patterns, resource mixes, and time zones to integrate more renewable generation while mitigating risks from weather changes, including extreme weather events and wildfires. Ultimately, moving toward a regional transmission organization would be an important step to improve west-wide coordination and reduce costs for consumers.

It is important that the State of Oregon engage in these activities to advance state energy policy objectives, ensure that regional activities are consistent with state policy, and strengthen Oregon's cooperation on vital areas including market development, resource adequacy, emissions accounting, and transmission planning. For example, hydropower is a key generating resource for Oregon and the Pacific Northwest, and Oregon should support regional and other planning efforts, such as by the Bonneville Power Administration and the Northwest Power and Conservation Council, to understand and mitigate the expected negative impacts of climate change and extreme weather on hydropower availability. Regional processes like these are becoming increasingly important and complex as the region moves toward day ahead markets, tackles resource adequacy, endeavors to build much needed transmission, and plans for a growing and cleaner grid.

Risks and Barriers

Perspectives and priorities of interested parties in Oregon do not always align, so regional engagement – including with Tribes, other states, and in regional processes – is essential to advance dialogue and identify mutual problems and solutions.



4. Low-Carbon Fuels. Advance the use of low-carbon fuels in the hardest-to-electrify end uses to achieve GHG emissions reductions while maintaining industry competitiveness and a reliable electricity grid.

POLICIES

4a. Foster development and expansion of low-carbon fuels and fuel infrastructure in Oregon to serve the hardest-to-electrify sectors in Oregon as a strategic resource, while mitigating environmental and community impacts. (*Low-carbon fuels and fuel infrastructure*)

4b. Support low-carbon fuel adoption in the hardest-to-electrify sectors including aviation, rail, marine transport, long-haul trucking, agriculture and off-road equipment, high-heat industrial processes and resources that support electric system reliability. (*Low-carbon fuels adoption*)

4c. Support a managed fuels transition that minimizes stranded assets as end-uses electrify, identifies opportunities to leverage existing infrastructure and expertise to support clean fuel alternatives, and encourages technological innovation to advance new opportunities. (*Managed fuels transition*)

4a. Foster development and expansion of low-carbon fuels and fuel infrastructure to serve the hardest-to-electrify sectors in Oregon as a strategic resource, while mitigating environmental and community impacts.

Low-carbon fuels, including liquid and gaseous fuels consumed for transportation, direct use, and electricity production, will play a growing role in Oregon’s economy as the state decarbonizes. The energy strategy modeling found that electrification in transportation and buildings is part of a least-cost pathway to decarbonizing the economy, but some applications will still need to be powered by fuels. In the least-cost pathway modeled in the Reference Scenario, fuel consumption dropped 70 percent by 2050, and most remaining fuels shifted from fossil to a lower carbon alternative.

Low-carbon fuels and electricity are used in Oregon’s transportation sector today but only represent about 9 percent of the fuel consumed.³¹ Most low-carbon fuels consumed in Oregon are imported into the state and adoption is constrained by a limited supply. Not all of Oregon’s communities have affordable access to these fuels as supply is focused on meeting demand in the urban areas along the I-5 corridor. Decarbonization in Washington and California will likely drive greater regional demand for low-carbon fuels. This may lead to increasing competition and potentially higher prices for these fuels, or simply a lack of availability in Oregon as limited supply is directed to Washington or California. Encouraging the development of low-carbon fuels regionally will be important to help meet decarbonization needs, while development of in-state fuel production and distribution will help Oregon leverage economic opportunities in the state.

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Need for Policies

Oregon has existing policies guiding decarbonization of transportation and direct-use fuels but needs to develop new policies around fuel infrastructure development to ensure fuel supply access and program success. Oregon's Clean Fuels Program and the federal renewable fuel standard support clean fuels development.

To evaluate the potential of renewable natural gas production, the Oregon Department of Energy conducted a Biogas and Renewable Natural Gas Inventory Report in 2018 to identify fuel feedstocks and locations around the state.³² Natural gas utilities have also been encouraged to incorporate biogas into their fuel mix with voluntary biogas goals.³³ Biogas collection facilities have been sited in Oregon but most of the fuel produced is used onsite or the environmental benefits are sold out of state. Oregon joined Washington and other public and private partners in the region in creating the Pacific Northwest Hydrogen Hub to create a test bed for clean hydrogen infrastructure in the northwest, winning a \$1 billion federal investment.³⁴ Changing policies at the federal level have put this project at risk.

With a growing demand for low-carbon fuels, complementary policies are needed to facilitate fuel production in Oregon and help ensure low-carbon fuels are available to support targeted deployment in strategic sectors.

Risks and Barriers

While the limited amount of fossil and biofuel production in Oregon has led to economic dependence on other states, it also shielded Oregon communities from some of the environmental and social impacts associated with producing these fuels. New low-carbon fuel production facilities offer jobs and economic development but they may also add air, water, and noise pollution to communities. Identifying existing brownfields for potential development may mitigate some environmental harms of new development but may also continue historic negative health and social impacts on vulnerable communities located near industrial sites.

Biofuels are dependent on feedstocks from agricultural, municipal, and wood waste. As demand for fuel increases and competition for waste feedstocks increases, there is a risk that non-waste feedstocks could be used, potentially leading to deforestation, habitat loss, and farmland being used to produce energy crops rather than food.

Investment in low-carbon fuel production facilities carries risk as some of these fuels, such as hydrogen or ammonia, are nascent technologies with limited existing production and distribution infrastructure. Low-carbon fuels are more expensive to produce than petroleum fuels and are dependent on government subsidies and tax credits to be competitive in the fuel market. Federal and state policies may change over time, and that can have a dramatic effect on the demand for and the economics of these fuels. Technologies and the applications of these fuels are also evolving and uncertain.

Increasing fuel production in Oregon has potential social, environmental, and economic risks and also benefits to decarbonization and economic growth and independence. Oregon needs to evaluate the options and develop a comprehensive approach to attracting fuel production in the state while mitigating negative effects and preventing unintended consequences.

4b. Support low-carbon fuel adoption in the hardest-to-electrify sectors including aviation, rail, marine transport, long-haul trucking, agriculture and off-road equipment, high-heat industrial processes and resources that support electric system reliability.

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Shifting demand from fossil to low-carbon fuels in transportation and industry may require technical guidance and financial support from the state. Drop-in fuels or those that can be used in existing equipment and fuel storage are the easiest to adopt but some fuels and applications will require equipment retrofits and/or a change in how fuels are consumed. In transportation, the energy strategy model indicated that low-carbon fuels were needed to decarbonize aviation, rail, and marine transport as well as some long-haul trucking, agriculture and off-road equipment. In the least-cost pathway modeled in the Reference Scenario, by 2050 most industrial processes were powered by clean gas from biogenic sources or green hydrogen where electrification of applications was not cost-effective or feasible. In the electricity sector, while less gas overall was burned over time across the scenarios, the system relied on existing fossil and new low-carbon gas operating at low capacity factors to provide system flexibility and reliability. To achieve this shifting demand in how we use fuels and what fuels we do use will require clear and early direction from the state so Oregon businesses and communities have time to prepare. State government can support this transition through research, technical guidance, and resources.

Need for Policies

Oregon's fuel decarbonization policies are focused on reducing the emissions of fuels used in transportation and direct use but are limited in their support of consumers and industries that need to make the energy transition. The Clean Fuels Program aims to reduce the carbon intensity of Oregon's transportation fuels over time. The Climate Protection Program establishes a declining limit on greenhouse gas emissions from fossil fuels used throughout Oregon, including diesel, gasoline, and natural gas, out to 2050. Support is needed to drive implementation of these programs, including overcoming cost, information gaps, and technical barriers.

While some low-carbon fuel solutions such as renewable diesel, biodiesel, and ethanol are in use in transportation today, others like hydrogen and ammonia are not yet at market scale. These may be viable solutions in the future, and the state can help Oregon businesses vet the opportunity by tracking their commercial development, determining the best uses for Oregon consumers, identifying opportunities to integrate them into Oregon's energy system, and evaluating the state's role in securing access.

Existing policies do not offer clear direction around a decarbonization pathway or timeline for fuel applications like maritime, aviation, and rail transportation fuels. These transportation categories and other fuel applications without clear direction may benefit from state policies such as fuel decarbonization targets or support, allowing Oregon businesses to plan for the transition and begin to secure regional low-carbon fuel supply. Sectors that are covered by policies with direct regulatory decarbonization goals, such as energy-intensive trade-affected industries (in the Climate Protection Program) and commercial buildings (in the Building Performance Standard program) face technical, informational, and financial barriers as they transition how they use energy. There are opportunities for the state to offer research, technical, and financial assistance to support the transition and help Oregon businesses decarbonize successfully while remaining competitive.

Risks and Barriers

Decarbonization of fuels, electrification, and increased energy efficiency have the potential to reduce operating costs and offer savings for Oregon businesses over time but the initial investment and potential increased risk are significant hurdles for most businesses.

Increased adoption of low-carbon fuels may pose economic, technological, and social risks, and policies must be structured to understand and help navigate these risks. Adopting low-carbon fuel technologies

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may require significant upfront capital, and use of low-carbon fuels may lead to higher costs, making it more difficult to compete outside of Oregon or leading to higher costs for consumers and businesses. Shifting policies creates additional risk and uncertainty. There is a limited supply of low-carbon fuels, which means Oregon businesses may be competing for access to the fuels unless new production comes online in Oregon and the region. Onsite generation and storage of fuels such as hydrogen may be a viable option but will require a greater initial investment, may potentially pose new safety hazards, and increase dependence on access to resources such as feedstocks or water.

Developing and scaling up new technologies and fuels requires continuous innovation, investment, and overcoming consumer behavior and technical limitations in energy conversion efficiency and storage. Existing infrastructure may need to be retrofitted or replaced, consumer behavior and manufacturing processes may need to change, and workforce training may be needed.

4c. Support a managed fuels transition that minimizes stranded assets as end-uses electrify, identifies opportunities to leverage existing infrastructure and expertise to support clean fuel alternatives, and encourages technological innovation to advance new opportunities.

Transitioning existing fuel consumption to electricity and low-carbon fuels is an important component of a least-cost pathway to decarbonizing transportation and buildings — but the transition poses challenges for existing fuel suppliers and customers, as well as for power system reliability. Shifting energy use from the existing natural gas system to the electricity system will require expansion of low-carbon electricity generation, transmission, and distribution infrastructure. Fuel suppliers will experience a gradual decline in end-users, leaving fewer remaining customers to cover the costs of the fuel and maintaining the existing fuel distribution system. Oregon’s energy system will still be dependent on petroleum fuels but as consumption volumes decline it may be more challenging for fuel suppliers to remain economically viable and still provide service. It is important to consider the state’s role in managing this risk, guiding gradual change while supporting innovation, and capturing opportunities to repurpose existing infrastructure for low-carbon fuels or other energy applications.

Managing this transition requires a recognition of the role of strategic electrification in decarbonizing buildings, industry, and transportation as a cost containment approach. The transition will require policy and strategic support from Oregon’s Legislature, state agencies, and fuel providers to address the effects of declining demand on distribution systems over time. It is also important to consider how to use existing infrastructure to support low-carbon fuel adoption in the hardest-to-electrify end uses and electricity generation, and where retrofitting is necessary to accommodate low-carbon fuels such as ammonia, renewable natural gas, and green hydrogen. Finally, it is important to explore how to use existing fuel supplier expertise and infrastructure to help deliver deeper carbon reductions through new approaches, such as through construction and management of thermal energy networks and applying geothermal or industrial waste heat, that have the potential to serve multiple buildings and even entire neighborhoods.

Need for Policies

A managed energy transition will not happen alone. The economywide interactions between sectors are not captured by the planning of any single entity and cross-fuels coordination will be needed to support resource adequacy and reliability during the transition. State policy is needed to balance the risk of investment in resources or infrastructure that may become obsolete or uneconomical to operate due to

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changing energy demands — for example, paying for upgrades on a distribution line to a community with declining natural gas consumption over time. Absent explicit policies and analysis, it can be challenging to predict changes in consumer demand that could result in much higher natural gas costs for customers remaining on the distribution line. During this transition, non-pipe solutions such as energy efficiency or electrification as an alternative to new distribution infrastructure could reduce the risks associated with large investments. This will require a data-driven approach, regulatory guidance, and collaboration with Oregon communities. California, for example, is deploying several pilot projects to test strategies to manage the shift to electric end-uses in buildings by focusing electrification initiatives in areas where the gas distribution network is in need of upgrades.³⁵ It will also be important to consider policies that support innovation, leveraging expertise from the oil and gas sectors to support low-carbon fuels and other technologies like district heating and enhanced geothermal power generation.

Risks and Barriers

Decarbonizing fuel applications by transitioning from petroleum fuels to electricity or an alternative low-carbon fuel has a variety of short term economic and social risks. Long term, it is clear that mitigating climate change and reducing Oregon’s dependence on finite imported petroleum fuels is beneficial. In the short term, the transition will require significant investments in new infrastructure and there will be risk associated with investing in nascent technologies and fuels. Not all consumers will be interested in transitioning to new fuels or changing how they use energy. Tribal and public engagement will be important to a successful transition.

A declining customer base of the existing fuel distribution networks is likely to raise costs for the remaining customers, elevating affordability, equity, and environmental justice concerns for those customers unable to afford switching to efficient electric technologies. It will be important to apply a strategic electrification approach to reduce and mitigate effects on environmental justice households and communities, and for policies to reduce risks of stranded assets. Some industrial users in Oregon may continue to use natural gas for their operations and/or as a backup power source because there isn’t an affordable or viable alternative, but they may be subject to increasing fuel costs. Fuel suppliers will gradually lose customers but will need to remain viable where they are providing a critical service to Oregon’s energy system. It will be important to mitigate the risks of relying on new markets for new fuels and technologies during the transition.



5. Resilience. Strengthen resilience across all levels of the energy system, including utilities, communities, and customers, enhancing Oregon’s ability to adapt to climate change and mitigate other risks.

POLICIES

5a. Evaluate cross-fuel interdependencies and vulnerabilities to better ensure long-term reliability of the electric grid. This specifically includes strengthening coordination of electricity and natural gas system planning and exploring other cross-fuel areas requiring strategic coordination. *(Cross-fuels planning)*

5b. Fund resilience measures across the energy system, including at utility scale and in homes, businesses, and communities through a combination of ratepayer and taxpayer dollars, particularly where climate adaptation measures can also help advance climate mitigation. *(Resilience measures)*

5c. Maintain emergency response capabilities, including the adaptability and readiness of vehicles, supply of fuels, and fuel storage needs during the energy transition. (*Emergency response capabilities*)

5a. Evaluate cross-fuel interdependencies and vulnerabilities to better ensure long-term reliability of the electric grid. This specifically includes strengthening coordination of electricity and natural gas system planning and exploring other cross-fuel areas requiring strategic coordination.

Oregon’s energy systems are under increasing pressure from wildfire, extreme weather, and other effects of climate change at the same time that they are tasked with decarbonizing. To mitigate risks and better prepare for and respond to system stress, it is important to strengthen coordination between sectors to manage climate risks and the increasing complexity of cross-sector interdependencies. This is particularly true for the power and natural gas sectors, which face confluent vulnerabilities during extreme weather events. In January 2024, the Governor declared a state of emergency after freezing rain and downed trees led to widespread power outages.³⁶ During that event, electricity demand across the region exceeded historic records at the same time many electricity generating resources faced performance challenges. Simultaneously, natural gas supply—critical not only for some home heating but also for gas-powered electricity generating resources—was restricted due to an issue at a key gas storage facility.³⁷

As more end uses electrify and the power and natural gas systems decarbonize, it will be important to evaluate how we maintain reliability during times of peak system stress. The Oregon Energy Security Plan identifies relationships between these and other sectors that may have a growing need for more coordination to ensure a reliable energy transition. The plan identifies additional risks that will be important to plan for, including the risk of an earthquake in the Cascadia Subduction Zone, cyber security threats, and domestic and international terrorism.¹⁷ Other regional studies have similarly identified a critical need for more coordination to ensure a reliable energy supply from the electric and gas systems.^{xix}

Need for Policies

Separate entities provide energy services for different fuels, such as transportation fuels, electricity, and natural gas. Those entities have historically focused on their own individual system, without significant cross-system coordination. Yet such coordination is important to address the interconnected nature of Oregon’s energy sector and the growing threats like climate change that threaten all systems. With regulatory oversight over investor-owned electric utilities, the Oregon Public Utility Commission has been encouraging regulated entities to coordinate and share information, particularly in their long-term planning processes; some energy providers have initiated this process. More guidance and support from the state is needed to enable the robust energy security planning needed for a resilient and affordable energy future, not only in investor-owned utility service areas but broadly across the state. In the near term, Oregon should focus on facilitating multi-fuel conversations to inform and improve energy reliability and resilience, particularly between the electricity and natural gas sectors. Over time, more

^{xix} For example, the Pacific Northwest Utilities Conference Committee and Northwest Gas Association commissioned a third-party analysis of regional energy reports that highlights these challenges. <https://www.pnucc.org/wp-content/uploads/Guidehouse-analysis-of-regional-energy-reports-2025.pdf>

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coordination around distribution system planning may also be needed to manage the process of implementing building electrification where customers transition from gas networks to electric grids.

Risks and Barriers

Oregon's electric and natural gas systems are interconnected and dependent on each other but decarbonization may strain that relationship as end users electrify and the current natural gas business model evolves. The total volume of natural gas used will gradually decline but the fuel will remain critical to the remaining customers and maintaining electricity system reliability as an on-demand resource. Oregon's natural gas and electric utilities conduct resource adequacy planning for their systems as part of their integrated resource planning. These evaluations are independent of other energy systems and may conflict with the assumptions of other energy providers. Energy demands are increasing from tech loads, industry, and population growth that supports economic development but can be challenging for utilities to service. Utility infrastructure development independent of other energy systems may lead to the construction of redundant resources, stranded assets, or inadequate resources in some communities.

Maintaining system reliability while minimizing the costs of the energy transition will require energy service suppliers to share data, assumptions, and work together. The state must support utilities in getting beyond the barrier of market competition and focus on agreement around the rate of electrification in their service areas, emergency response scenarios, resources needed to meet demand, and Oregon's changing energy landscape.

5b. Fund resilience measures across the energy system, including at utility scale and in homes, businesses, and communities through a combination of ratepayer and taxpayer dollars, particularly where climate adaptation measures can also help advance climate mitigation.

Many of the measures that reduce greenhouse gas emissions also deliver resilience benefits. As temperature extremes grow, investments in measures like weatherization, heat pumps for air conditioning, and distributed renewable resources and batteries can reduce carbon emissions while protecting households from risks such as wildfire smoke, extreme temperatures, and prolonged outages. Climate change is also making other measures more expensive. For example, utilities invest in "grid hardening" to reduce risks of wildfire and wildfire-caused damage, which increase costs of building and maintaining transmission and distribution infrastructure. Costs have increased for utilities and could rise more from wildfire damage and litigation. Insurance against climate risks has become more expensive. Financial support to cover these infrastructure costs, such as bank loans to investors, is generally less available and more costly to secure.

Need for Policies

While utilities have a critical role to play in improving the resilience of their systems, resilience measures should not be constrained by a utility's funding limitations. A utility may not be able to make the investments or operational decisions needed to improve resilience at the local level for individual communities, businesses, and households. State action is needed to ensure investments are made that take into account the resilience benefits. This may include policies that can build on existing utility ratepayer funded programs, as well as existing state-funded programs such as the County Energy Resilience Grant Program, Community Renewable Energy Grant Program, and state-funded heat pump

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programs – all of which are now in jeopardy due to lack of available state funding. Certain communities in Oregon, including those served by consumer-owned utilities, may need higher levels of government support to implement proactive grid-resilience measures and recover from damages caused by wildfire, winter storms, or other disasters. Absent government support, the increased costs necessary to pay for significant resilience or reliability investments will fall hardest on those households and businesses already suffering from a high energy burden. It is important to continue to promote and support relationships between Tribes and utilities to focus on resilience projects that benefit tribal communities and lands through programs like the federal [Grid Resilience Grant program](#).

Risks and Barriers

Oregon’s existing electricity grid and natural gas pipeline infrastructure is aging and will increasingly be vulnerable to outages, wildfires, and declines in efficiency. Existing infrastructure can also hinder the integration of new technologies and potential solutions to improve the efficient delivery of energy. Utility resilience measures require significant upfront investment and planning to implement, and many utilities in rural communities are the most exposed but have the least amount of resources to address the issues. Supply chain disruptions caused by geopolitical tensions, trade restrictions, and events like the COVID-19 pandemic have resulted in long lead times for equipment procurement and higher costs for utilities.

Households, businesses, and communities also face increasing risks that fall outside of utility cost-effectiveness calculations. For example, weatherization measures or installation of solar panels plus storage may not be cost-effective from an energy perspective, but can deliver significant benefits in the case of extreme weather and outages. Support is needed to encourage investment in resilience measures across investor- and community- owned utility service areas, and especially in rural and coastal communities that face higher outage frequency and duration.

5c. Maintain emergency response capabilities, including the adaptability and readiness of vehicles, supply of fuels, and fuel storage needs during the energy transition.

Every day, the thousands of Oregonians involved in emergency management, planning, and response provide critical services to the people of our state, protecting lives, property, and the environment. In turn, these Oregonians rely on vehicles, utilities, tools, and facilities, all of which are powered by energy. Today, emergency response vehicles — including fire trucks, police cars, ambulances, wildfire fighting crews, air support, and bulldozers — rely on a steady supply of petroleum liquid fuels. Additionally, when grid power is unavailable, backup emergency power is typically provided by liquid fuels or natural gas generators.

Even as communities increase their resilience by adding distributed generation and storage, liquid and gas fuels will likely still be needed in the foreseeable future to provide on-demand power to emergency response resources, including vehicles, planes, and backup power generation. Low-carbon fuels or other innovative technologies may be able to meet these needs while lowering greenhouse gas emissions, but it will take time to transition to these alternatives, and costs will likely be higher than traditional fuels. State and local jurisdictions will need to work with partners to develop guidance on what investments to make for emergency planning while also preparing for changes in how energy is used in the future.

Need for Policies

The Oregon Department of Energy published the [Oregon Energy Security Plan](#) in September 2024, following direction from the federal government and SB 1567. The plan is updated annually and

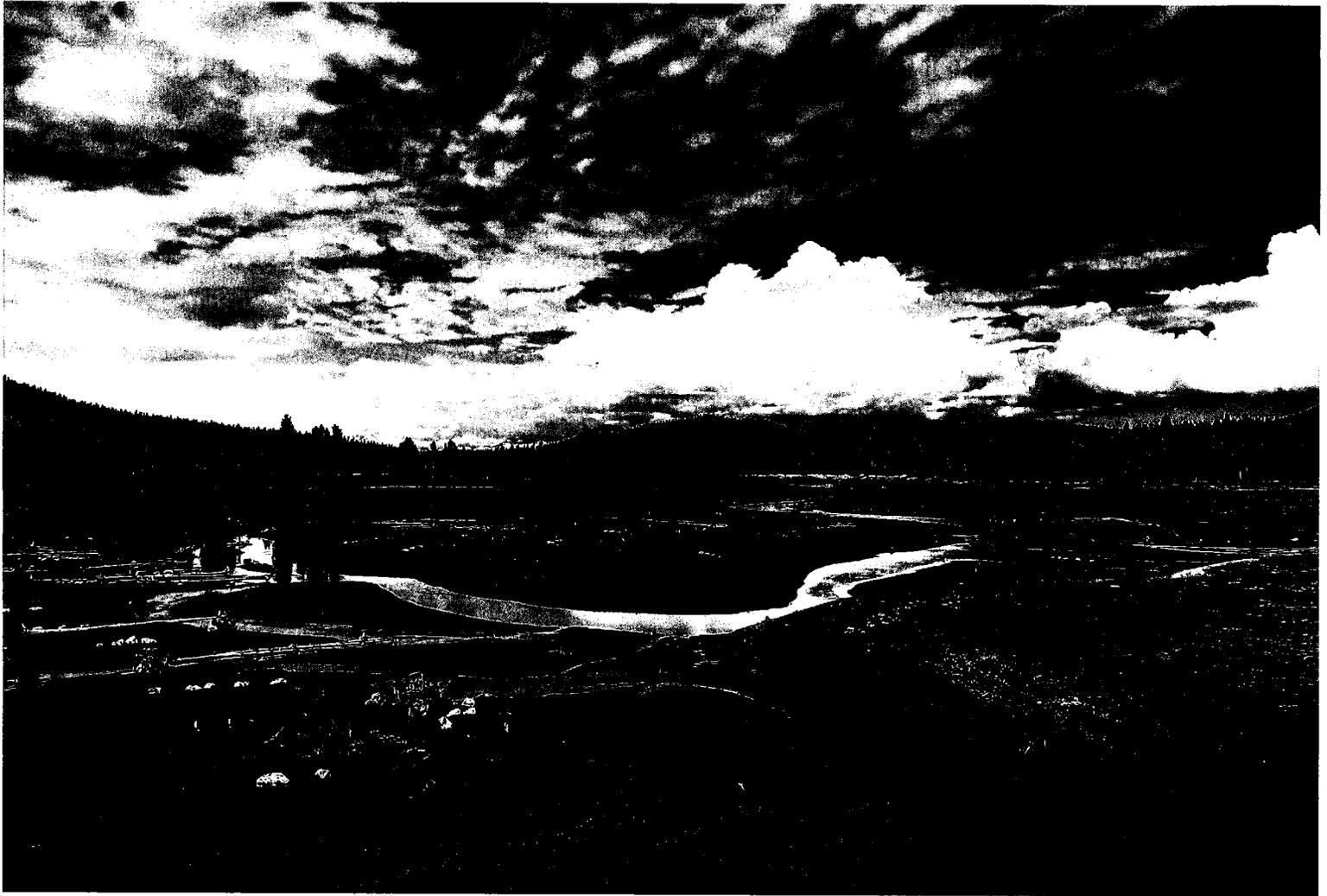
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identifies risks to electricity, liquid fuel, and natural gas/propane systems, and proposes ways to mitigate those risks. This plan is intended to inform Tribes, the state, and local governments as they prepare for supply disruptions and make decisions related to energy systems and infrastructure investments, resilience and hardening strategies, and asset management. However, the Energy Security Plan does not specifically evaluate current statewide or local emergency planning resources or analyze how Oregon's energy transition may affect emergency response capabilities. State guidance on future emergency management resource needs can support strategic investment by governments at all levels to better prepare the state to respond and recover from future energy emergencies.

With this in mind, it is necessary for Oregon to enact and implement policies that will protect our emergency response capabilities through the energy transition. This includes maintaining a resilient supply of necessary fuels, as well as the infrastructure required to procure, transport, distribute, and store those fuels. There is a need for coordinated, strategic energy emergency management planning that aligns with state greenhouse gas reduction goals and identifies short, medium, and long-term energy needs for emergency response. This work should build upon the Oregon Energy Security Plan as well as ongoing coordination between tribal governments and state agencies.

Risks and Barriers

There are limited alternatives to liquid fuels for most emergency response vehicles and heavy equipment. Specifically, the need for diesel fuel (or its lower-carbon variation, renewable diesel) and the need for aviation fuel (or its lower-carbon variation, sustainable aviation fuel) will be necessary and vital for Oregon's emergency response systems. This is especially true for emergency response vehicles serving locations far from the power grid that must be able to operate when the power grid is down and have to respond immediately (and not wait for charging, for example). Oregon faces regular significant natural hazards including major wildfires, winter storms, and floods that are becoming 'routine' and seasonal. Additionally, the state must continue to prepare for a potential Cascadia Subduction Zone earthquake, as well as non-natural hazards such as acts of terrorism and cybersecurity threats, all of which can impact energy systems that we rely upon for life safety.



Nine Federally Recognized Tribes: Feedback and Themes

Indigenous Tribes and Bands have been with the lands that we inhabit today throughout Oregon and the Northwest since time immemorial and continue to be a vibrant part of Oregon today: Burns Paiute Tribe; Confederated Tribes of Coos, Lower Umpqua & Siuslaw Indians; 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 the Umpqua Tribe of Indians, and The Klamath Tribes.

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As the State of Oregon charts its path forward towards a clean energy transition, it must ensure that the nine federally recognized Tribes in Oregon — sovereign nations with deep ties to the land, water, and natural resources — are purposefully included in planning, policy and investment decisions. To build an energy future that is just, effective, and inclusive, Oregon must shift how it engages with Tribes, how it structures funding, and how it integrates traditional knowledge and long-standing values into its energy work.

Through the engagement process, ODOE reached out to the nine federally recognized Tribes through formal government-to-government letters, staff-to-staff discussion, individual in-person or virtual meetings with Tribal leaders and staff, and presentations through the Legislative Commission on Indian Services and cluster groups. ODOE heard concerns about how existing energy systems overlook tribal sovereignty, cultural knowledge, and priorities, as well as support for incentive programs that can help tribal members shift to clean energy and energy efficient opportunities.

As ODOE continues government-to-government outreach and requests for consultation, where appropriate, ODOE has heard important themes. In this draft report, ODOE is not including any specific priorities of Tribes or a level of detail that would run counter to our government-to-government process. Rather, staff have synthesized feedback and are reflecting what was heard through these themes so it could be internalized and applied in the development of the Oregon Energy Strategy. As policymakers consider policies and actions to move Oregon forward on the five pathways in the Oregon Energy Strategy, the themes and synthesis below should be considered and incorporated into the design of programs and regulations.

Energy Independence & Sovereignty

For many Tribes, energy sovereignty, the ability to control and determine their own energy infrastructure and priorities, is essential to self-determination and long-term resilience. Oregon should consider establishing a **Tribal Energy Block Grant Program** that would allow Tribes to assess their risks, identify priority investments, and develop implementation strategies tailored to their communities (See Cross-Cutting Action 3). Legislative and agency-level program design should also include options for Tribes to directly administer funds for their members, with adequate administrative resources built into budgets (See Buildings Action 6). In addition, **support for community-scale energy projects and microgrids** would allow Tribes to maintain electricity during grid outages, reducing dependence on large utility infrastructure while increasing local control. Currently, these types of projects are funded by ratepayers and often require utility regulatory reforms and creative funding strategies to ensure that they are cost-effective and do not impose disproportionate costs on other rate payers. State support could help broaden support for these projects, recognizing that they serve a crucial resilience function. With the passage of HB 2065 and HB 2066 in the 2025 legislative session, there is opportunity through implementation of these new laws to help make microgrids for Tribes more likely.

Affordable Energy Options

Energy affordability also remains a major concern. Rising electricity, propane, natural gas, and gasoline prices are placing increasing financial stress on tribal households. At the same time, cleaner and more efficient technologies like solar panels, heat pumps, and electric vehicles remain unaffordable for many tribal members due to high upfront costs – even though they would likely reduce long-term energy bills and improve indoor air quality. Oregon can support more affordable energy options by working with

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utilities and Tribes to align investments with affordability needs, including through rate design or shared infrastructure projects. **Expanding funding for energy efficiency and weatherization programs** for tribal households is also critical. The State can further support Tribes by coordinating technical assistance and making it less administratively burdensome to access funding for clean energy upgrades.

Access to Decision Making

There is strong concern in lack of meaningful inclusion of Tribes in energy decision making. Tribes are often brought into conversations only after policies or projects have already been developed. This approach disregards the Tribes' sovereign status and misses critical opportunities to incorporate cultural and ecological perspectives early in the planning process. Oregon should continue to develop state-level processes that require engagement with tribal representatives at the earliest stages of energy-related work, during idea generation, before decisions are finalized or public comment periods begin. In addition, Tribes should be invited to participate directly in the state's energy-related advisory bodies, commissions, or working groups. To support this participation, Oregon must also invest in financial and administrative support to **ensure that Tribes are compensated for their time and expertise**. Without this support, participation becomes another burden on already stretched tribal governments.

Stabilization of Funding Cycles

One of the most persistent challenges facing tribal energy development is the instability of federal and state funding. Short-term, competitive, one-time-funded grants often require significant administrative time. This cycle creates uncertainty and hinders long-term planning. Oregon should take steps to stabilize funding by **setting aside a minimum percentage of funds for Tribes** in energy incentive and grant programs, shifting from competitive awards to formula-based allocations when possible, and designing programs with multi-year funding structures. These changes would provide more predictable support and better reflect the long-term nature of energy planning in tribal communities. The uncertainty of the federal government programs makes partnership with the state even more vital.

Consultation, Cultural, and Natural Resources Values

The protection of cultural and natural resources remains a critical component of energy work with Tribes. Traditional Ecological Knowledge (TEK), sacred landscapes, and culturally significant sites are often left out of state energy planning and infrastructure decisions. Consultation processes are inconsistent across agencies and often do not meet Tribes' expectations or legal requirements. Oregon should build on the work of the [Governor's Tribal Consultation Task Force](#) to **develop standardized consultation procedures that reflect each Tribe's unique protocols, establishes clear timelines, and protects sensitive information**. State agencies should also partner with Tribes in applying for federal and philanthropic funding that supports TEK-informed planning and implementation. Where possible, the state should support projects that allow Tribes to co-develop or co-own energy infrastructure, in ways that both protect cultural resources and build economic opportunity. Existing efforts, such as the Department of Land Conservation and Development's Goal 5 rulemaking, provide an example for balancing resource protection and development and could be expanded.



An Equity and Justice Framework for Decision- making and Program Implementation

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As part of the Oregon Energy Strategy, the Equity and Justice Framework was informed by the Environmental Justice and Equity Policy Working Group and is designed to be used in the development and implementation of energy policy by policy makers, agencies, and other implementors. The framework serves to guide decision-making processes by reducing the disproportionate costs of energy burden, negative health effects from energy-related pollution, negative effects of energy infrastructure development on natural and working lands, and insufficient resilience against extreme weather induced by climate change. At the same time, the framework considers bolstering opportunities and benefits to environmental justice communities as the state adopts new programs, regulatory structures, and business models to move the state toward cleaner energy sources. It can help determine what equity and justice approaches could be used to develop and implement policies that move Oregon toward its energy goals.

Using targeted universalism, meaningful involvement, and the four pillars of energy justice, the Environmental Justice and Equity Working Group informed six approaches for centering equity and justice in Oregon's energy goals. Each approach has supporting metrics to understand if progress is made toward equitable outcomes. The four pillars:

The Energy Strategy's Equity and Justice Framework adopts the four pillars of energy justice from the University of Michigan's 2022 Energy Equity Project.

Procedural: All groups who stand to benefit or are burdened are provided space to participate and their input should be taken seriously throughout the process.

Recognition: No one group should dominate a process. The process addresses demographic, socio-economic, and geographic variables, disproportionate burdens, and lived experiences of environmental justice communities.

Distributive: Understanding of indirect and community benefits (health, jobs, environment, etc.) and intentional distribution of benefits to overburdened communities.

Restorative: Recognizing and reflecting on past harms and injustices caused by the energy system and actively working to prevent future harms and maximizing future benefits.

The Equity and Justice Framework is not a one-size-fits-all approach. Justice and equity meet the needs of communities and people where they are, and use of the framework must adapt to serve these needs. Often, there is not a simple answer or a linear process to realizing state energy objectives in an equitable manner. Policymakers may need to consider multiple approaches within the framework to accomplish one. For example, there may be a need to build community capacity to engage in decision-making, and the different ways to accomplish this may be tailoring translated resources *and* holding in-person, onsite listening sessions to meet varying community needs.

Implementing the Framework

The Equity and Justice Framework presents six key approaches to embedding equity and justice throughout the energy policy process. Implementing the framework will provide an opportunity to create more just and equitable practices that include access to the decision-making process, access to infrastructure development, investment in long term incentive programs, promotion of holistic workforce development, development of partnerships and resources, and consideration of cultural priorities as well as natural and working lands throughout environmental justice communities.

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ODOE and the Environmental Justice and Equity Policy Working Group identified the five steps below to apply when developing and implementing energy policies.

1. Determine the **universal goal** for the issue being addressed and who may benefit, be harmed, or be burdened when taking action.
2. Use the **four pillars** of energy justice to provide direction to achieving just and equitable outcomes in energy policies.
3. Use the approaches in the framework table to develop targeted actions (**targeted universalism**) to meet the universal goal while keeping the **four pillars** in mind.
4. **Identify metrics** that can be collected before, during, and/or after implementation to demonstrate success and understand gaps in the policy implementation.
5. **Review the outcomes** through the lens of the determined universal goal, targeted strategies, and metrics. Complete an analysis to understand if there are gaps and if a new goal or strategy is needed to meet the metrics.

In defining, implementing, and tracking progress on policies, it is important to endeavor to advance the following six approaches to ensure an equitable energy transition that advances energy justice. These approaches should be considered broadly and across many areas of energy policy such as energy efficiency adoption, prioritizing energy burdened households, and environmental justice communities.

Potential metrics are meant to create a starting point for conversation and should be made more specific depending on the particular policy and implementation. These potential metrics are only some ideas and not a finite list. Additionally, while the majority of these metrics are written as quantitative approaches, it is recommended to include qualitative methodologies for a complete picture of benefits, burdens, barriers, and outcomes.

The Framework

APPROACHES	POTENTIAL METRICS
<p>1. Provide Equitable Access to Decision-Making Processes</p> <ul style="list-style-type: none"> All policies or programs to develop energy infrastructure are designed to ensure environmental justice and energy burdened communities have equitable access to meaningful involvement to decision-making processes and bodies. This includes using accessible language, language translations, and encouraging participation from non-technical experts and experts with community-based knowledge to include those with lived and professional experience. Intentionally reduce barriers to the participation of environmental justice groups and community members in decision-making processes and bodies, including evaluating the feasibility of providing direct financial support and indirect support for participation and incorporating the cost into agency program planning. 	<ul style="list-style-type: none"> Percentage of participants with economic, health, pollution burden or other energy-burden factors such as <u>climate vulnerability score</u>. Percentage of budget dedicated to supporting meaningful involvement. Percentage of feedback provided by environmental justice participants incorporated into policies and proposals. Post-process survey on <u>accessibility and transparency</u>.
<p>2. Ensure Equitable Access to Infrastructure Development Processes</p> <p>Design policies and programs to deliver equitable access to clean technologies and measures for environmental justice and energy burdened communities, recognizing that they often deliver multiple benefits including clean energy, resilience, health, affordability, and other benefits. Examples include weatherization, electric vehicles and vehicle charging infrastructure, energy efficient electric <u>heat pumps</u>, and distributed energy resources.</p> <ul style="list-style-type: none"> Examples include weatherization, <u>electric vehicles and vehicle charging infrastructure</u>, energy efficient electric heat pumps, and distributed energy resources. 	<ul style="list-style-type: none"> Reduced frequency and duration of power outages in environmental justice and medically vulnerable communities. Increased weatherization and other conservation investment in environmental justice communities. Number of heat pumps, <u>distributed energy resources</u>, and other clean energy technologies deployed to the benefit of environmental justice communities. Number of public electric vehicle charging stations in under-resourced communities compared to per capita average across comparable communities/households. Number of charging stations in low to moderate income multifamily housing compared to per capita average across nearby communities. Proportion of technologies and measures installed in low- and moderate- income households as a percentage of total.

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3. Invest in Long Term Incentive Programs for Environmental Justice Communities

- Develop statewide prioritization criteria for energy funding and assistance to reduce barriers for people with the greatest assistance need.
 - Provide increased and stable funding and assistance for those in low-income and energy burdened households to include transportation burden, commensurate with increases in energy costs.
 - Identify opportunities to reduce monthly bills, even where costs are rising, through deeper weatherization and energy efficiency measures.
 - Establish revolving loans with beneficial features such as low interest rates and longer repayment terms to minimize monthly loan payments for low- and medium-income households.
- Number of energy funding/assistance programs created specifically for or serving majority energy- and transportation-burdened households within environmental justice communities.
 - Percentage of program participants who are part of an environmental justice community.
 - Percentage of program participants served versus eligible populations.
 - Reductions in negative environmental-related health conditions (such as asthma, respiratory disease, etc...) in environmental justice communities.

4. Promote Holistic Workforce Development in Environmental Justice Communities

- Develop and expand trainings, apprenticeships, and continuing education programs for sales, contractors, tradespeople, and landlords in relevant incentive programs to include:
 - Cultural responsiveness
 - New technologies
 - Overall benefits in underserved communities
- Number of energy-related college, vocational, and apprenticeship programs offering energy-related training opportunities and incentives to environmental justice communities.
- Percentage of individuals enrolled who identify as environmental justice community members.
- Percent of environmental justice community-owned business in a specified energy-related industry dependent on the program or policy.
- Percent of policies supporting hiring, training, and retention of people from environmental justice communities.
- Percentage of employees who live in the community where the work is taking place.
- Percentage of program expenditures going to environmental justice community-owned businesses.

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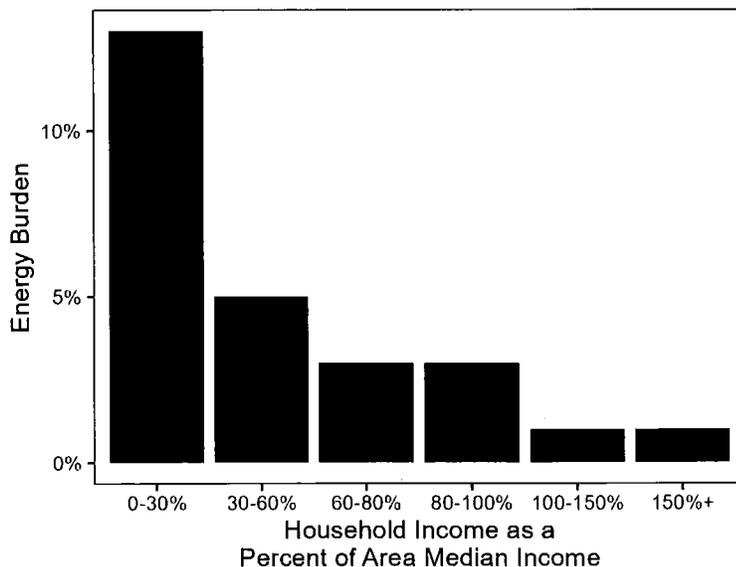
<p>5. Develop Partnerships and Resources in Environmental Justice Communities</p> <ul style="list-style-type: none"> • Provide community outreach and informational opportunities that include in-person engagement, and resources/tools that use plain/accessible language and is in multiple languages. • Partner with community organizations who are trained and compensated appropriately, with long-term funding, to be trusted partners and community navigators in the field. • Consider opportunities to collaborate with city and county governments and utilities to best support communities and customers. 	<ul style="list-style-type: none"> • Number of people participating in processes and/or programs from environmental justice communities. • Number of materials developed (e.g. fact sheets, two-pagers, informational fliers) that are culturally specific (e.g. plain language, translated, regionally specific) and relevant and percentage of program materials available in multiple languages. • Number of partner environmental justice organizations/trusted community organizations participating in or distributing program materials. • Percentage of meetings hosted with interpretation and translation services.
<p>6. Consider The Effects of Energy Policies on Natural and Working Lands, Cultural Resources, and the Broader Environment</p> <ul style="list-style-type: none"> • Balance energy needs — like access to affordable energy and economic opportunity — with the needs of ecosystems and cultural priorities. • Make decisions that minimize harm to both communities and nature, and ensure that environmental burdens and benefits are distributed equitably, without disproportionately impacting marginalized groups. 	<ul style="list-style-type: none"> • Improved outdoor air quality particularly in areas with disproportionately poor air quality. • Improved indoor air quality particularly in areas with disproportionately poor air quality. • Increased investment for wildfire risk management. • Increased salmon/wild fish populations / increased populations of endangered or culturally significant wildlife. • Reduction in heat island effects in urban areas — measured by relative temperatures in green spaces vs adjacent city spaces and reductions in average cooling load for local buildings.

Oregon Context

To create equitable strategies for accomplishing our state’s climate and energy goals, it is important to recognize there are disparities in how Oregonians experience benefits from or are burdened by our energy system. For example, Oregonians who are energy burdened spend a greater proportion of their annual household income on home energy costs. Figure 1 demonstrates this energy burden in Oregon. Oregon is already experiencing the effects of climate change in the increased frequency of extreme weather and natural disasters, such as the 2021 heat dome which caused an estimated 116 deaths (of which the majority were older than 60, living alone and without access to air conditioning in their homes).³⁸ The record 2020 wildfire season burned 1.49 million acres; the Labor Day mega fires alone burned over 850,000 acres, resulted in 11 deaths, and destroyed or damaged 4,000 homes.³⁹ These wildfires devastated Talent and Phoenix, in particular destroying more than 1,700 mobile or manufacture homes, and the financial security of many community members, many of whom still do not have permanent replacement housing five years later.⁴⁰ Climate change related emergencies have a direct effect on the health of the communities, and their resilience and recovery from these events is dependent on the community’s access to resources like local health care and emergency preparedness. Increased incidences of extreme weather can strain already limited resources for environmental justice communities.⁴¹

The state is currently in the process of developing an Environmental Justice Mapping Tool to help identify communities underrepresented in government processes and harmed by environmental and health hazards. This tool, which is expected to be available in 2027, may provide more comprehensive insight into disparities created by the development and use of energy in the state and could be used in future updates of the Oregon Energy Strategy along with other relevant tools and data. These insights will be vital for developing equitable policy. However, even as that tool is under development, there should be a concerted effort by policy makers, agencies, and implementors to “meaningfully involve” and “fairly treat⁴²” those who have been historically and are currently excluded from decision making processes and actions. This is the goal with the Oregon Energy Strategy’s equity framework.

Figure 1: Energy Burden by Household Income⁴³





Legislative and Policy Actions

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HB 3630 directs ODOE to recommend legislation or changes to policy necessary to implement the state energy strategy.¹¹ The previous sections presented strategies and policies to align decisions with direction needed to meet our energy policy objectives. This section identifies near-term actions that build on existing policy frameworks, serve to overcome barriers, will lay a foundation for continued progress over time.



Oregon faces several immediate challenges that affect the state's ability to meet its energy goals. These include:

- Increasing demand for electricity at a pace and scale that threatens to potentially outstrip supply
- A shift in federal funding and policy
- Extreme weather events exacerbated by climate change
- Erosion of federal support for social services
- Economic uncertainty

These challenges will affect Oregon's economy and state budget and require that near-term actions operate in a context of competing priorities and heightened uncertainty and risk.

In identifying actions, ODOE staff focused on actions needed to overcome near-term barriers to addressing our energy policy objectives. This work was informed by tribal outreach and consultation and by engagement with working groups, the Advisory Group, Inter-Agency Steering Group, and public forums. In identifying near-term priorities, and building on inputs from engagement, staff sought to answer the following questions:

1. Does the action address a critical near-term barrier to achieving one of the five strategies and related policies?
2. Might the action support longer-term needs to achieving the strategies and policies?
3. What are the benefits and risks of the action, accounting for both energy and non-energy considerations?
4. Does the action improve, worsen, or make no change to existing disparities. How can we address benefits and/or unintended consequences for environmental justice communities?
5. How would the action affect affordability and reliability in the state?

The recommended policy actions have been informed by engagement, technical analysis, and evaluation of existing policy frameworks and energy trends. This includes engagement with Tribes and with other state agencies, the Policy Working Groups, Advisory Group, public forums, and written comments. The technical analysis includes the energy strategy modeling and complementary analyses summarized earlier in this document. Evaluation of existing policies and trends was undertaken by ODOE staff and informed by resources and perspectives shared during public engagement and comment periods.

This section presents the 42 near-term actions that ODOE recommends for consideration by the Governor's office, legislators, and by state agencies. Actions are presented by sector (transportation, buildings, industry, electricity, fuels, and cross-cutting). Each sector begins with a description of the vision for that sector, near-term priorities, and longer-term outlook, followed by actions.

Actions are characterized by the primary focus of the action. For example, does the action provide funding to help advance a given technology? Serve to develop data to make better informed decisions? Introduce or amend an area of regulation? Establish a policy mechanism to enable a key area of investment? While an action may involve more than one of these focus areas, actions have been organized as having a primary area of focus falling in one of the following four areas. This

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characterization serves to help Legislators, the Governor’s Office, and other decisionmakers to quickly identify actions by the core activity they would advance:

- Funding
- Data and information
- Regulation

Each action advances one or more pathways and policies, and requires application of one or more approaches from the equity and justice framework. To help see these connections, each action is followed by italicized headings identifying the pathways, policies, and equity and justice approaches that relate to that action.

Transportation Actions

Vision

The transportation sector includes on-road vehicles like cars, trucks, and buses; industrial and agricultural vehicles and equipment; and modes such as aviation, marine shipping, and rail. It includes personal vehicles and public transportation, as well as infrastructure for active transportation, including sidewalks and dedicated bicycle lanes. This sector is responsible for 35 percent of Oregon’s greenhouse gas emissions, making it the largest source of emissions in the state.



The Energy Strategy modeling found that transportation electrification and reducing vehicle miles traveled offer the greatest cost and energy savings, compared to strategies that rely more heavily on replacing fossil fuels with low-carbon fuels. While electrification is a viable and cost-effective strategy for most on-road transportation, some segments of the sector – such as aviation, marine and rail transport, long-haul trucking and shipping, and agricultural or other off-road equipment – are more difficult to fully electrify and will require increasing shares of low-carbon fuels to achieve decarbonization. The Low-Carbon Fuels Actions section describes near-term priorities to support this transition, while this section focuses on strategies to electrify on-road vehicles and expand access to and appeal of multimodal transportation options.

Achieving Oregon’s climate and energy goals will require a fundamental transformation of the transportation sector – accelerating the transition to zero-emission vehicles, reducing reliance on single-occupancy trips, and shifting to low-carbon fuels. Meeting this challenge demands a strong and sustained commitment to expand existing programs and establish new ones that directly support these shifts. Current funding levels are inadequate to address the scale of the challenge.

Meeting the state’s transportation-related climate goals – and ensuring compliance with programs like Advanced Clean Cars II and Advanced Clean Trucks^{xx} – requires a coordinated strategy between state agencies, electric utilities, and industry to understand needs, close funding gaps, remove barriers, and provide targeted support across the zero-emission vehicle landscape. With the withdrawal of key federal tax incentives, it’s critical for the state to step in with new and expanded funding mechanisms, including

^{xx}Using the Congressional Review Act, the Trump Administration revoked California’s authority to exceed federal pollution limits and enforce the Advanced Clear Cars II and Advanced Clean Trucks programs. This action affects the dozen states that follow California’s standards, including Oregon. California, Oregon, and nine other states are currently in the process of litigating the revocation, citing the U.S. Government Accountability Office and the Senate parliamentary ruling that California’s air quality standards cannot legally be blocked using the Congressional Review Act.

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sustainable support for vehicle incentives and infrastructure through direct financial assistance and tools like the revolving loan fund. These funding and financing mechanisms must be inclusive of low-income households who are often left behind due to upfront costs and lack of affordability. Broadening access to clean, affordable mobility options through initiatives like a statewide e-bike incentive program will further support a more equitable and inclusive transition.

Support for fleets is also essential. Developing technical assistance programs for public and private fleets and strengthening programs that offer financial support will accelerate the transition to ZEVs. Advancing medium- and heavy-duty electrification will also require the development of strategic planning tools, such as a statewide MHD ZEV roadmap and hosting capacity maps. Simultaneously, Oregon must prepare for the deployment of hydrogen fuel cell electric vehicles through the coordinated development of minimum standards and regulations for heavy-duty hydrogen refueling infrastructure in Oregon.

In addition, policy barriers must be addressed. For example, the way Oregon funds its transportation system limits investments in multimodal infrastructure and transportation electrification.^{xxi} It is essential to align transportation funding with the state's climate goals. This requires reevaluating how transportation is funded and where those funds are directed – shifting away from traditional reliance on fossil fuel revenues and highway-centric investments, and toward a fuel-neutral revenue source and support for zero-emission vehicles and multimodal transportation options. To guide this transition, a Climate-Aligned Transportation Funding Task Force is needed to review existing funding structures and recommend strategies to ensure stable, sustainable funding that supports the sector's energy transition. Similarly, expanding local governments' authority to generate and direct transportation revenues toward climate-aligned infrastructure provides critical flexibility to meet the scale and urgency of the sector's transition, while enabling funding mechanisms that reflect local needs and priorities.

At the same time, near-term funding is needed and must be directed toward programs that address immediate priorities, such as expanding multimodal options and deploying zero-emission vehicles and infrastructure. Aligning long-term structural funding reform with targeted, program-level investments is essential to building a transportation system that is sustainable and supports climate goals while also addressing immediate priorities.



These near-term actions will lay the groundwork for deeper shifts over the next 5-10 years to keep Oregon on track toward its transportation electrification and decarbonization objectives.

Transportation Action 1. Establish a dedicated, sustainable, and long-term state revenue source to support the rapid deployment of zero emission vehicle charging and fueling infrastructure across the state.

*Pathways: Electrification, Low-Carbon Fuels
Policies: 2a (Electrify Transportation)*

^{xxi} For further discussion of the funding mechanisms for transportation in Oregon, refer to Transportation Action 2 (relating to a Climate-Aligned Transportation Funding Task Force).

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Equity and Justice Approaches: 1 (decision-making); 3 (incentive programs)

The Legislature should establish a dedicated, sustainable, and long-term state revenue source to support the deployment of ZEV charging and fueling infrastructure across Oregon, including incentives for publicly accessible, fleet depot, workplace, and multi-family housing installations, as well as customer-side distribution system upgrades needed to enable high-capacity battery electric vehicle charging, particularly for commercial fleet operators and transit agencies.

Oregon has adopted ambitious zero-emission vehicle targets across light-, medium-, and heavy-duty sectors through the adoption of the Advanced Clean Cars II and Advanced Clean trucks rules. Achieving these targets will require the proactive, strategic deployment of accessible and reliable charging and fueling infrastructure – built in advance of vehicle adoption – to give consumers and fleet operators confidence that refueling zero emission vehicles will be convenient, dependable, and aligned with operational needs. However, Oregon currently lacks a sustainable, long-term state funding source dedicated to supporting this critical infrastructure buildout. Existing incentive programs rely heavily on federal funding, which is both limited and uncertain. Compounding the challenge, infrastructure deployment often requires expensive distribution system upgrades – costs that are frequently ineligible for current incentives or cost-sharing programs.

To meet Oregon’s ZEV goals and close the infrastructure and funding gaps, the state must establish a dedicated and durable revenue source that ensures consistent investment in charging and fueling infrastructure. New revenue should flow through existing funds for ZEV infrastructure, including the Medium- and Heavy-duty Electrification Charging Fund and the Transportation Operating Fund, to ensure continued and coordinated state investment.

Creating this revenue stream presents significant political and legal challenges. Oregon faces major constraints on how transportation revenue can be raised and spent. With existing revenue sources already stretched thin and many earmarked for traditional road projects, reallocating or introducing new funding for ZEV infrastructure will likely require navigating legal constraints, competing budget priorities, and differing stakeholder perspectives. Despite these challenges, identifying a sustainable funding path forward is critical to enabling the widespread transition to zero-emission transportation and realizing the state’s climate goals.

Transportation Action 2. Establish a Climate-Aligned Transportation Funding Task Force to review Oregon’s transportation funding mechanisms for alignment with the state’s energy and climate policy priorities and make recommendations.

Pathways: Energy Efficiency, Electrification

Policies: 1c (Expand access to and appeal of multimodal transportation options); (2a (Electrify Transportation))

Equity and Justice Approaches: 1 (decision-making)

Convene an ODOT-led Climate-Aligned Transportation Funding Task Force comprising legislators, state and local government entities, public interest and environmental justice advocates, and industry representatives, to review existing and potential transportation funding mechanisms for alignment with the state’s energy and climate policy priorities – while ensuring stable, long-term funding.

The Task Force shall report to the legislature on:

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1. An evaluation of existing transportation funding mechanisms to determine how they may support or hinder Oregon’s transportation decarbonization goals, including vehicle electrification, VMT reduction and multimodal transportation infrastructure, and equitable access to clean mobility. This includes identifying statutory or constitutional barriers that restrict the use of transportation revenues for climate-aligned investments. Recommend opportunities to better align funding policies with climate outcomes.
2. Identification, assessment, and recommendation of new or reformed revenue options that incentivize zero emission vehicle adoption, support VMT reduction and multimodal transportation options, and advance equitable transportation access.

Funding Priorities

Transportation Action 3. Implement a Road Usage Charge program for all light-duty passenger vehicles to stabilize transportation funding and support accelerated adoption of zero emission vehicles.

Pathways: Energy Efficiency, Electrification

Policies: 1c (Expand access to and appeal of multimodal transportation options); (2a (Electrify Transportation)

Equity and Justice Approaches: 1 (decision-making); 5 (partnerships and resources)

A Road Usage Charge is a mileage-based user fee that charges drivers based on miles driven rather than fuel consumed. Piloted through Oregon’s voluntary OReGO program for more than a decade, road usage charges are gaining national traction as a fairer, more stable alternative to the fuel tax. By aligning user fees with how much and how far people drive, a RUC can stabilize revenue, promote fairness, support climate and equity goals, and encourage more efficient travel.

The Road Usage Charge program (OReGO) should be broadly adopted for all vehicles, not just hybrid and electric. Doing so will send price signals to users for each and every mile they drive, and support VMT reduction. It should also be designed to build in the costs of climate externalities, such as vehicle weight and supports investments in electrification and multimodal transportation options.

Transportation Action 4. Increase funding for the Zero-Emission Incentive Fund and create a stable, long-term revenue source for the Zero-Emission Medium and Heavy-Duty Vehicle Incentive Fund to accelerate the adoption of light-, medium- and heavy-duty ZEV statewide.

Pathways: 2 (Electrification)

Policies: 2a (Electrify transportation)

Equity and Justice Approaches: 3 (incentive programs)

The next four years represent a pivotal window for accelerating the adoption of zero-emission vehicles across the light-, medium- and heavy-duty sectors. Continued and expanded state funding for ZEVs during this period is essential to sustaining progress. Key federal incentives, including the light-duty EV tax credit (Section 30D) and the Commercial Clean Vehicle Credit (Section 45W), have been eliminated

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with the recent passage of the H.R. 1 (One Big Beautiful Bill), and Oregon’s regulatory foundations for ZEV adoption, including the Advanced Clean Cars II and Advanced Clean Trucks rules, are under legal and political threat. Until now, federal tax credits have played a central role in improving the total cost of ownership for ZEVs. Without them, costs will rise significantly, especially for low- and moderate-income households and small businesses.

It is imperative that state funding fill this gap to the extent feasible, helping to maintain momentum and ensure that adoption doesn’t stall during this uncertain federal landscape. In doing so, Oregon can send a strong and consistent market signal to industry, attracting private investment in charging infrastructure, vehicle availability, and workforce development. In the absence of federal certainty, state programs help keep businesses confident in Oregon’s ZEV market. Moreover, medium- and heavy-duty fleets – which are costly and complex to electrify – require dedicated, sustained investment. A stable state revenue stream targeted at MHD ZEVs ensures continued progress toward electrifying fleets that have disproportionate impacts on air pollution and emissions.

Transportation Action 5. Increase statewide support for public and active transportation in Oregon by expanding the statewide payroll tax to fund transit and boosting investments in Safe Routes to School and Great Streets at levels that reflect the scale of community needs.

Pathways: 1 (Energy Efficiency)

Policies: 1c (Expand access to multimodal transportation options)

Equity and Justice Approaches: 1 (decision-making); 2 (infrastructure development); 5 (partnerships and resources)

Access to multimodal transportation options in Oregon – including public transit, walking, and biking – is essential for reducing Oregon’s dependence on single-occupancy vehicles and lowering vehicle miles traveled. These shifts are critical to meeting the state’s climate goals, improving air quality, and reducing traffic congestion. But to achieve meaningful reductions in VMT and build a transportation system that truly supports climate action, equity, and public health, Oregon must significantly increase its investment in transit and multimodal infrastructure. That means expanding the Statewide Transit Tax and securing dedicated state funding for Safe Routes to School and Great Streets. These investments will enable more Oregonians to choose cleaner, safer, and more affordable ways to get around – and are essential to building healthier, more sustainable communities.

The Statewide Transit Tax is the primary state funding source for transit. Without a significant increase, many transit agencies face the prospect of cutting service by up to 25 percent in the next several years.⁴⁴ Such cuts would disproportionately affect low-income and transit-dependent communities, particularly in rural and underserved areas. In contrast, adequate funding would allow agencies to expand routes and service hours, increase frequency, and serve more people – making transit a more viable and attractive option statewide.

Active transportation must also play a much larger role in reducing VMT – especially for short trips, which make up a large share of daily travel. Enabling more people to walk, bike, and roll not only reduces emissions but also saves money and improves public health and community livability. However, safety concerns are a major barrier, especially for vulnerable populations. Existing programs like Safe Routes to School and Great Streets directly address these concerns by investing in infrastructure that makes active

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travel safer and more appealing. Yet, demand far outpaces available resources: Safe Routes to School is currently oversubscribed by 2.5 to 1,⁴⁵ and Great Streets lacks a dedicated funding stream, relying heavily on limited federal dollars. Increasing funding for these programs and new programs focused on multimodal infrastructure is essential for meeting the state's VMT reduction goals.

Transportation Action 6. Establish a statewide incentive program for both standard and cargo e-bikes, with enhanced incentives and prioritization for income-qualifying Oregonians to ensure equitable access to clean, affordable transportation options.

Pathways: 1 (Energy Efficiency)

Policies: 1c (Expand access to multimodal transportation options)

Equity and Justice Approaches: 3 (incentive programs)

Electric bikes, or e-bikes, offer a clean and affordable alternative to car trips, particularly for short and medium-distance travel common in urban and suburban areas. They produce zero tailpipe emissions, reduce traffic congestion, and are more likely than conventional bicycles to replace car trips, thereby helping to lower transportation emissions. E-bikes are an especially attractive low-carbon alternative for households that do not have access to at-home charging for EVs, such as multi-family housing residents. They are also significantly more affordable to own and operate than conventional vehicles, expanding access to low-carbon mobility for a wider range of Oregonians.

While e-bikes are significantly more affordable than cars, upfront costs remain a barrier for many households, especially for cargo e-bikes which are more expensive but they can transport multiple passengers or large loads. A statewide incentive program, especially one that offers higher rebates for low- to moderate-income individuals, would improve equitable access to clean mobility options. Without targeted support, e-bike adoption may be concentrated among higher-income households, exacerbating existing mobility and economic disparities. This action would be complementary to work underway by many municipalities to make biking infrastructure available and to reduce emissions, cost, and traffic congestion associated with driving.

Transportation Action 7. Expand local governments' authority to generate and direct transportation revenues toward climate-aligned transportation infrastructure that meets local needs and priorities.

Pathways: 1 (Energy Efficiency); 2 (Electrification)

Policies: 1c (Expand access to multimodal transportation options); 2a (Electrify Transportation)

Equity and Justice Approaches: 1 (decision-making); 2 (infrastructure development)

Many of Oregon's local governments face mounting pressure to address climate change, equity, and mobility needs, but are constrained by limited authority to raise and direct revenue for transportation infrastructure. Current state laws often require voter approval for local fuel taxes or vehicle fees, and many transportation districts lack authority to levy payroll taxes – creating delays and restricting communities' ability to respond quickly to evolving transportation needs or invest in timely, climate-aligned solutions. Expanding local authority to generate and allocate transportation revenues – through tools like fuel taxes, vehicle registration fees, and payroll taxes – would give communities the flexibility to meet the scale and urgency of climate and equity-driven transportation challenges. This policy would

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enable local governments to implement funding mechanisms more quickly, reduce reliance on state and federal funding cycles, and establish stable, sustainable revenue streams. With greater autonomy, localities could accelerate investments in multimodal, zero-emission, and equity-focused transportation infrastructure and target resources toward local priorities such as transit expansion, active transportation networks, and ZEV infrastructure. To ensure these new funding tools do not exacerbate existing disparities, strategies should include safeguards such as income-based exemptions, discounts for low-income households, or reinvestment of revenues in historically and currently underserved communities to improve transit access, reduce transportation costs, and expand mobility options.

Data & Information

Transportation Action 8. Develop a strategic roadmap to guide the deployment of medium- and heavy-duty zero emission vehicles in Oregon, co-led by the Oregon Department of Transportation and Department of Environmental Quality, with support from the Oregon Department of Energy. The Roadmap should include a technology readiness and feasibility assessment, as well as a statewide infrastructure needs assessment. Funding should be allocated to support its development.

Pathways: 2 (Electrification); 4 (Low-Carbon Fuels)

Policies: 2a (Electrify transportation); 3c (Load flexibility); 4a (Low-carbon fuels and fuel infrastructure)

Equity and Justice Approaches: 1 (decision-making)

Oregon has adopted ambitious targets and strategies for the electrification of medium- and heavy-duty vehicles through adoption of the Advanced Clean Trucks rule and the Statewide Transportation Strategy. However, the state lacks a clear, sector-specific strategy to operationalize these goals for MHD vehicles, which are among the most difficult to electrify. A Strategic Roadmap will provide the actionable steps needed to meet regulatory targets in a coordinated and cost-effective way.

MHD ZEV technologies are rapidly evolving, but their commercial availability and suitability vary significantly by fleet type, application, and geography. A Roadmap that includes a Technology Readiness and Feasibility Assessment, and that is developed in collaboration with Oregon fleets and in consideration of their real-world operating needs, ensures that state investments are grounded in technical and economic reality. Engaging fleets early and meaningfully provides critical insights into vehicle availability, performance in diverse operating conditions, maintenance considerations, and total cost of ownership. It also helps identify deployment barriers unique to specific sectors. By incorporating fleet perspectives, the Roadmap can prioritize solutions that are both practical and scalable.

In addition, scaling MHD ZEV adoption will require substantial upgrades to Oregon's charging and fueling infrastructure. High-powered public charging sites, depot charging for fleets, and hydrogen fueling stations all require long lead times, significant grid capacity, and coordination across utilities, regulators, and fleet operators. A Statewide Infrastructure Needs Assessment is necessary to identify these needs early, avoid deployment bottlenecks, and enable strategic investments that maximize equity, efficiency, and emissions reductions.

Lastly, MHD vehicles are major contributors to local air pollution, particularly in low-income and historically marginalized communities located near highways, ports, and freight hubs. A Strategic

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Roadmap can prioritize fleet electrification in these high impact areas, support both climate and environmental justice goals.

Transportation Action 9. Establish a statewide technical assistance program to support public and private fleets in planning and executing a successful transition to zero-emission vehicles (ZEVs).

Pathways: 2 (Electrification); 4 (Low-Carbon Fuels)

Policies: 2a (Electrify transportation); 3c (Load flexibility); 4a (Low-carbon fuels and fuel infrastructure)

Equity and Justice Approaches: 4 (workforce); 5 (partnerships and resources)

A lack of technical expertise and resources remains a significant barrier for fleets looking to transition to zero emission vehicles. The shift to ZEVs involves a steep learning curve, from understanding vehicle options to planning for infrastructure, fuel, and grid impacts. This program would provide comprehensive support to fleets across Oregon by equipping them with the tools and knowledge they need. The proposed program should provide hands on guidance and analytical support, including through the development of fleet transition plans, infrastructure and site readiness assessments, electricity and fuel cost analyses, and evaluation of load management strategies to optimize energy use and reduce operational costs. The program would accelerate ZEV adoption, reduce attrition rates of existing incentive programs, and ultimately lower administrative burdens and costs for state agencies and fleets alike.

Transportation Action 10. Require IOUs to publish and maintain interactive, feeder-level Hosting Capacity Maps (HCMs) showing available capacity for EV charging infrastructure, building electrification, distributed generation, and battery storage.

Pathways: 2 (Electrification); 3 (Clean Electricity)

Policies: 2a (Electrify transportation); 2b (Distribution system readiness for EVs); 3b (Utility-scale and distributed energy resources); 3c (Load flexibility)

Equity and Justice Approaches: 5 (partnerships and resources)

A lack of accessible, consistent, and up-to-date information on grid capacity is a significant barrier for transportation electrification, particularly for projects requiring large new electrical loads. While Oregon's investor-owned utilities currently publish hosting capacity maps, these are primarily focused on distributed generation and vary widely in scope, detail, and update frequency.

This policy action would build on existing efforts to establish uniform standards and processes for IOUs to regularly publish feeder-level data on grid hosting capacity. These maps should reflect the grid's ability to accommodate both transportation and building electrification loads – such as EV charging infrastructure and heat pumps – as well as distributed energy resources like solar PV and battery storage. As electrification advances, consumer-owned utilities may also find value in undertaking this exercise, and technical assistance to support these sorts of efforts will be important for the state to support.

Greater transparency and consistency in hosting capacity data will support informed planning, reduce project delays, and enable more strategic investments in electrification infrastructure across sectors.

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Regulation

Transportation Action 11. Establish a multi-agency working group to develop regulations and minimum standards for public heavy-duty hydrogen refueling infrastructure in Oregon. This group should address key elements such as technical specifications, safety protocols, fuel quality standards, consumer protection measures, and streamlined permitting processes to ensure that stations are safe, reliable, and accessible. The working group should also establish targets for the carbon intensity of hydrogen supplied at fueling stations and recommend inclusive processes for community engagement in station siting decisions to align with Oregon’s climate and equity goals.

Pathways: 2 (Electrification); 4 (Low-Carbon Fuels)

Policies: 2a (Electrify Transportation); 4a (Low-carbon fuels and fuel infrastructure)

Equity and Justice Approaches: 1 (decision-making); 5 (partnerships and resources)

The absence of hydrogen refueling infrastructure in Oregon presents a major barrier to the deployment of heavy-duty hydrogen fuel cell vehicles. Without existing infrastructure, the state lacks established regulations and protocols to ensure public safety, fuel quality, and consumer protection. This action aims to proactively prepare Oregon for future deployment by establishing clear, statewide regulations and minimum standards for hydrogen refueling infrastructure. These standards should address equipment testing, fuel quality assurance, public safety protocols, and station certification processes, ensuring a reliable and safe fueling experience.

The effort will enhance coordination among key state agencies – including ODOE, ODOT, DEQ, and the Oregon Department of Agriculture – to ensure a streamlined, consistent approach to infrastructure deployment. To support a consistent and coordinated regional hydrogen fueling network, the working group should also collaborate with neighboring jurisdictions, including California, Washington, and British Columbia, that are also advancing hydrogen infrastructure, particularly along the I-5 corridor. Harmonizing standards and regulatory frameworks across the regions will support seamless vehicle operations across jurisdictions, create certainty for infrastructure developers, and strengthen the West Coast’s position as a leader in zero-emission freight.

Recognizing the importance of equity in infrastructure planning, the working group should also develop best practices for inclusive community engagement in station siting decisions. This includes ensuring that environmental justice organizations and impacted communities are provided with transparent information, early, ongoing, and meaningful opportunities for participation, and the resources needed to advocate for their interests in station siting and decision-making processes.

Transportation Action 12. Amend DEQ’s Clean Fuels Program to extend Advance Crediting eligibility to high-mileage private fleet operators – such as delivery, ride-hailing, logistics, and service fleets – whose vehicles operate predominantly in Oregon.

Pathways: 2 (Electrification); 4 (Low-Carbon Fuels)

Policies: 2a (Electrify Transportation); 4a (Low-carbon fuels and fuel infrastructure)

Equity and Justice Approaches: 3 (incentive programs)

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High mileage fleets – such as delivery vans, ride-hailing vehicles, logistics carriers and service fleets – have a disproportionate impact on greenhouse gas emissions and local air quality due to their intensive vehicle use. Targeted support for these fleets can accelerate emissions reductions by prioritizing the electrification of the vehicles that drive and pollute the most. As upfront costs remain a barrier, providing early access to credits would offer predictable, much-needed capital to help fleet operators invest in ZEVs and infrastructure before they realize long-term savings from reduced fuel and maintenance costs. This amendment to the Clean Fuels Program would create strong financial incentives for electrification where climate and health benefits are greatest while strengthening market certainty, attracting private investment, and reinforcing Oregon’s broader climate and transportation electrification goals.

Buildings Actions

Vision

The buildings sector includes residential and commercial buildings. Within these designations are single- and multi-family homes, commercial buildings like stores, hotels, and warehouses, and public buildings like hospitals, schools, and universities. There is a wide diversity of building types, ages, designs, and construction materials, making building decarbonization a complex challenge.



Oregon is facing a housing and homelessness crisis, and building more housing quickly is a top priority for the state. Decarbonization measures in new buildings present an important opportunity to align housing construction with affordability. Housing must not just be available, but also cost effective to build and affordable to live in. Poorly insulated housing and inefficient appliances may be less expensive to install, but drive up monthly energy bills that can only be overcome with expensive retrofits and replacements. Multifamily housing can help meet housing and decarbonization goals affordably, due to the higher energy efficiency of shared wall construction and lower landscaping per unit.

Oregon has experience implementing decarbonization measures in buildings, providing a strong foundation to increase the pace and scale of action needed to achieve our state’s energy policy objectives. This experience includes measures identified by the Energy Strategy modeling as essential to a least-cost pathway to decarbonization like weatherization, adoption of efficient heat pump technologies, and distributed energy resources. These measures can also advance resilience. Weatherization can help buildings withstand greater temperature swings while protecting indoor air quality from wildfire smoke, and heat pumps can provide efficient cooling and heating. Distributed energy resources, which include solar PV panels paired with battery storage and electric vehicles, can provide backup power as outage frequency increases with extreme weather and public safety power shutoffs.

As the energy wallet analysis showed, heat pump technologies yield significant energy savings, but may not always be the least cost option for individual households or building owners – even when they represent a least-cost economywide option in the long term. In addition to maintaining existing utility- and state- funded programs, additional incentives for heat pumps will be necessary to overcome the upfront cost barrier to purchasing a heat pump and expand access to efficient cooling for households without it. Programs should evaluate how to ensure energy burdened households are able to access efficient heat pumps for heating and cooling and to mitigate any bill associated increases. Similarly, it may be necessary to consider how to protect renters where rents may go up following energy efficiency

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improvements. The strategic electrification steps defined in Building Action 2 will be important to help inform the approach to efficient heat pump adoption.

Four main areas of policy support building decarbonization today: the Climate Protection Program sets fuel decarbonization targets; new Building Performance Standards and steadily progressing efficient energy codes will lead to lower-carbon new and existing buildings; appliance standards and labeling programs drive the market towards efficient models; and incentive programs, including federal, state, and ratepayer-funded programs, support uptake of the most efficient technologies and measures. Evaluation of these existing policies finds gaps that near-term actions aim to help fill:

- The state lacks an electrification strategy for buildings – particularly residential buildings. A detailed analysis is needed to guide a reliable, affordable, and largely electric trajectory, and to identify least-cost strategies to realize the shift from fossil fuel to clean infrastructure.
- The Building Performance Standard does not cover small commercial buildings or single-family homes, leaving a gap in setting clear direction for this sector.
- The Building Performance Standard is an energy efficiency policy, and while improved efficiency will reduce emissions, the Standard alone will not result in sector wide decarbonization.
- Existing building code and appliance standards set minimum thresholds, and still allow for inefficient and high carbon emitting technologies, equipment and appliances to be sold and installed.

Guidance on strategic electrification would help identify a path to a strategic transition for residential and commercial buildings, informing compliance with existing regulations, development and updates to Oregon's Building Performance Standards for new and existing buildings, and setting clear direction for residential buildings not covered under the BPS. In addition, it will be important to continue to track federal appliance standards and to be ready to step in with Oregon standards should they be removed.

Existing funding streams are insufficient to achieve the pace and scale of investment needed to decarbonize buildings. An essential feature of existing energy efficiency programs is that support is offered to low- and moderate- income households, and this program focus must continue. At the same time, there are many able-to-pay households, including some low- and moderate- income homeowners, for whom a low- or no- cost loan can overcome the upfront cost barrier of purchasing a high-efficiency appliance. Shifting support to loans for able-to-pay households would help replenish public funds over time as loans are paid back, creating a revolving source of financing that can grow over time. A revolving loan fund would provide attractive financing options for households and allow direct funding support to focus more strongly on low- and moderate- income households who are unable to afford upfront costs or financing. The revolving loan fund could complement existing financing programs as well as other mechanisms like on-bill financing supporting clean energy investment in Oregon.

In addition to these priorities, existing programs must continue to be funded. A particular priority is to earmark flexible funding for deferred maintenance measures like a new roof or replacing rotting walls to enable households requiring deeper upgrades to benefit from energy efficiency and other decarbonization measures.

These near-term actions are essential to set the groundwork for increased activity over the longer term. As the revolving loan fund gets established and grows, more Oregonians will be able to benefit from low-cost loans. Guidance on strategic electrification should provide a vision for investment in building decarbonization, filling gaps in existing policy, informing recommendations for Oregon's Building Performance Standards for existing buildings, expected in 2030, and providing background for updates to the BPS for existing buildings over time.

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Buildings Action 1. Advance strategic electrification in buildings in conjunction with other measures that support state decarbonization and resilience goals reliably, affordably, and equitably. Direct the Oregon Department of Energy to develop a building decarbonization roadmap with recommendations to advance strategic electrification and other decarbonization measures, and as necessary, to provide data and analysis on building decarbonization to inform policies and programs.

Pathways: All

Policies: 1a (Buildings efficiency); 2c (Strategic electrification); 3b (Utility-scale and distributed energy resources); 3c (Load flexibility); 4c (Managed fuels transition); 5a (Cross-fuels planning); 5b (Resilience measures)

Equity and Justice Approaches: 1 (decision-making); 3 (incentive programs)

The energy strategy modeling found that electric heat pumps for water and space heating and cooling play an essential role in a least-cost economy-wide pathway to decarbonization. Delaying the high levels of energy efficiency and electrification in the Reference Scenario cost \$17 billion more in 2050. The energy wallet analysis, however, found that while efficient electric technologies generated energy savings across sample households, they do not always generate cost savings for that household. Factors including the technology being replaced, need for air conditioning, and differences between single- and multi-family housing all contributed to the level of household costs and savings. There are also uncertain technology and energy costs that can make adoption of efficient heat pump technologies more or less accessible to a household. It will also be important to consider how to electrify in a way that supports electric system reliability through measures such as demand flexibility, pairing electrification with weatherization, and leveraging dual fuel heat pumps to shift electric loads away from peak hours.

More detailed analysis is needed to evaluate and apply available data and trends on building stock and technologies to help establish a building decarbonization trajectory and incorporate strategic electrification into policies and programs. Current analysis of building data is largely based on limited survey data. While this data can help inform policies, expanding analysis is important to help provide more detailed recommendations that can serve the needs of different communities across Oregon. This may include actual utility energy use data, incorporating building characteristic data from local jurisdiction permitting offices, existing state and utility programs, and from available real estate databases.

Agencies may develop interim recommendations for their own policy and regulatory purposes that can inform the Roadmap. For example, the OPUC may seek to develop realistic and data driven electrification forecasts for utility service areas that consider trajectories for building electrification from a systems perspective. It will be important to work across agencies to ensure the Roadmap integrates such analyses.

As a repository for energy data, information, and analysis, ODOE is positioned to lead development of a building decarbonization roadmap, and to provide ongoing support to inform state policies and programs. These include building performance standards, energy codes, appliance standards, OPUC planning processes and ratemaking, ratepayer- and publicly- funded programs, and zoning and planning. The analysis should inform how to incorporate environmental justice community needs into policies and planning.

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The roadmap should consider, at a minimum, existing building stock and technologies, energy costs and cost uncertainties, and benefits of efficient heat pump technologies and other energy efficiency measures. It should consider emerging options, such as district energy networks. The roadmap should take into account affordability, reliability, regulatory principles, and prioritize equity considerations.

Buildings Action 2. Update energy efficiency and demand response program and delivery infrastructure to promote strategic electrification.

Pathways: 1 (Energy Efficiency); 2 (Electrification)

Policies: 1a (Buildings efficiency); 2c (Strategic electrification)

Equity and Justice Approaches: 1 (decision-making); 3 (incentive programs); 5 (partnerships and resources)

To decarbonize, it is necessary to shift buildings toward greater overall efficiency and to reduce their carbon footprint. Cost-effectiveness evaluations should look beyond a single-fuel appliance efficiency and consider the total energy usage of a building. This lens would help identify the role of strategic electrification as an energy efficiency and decarbonization measure where cost-effective. It would provide a mechanism to advance the key finding from the energy strategy modeling that electrification of buildings is a lower cost, lower risk pathway than continued reliance on direct use fuels and transitioning them to low-carbon fuels over time. In addition to heating, electric heat pumps also provide efficient cooling, which benefits households that need to adopt air conditioning to manage higher summer temperatures and protect indoor air quality from wildfire smoke. These benefits should also be accounted for, where appropriate.

As appliances and equipment electrify, demand response will be increasingly important to manage electricity system peaks, as well as to take advantage of abundant wind and solar resources. Acquisition of cost-effective demand response resources should account for these systems benefits, and customers should be compensated for the flexibility they provide. The value of dual-fuel systems should be recognized as a reliability resource to mitigate system peaks, particularly during extreme winter weather events.

More broadly, energy efficiency and demand response programs should incorporate a strategic electrification lens, and adopt approaches that recognize the value of strategic electrification as a least-cost decarbonization resource. Additional financial support should be made available to households facing cost barriers to adopting efficient technology. The building decarbonization roadmap (Buildings Action 1) will consider this broader picture and the role of different approaches to reduce carbon emissions in buildings. Some of these changes may require legislative action. Those actions should be informed by findings from the analysis and roadmap in Building Action 1.

Buildings Action 3. Prioritize measures in energy efficiency incentive programs that relieve pressure on the power system. In the near term, maintain – and where possible accelerate – building weatherization, replacement of less efficient electric heating with efficient electric heat pumps, and expand demand flexibility.

Pathways: 1 (Energy Efficiency); 2 (Electrification); 3 (Clean Electricity)

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Policies: 1a (Buildings efficiency); 2c (Strategic electrification); 3b (Utility-scale and distributed energy resources); 3c (Load flexibility)

Equity and Justice Approaches: 3 (incentive programs); 4 (workforce)

This action serves to redouble efforts on energy efficiency and demand flexibility that can quickly alleviate pressure on the electricity system. This includes utility ratepayer programs in IOU and BPA service territories as well as state programs such as Home Efficiency Rebates and Home Electrification and Appliance Rebates. Ensure that programs and incentives prioritize low-income households.

Energy efficiency and electrification are key strategies for Oregon. In the near-term, the power system faces pressure from rapidly rising loads, extreme weather, and long lead times to construct utility-scale resources. Weatherization and replacing inefficient electric heating systems with efficient electric heat pumps can trim winter peak loads and provide lifesaving cooling during increasing summer peaks. Installing heat pumps as dual fuel systems (e.g., heat pump primary and natural gas reserve) in some homes can further electrification goals and provide options for resilience and peak reduction during the winter months. Load flexibility can leverage existing electric loads to shift off peak or to switch to backup sources of heat, further alleviating the highest-stress times on the power system.

While these measures are already being implemented under existing programs, it is important to emphasize the need to maintain existing programs during a time of public budgetary pressures, and where possible to accelerate them in the near-term given the challenge of meeting rising demand. This includes programs that enable renters to implement energy efficiency measures, such as through the Rental Home Heat Pump Program. For ratepayer-funded programs, re-visiting the limits of current cost benefit analyses could help better quantify the many non-energy benefits of energy efficiency measures, such as improved indoor air quality and protection from wildfire smoke from weatherization and access to efficient cooling from heat pump installation.⁴⁶

Funding Priorities

Buildings Action 4. Prioritize existing incentive programs offering essential energy efficiency and weatherization improvements, particularly those focused on low- and moderate- income households.

Pathways: 1 (Energy Efficiency); 2 (Electrification)

Policies: 1a (Buildings efficiency); 2c (Strategic electrification)

Equity and Justice Approaches: 3 (incentive programs)

Continue ratepayer-funded programs and restore state programs that provide essential support for household energy efficiency, weatherization, emergency appliance replacement, and installation of high efficiency equipment and appliances. For federally funded programs that will lose funding, consider how state funds can support the revolving loan fund as well as programs that offer direct support for low- and moderate- income households. This can help drive greater carbon reductions in our state with less money by prioritizing direct funding for the households with the most needs, while shifting other funds to finance our clean energy future. A revolving loan fund can offer a revolving source of low-cost loans for able-to-pay households and expand financing options to help low- and moderate- income homes who are often subject to predatory lending practices.

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Buildings Action 5. Earmark flexible funding for deferred maintenance measures necessary to enable low- and moderate- income homes to install efficiency and weatherization technologies and measures.

Pathways: 1 (Energy Efficiency)

Policies: 1a (Buildings Efficiency)

Equity and Justice Approaches: 3 (incentive programs); 5 (partnerships and resources)

Many low-income households require maintenance measures to be completed before any equipment or weatherization measures can be installed. There is a lack of funding for these kinds of upgrades, including in owner-occupied and rental housing, creating a barrier to new technologies. Earmarked funding would help overcome this barrier.⁴⁷ Eligible entities to distribute funds should include Community Action Partnership agencies and other community partners that provide energy-related services, including consumer-owned utilities and community-based organizations. The revolving loan fund could, over time, provide additional financing support for qualifying households.

Buildings Action 6. Allow higher administrative costs for energy programs that serve or benefit^{xxii} Environmental Justice Communities, to better manage cost shortfalls experienced by programs and projects that benefit the overall system.

Pathways: 1 (Energy Efficiency); 2 (Electrification); 3 (Clean Electricity)

Policies: 1a (Buildings efficiency); 2a (Electrify transportation); 3b (Utility-scale and distributed energy resources)

Equity and Justice Approaches: 1 (decision-making); 5 (partnerships and resources)

Administrative cost limits for energy programs that benefit communities and do equity work represent a barrier to administering programs. Often, program funding and grant recipients must seek additional funding to support the staff necessary to manage grant programs before they can access funds. Some examples of cost shortfalls this could address are related to providing a higher level of service or “wrap-around” services to low- and moderate- income families, including more rigorous quality assurance, translation services, project planning and management, and more. This measure recommends that policy makers and program developers and implementers adjust program framework to raise the cost limits for the share of funding that can go to support administration of grants and programs, including those that support Tribes. Additionally, policymakers and program developers should consider allowing for advance funding to begin work, especially where the cost of the work creates significant cash flow issues for implementers and grant recipients waiting on reimbursement.

The updated administration cost level should be established through consultation with organizations that implement energy programs and projects and a review of best practices. Changes to legislative funding allocations for state programs, Public Utility Commission metrics for utility program cost effectiveness metrics, OHCS and ODOE rulemaking for state funded energy programs, and federally funded grant program rules (and associated laws) would be necessary to address this issue across all energy programs in Oregon.

^{xxii} For more on the benefits of energy efficiency programs, see [2022-BER-Policy-Briefs.pdf](#)

Regulation (Codes and Standards)

Buildings Action 7. Modify the Oregon Residential Specialty Code to require progress on energy efficiency and decarbonization requirements for new buildings. In the near term improve envelope efficiency measures, especially if less efficient or fossil-fueled technologies (such as electric resistance or natural gas) are used for primary space or water heating systems. Reach code should reflect goals for economy wide decarbonization and may need to define what ‘net zero’ carbon in buildings would be.

Pathways: 1 (Energy Efficiency); 2 (Electrification)

Policies: 1a (Buildings efficiency); 2c (Strategic electrification)

Equity and Justice Approaches: 2 (infrastructure development); 4 (workforce)

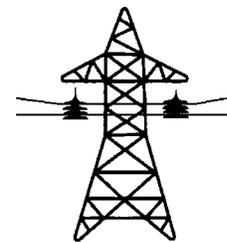
This policy action addresses greenhouse gas emissions in new residential buildings. Fossil fuel powered appliances used for primary space and water heating are significantly less energy efficient than electric heat pumps and result in direct emissions of greenhouse gases during drilling, transportation through pipelines, and end use combustion. While the electricity sector also has associated emissions from generation sources, emissions are expected to decrease over time. This means that an electric appliance installed today will have a declining emissions profile over time.

This action aims to balance the goal of advancing energy efficient buildings with the preference by some customers for installing non-electric primary heating systems. It also leaves flexibility for non-electric backup systems. It steers the residential market toward efficient electric heat pumps, which have the added benefit of enabling summer cooling — an increasing public health necessity in much of the state.

Clean Electricity Actions

Vision

Clean electricity actions cover investment in the electricity sector, from utility-scale generation, storage, transmission, and distribution to distributed renewable resources that include customer-sited generation and storage. They also encompass an increased focus on how customer-side resources interact with the electricity system, including through measures like load shifting in residential, commercial, and industrial sectors. Load shifting may include actions like charging an electric vehicle overnight instead of during the day, or pre-cooling a home before the mid-day peak happens.



Electricity is a key fuel for Oregon to meet its energy and climate policy objectives. Oregon’s electric utilities provide an essential service that supplies energy for nearly every Oregon home and business, for

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many industries, and increasingly for transportation. Electricity is not emissions free today,^{xxiii} but many electric-powered technologies, such as electric vehicles, are already more energy efficient and ultimately lower emitting than their non-electric counterparts.⁴ Strategic electrification is a critical component to a least-risk, least-cost pathway to meeting our state's climate goals. The energy pathways modeling indicates that by 2030, Oregon's electricity demand could increase approximately 40 percent, even with aggressive levels of energy efficiency. The biggest near-term driver is new tech loads, including data centers. This load growth is uncertain. Yet even if only half the modeled tech load shows up by 2030, Oregon's electricity demand could still increase more than 25 percent by 2030.

Meeting these current and growing needs for electricity requires a pace and scale of construction of new electricity infrastructure that is not being met today. This problem is not unique to Oregon. According to the Western Electricity Coordinating Council, resource plans for utilities across the West call for an unprecedented amount of development in the next ten years.⁴⁸ Failure to construct the necessary resources increases the risks of power supply disruptions, including power outages. Even those areas without load growth face heightened risks of disruptions due to extreme weather events, and those utilities need to be empowered to invest in resilience measures to mitigate outage risks.

This is a challenge that utilities should not face on their own. Electricity prices have already increased across the state, and many utility customers cannot afford the rate increases needed to support new investments. Yet the existing policy landscape asks utilities to manage these costs on their own. Absent intentional public sector investment, there will be pressure for utility customers to bear a disproportionately high share of the costs for Oregon's economy-wide clean energy transition.

There are several reasons underpinning the need for state support. Investment is needed on a rapid timeline and scale to meet rising demand and clean electricity goals. This means concentrating capital investments in a much shorter timeframe than has been seen in many decades. Inflation has significantly increased the cost of new infrastructure, and these cost increases are already affecting customer bills. Climate change is increasing risk and cost. For example, extreme weather is sharply increasing winter and summer peak demand. Changing precipitation patterns are affecting hydroelectric system operations. And more intense wildfire seasons are leading to increased costs for resilience measures like grid hardening and public power safety shutoffs. Without state support, these factors threaten to overwhelm ratepayers at a critical time for electricity sector investment.^{xxiv}

The state must consider opportunities to reduce these costs and ways to leverage other funding sources to support this transition. State support is particularly critical to help historically and currently underserved communities that could be unduly burdened in the transition or otherwise left behind. Facilitating new development should not undermine past and current efforts to minimize the effects of development on our natural and working lands and waters, to engage environmental justice communities, and to mitigate energy burden. At the same time, the state should carefully consider opportunities to promote more in-state development of clean electricity resources, in order to generate local jobs and economic development. If Oregon does not accelerate new resource development within

^{xxiii} The electricity sector is a leading source of greenhouse gas emissions and accounted for nearly 29 percent of the state's carbon footprint in 2023. Achieving the clean energy targets in HB 2021 (2021) would mean many, but not all, of these emissions are eliminated. Achieving further decarbonization of the electricity sector would mean even greater emissions benefits from electrifying other end uses.

^{xxiv} It will also be important to track demand projections closely to avoid over-investment, which can burden ratepayers even more with stranded costs. The example of the Washington Public Power Supply System investments in large nuclear projects in the 1950s should serve as a cautionary tale where over-investment and cost overruns led to the largest municipal bond default in US history. [Washington Public Power Supply System \(WPPSS\) - HistoryLink.org](https://www.historylink.org/11000/wppss)

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the state, utilities will increasingly rely on out-of-state resources to serve growing loads. This would mean Oregon misses out on potential jobs and other economic benefits from in-state development, and the costs of these necessary investments will primarily flow out of state rather than directly or indirectly supporting Oregon households and businesses.

The following actions aim to deliver progress on this vision in the near-term. In this time frame, the top priority is facilitating enhancement and expansion of clean energy infrastructure to maintain reliability. Transmission enhancements and expansions require collaboration and support, which the state can better provide through establishing a state transmission entity charged with designating transmission corridors and facilitating development within them. Development, whether by incumbent utilities or by independent developers, is needed both regionally and in the state. Updating the Oregon Renewable Energy Siting Assessment Tool will help guide in-state development assessments. Oregon should also continue its engagement and support for regional activities, particularly as federal policies threaten to diverge from shared Northwest clean energy goals.

Additional recommendations could emerge from two proposed studies described in this section. These studies should provide recommendations that facilitate the expedited development of clean energy infrastructure while still mitigating the negative effects of infrastructure investments on Oregon's natural and working lands as well as on electricity rates and energy affordability.

Enabling Mechanisms

Clean Electricity Action 1. Establish a state transmission entity with the authority to (1) identify and designate transmission corridors; (2) pursue partial siting and permitting approvals for future projects in those corridors; and (3) provide direct financial support through state bonds for projects that are determined to benefit the public interest.

Pathways: 3 (Clean electricity); 5 (Resilience)

Policies: 3a (Tribal and regional engagement); 3b (Utility-scale and distributed energy resources); 5b (Resilience measures)

Equity and Justice Approaches: 1 (decision-making); 2 (infrastructure development); 3 (incentive programs); 5 (partnerships and resources); 6 (natural and working lands, cultural resources, broader environment)

Across the Pacific Northwest, transmission constraints hinder access to least-cost generation and contribute to reliability concerns. Line expansions and additions are not proceeding at the pace or scale necessary to meet Oregon's policy objectives.^{xxv} There are several reasons for this that a new state entity^{xxvi} could help address. First, siting and permitting a single transmission line, particularly across both federal and state jurisdictions, can take years or even decades; these processes can affect even

^{xxv} There are multiple ongoing workstreams focusing on this issue, and the proposed policy action is intended to add value beyond those workstreams. Those workstreams include Bonneville Power Administration's Transmission Planning Reform discussions, <https://www.bpa.gov/energy-and-services/transmission/transmission-planning-reform>, as well as the Western Transmission Expansion Coalition (WestTEC), <https://www.westernpowerpool.org/about/programs/western-transmission-expansion-coalition>.

^{xxvi} The state legislature considered establishing a state transmission authority in the 2025 legislative session but did not do so. HB 3628 (2025). As noted in the final paragraph here, any new state entity would need to be carefully designed and have clear authority to undertake the necessary work while mitigating the risks of this approach.

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smaller projects aimed at upgrading existing lines. To reduce this barrier, a new state entity could establish designated corridors for transmission development and obtain limited siting approval for development within the corridor, including development of enhanced, expanded, or new transmission facilities but also of storage and electric generating resources. Having a new state entity pursue limited siting approval for an entire corridor would retain Oregon’s historic focus on robust siting and permitting processes, while enabling individual projects within a given sited corridor to proceed more rapidly than is currently possible. This work to establish designated transmission corridors should be informed by engagement with utilities and regional transmission planning efforts (see policy action 29 below), including taking a hard look at transmission asset utilization practices and potential business reforms to maximize the efficient usage of the existing grid. In addition, the new state entity should be explicitly authorized to utilize an environmental justice and energy justice lens and equitable processes through meaningful community involvement, as defined in House Bill 4077, to prioritize affected environmental justice communities in undertaking any designation process.

Second, the costs of financing a transmission project are often assigned today to one or very few entities, although upgrades can benefit numerous entities. As a result, needed projects are often delayed. A state entity with authority to identify projects that benefit the public interest and provide financial support for those projects—not only through undertaking limited siting processes but also potentially direct state-level funding through bonding authority—would help to overcome a significant bottleneck in existing processes.

A new state entity would need to be created, authorized and funded to undertake this work. Additionally, the Energy Facility Siting Council would need additional authority and guidance to review corridor-based proposals and to review subsequent limited in-corridor project proposals.

Risks of this approach include complicating an already complex process and using taxpayer dollars for projects that may not provide direct value statewide. Prioritizing projects that provide statewide benefits will also need to be balanced with prioritizing projects that best mitigate historic and current environmental injustices. Any new entity would need to be carefully designed and have clear authority to undertake the necessary work to expedite transmission development while mitigating these risks.

Clean Electricity Action 2. Direct the Oregon Department of Energy to conduct a study on barriers preventing construction and interconnection of permitted projects and recommend actions to overcome barriers.

Pathways: 3 (Clean Electricity)

Policies: 3b (Utility-scale and distributed energy resources)

Equity and Justice Approaches: 1 (Decision-making); 2 (Infrastructure development); 6 (natural and working lands, cultural resources, broader environment)

Siting and permitting are often cited as primary barriers to new resource development in Oregon. Yet, a number of large-scale renewable projects have received approval from the Energy Facility Siting Council only to wait months or years before beginning construction or simply abandoning their project. A study could shed light on the barriers these projects are encountering and where regulatory reforms could improve the overall development process.

The OPUC^{49 50} and Bonneville Power Administration⁵¹ are in the process of conducting generation interconnection reforms. These efforts must continue. This action builds on those processes to identify

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opportunities to overcome barriers to construction and interconnection of new generation, as well as evaluation of where governmental siting and permitting processes and generator interconnection processes might be better aligned.

Clean Electricity Action 3. Report on developments in emerging technologies, including long-duration storage, enhanced geothermal, floating offshore wind, and small modular nuclear reactors, to identify the role they can play in meeting the state's electricity needs; also explore opportunities for pilot programs in the near-term.

Pathways: 3 (Clean Electricity)

Policies: 3b (Utility-scale and distributed energy resources)

Equity and Justice Approaches: 1 (Decision-making); 2 (infrastructure development); 6 (natural and working lands, cultural resources, broader environment)

The energy strategy modeling clearly indicated the value of having high-capacity resources to complement hydro and variable renewable resources on the electricity system. Several emerging technologies may help meet this need; however, today it is not clear which will present the most cost-competitive opportunities for Oregon.

These projects will require large capital investments and have long lead-times, meaning that any state support would be needed well in advance of when these technologies would be expected to come online. Oregon is currently engaged in development of an Offshore Wind Roadmap that will evaluate the steps needed to develop floating offshore wind off the Oregon Coast. This roadmap will advance analysis on the value of offshore wind and policy actions that would set the stage for future development.⁵² The AltaRock Enhanced Geothermal Systems demonstration project is underway near Newberry Volcano in Oregon, exploring the role that enhanced geothermal power might play in our energy future.⁵³ And while Oregon law does not practicably allow siting nuclear facilities in Oregon, an Oregon-based company is undertaking research and development to develop modular nuclear reactor design.⁵⁴

This study, led by the Oregon Department of Energy, will evaluate emerging technologies in Oregon, regionally, and in light of shifting federal incentives to ensure state policymakers have up-to-date information as these processes advance and requests for state support arise. ODOE will also look for opportunities to access federal funding and resources for the evaluation and potential demonstration projects.

Clean Electricity Action 4. Study government policy incentives for local electricity investments and identify opportunities for the state to better advance infrastructure needs, economic development and energy justice objectives.

Pathways: 3 (Clean Electricity); 5 (Resilience)

Policies: 3b (Utility-scale and distributed energy resources); 3c (Load flexibility); 5b (Resilience measures)

Equity and Justice Approaches: 2 (Infrastructure development); 3 (Incentive programs); 4 (workforce) 6 (natural and working lands, cultural resources, broader environment)

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This action aims to inform government incentive and policy support for local electricity investments to align Oregon’s energy policy objectives with economic growth and energy justice. Absent informed state support, some Oregon communities, including existing environmental justice communities, may face higher costs and other burdens from a statewide energy transition without enjoying commensurate local benefits. Similarly, some cultural resources or natural resources, like high value habitats or working lands, may be unduly affected in certain areas of the state.

State support for local electricity investments can support local economies by providing power for new businesses, creating local energy jobs, and otherwise promoting local economic development. Such investments may include a range of projects like rooftop solar, electric vehicle charging stations, local microgrids, and large-scale infrastructure investments. Providing funding to such projects helps fill a gap in traditional utility investing that focuses on the greatest economic value to that utility’s system and does not consider opportunities to redress historic or current inequities that may extend beyond one utility’s purview. With support from other agencies such as Business Oregon, the Oregon Department of Energy could be well-positioned to lead this study. This study would identify areas where additional incentives or improvements to existing program design would best advance infrastructure needs, economic development and energy justice objectives. Policymakers should be prepared to implement recommendations from this study once undertaken.

Data and Information

Clean Electricity Action 5. Update and enhance the Oregon Renewable Energy Siting Assessment Tool, with a goal of providing a robust database of lands suitable for various types of electricity infrastructure projects.

Pathways: 3 (Clean Electricity)

Policies: 3b (Utility-scale and distributed energy resources)

Equity and Justice Approaches: 2 (infrastructure development); 6 (natural and working lands, cultural resources, broader environment)

The Oregon Department of Energy maintains the Oregon Renewable Energy Siting Assessment tool, which is an interactive application that allows users to review data and gain a coarse level perspective of potential land use, military, natural resources, and other considerations related to land use across Oregon. The information serves to help the public and developers understand land use and natural resource constraints and limitations when exploring potential development opportunities for electricity infrastructure. Currently, funding is not available to update all datasets in the tool or add new data layers. Some valuable data layers are not even available to add and would require investments in surveys to collect the underlying data. For example, during the development of the ORESA tool, it was identified that it would be helpful to support renewable energy reporting functionality for larger areas (e.g., regions or statewide) to show areas where constraints are minimal and renewable energy opportunities are relatively high. In addition, DSL is drafting the Renewable Energy Analysis for School Lands, which will explore a new classification, “renewable energy lands.”

This action does not recommend updating any one specific dataset. A report from the Eastern Oregon Solar Siting Rules Advisory Committee, managed by the Oregon Department of Land Conservation and Development, is expected to make recommendations informing strategic direction for ORESA and its

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data sets in late 2025. The Legislature should carefully consider those recommendations in that forthcoming report and implement them.

Regulation

Clean Electricity Action 6. Direct the OPUC to investigate opportunities to modify utility business models and ratemaking practices to enhance marketplace competition and thereby lower costs in utility planning and resource procurements.

Pathways: All

Equity and Justice Approaches: 2 (infrastructure development); 4 (Workforce)

Traditional ratemaking rewards utility investors for making capital investments and does not reward non-capital spending like procuring power via a contract or pursuing non-wires solutions such as energy efficiency and customer demand response. This structure disincentivizes investor-owned utilities from pursuing or facilitating non-utility owned resources at all scales, a phenomenon recognized as the “utility build-vs.-buy bias.” It is difficult to know with certainty the lost opportunity of adhering to historical methods, but it is likely that this regulatory structure deters independent non-utility investment in needed resources, from customer-sited storage to microgrids to large-scale generation projects to transmission upgrades. It also likely deters non-investment spending by investor-owned utilities. Regulatory mandates and rules endeavor to overcome this structure’s shortcomings, and continuing enforcement and modernization efforts should be continued.^{xxvii}

With additional funding and staff capacity, the Oregon Public Utility Commission could undertake the long process needed to adequately evaluate potential reforms like performance-based ratemaking that could ultimately ensure investor-owned utilities deliver the services that customers need at reduced cost. This goal is the anticipated outcome of successfully removing utility disincentives to the diverse ownership of clean generation, storage, and transmission resources. This investigation will likely not provide near-term benefits to ratepayers, but it could provide significant long-term value after (1) reporting metrics are identified, then (2) a foundational baseline of information is established, and finally (3) performance incentives or penalties are established if appropriate. Without sufficient resources for investigation or baseline-setting, a drastic change to traditional ratemaking could increase risks to ratepayers without improvements to service or utility spending methods.

SB 688 (2025) explicitly authorizes the OPUC to consider performance-based ratemaking for varied purposes. The proposed action builds on that new law with more specific direction and additional funding for OPUC. The proposed action in no way proposes to limit the scope of SB 688, which includes a broad definition for the “public interest” that the OPUC must consider in undertaking any investigation of performance-based ratemaking.

^{xxvii} For example, OPUC Docket No. UM 2348 (Staff Investigation into Integrated Resource Plan and Request for Proposal Modernization) is a critical effort. The proposed policy action furthers that ongoing workstream and does not replace it.

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Clean Electricity Action 7. Expand the Oregon Department of Energy’s statewide energy infrastructure resilience programs, including increasing funding for and amending the Community Renewable Energy Grant Program to support projects that improve energy resilience.

Pathways: 3 (Clean electricity); 5 (Resilience)

Policies: 3b (Utility-scale and distributed energy resources); 4a (Low-carbon fuels and fuel infrastructure); 4c (Managed fuel transition); 5a (Cross-fuels planning); 5b (Resilience Measures)

Equity and Justice Approaches: 2 (infrastructure development), (incentive programs); 6 (natural and working lands, cultural resources, broader environment)

Oregon has several existing programs to fund energy and energy infrastructure resilience projects, including as examples ODOE’s Grid Resilience Grant Program, Community Renewable Energy Grant Program and County Energy Resilience Grant Program. With uncertainty around the availability of federal funding dollars to support these investments for Tribes, local governments, communities, and households, it is important for the state to provide funding for electric system resilience.

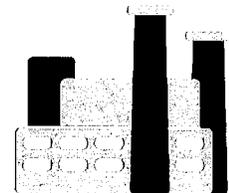
These programs are critical to enhancing energy security. The Oregon Energy Security Plan highlighted the importance of improving the resilience of community owned electric utility infrastructure. These improvements reduce the frequency and duration of power outages as well as decrease the need for liquid-fueled back-up power generation. Improved resilience supports decarbonization and reduced reliance on imported liquid petroleum fuels. Many small electric utilities in Oregon do not have the rate payer base to increase costs and fully pay for robust grid resilience infrastructure improvement projects. A more robust grant program funded by the state could spur needed improvements that reduce the risk of costly wildfires and other hazards.

Similarly, resilience funding should support efforts to advance community energy resilience like microgrids. HB 2066 (2025) directs the OPUC to develop a regulatory framework for microgrids. However, communities that want to make use of the new regulatory framework will need access to technical knowledge to effectively engage with utility partners. With major federal funding sources of microgrids recently cut, it will be difficult for many projects to move forward absent state support in securing adequate technical assistance and project funding.

Industrial Actions

Vision

Oregon’s industrial sector needs policy direction and support to comply with state decarbonization targets while remaining competitive in a world of rising energy costs. Current operations are dependent on imported fossil fuels to power manufacturing processes that result in a significant amount of GHG emissions. To meet state decarbonization targets, Oregon industry will need to transition to cleaner and more efficient manufacturing processes. Identifying cost effective pathways for businesses to reduce their emissions, mitigate energy costs, and remain competitive in regional and global markets will be critical to transitioning Oregon’s industrial sector. In addition to supporting industrial competitiveness and sustainability, these actions have the potential to reduce emissions in affected communities.



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Energy modeling conducted for the Oregon Energy Strategy determined that investment in energy efficiency and electrification can reduce some energy demand, and adoption of low-carbon fuels will be essential to decarbonize the hardest-to-electrify processes. Many high heat applications do not have an equivalent electricity technology replacement and will continue to be dependent on combustible fuel to meet energy demand. Low-carbon fuels have the potential to meet this energy demand while reducing lifecycle emissions. Low-carbon fuels such as biofuels or hydrogen also present the opportunity of onsite production and storage using waste feedstocks, water, or other local resources.

These industrial policy actions highlight the need to collaborate with Oregon businesses to research and better understand the barriers and opportunities available to decarbonize Oregon industry.

Industrial Action 1. Identify and evaluate short and long term decarbonization options for the emissions-intensive, trade-exposed large industrial entities in Oregon that are obligated to reduce their greenhouse gas emissions under the Climate Protection Program.

Pathways: 1(Energy Efficiency), 2 (Electrification), 4 (Low-Carbon Fuels)

Policies: 1b (Large commercial and industrial efficiency), 2 (Strategic electrification), 4b (Low-carbon fuels adoption), 4c (Managed fuels transition)

Equity and Justice Approaches: 3 (decision-making); 4 (workforce)

Direct ODOE, DEQ, and Business Oregon to collaborate with emissions-intensive, trade-exposed sources (EITEs) covered by the Climate Protection Program (CPP) on a study to identify opportunities for decarbonization, including energy efficiency, demand response, industrial symbiosis, electrification of thermal processes, low-carbon fuels, carbon capture and storage and other opportunities to support compliance with the Climate Protection Program. Recommendations from that study should then be implemented by state agencies and the legislature.

Under the Climate Protection Program, emissions-intensive, trade-exposed industrial sources must reduce their greenhouse gas emissions over time. These thermal energy industries combust solid, liquid, and gaseous fuels to produce their products and need proven decarbonization solutions to invest in to comply with the Climate Protection Program and remain competitive. DEQ will develop GHG emission intensity targets for these sectors in 2027 and will need to help these industries identify a path to compliance. Reducing industrial emissions requires tailored solutions to address a range of different processes and technologies. This action will help advance understanding of what those solutions might look like across Oregon's industrial landscape.

Funding Priorities

Industrial Action 2. Fund an industrial modernization revolving loan fund to bolster adoption of energy efficiency improvements, electrification of thermal processes, industrial symbiosis, smart manufacturing, and application of low-carbon fuels where electrification is not feasible for large industrial entities.

Pathways: 4 (Low-carbon fuels)

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Policy: 4b (Low-carbon fuels adoption), 4c (Managed fuels transition)

Equity and Justice Approaches: 3 (incentive programs); 4 (workforce)

This action would build on the previous action and support implementation of measures to decarbonize emissions-intensive, trade-exposed sources (EITEs) covered by the Climate Protection Program (CPP). Industries will require support to help identify innovations that can help decarbonize their processes while maintaining competitiveness in the national and global economy. Support may include technical assistance, collaborative forums, low-cost financing, or grants to help industries identify and deploy approaches to decarbonization.

Low-Carbon Fuels Actions

Vision

Low-carbon fuels include both liquid fuels such as ethanol, renewable diesel, and biodiesel, primarily used for transportation, as well as gaseous fuels, such as renewable natural gas and hydrogen, used for heating, manufacturing, and other direct uses. The shift to low-carbon fuels requires investment on the demand side, including in industries reliant on high-heat industrial processes as well as aviation, rail, and marine transport. It also requires supply-side investments to ensure that both transportation and direct use fuels are available where and when needed.



Some low-carbon fuels are already being used in Oregon to reduce emissions in transportation. Renewable diesel consumption has grown from 16 million gallons in 2019 to almost 171 million gallons in 2024, and renewable natural gas consumption, including out-of-state purchases, has increased from just over 2 million diesel gallons equivalent in 2019 to almost 4 million diesel gallons equivalent in 2024.

In the near-term, the focus on the demand-side is to explore the opportunities for low-carbon fuels in hardest-to-electrify industries in Oregon and generating opportunities to fund and finance measures that shift operations to low-carbon fuels.

On the supply-side, the focus is on aligning policies, programs, and incentives for low-carbon fuels in Oregon with that of neighboring states while identifying lowest impact sites for low-carbon fuel facilities in Oregon. This would allow Oregon to define approaches to support technologies that have the support of our broader regional economy, reducing the risk of stranded costs or of Oregon “going it alone.” Oregon is currently researching and investing in a potential hydrogen economy with Washington and Montana by supporting demonstration projects in the Pacific Northwest Hydrogen Hub. Identifying regional demand for low-carbon fuels as well as the lowest impact sites for fuel production would help enable development of strategic sectors to our economy while minimizing negative effects such as harmful emissions on neighboring communities.

Data and Information

Fuels Action 1. Direct the Oregon Department of Energy, Oregon Department of Land Conservation and Development, and Business Oregon to create criteria to identify sites with the greatest opportunity for low-carbon-intensity fuel production development in

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Oregon by assessing existing brownfields and industrial sites across the state, and publishing recommendations on how to improve engagement with local communities.

Pathways: 4 (Low-carbon fuels)

Policy: 4a (Low-carbon fuels and fuel infrastructure)

Equity and Justice Approaches: 1 (decision-making); 5 (partnerships and resources); 6 (natural and working lands, cultural resources, broader environment)

Low-carbon fuel production potential exists in Oregon and energy modeling demonstrated a growing demand for these fuels. Some low-carbon fuels are already produced in Oregon, including biodiesel from used vegetable oil as well as renewable natural gas from agricultural, wood, and municipal waste, and wastewater. While Oregon imports most of the low-carbon fuels it consumes, in-state production can help support local economies and increase access to the fuel. In-state production could deliver other benefits, such as improved power system reliability by co-locating renewable natural gas production with electricity generation to help meet peak demand.

Finding a suitable location for low-carbon fuel production is one of the main barriers identified to producing these fuels in Oregon. This study would help identify criteria for sites likely to have the lowest impact on communities and the environment by focusing on industrially zoned and brownfield areas. It will be important to involve environmental justice communities in the evaluation process both in criteria selection, and in evaluating ways to improve engagement with local communities when siting facilities.

Fuels Action 2. Direct the Oregon Department of Energy to develop a low-carbon fuels roadmap that evaluates current policy support mechanisms for low-carbon fuels, identifies gaps and opportunities, and recommends additional support mechanisms that align with regional and national frameworks for low-carbon fuels in transportation and in commercial and industrial sectors.

Pathways: 4 (Low-carbon fuels)

Policy: 4a (Low-carbon fuels and fuel infrastructure), 4b (Low-carbon fuels adoption), 4c (Managed fuels transition)

Equity and Justice Approaches: 1 (decision-making); 2 (infrastructure development); 6 (natural and working lands, cultural resources, broader environment)

An evaluation of support mechanisms and markets for low-carbon fuels would help inform how Oregon can most constructively support decarbonization of our economy. For example, working with public partners to evaluate and recommend fuel decarbonization targets over time for maritime, aviation, and rail transportation will provide industry with direction and advance state decarbonization goals. The evaluation should also include an investigation of potential feedstocks to produce low-carbon fuels in Oregon and which gaseous and liquid fuels make the most economic sense for Oregon to produce to meet demand. The process should engage environmental justice and other affected communities to ensure that their views inform the roadmap.

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Fuels Action 3. Direct the Oregon Department of Energy to research and forecast fuel needs for emergency preparedness in collaboration with Tribes and public partners across the state, and ensure that these needs are met as technologies evolve throughout the energy transition.

Pathways: 5 (Resilience)

Policy: 5c (Emergency Planning)

Equity and Justice Approaches: 1 (decision-making); 5 (partnerships and resources)

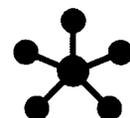
State, Tribal, county, and local jurisdiction emergency management teams are evaluating the ability of Oregon communities to respond during an event. Most emergency response vehicles and fuel storage are dependent on fossil fuels to meet their community needs. The decarbonization of Oregon's energy systems will lead to the adoption of new technologies, electrification, and greater use of low-carbon fuels. The rate of the change to new technologies or fuels and the impact to emergency management is evolving, which can be challenging for jurisdictions to know what to invest in and plan for.

To support resilience of the energy system, Oregon should analyze areas around the state where fuel may be in limited supply for emergency response needs, and identify specifically where and how the state, local governments, Tribes, and private sector partners can build fuel storage capacity and maintain a reliable supply of liquid fuels. Analysis of future fuel storage locations must be done in conjunction with local governments and Tribal governments, the private sector, and communities, and must not cause undue impacts to disadvantaged neighborhoods. Emergency response capabilities must be able to respond at any location in our state, and the most remote areas of Oregon are frequently those that face significant risk from wildfire or other natural disasters, and may have limited means to respond to those disasters.

The Oregon Department of Energy would collaborate and coordinate with energy and emergency management Tribal and public partners to research and map the fuel needs of local jurisdictions, track adoption rates of new technologies and fuels, and provide guidance to local jurisdiction emergency management teams on how to prioritize investments in emergency management energy resources. This work would expand the depth and reach of the existing County Energy Resilience Grant Program and Energy Security Plan. A grant program for participating Tribes and local governments would need to be funded to support the sharing of data as well as help governments implement findings from the research. Results of the research project would refine and support the development of emergency plans and procedures at the Oregon Department of Energy.

Cross-Cutting Actions

The following actions advance progress in more than one sector.



Regulation

Cross-Cutting Action 1. Direct the Environmental Quality Commission to adopt rules imposing registration and reporting requirements upon all new large electric loads to

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inform greenhouse gas emissions analyses, and to evaluate whether policy changes are needed to bring emissions in line with state policies.

Pathways: 3 (Clean Electricity); 4 (Low-Carbon Fuels)

Policies: 3a (Utility-scale and distributed energy resources); 4b (Low-carbon fuels adoption)

Equity and Justice Approaches: 1 (decision-making)

Although new tech loads, such as data centers, are expected to be the biggest near-term driver of electricity demand growth, relatively little information is available for these loads—or what resources will serve them. Some will be served by utilities with clean energy requirements pursuant to HB 2021 (2021), but others will not. Most of Oregon’s consumer-owned utilities receive all or nearly all of their electricity supply from the Bonneville Power Administration. Yet federal law restricts BPA’s ability to supply new large loads, which is defined as “any new load, or expansion of an existing load, at a single facility that grows by 10 average megawatts (aMW) or more in any consecutive 12-month monitoring period.”^{xxviii}

There is a risk that utilities will rely on the wholesale market to meet power needs for these loads, exacerbating resource adequacy concerns, increasing emissions, and raising power costs for the region as a whole. By contrast, if these loads procure clean power through long-term contracts, it could help finance the development of new, clean generation for the region.

Imposing new obligations poses a risk of discouraging new loads and new economic development in the state. Yet having better data would benefit the state in considering policy changes, which could be undertaken by the EQC.

Funding

Cross-Cutting Action 2. Establish and identify a source of funding for a revolving loan fund to provide a stable source of low-cost and no-cost loans to support the energy transition and resilience.

Pathways: All

Equity and Justice Approaches: 1 (decision-making); 3 (incentive programs); 5 (partnerships and resources)

This action would establish a dedicated revolving loan program that primarily serves to amplify the lending capacity of existing entities delivering grants and loan programs to support access to clean energy technologies for households and businesses. Examples include local credit unions, utility programs, the Energy Trust of Oregon, community organizations, local governments, and state agencies. It would be necessary to work with state agencies and the legislature to identify seed funding and establish an appropriate framework. It will be important to ensure that the new financing does not result in defunding or re-prioritizing programs and/or assistance for energy efficiency measures for residents with low and moderate incomes.

The energy transition will require significant investment in new technologies and infrastructure. A stable source of financing is critical to support the pace and scale of investment required to both reduce

^{xxviii} For more on this, see BPA’s New Large Single Load fact sheet, available at [fs-202011-new-large-single-load.pdf](#).

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greenhouse gas emissions and enhance resilience to climate impacts. A revolving loan fund can provide a stable and growing pool of money to support measures driving uptake of clean energy technologies over time.

A revolving loan fund also provides an opportunity to support loan products that provide access to financing for low- and moderate- income and environmental justice households who have either not had access to loans or been subject to predatory lending practices. A revolving loan fund can enable existing grant and rebate programs to focus more direct assistance funding to low- and moderate- income households who do not qualify for traditional loans.

The revolving loan fund should include programs that make financing available in, at minimum, the following areas: energy efficiency and electrification measures in residential and commercial buildings; light-, medium- and heavy-duty zero emission vehicle and ZEV charging or fueling infrastructure; and distributed resource investment.

Cross-Cutting Action 3. Establish a Tribal Energy Block Grant Program to support Tribal energy priorities, cultural values, and community needs through alignment with their own energy planning processes or the Oregon Energy Strategy.

Pathways: All

Equity and Justice Approaches: 1 (decision-making); 3 (incentive programs); 5 (partnerships and resources)

The Tribal Energy Block Grant program would provide direct, flexible funding to federally recognized Tribes to design and implement energy programs that reflect their own priorities, cultural values, and community needs. Modeled after other successful block grant structures, such as federal housing block grants, this program would shift decision-making power to the Tribes by allowing them to determine how best to use their funds, whether for energy efficiency upgrades, renewable energy deployment, workforce development, planning and capacity building, or other strategies that align with the policy recommendations in the Oregon Energy Strategy or tribal energy strategies. Rather than prescribing a one-size-fits-all approach, the program would recognize the sovereignty of each tribe and support locally tailored solutions that promote energy resilience, affordability, and self-determination. The program should build in administrative support and multi-year funding to ensure the program's stability and reduce the administrative burden that often accompanies competitive grant processes. Ultimately, this program could serve as a key tool in operationalizing the state's commitment to equity and Tribal energy sovereignty.

Data and Information

Cross-Cutting Action 4. Develop a state-wide definition of energy burden that combines household and transportation costs to help inform Oregon's energy transition.

Pathways: All

Equity and Justice Approaches: 1 (decision-making); 5 (partnerships and resources)

Direct the Oregon Department of Energy to develop a consistent, cross-agency definition of energy burden that incorporates both building energy costs and transportation-related energy expenses. This

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updated definition can be used across agencies to assess and track how policies – particularly those related to electrification in buildings and transportation, as well as investments in multimodal transportation – affect household energy costs over time. Under this action, ODOE would cooperate with other agencies in developing this definition, including OHCS, OPUC, ODOT, DEQ, and DLCD.

Currently, transportation energy costs – often the largest single energy expenditure for many families, as demonstrated by the Energy Wallet analysis – are not included in traditional definitions of energy burden. As Oregon moves toward widespread electrification of buildings and vehicles, a modernized definition is critical for understanding how shifts in energy consumption and fuel sources impact affordability, particularly for low-income, as well as currently and historically marginalized communities. Without updating how energy burden is calculated, the state risks overlooking significant changes in household energy spending, such as the shift from gasoline to electricity for vehicles.

Incorporating transportation into the energy burden framework would also allow agencies and policymakers to more accurately assess the impact of alternative mobility investments, such as expanded public transit, safe biking and walking infrastructure, and other strategies that reduce household transportation costs. A common, inclusive definition would provide a valuable tool for guiding equitable policy development, targeting financial assistance, and measuring progress toward affordability and environmental justice goals statewide.

Cross-Cutting Action 5. Conduct a biennial survey on energy affordability and report on trends to inform state policymaking.

Pathways: All

Equity and Justice Approaches: 5 (partnerships and resources)

Rising costs for electricity, gasoline and other energy uses are of concern to Oregon households and businesses across the state. Yet a holistic view of energy affordability is difficult to form due to lack of information, a problem exacerbated by the loss of federal tools and support. To obtain the most accurate picture of household and business energy costs and energy needs, the state should undertake a recurring survey of household and business energy costs and energy consumption patterns. For example, electricity service is not reliable if consumers cannot afford to use electricity to meet basic needs, such as air conditioning during extreme heat events. Energy security includes access to affordable energy.¹⁷ This information would help the state make informed decisions about the potential impacts of energy policies and how to shape policy to address them.

The survey of energy affordability should include energy costs both in buildings and transportation, as well as vehicle miles traveled and usage of alternative modes of transportation. In this way, this action should link to action Cross-Cutting Action 5, which recommends developing a shared definition of energy burden that includes both building and transportation related energy costs. This will ensure that, as the transportation sector evolves and vehicles electrify, Oregon is tracking the effects of this shift on household and business energy costs and consumption patterns.

Cross-Cutting Action 6. Direct the Oregon Department of Energy to facilitate the sharing of data and joint planning to enhance energy resilience and reliability.

Pathways: 5 (Resilience)

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Policies: 5a (Cross-fuels planning), 5b (Resilience measures)

Equity and Justice Approaches: 5 (partnerships and resources)

The Oregon Energy Security Plan highlighted the need for coordination between energy providers and the state to ensure that credible contingencies are part of their planning regime and there is adequate coverage across the state. Energy providers in the Pacific Northwest have already begun to explore enhanced coordination and planning, and this action would call on the state to support and build on these efforts. The state would encourage participation by electric and gas utilities, fuel providers, and energy stakeholders.

Better data and coordination could potentially mitigate the risks of or effects from extreme weather events, such as the winter storm of January 2024. During that event, electricity demand across the region exceeded historic records at the same time many electricity generating resources faced performance challenges. Simultaneously, natural gas supply—critical not only for some home heating but also for gas-powered electricity generating resources—was restricted due to an issue at a key gas storage facility.³⁷

Greater coordination can help energy providers share high level resource adequacy data and engage in and participate in state emergency planning. This activity will provide transparency into Oregon's larger energy system, how energy use may change over time based on energy provider data like new large loads joining the electric system, and how the system may respond during an event. Results of planning activities and data will inform future iterations of the Oregon Energy Security Plan.

Cross-Cutting Action 7. Identify gaps in current and estimated occupation-level employment to meet Oregon's future energy need and support and expand workforce development efforts. Direct ODOE to study gaps and recommend actions.

Pathways: All

Equity and Justice Approaches: 1 (decision-making); 4 (workforce); 5 (partnerships and resources)

As the energy sector evolves to meet Oregon's future energy needs and policy objectives, the energy industry workforce will need to evolve as well. The jobs analysis conducted for the energy strategy demonstrates a need for greater employment in several key occupations, including electricians, HVAC specialists, and others. If workforce development needs in these occupations are not addressed, this may lead to employee shortages and delay in meeting Oregon's energy goals, particularly in rural, frontier, and remote areas. At the same time, industries engaged in the extraction, dissemination, and use of fossil fuel are likely to see job displacement. This may lead to greater unemployment in certain industries if retraining and new opportunities are not available.

A workforce needs assessment would serve as a step toward improving our understanding of these areas of potential shortage and displacement and provide guidance on strategies to support further development and retraining of the necessary workforce. The study should consider how different potential strategies for building the clean energy workforce would affect the promotion of a just transition, including considerations around: job quality, pay, benefits, demographic diversity in hiring and training geography/location, and the role of different development opportunities such as apprenticeships, college and vocational education programs, and dedicated training programs.

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Other

Cross-Cutting Action 8. Advocate for federal policies that support advancement of state energy objectives.

Pathways: All

Equity and Justice Approaches: 1 (decision-making); 5 (partnerships and resources)

Federal policies play an important role in relation to state energy objectives. For example, the Clean Air Act Section 209(b) waivers (often referred to simply as the California waivers), ENERGY STAR program, appliance and equipment standards, and funding are examples of federal programs that support state energy objectives. Federal policy can also make it more difficult for Oregon to reach its energy policy objectives.

This action directs state agencies to identify existing federal programs that align with the Oregon Energy Strategy and advocate for policies that support achievement of state energy objectives and continue to elevate the needs of environmental justice communities. This includes engaging with Oregon's federal delegation to ensure that Oregon's voice is heard in Washington, DC.

Cross-Cutting Action 9. Direct state agencies to increase coordination with community-based organizations, utilities, Energy Trust of Oregon, and other partners to advance consumer education and facilitate delivery of energy related services.

Pathways: All

Equity and Justice Approaches: 1 (decision-making); 5 (partnerships and resources)

Oregon's energy transition involves Oregon households and businesses making informed decisions about building upgrades, equipment purchases, vehicle purchases and other choices with long term energy implications. Comprehensive resources should be developed to ensure that every Oregon home or business has the information needed to navigate complex energy decisions. Consumer education should be shared at level of consumers, customers, and communities through culturally appropriate materials that are translated and in plain or accessible language. Community based organizations and industry partners should have access to training and funding to enable participation, to ensure all energy related measures meet quality, performance and financial expectations.

This action recommends coordination to facilitate delivery of energy related services. Equipment installers, vehicle dealers, and other providers of clean energy services are often the main actors engaging consumers and helping them make purchase decisions. As technologies evolve and to advance the state's energy policy objectives, these service providers must be knowledgeable about new technologies and have information available for consumers, such as availability of rebates or low-cost loans, as well as information on upfront costs and operating costs over time to capture the benefits of more energy efficient technologies.

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Funding

Cross-Cutting Action 10. Increase resources, funding, and staff levels at agencies as needed to implement actions necessary to advance Oregon’s energy policy objectives.

Pathways: All

Equity and Justice Approaches: 1 (decision-making)

As legislators and the Governor consider actions in the Energy Strategy, this action urges them to provide needed funding and to implement those actions.

It is clear that the clean energy transition will be most effective and equitable if managed well. Yet no single entity has explicit authority to undertake this management work. Instead, a number of different Oregon state agencies play a role in enabling, supporting, and overseeing the energy transition. The scale of the challenge brought to these agencies often outbalances the scope of resources currently available to them.

Agencies named in the energy strategy include key agencies responsible for implementing energy policy and providing essential analysis and information across the transportation, fuels, utilities, and broader energy systems. This includes the Oregon Department of Transportation, Department of Environmental Quality, Public Utility Commission, Department of Energy, and Department of Land Conservation and Development. There are many other agencies involved in supporting implementation of Oregon’s energy policies in way that protects natural and working lands, inland and coastal waters, economic development, housing development, public health, and many other essential public services.

Wherever named or included in the implementation of an action, it is important to ensure that resources are made available to enable agency action.

Cross-Cutting Action 11. Direct ODOE to develop a community benefits framework that can be used as appropriate across the agency to address outreach and engagement, workforce needs, prioritizing environmental justice communities, and equitable practices.

Equity and Justice Approaches: 1 (decision-making); 5 (partnerships and resources)

Federal uncertainty highlights the need for a formalized state community benefits framework that provides meaningful involvement with Environmental Justice communities as defined in HB 4077. Community Benefits Plans were required in many Inflation Reduction Act and Infrastructure Investment and Jobs Act grant funded programs. Changes in federal policy will likely result in community benefits plans no longer being required or funded by the federal government. A community benefits framework would provide a foundation to continue supporting and funding community benefits through the state. It would provide an opportunity for projects/programs to learn more about community needs and interests as well as direct benefits through metrics and then develop an implementation plan that carries those benefits throughout the life of the project.

Full List of Legislative and Policy Actions

Transportation

1. Establish a dedicated, sustainable, and long-term state revenue source to support the rapid deployment of zero emission vehicle charging and fueling infrastructure across the state.
2. Establish a Climate-Aligned Transportation Funding Task Force to review Oregon’s transportation funding mechanisms for alignment with the state’s energy and climate policy priorities and make recommendations.
3. Implement a Road Usage Charge program for all light-duty passenger vehicles to stabilize transportation funding and support accelerated adoption of zero emission vehicles.
4. Increase funding for the Zero-Emission Incentive Fund and create a stable, long-term revenue source for the Zero-Emission Medium and Heavy-Duty Vehicle Incentive Fund to accelerate the adoption of light-, medium- and heavy-duty ZEV statewide.
5. Increase statewide support for public and active transportation in Oregon by expanding the statewide payroll tax to fund transit and boosting investments in Safe Routes to School and Great Streets at levels that reflect the scale of community needs.
6. Establish a statewide incentive program for both standard and cargo e-bikes, with enhanced incentives and prioritization for income-qualifying Oregonians to ensure equitable access to clean, affordable transportation options.
7. Expand local governments’ authority to generate and direct transportation revenues toward climate-aligned transportation infrastructure that meets local needs and priorities.
8. Develop a strategic roadmap to guide the deployment of medium- and heavy-duty zero emission vehicles in Oregon, co-led by the Oregon Department of Transportation and Department of Environmental Quality, with support from the Oregon Department of Energy. The roadmap should include a technology readiness and feasibility assessment, as well as a statewide infrastructure needs assessment. Funding should be allocated to support its development.
9. Establish a statewide technical assistance program to support public and private fleets in planning and executing a successful transition to zero-emission vehicles (ZEVs).
10. Require IOUs to publish and maintain interactive, feeder-level Hosting Capacity Maps (HCMs) showing available capacity for EV charging infrastructure, building electrification, distributed generation, and battery storage.
11. Establish a multi-agency working group to develop regulations and minimum standards for public heavy-duty hydrogen refueling infrastructure in Oregon. This group should address key elements such as technical specifications, safety protocols, fuel quality standards, consumer protection measures, and streamlined permitting processes to ensure that stations are safe, reliable, and accessible. The working group should also establish targets for the carbon intensity of hydrogen supplied at fueling stations and recommend inclusive processes for community engagement in station siting decisions to align with Oregon’s climate and equity goals.
12. Amend DEQ’s Clean Fuels Program to extend Advance Crediting eligibility to high-mileage private fleet operators – such as delivery, ride-hailing, logistics, and service fleets – whose vehicles operate predominantly in Oregon.

Buildings

1. Advance strategic electrification in buildings in conjunction with other measures that support state decarbonization and resilience goals reliably, affordably, and equitably. Direct the Oregon Department of Energy to develop a building decarbonization roadmap with recommendations to

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- advance strategic electrification and other decarbonization measures, and as necessary, to provide data and analysis on building decarbonization to inform policies and programs.
2. Update energy efficiency and demand response program and delivery infrastructure to promote strategic electrification.
 3. Prioritize measures in energy efficiency incentive programs that relieve pressure on the power system. In the near term, maintain – and where possible accelerate – building weatherization, replacement of less efficient electric heating with efficient electric heat pumps, and expand demand flexibility.
 4. Prioritize existing programs offering essential energy efficiency and weatherization improvements, particularly those focused on low- and moderate- income households.
 5. Earmark flexible funding for deferred maintenance measures necessary to enable low- and moderate- income homes to install efficiency and weatherization technologies and measures.
 6. Allow higher administrative costs for energy programs that serve or benefit Environmental Justice Communities, to better manage cost shortfalls experienced by programs and projects that benefit the overall system.
 7. Modify the Oregon Residential Specialty Code to require progress on energy efficiency and decarbonization requirements for new buildings. In the near term improve envelope efficiency measures, especially if less efficient or fossil-fueled technologies (such as electric resistance or natural gas) are used for primary space or water heating systems. Reach code should reflect goals for economy wide decarbonization and may need to define what ‘net zero’ carbon in buildings would be.

Clean Electricity

1. Establish a state transmission entity with the authority to (1) identify and designate transmission corridors; (2) pursue partial siting and permitting approvals for future projects in those corridors; and (3) provide direct financial support through state bonds for projects that are determined to benefit the public interest.
2. Direct the Oregon Department of Energy to conduct a study on barriers preventing construction and interconnection of permitted projects and recommend actions to overcome barriers.
3. Report on developments in emerging technologies, including long-duration storage, enhanced geothermal, floating offshore wind, and small modular nuclear reactors, to identify the role they can play in meeting the state’s electricity needs and opportunities for pilot programs in the near-term.
4. Study government policy incentives for local electricity investments and identify opportunities for the state to better advance infrastructure needs, economic development and energy justice objectives.
5. Update and enhance the Oregon Renewable Energy Siting Assessment Tool, with a goal of providing a robust database of lands suitable for various types of electricity infrastructure projects.
6. Direct the OPUC to investigate opportunities to modify utility business models and ratemaking practices to enhance marketplace competition and thereby lower costs in utility planning and resource procurements.
7. Expand the Oregon Department of Energy’s statewide energy infrastructure resilience programs, including increasing funding for and amending the Community Renewable Energy Grant Program to support projects that improve energy resilience.

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Industry

1. Identify and evaluate short and long term decarbonization options for the emissions-intensive, trade-exposed large industrial entities in Oregon that are obligated to reduce their greenhouse gas emissions under the Climate Protection Program.
2. Fund an industrial modernization revolving loan fund to bolster adoption of energy efficiency improvements, electrification of thermal processes, industrial symbiosis, smart manufacturing, and application of low-carbon fuels where electrification is not feasible for large industrial entities.

Low-carbon Fuels

1. Direct the Oregon Department of Energy, Oregon Department of Land Conservation and Development and Business Oregon to create criteria to identify sites with the greatest opportunity for low-carbon-intensity fuel production development in Oregon by assessing existing brownfields and industrial sites across the state, and publishing recommendations on how to improve engagement with local communities.
2. Direct the Oregon Department of Energy to develop a low-carbon fuels roadmap that evaluates current policy support mechanisms for low-carbon fuels, identifies gaps and opportunities, and recommends additional support mechanisms that align with regional and national frameworks for low-carbon fuels in transportation and in commercial and industrial sectors.
3. Direct the Oregon Department of Energy to research and forecast fuel needs for emergency preparedness in collaboration with Tribes and public partners across the state, and ensure that these needs are met as technologies evolve throughout the energy transition.

Cross-cutting Actions

1. Direct the Environmental Quality Commission to adopt rules imposing registration and reporting requirements upon all new large electric loads to inform greenhouse gas emissions analyses, and to evaluate whether policy changes are needed to bring emissions in line with state policies.
2. Establish and identify a source of funding for a revolving loan fund to provide a stable source of low-cost and no-cost loans to support the energy transition and resilience.
3. Establish a Tribal Energy Block Grant Program to support Tribal energy priorities, cultural values, and community needs through alignment with their own energy planning processes or the Oregon Energy Strategy.
4. Develop a state-wide definition of energy burden that combines household and transportation costs to help inform Oregon's energy transition.
5. Conduct a biennial survey on energy affordability and report on trends to inform state policymaking.
6. Direct the Oregon Department of Energy to facilitate the sharing of data and joint planning to enhance energy resilience and reliability.
7. Identify gaps in current and estimated occupation-level employment to meet Oregon's future energy need and support and expand workforce development efforts. Direct ODOE to study gaps and recommend actions.
8. Advocate for federal policies that support achievement of state energy objectives.
9. Direct state agencies to increase coordination with community-based organizations, utilities, Energy Trust of Oregon, and other partners to advance consumer education and facilitate delivery of energy related services.

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10. Increase resources, funding, and staff levels at agencies as needed to implement actions necessary to advance Oregon's energy policy objectives.
11. Direct ODOE to develop a community benefits framework that can be used as appropriate across the agency to address outreach and engagement, workforce needs, prioritizing environmental justice communities, and equitable practices.

APPENDIX A: ENERGY STRATEGY TECHNICAL REPORTS AND PUBLIC INPUT SUMMARIES

Technical Approach Document

<https://www.oregon.gov/energy/Data-and-Reports/Documents/OES-CETI-EER-Technical-Approach-to-Modeling.pdf>

Modeling Assumptions and Sources

<https://www.oregon.gov/energy/Data-and-Reports/Documents/Oregon-Energy-Strategy-Modeling-Assumptions-Sources.pdf>

Energy Pathways Technical Report

<https://www.oregon.gov/energy/Data-and-Reports/Documents/2025-OES-Technical-Report.pdf>

Complementary Analyses Technical Report

<https://www.oregon.gov/energy/Data-and-Reports/Documents/2025-OES-Complementary-Analysis-Tech-Report.pdf>

Phase 1 Comment-Response Document

<https://www.oregon.gov/energy/Data-and-Reports/Documents/OES-Phase1-Comment-Response-Document.pdf>

Phase 2 Comment Summaries

Forthcoming with Final Report

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APPENDIX C: GLOSSARY

Term	Definition
Actions	Near-term legislative and policy recommendations intended to build on policy frameworks, overcome barriers, and lay a foundation for continued progress toward state energy policy objectives over time.
Advanced Clean Cars II	A regulation adopted by ODEQ in continuation of the first Advanced Clean Cars regulation, governing the sales of passenger cars, SUVs, and light duty trucks in Oregon. Advanced Clean Cars II applies to the 2026-2035 model year; will require auto manufacturers to deliver 100 percent new zero emission battery electric and plug-in hybrid electric vehicles by 2035; and ensures new gasoline and diesel vehicles sold through 2024 have the cleanest emissions possible.
Advanced Clean Trucks	A regulation adopted by ODEQ to reduce tailpipe and greenhouse gas emissions through advanced clean technology. The rule requires manufacturers of medium- and heavy-duty vehicles (Class 2b – 8) to sell zero-emission trucks as an increasing percentage of its overall sales from vehicle model year 2025 through 2035.
Advisory Group	A group of subject matter experts and interested parties convened by ODOE to provide a diverse range of perspectives for the development of a comprehensive and well-informed Oregon Energy Strategy. For more information, refer to the AG Charter .
Agrivoltaics	Agrivoltaics, sometimes called dual-use solar or agrisolar, refers to the practice of producing both food and electricity using solar panels on the same parcel of land.
Air quality modeling	For Oregon’s Energy Strategy, the air quality modeling interfaced with EPA’s COBRA model and the energy pathways modeling results to provide insights on the benefits of reduced pollutant emissions on public health outcomes associated with several scenarios.
Ammonia	A colorless gas compound with a characteristic pungent smell, made from hydrogen and nitrogen. Today, ammonia is mainly used to make fertilizer, cleaning products, and plastics, but is also seen as a promising carbon-free resource to power maritime or other heavy transport, generate electricity, and store and distribute hydrogen.
Strategic electrification	Strategic electrification – also referred to as beneficial electrification – is a guiding framework for advancing electrification while supporting affordability and reliability. For electrification to be considered “strategic” it must advance one of the following areas without adversely affecting the others: (1) benefits consumers over the long run; (2) enables better grid management; and (3) reduces negative environmental impacts. <i>From updated drafting, based on RAP definition.</i>
Biomass	Any organic matter that is available on a renewable or recurring basis, including agricultural crops and trees, wood and wood residues, plants, algae, grasses, animal manure, municipal residues, and other residue materials, especially when this matter is used for or space heating,

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	<p>cooking, electricity generation, and transportation. Biomass can be burned directly for heat or converted to liquid and gaseous fuels through various processes. Wood and wood waste is Oregon’s largest source of biomass. Oregon used biomass to produce renewable natural gas, a biogas that has been purified to be a substitute for fossil natural gas, often to meet specifications required for injection into a natural gas distribution pipeline. Oregon also produces plant-derived ethanol fuel and biodiesel from used cooking oil to be used as transportation fuels.</p>
<p>Bonneville Power Administration</p>	<p>A federal agency that markets the power produced by Federal Base System resources and resources acquired under the provisions of the Northwest Power Act of 1980. Bonneville sells power to public and private utilities, direct-service industrial customers and various public agencies. The Northwest Power Act charges Bonneville with other duties, including pursuing conservation, acquiring sufficient resources to meet its contract obligations, funding certain fish and wildlife recovery efforts, and implementing the Northwest Power and Conservation Council’s Power Plan and Fish and Wildlife Program.</p>
<p>Building Performance Standard (BPS)</p>	<p>Oregon’s policy addressing energy use and emissions from existing commercial buildings, which account for nearly 20 percent of energy use in Oregon, based on ASHRAE Standard 100-2024 and Oregon-specific amendments. Building performance standards differ from building codes (which apply to the construction or renovation of buildings) as they regulate buildings’ operational energy use. For more information on the BPS program, refer to https://www.oregon.gov/energy/save-energy/Pages/BPS.aspx.</p>
<p>Climate Protection Program</p>	<p>A program administered by Oregon Department of Environmental Quality that establishes a declining cap, or limit, on greenhouse gas emissions from fossil fuels used throughout Oregon, including diesel, gasoline, and natural gas. The program is designed to reduce these emissions 50 percent by 2035 and 90 percent by 2050. For more information on the CPP, refer to https://www.oregon.gov/deq/ghgp/Documents/cppOverviewFS.pdf.</p>
<p>Community energy resilience</p>	<p>The ability of a specific community to maintain the availability of energy needed to support the provision of energy-dependent critical public services to the community following nonroutine disruptions of severe impact or duration to the state’s broader energy systems.</p>
<p>Community Renewable Energy Grant Program</p>	<p>A grant program established by HB 2021 and administered by ODOE to offset the cost of planning and developing community renewable energy and energy resilience projects; make community renewable energy projects economically feasible for qualifying communities; promote small-scale renewable energy projects; and provide direct benefits to communities across this state in the form of increased community energy resilience, local jobs, economic development or direct energy cost savings to families and small businesses. For more information of the Community Renewable Energy Grant Program, refer to</p>

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	https://www.oregon.gov/energy/Incentives/Pages/CREP.aspx . <i>Adapted from HB 2021.</i>
Complementary analyses	Analytical efforts that followed on the energy pathways modeling to further inform the Energy Strategy. The complementary analyses included a Household Energy Wallet analysis, air quality modeling, geospatial mapping, and a study on employment effects.
Consumer-owned utility (COU)	A not-for-profit utility governed by a local, elected board. Oregon COUs have a long history of contracting with BPA for significant amounts of their power supply.
Day-ahead market	A regional transmission organization or independent system operator-administered market where the RTO or ISO schedules electricity production to meet forecasted demand one day in advance, based on factors, including weather, the day of the week, and planned power plant outages. Day-ahead markets function as auction markets for next-day electricity service. Entities that would like to buy or sell electricity for the next day can enter bids with the market operator. These bids indicate the price at which an entity is willing to buy or sell a quantity of electricity for a given time period, often a specific hour(s) of the next day. The market operator takes the bids it receives, and for each time period of the next day, creates supply and demand curves. The market operator creates the supply curve by ordering each of the sell bids from lowest to highest price and creates the demand curve by ordering each of the buy bids from highest to lowest price. Examples of forthcoming day-ahead markets include Southwest Power Pool's Markets+ and California Independent System Operator's (CAISO's) Energy Day Ahead Market.
Demand response	Changes in electricity usage by consumers in response to peak load periods to decrease demand on the grid and maintain electricity reliability.
Distributed energy resources	Small, modular, energy generation and storage technologies that provide electric capacity or energy near sites of use. Examples include rooftop solar panels and customer-sited battery storage. An electric vehicle may be a distributed energy resource if it has the ability to provide vehicle-to-grid power; otherwise, it is a flexible load.
Distribution infrastructure	The physical equipment used to distribute electric power at voltages below 38,000 volts, including but not limited to poles, primary lines, secondary lines, service drops, transformers, and meters.
Electric vehicle	A battery-powered vehicle that runs on electric motors.
Electricity load	The amount of electricity drawn from the electrical grid. Load may also refer to a specific use of electricity, such as a heating load.
Electric resistance heating	An electric resistance heater produces heat when an electric current passes through the resistance of a conductor. Electric resistance heating equipment can include baseboard heaters, electric furnaces, and electric wall heaters.
Energy	The capacity for doing work as measured by the capability of doing work (potential energy) or the conversion of this capability to motion (kinetic energy). Energy has several forms, some of which are easily convertible

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	<p>and can be changed to another form useful for work. Electrical energy is usually measured in kilowatthours, while heat energy is usually measured in British thermal units (Btu).</p> <p>In the electricity context, energy may refer to electricity available in a given moment, as distinct from capacity that represents the ability to produce electricity in a specific future moment. Energy capacity is further defined below.</p>
Energy burden	<p>Home energy burden is the percent of household income spent on home energy bills. Energy bills include electricity, natural gas, and other home heating fuels, and are compared to the total income of the people in that household. If a household is spending more than 6 percent of its income on home energy costs, it is considered burdened. The Energy Strategy recommends that a statewide definition of energy burden be developed to combine household and transportation costs and provide cross-agency consistency in the energy transition.</p>
Energy capacity	<p>The maximum power that a machine or system can produce or carry under specified conditions. The capacity of generating equipment is generally expressed in kilowatts or megawatts. In terms of transmission lines, capacity refers to the maximum load a line is capable of carrying under specified conditions.</p>
Energy efficiency	<p>Using less energy to perform the same task or produce the same result; in the Energy Strategy, electrification of end uses is discussed as distinct from energy efficiency for organizational purposes, but electrification is generally best understood as an energy efficiency measure.</p>
Energy justice	<p>The goal of achieving equity in both the social and economic participation in the energy system, while also remediating social, economic, and health burdens on those historically harmed by the energy system (“frontline communities”). Energy justice explicitly centers the concerns of marginalized communities and aims to make energy more accessible, affordable, clean, and democratically managed for all communities. The practitioner and academic approaches to energy justice emphasize these process-related and distributive justice concerns.</p>
Energy pathways modeling (the modeling)	<p>A planning tool that calculates energy needed to power an economy while meeting policy targets, such as a greenhouse gas emissions target, and the economy-wide least-cost way to meet those energy needs with efficiency, clean electricity, electrification, clean fuels, and carbon sequestration. Energy pathways modeling uses a “backcasting” approach that, based on current circumstances, optimizes ways to achieve given policy targets rather than forecasting a future based on current information and trends. For more context on household-level affordability analysis, refer to the Energy Wallet.</p>
Energy reliability	<p>The degree to which the performance of the elements of the electrical system results in power being delivered to consumers within accepted standards and in the amount desired. Reliability encompasses two concepts, adequacy and security. Adequacy implies that there are sufficient generation and transmission resources installed and available</p>

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	to meet projected electrical demand plus reserves for contingencies. Security implies that the system will remain intact operationally (i.e., will have sufficient available operating capacity) even after outages or other equipment failure. The degree of reliability may be measured by the frequency, duration, and magnitude of adverse effects on consumer service.
Energy resilience	The ability of energy systems, from production through delivery to end-users, to withstand and restore energy delivery rapidly following nonroutine disruptions of severe impact or duration.
Environmental justice	The equal protection from environmental and health risks, fair treatment and meaningful involvement in decision making of all people regardless of race, color, national origin, immigration status, income or other identities with respect to the development, implementation and enforcement of environmental laws, regulations and policies that affect the environment in which people live, work, learn and practice spirituality and culture.
Environmental justice community	Includes communities of color, communities experiencing lower incomes, communities experiencing health inequities, tribal communities, rural communities, remote communities, coastal communities, communities with limited infrastructure and other communities traditionally underrepresented in public processes and adversely harmed by environmental and health hazards, including seniors, youth and persons with disabilities.
Flexible load	An appliance or device with power consumption that can be varied to shift electricity demand and restore balance to the grid during peak events.
Focus-area Working Groups	The topic-focused groups convened by ODOE to provide specific input or feedback to inform the modeling and technical analysis.
Heat pumps	Unlike other heating devices that produce heat through the combustion of fossil fuels, such as furnaces, heat pumps exchange heat from one space to another. Air-source heat pumps run on electricity and use a refrigerant to absorb heat from outside air and release it into an indoor space. They can also provide cooling by running in the opposite direction. Air-source heat pumps are the most common type of heat pump in residential buildings in the United States.
Household Energy Wallet analysis	An analysis of energy pathways scenarios' effects on sample household energy burdens and affordability based on the cost of delivering energy to customers according to factors like household VMT, vehicle type, home size, and heating and cooling technology and needs..
Hydrogen	The most abundant element in the universe and the lightest of all gases. Hydrogen occurs naturally on Earth only in compound form with other elements in liquids, gases, or solids. Hydrogen combined with oxygen is water (H ₂ O), and hydrogen combined with carbon forms different compounds (hydrocarbons) found in natural gas, coal, and petroleum. Hydrogen can be produced—separated—from water, fossil fuels, or

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	biomass and used as a source of energy/fuel that has a high energy content per unit of weight.
Industrial symbiosis	Voluntary collaboration among businesses or organizations to share and exchange materials, energy, water and by-products in order to optimize resource use, reduce waste and enhance economic and environmental outcomes.
Interagency Steering Group	<u>A group of Oregon state agency and government representatives, from the Oregon Departments of Energy, Land Conservation and Development, Transportation, Environmental Quality, and State Lands; Oregon Public Utility Commission; Business Oregon; the Governor’s office; and other agencies provided agency perspectives and guidance to develop a statewide Energy Strategy.</u>
Integrated resource planning	Planning by utilities to meet the future energy and capacity needs of their customers through a “least-cost, least-risk” combination of energy generation and demand reduction. IRPs include estimates of future energy needs, analysis of the resources available to meet those needs, and the activities required to secure those resources. IRP drafting is a large, stakeholder-driven process that results in a comprehensive and strategic document that drives utility investments, programs, and activities.
Internal combustion engine vehicle	Vehicles that are powered by burning a liquid, such as gasoline, diesel, biofuels, or a gaseous fuel, such as compressed natural gas.
Investor-owned utility (IOU)	A for-profit corporation that provides a utility service like electricity or natural gas and which is overseen by Oregon’s Public Utility Commission.
Low-carbon fuels	Fuels that when combusted provide thermal energy with fewer greenhouse gas emissions than petroleum based or traditional fuels. These fuels are used to heat buildings, cook, generate electricity, and power industrial processes. Examples include gaseous fuels like hydrogen, ammonia, or renewable natural gas or liquid fuels like biodiesel, renewable diesel, or ethanol.
Managed charging	Adapting the charging cycle of electric vehicles or other battery-powered devices to both the conditions of the power system and the needs of users.
Meaningful involvement	An element of environmental justice in policymaking where (a) members of vulnerable populations have appropriate opportunities to participate in decisions about a proposed activity that will affect their environment or health; (b) public involvement can influence a decision maker’s decision; (c) the concerns of all participants involved are considered in the decision-making process; and (d) decision makers seek out and facilitate the involvement of members of vulnerable populations.
Microgrid	A group of interconnected loads and distributed energy resources within clearly defined electrical boundaries that functions as a single controllable system, irrespective of whether the microgrid is operating independently of or in conjunction with an electric grid.
Multimodal transportation	Multiple modes of transportation, including but not limited to pedestrians, bicyclists, transit, personal vehicles, freight, and

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	micromobility, such as scooters, skateboards, or services that enable sharing and rental of these devices.
Oregon’s Energy Security Plan	An ODOE report developed in collaboration with the Oregon Public Utility Commission, stakeholders, and Tribal Nations that provides an overview of the state’s energy infrastructure, quantifies the threats and hazards that could cause energy insecurity, and proposes mitigation measures that the state and its partners can implement to reduce risk.
Pathways	High-level means towards decarbonization and the energy transition; together, the pathways provide the direction Oregon needs to pursue to meet our energy policy objectives. The pathways are meant to inform and align policies and actions to meet our energy policy objectives of clean, reliable, and affordable energy. Pathways are meant to be long-lived and represent a stable framework for action over time. Energy Strategy policies are organized under and in furtherance of the pathways.
Peak loads	The maximum demand for electricity during a given time period (for example, a day, season, or year).
Phase 1	The period of Oregon Energy Strategy development focused on technical analyses and fact-finding to support and inform exploration of pathways to achieving the state’s energy policy objectives.
Phase 2	The period of Oregon Energy Strategy development focused on discussing policy gaps and opportunities to inform policy recommendations.
Policies	More detailed directives that advance the high-level pathways and provide a long-term framework for the development of more specific, near-term actions.
Policy Working Group	A topic-focused group convened by ODOE in Phase 2 to discuss policy gaps and opportunities to inform Oregon Energy Strategy policy recommendations.
Ratepayer-funding	Collections added to utility bills—often labeled as system benefits charges, public purpose charges, or similar—that go directly into energy programs and may be used to support low-income energy assistance, energy efficiency upgrades, renewable energy projects, utility bill discounts, weatherization efforts, or other initiatives.
Reference Scenario	The core set of assumptions and data that the energy pathways modeling uses to inform and constrain the model’s selection of a least-cost pathway to achieving Oregon energy policy objectives. This pathway has been selected to strike a balance of “aggressive but achievable” assumptions that, based on numerous sources, are likely to yield the lowest-cost pathway to meet our objectives. However, many risks and uncertainties remain, and there is no one “correct” solution for the full combination of technologies and measures needed to meet our goals. To more fully inform the evaluation of pathways and policies, the Reference Scenario is compared to several Alternative Scenarios.
Regional transmission organization	An RTO is an independent, nonprofit organization that operates and ensures reliability of the bulk power system and optimizes supply and demand for wholesale electricity. One of the primary functions of an RTO

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	is operation of the electric transmission grid across a large, multi-state geographic region.
Resource adequacy	The ability of the electricity system to meet demand for electricity under a broad range of conditions, subject to an acceptable standard of reliability, as well as plan to meet future demand with sufficient supply-side and demand side resources.
Targeted universalism	An approach to policymaking that establishes a common goal for all groups concerned and then tailors solutions and approaches to achieve those goals based on different groups’ structure, culture, and geographies. Targeted universalism recognizes that while policy goals may be shared universally, achieving those goals requires approaches tailored to the specific needs and circumstances of different communities. The approach incorporates the idea that conversations, policies, and programs must be informed by the needs of different communities, and that decisionmakers must engage with communities to understand and co-create solutions. With this approach, we can better understand burdens, benefits, and barriers for communities across the state to help ensure an equitable energy transition.
Transmission lines	Conductors, insulators, supporting structures, and associated equipment used by electrical power systems to transfer electric power at voltages at or above 38,000 volts from one point to another.
Transportation electrification plans	Investor-owned utilities are required to submit transportation electrification plans for PUC approval covering the electric company's portfolio of near term, long-term, future, and other transportation electrification actions. Transportation electrification plans should seek to address areas most affected by market barriers in the electric company's service territory and to provide benefits for traditionally underserved communities.
Variable energy resource	A electric generating resource that is non-dispatchable due to the fluctuating nature of its energy production. For example, wind and solar PV.
Virtual power plant	Grid-integrated aggregations of distributed energy resources such as batteries, electric vehicles, smart thermostats, water heater, and other connected devices.
Western Resource Adequacy Program	A Western regional reliability planning and compliance program to deliver a region-wide approach for assessing and addressing resource adequacy. The WRAP coordinates participating utilities to set a regional reliability metric and use a consistent approach for counting resources. WRAP also allows participants to pool and share resources during tight grid operating conditions. The WRAP is composed of voluntary participating utilities and is governed by a fully independent board of directors at the Western Power Pool. The Southwest Power Pool serves as the Program Operator for the WRAP.
Western Transmission Expansion Coalition (WestTEC)	An industry-led, West-wide effort to develop an actionable, West-wide transmission needs study looking out over 10- and 20-year periods to support the needs of the future energy grid.

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Zero-emission vehicle (ZEV)	Any vehicle with zero tailpipe emissions, including electric vehicles and fuel-cell vehicles.
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May 31, 2023

VIA ELECTRONIC FILING

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

RE: LC 82—PacifiCorp’s 2023 Clean Energy Plan

PacifiCorp d/b/a Pacific Power (PacifiCorp or Company) submits to the Public Utility Commission of Oregon (Commission) for filing its 2023 Clean Energy Plan (2023 CEP). Under the directives of Oregon Revised Statute 469A.415(3)(a)¹ and Commission Orders 22-206² and 23-011,³ PacifiCorp’s 2023 CEP was due on March 31, 2023. However, in Order 23-131,⁴ the Commission granted PacifiCorp an extension until May 31, 2023, to file its 2023 CEP.

The Company will provide a follow-up supplemental filing containing all public, confidential, and highly confidential workpapers on or around June 14, 2023. All formal correspondence and data requests regarding this filing should be addressed as follows:

By e-mail (preferred): datarequest@pacificorp.com
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By regular mail: Data Request Response Center
PacifiCorp
825 NE Multnomah Street, Suite 2000
Portland, Oregon 97232

¹ ORS 469A.415(3)(a).

² *In the Matter of Public Utility Commission of Oregon, Threshold Planning Framework Issues for the First Clean Energy Plans*, Docket No. UM 2225, Order No. 22-206.

³ *In the Matter of PacifiCorp, dba Pacific Power, Request for Waiver of Integrated Resource Plan Guideline 2(c)*, Docket No. 77, Order No. 23-011.

⁴ *In the Matter of PacifiCorp, dba Pacific Power, 2023 Integrated Resource Plan*, Docket No. 23-131, Order No. 23-131.

Docket No. LC 82
Public Utility Commission of Oregon
May 31, 2023
Page 2

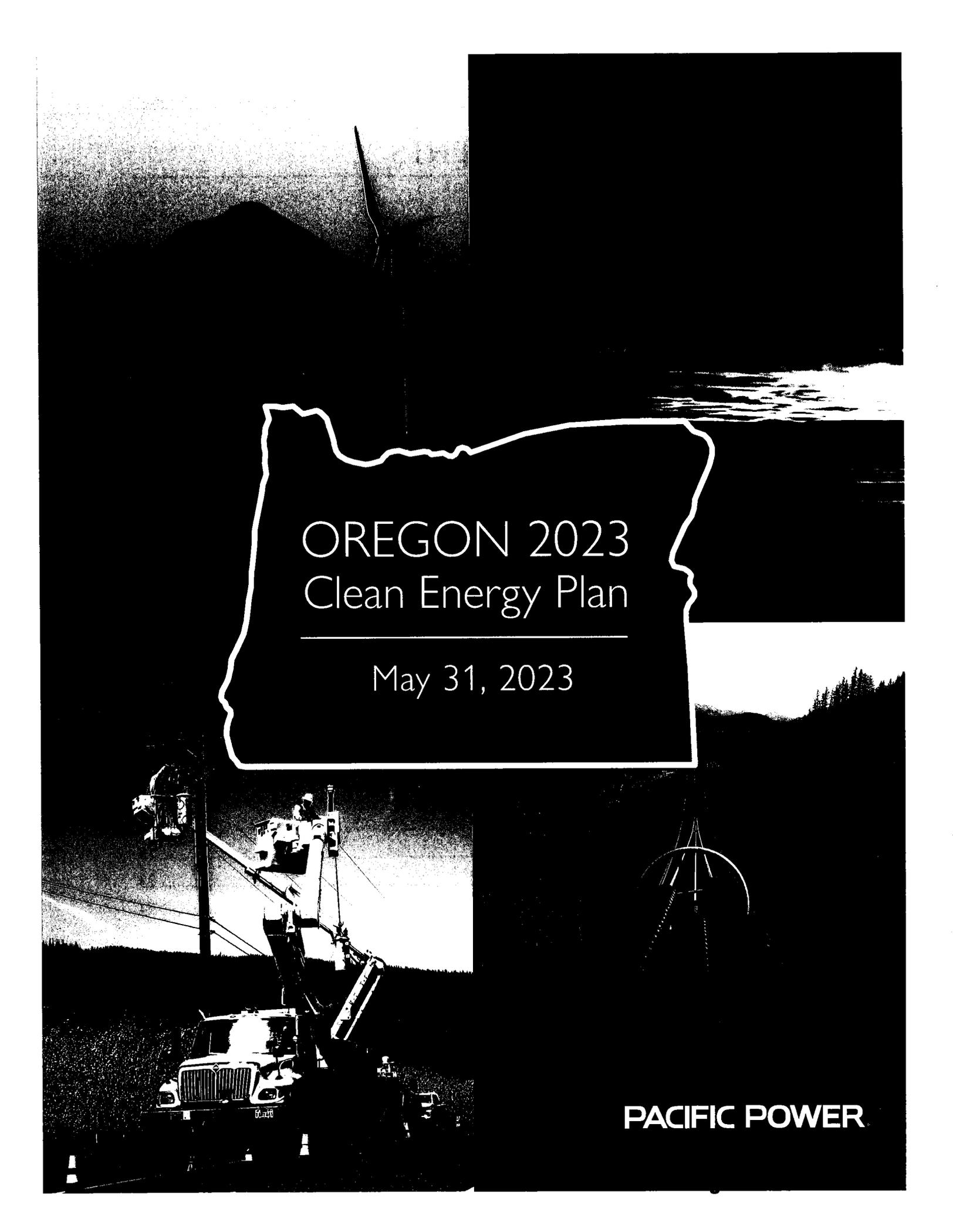
Informal inquiries may be directed to Cathie Allen, Regulatory Affairs Manager, at
(503) 813-5934.

Sincerely,

A handwritten signature in black ink, appearing to read "Matthew McVee", written over a horizontal line.

Matthew McVee
Vice President, Regulatory Policy and Operations

Enclosure

The cover features a collage of black and white images: a mountain range at the top left, a body of water at the top right, a forested hillside at the bottom right, and a utility truck with a bucket lift at the bottom left. A white outline of the state of Oregon is centered, containing the title and date.

OREGON 2023 Clean Energy Plan

May 31, 2023

PACIFIC POWER

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ACRONYMS USED IN THE CLEAN ENERGY PLAN

ACEEE	American Council for an Energy-Efficient Economy
AFN	Access and Functional Needs
AS RFP	All Source Request for Proposals
BIPOC	Black, Indigenous, and People of Color
BRIC	Community resilience score (part of NRI)
CAIDI	Customer Average Interruption Duration Index
CAISO	The California Independent System Operator
CBA	Cost-benefit Analysis
CBI	Community Benefit Indicators
CBIAG	Community Benefits and Input Advisory Group
CBO	Community-based Organization
CBRE	Community Based Renewable Energy
CEP	Clean Energy Plan
CIG	Community Input Group
CO _{2e}	Carbon Dioxide Equivalents
CO ₂	Carbon Dioxide
COD	Commercial Operation Date
Commission	Public Utility Commission of Oregon (also OPUC)
CREP	ODOE Community Renewable Energy Grant Program
DOE	U.S. Department of Energy
DSM	Demand-side Management
DSP	Distribution System Planning
EDAM	Extended Day-Ahead Market
eGRID	EPA's 2020 Emissions & Generation Resources Integrated Database
ENS	Energy Not Served
EPA	U.S. Environmental Protection Agency
ETO	Energy Trust of Oregon
EV	Electric Vehicle
FEMA	U.S. Federal Emergency Management Agency
FERC	U.S. Federal Energy Regulatory Commission
GMLC	U.S. Department of Energy's Grid Modernization Lab Consortium
GRIP	DOE Grid Resilience Innovation Partnership
GW	Gigawatts
HB	House Bill (Oregon)
IIJA	Infrastructure Investment and Jobs Act
IRP	Integrated Resource Plan
LEAD	U.S. Department of Energy's Low-Income Energy Affordability Data Tool
LT	Long-term model in PLEXOS
MMT	Million Metric Tons
MMT CO _{2e}	Million Metric Tons Carbon Dioxide Equivalents
MT	Medium-term model in PLEXOS
MT CO _{2e}	Metric Ton Carbon Dioxide Equivalents
MW	Megawatts
NREL	National Renewable Energy Lab
NRI	National Risk Index, prepared by FEMA

OATT	Open Access Transmission Tariff, approved by FERC
OCSP	Oregon Community Solar Program
ODEQ	Oregon Department of Environmental Quality
ODOE	Oregon Department of Energy
OPUC	Public Utility Commission of Oregon (also Commission)
PLEXOS	PacifiCorp's IRP modeling system
PVRR	Present Value Revenue Requirement
PVRR(d)	Present Value Revenue Requirement delta (a comparison of PVRRs)
PURPA	Public Utility Regulatory Policies Act
QF	Qualifying Facility Under the Public Utility Regulatory Policies Act
RBM	Regional Business Managers
REC	Renewable Energy Certificate
RFP	Request for Proposals
RPS	Renewable Portfolio Standard
RSE	Risk-spend Efficiency
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
SB	Senate Bill (Oregon)
SOVI	Social vulnerability score (part of NRI)
SSR	Small-scale Renewable
ST	Short-term model in PLEXOS
TE	Transportation Electrification
WRAP	Western Resource Adequacy Program
WREGIS	Western Renewable Energy Generation Information System

I. INTRODUCTION

PacifiCorp, doing business as Pacific Power in Oregon, presents its inaugural 2023 Clean Energy Plan (CEP) for review by the Public Utility Commission of Oregon (Commission or OPUC), our stakeholders, and the communities we serve.

In 2021, Oregon adopted an energy policy seeking to reduce emissions from electric generation facilities used to serve customers in the state. House Bill (HB) 2021 requires retail electricity providers to reduce greenhouse gas emissions associated with electricity sold to Oregon consumers by 100 percent by 2040, with interim emissions reduction milestones of 90 percent by 2035 and 80 percent by 2030.¹ For PacifiCorp, this requires the company to reduce baseline emissions of 8.99 million metric tons (MMT) of carbon dioxide equivalents (CO_{2e}) to 1.79 MMT CO_{2e} by 2030, 0.89 MMT CO_{2e} by 2035, and zero by 2040.

PacifiCorp submits a CEP that is based on, or included in, its integrated resource plan (IRP) every two years.² Over the past year the Commission and stakeholders have proactively and collaboratively considered important issues regarding utility clean energy planning specifically, and the implementation of HB 2021 generally.³ These discussions will continue into the future.

PacifiCorp's CEP builds from these discussions, and presents the company's initial vision for how it will achieve Oregon's emissions reduction targets, while at the same time maintaining an affordable, reliable, and resilient electric system. This vision is based on a clear-eyed assessment of the company's current emissions profile, and what incremental steps are required for 2030, 2035, and 2040. PacifiCorp will refine its CEP every two years to incorporate new information and experience.

Beginning with an examination of PacifiCorp's electrical system that serves Oregon customers, PacifiCorp is well positioned to begin the journey to comply with HB 2021. Over the past several years, PacifiCorp has been cost-effectively transitioning to a net-zero energy system. This has resulted in the company procuring, or seeking proposals for, over five gigawatts (GW) of renewable and non-emitting supply and demand-side resources, including:

- 2.5 GW of renewable and non-emitting resources from the 2020 All-Source RFP (2020 AS RFP); and
- Requests for approximately 2 GW of renewable, non-emitting, or storage resources from the 2022 All-Source RFP (2022 AS RFP).

PacifiCorp's successful, proactive procurement efforts are the direct result of market dynamics that have made wind and solar the most cost-effective resources for our customers, and planning activities initiated more than a decade ago that identified the need for new high-voltage transmission infrastructure. This foresight allowed us to respond quickly to changes in the market so that we could expand our transmission system to accommodate these low-cost, low-

¹ ORS § 469A.410.

² ORS § 469A.415.

³ *In re Commission Investigation of HB 2021*, Docket No. UM 2225.

risk, renewable resources. All the while, PacifiCorp has continued to grow its investments in cost-effective energy efficiency programs, and is actively pursuing demand-response technologies.

Because of these proactive efforts, in 2020 PacifiCorp's Oregon customers were served by over 20 percent renewable or non-emitting electricity.⁴ This creates a strong foundation for PacifiCorp's HB 2021 compliance glide paths, and the company's CEP details these strategies.

PacifiCorp's CEP is organized to address the issues of local importance to our customers first. PacifiCorp discusses its community engagement strategy, community benefit indicators and metrics, local resiliency, and community-benefit renewable energy at the beginning of this CEP. These components outline interim actions and the company's plan for further engagement on proposals. The CEP then discusses PacifiCorp's system resource planning, which is the foundation for PacifiCorp's Oregon clean energy transition. This is followed by an analysis of the emissions impact of the system plan and how the system resource plan aligns with Oregon energy policy. Finally, the CEP outlines PacifiCorp's action items for implementation.

The CEP begins with a discussion on community engagement in **Chapter II**. Beyond the more typical utility investment decisions, HB 2021 re-envisioned the utility planning processes. The law requires utilities to broaden stakeholder engagement processes so that more communities have a seat at the table. This includes both expanding access and opportunity for historically vulnerable populations, and strengthening relationships with existing partners. This will allow information to flow in both directions, where stakeholder feedback can inform PacifiCorp's strategic priorities, and provide opportunities to educate customers, stakeholders, and the company. This Chapter describes the company's engagement channels, including the new Oregon Community Benefits and Input Advisory Group, newly created information hubs and activities, and details the company's vision and proposed processes for future engagement.

Chapter III builds from these engagement channels and discusses the company's interim Community Benefit Indicators (CBI). These six CBIs and 14 proposed metrics will allow the company to demonstrate, and stakeholders to track, the impact of PacifiCorp's proposed programs, actions, and investments. These CBIs fall into five categories (resiliency, health and community wellbeing, environmental impacts, energy equity, and economic impacts), and each CBI and metric can be compared against PacifiCorp-developed baseline metrics that will allow parties to monitor the company's progress within each service region. These are interim CBIs that will develop over time after on-going discussions with stakeholders.

In **Chapter IV**, PacifiCorp discusses its plan to establish a framework that analyzes metrics, threats, and the effectiveness of PacifiCorp's resiliency actions. This includes an interim resiliency definition and two interim resiliency metrics (Improve Resilience of Vulnerable Communities During Energy Outages and Reduce Frequency and Duration of Energy Outages). Because of the breadth and depth of possible resiliency opportunities, lack of consensus on broadly accepted resiliency analyses, and the fundamental need to tailor resiliency actions for our communities, this Chapter concludes with the company's next steps to engage with its

⁴ Available here: <https://www.oregon.gov/energy/energy-oregon/Pages/Electricity-Mix-in-Oregon.aspx>.

stakeholders to build out its resiliency analyses framework.

Chapter V discusses Community Based Renewable Energy (CBRE) challenges and opportunities. The potential scope of what might qualify as a CBRE is broad, from community-owned commercial resources to community resiliency projects, to specific projects that reduce energy burden on vulnerable communities. To examine these issues, the company developed an Initial CBRE Potential Study and Initial CBRE Action Plan. This Initial CBRE Potential Study identified approximately 95 megawatts of future potential CBRE capacity between 2024 and 2030.

The company's 2023 IRP establishes the basis for examining emissions reductions pathways and is discussed in **Chapter VI**. The 2023 IRP is based on a system-wide portfolio (optimized for the company's entire six-state region), and continues the company's decarbonization trajectory, but it also recognizes the need for new technologies and markets to meet our goals. This system-wide portfolio of resources ensures that, in meeting HB 2021 requirements, Oregon customers will continue to benefit from PacifiCorp's multistate system planning and operations. This broad footprint mitigates risk by allowing us to deliver reliable energy from a broad range of low-cost resources across a diverse geographic area, and wholesale electricity markets.

Looking to the future, evolving federal and state policies, advances in storage technologies, new dispatchable non-emitting resources (like advanced nuclear reactors and pumped hydroelectric storage), enhanced carbon capture technologies, and improved market cooperation across the West (through the Western Power Pool's Western Resource Adequacy Program (WRAP) and the California Independent System Operator's (CAISO) Extended Day-Ahead Market (EDAM) programs), will continue to shape how PacifiCorp serves its customers across the West. To these ends, the 2023 IRP projects the need for over 30 GWs of new resources—including a requirement of over 800 MW of incremental small-scale renewables that peaks in 2037—and over a thousand miles of new high-voltage transmission lines.⁵ The company will issue subsequent all-source RFPs and consider additional procurement strategies to meet these demands.

From the broad foundation created by the 2023 IRP, the company has built an Oregon-Allocated CEP portfolio that layers in HB 2021's small-scale renewable requirements. Several sensitivity studies that examine alternative resource portfolios, the company's economic analysis confirms that the Oregon CEP portfolio presents the least-risk, least-cost portfolio of resources to meet Oregon's emissions reductions targets.

Based on these procurement strategies, **Chapter VII** details the company's two emissions reductions compliance pathways and renewable energy credit accounting practices. Both pathways analyze how PacifiCorp can comply with HB 2021 under current planning processes without having to take specific—and potentially costly—actions that could threaten reliability or affordability for our Oregon customers. **Pathway 1** achieves compliance by managing the dispatch of the company's natural gas fueled resources. This Pathway has the benefit of avoiding the need to replace natural gas fueled resources prior to 2030 with renewable resources built

⁵ PacifiCorp's 2023 IRP, Ch. 1 – Executive Summary, at 2 (available at https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/integrated-resource-plan/2023-irp/2023_IRP_Volume_1.pdf).

specifically for compliance, and hedges against the unknown risks that could result from novel renewable or non-emitting generation and storage technologies. **Pathway 2** relies on the company's ongoing multistate cost-allocation negotiation processes, where participants are discussing options that assign the costs and benefits of new non-emitting resources to states based on load and accelerated emissions requirements relative to PacifiCorp's current system-wide decarbonization trajectory. This pathway would allow states like Oregon and Washington to receive a larger share of new non-emitting resources to meet their respective energy policies, while at the same time ensures that states do not lean on other state generation and transmission assets to maintain reliability and resiliency.

Both Pathways present viable—and not mutually exclusive—compliance options to reduce the company's baseline emissions of 8.99 MMT CO_{2e} to 1.79 MMT CO_{2e} by 2030, 0.89 MMT CO_{2e} by 2035, and ultimately to zero by 2040.

Implementing HB 2021 will have challenges. There are several important topics that will require deliberate and reasoned action, including how to: prioritize and direct investments in new technology; procure adequate and cost-effective small-scale renewable resources; ensure efficient permitting and cost-recovery; determine the overall cost-effectiveness of CBREs; factor in forecasted load-growth; rely on reasonable cost allocation methodology assumptions; and ensure customer affordability and system reliability. The company highlights a few of these for the Commission's and stakeholder consideration.

Based on today's technology, operating a reliable system affordably in 2040 with zero emissions would be challenging. Absent new technologies or access to an emissions-free market, utilities may not be able to meet the requirements of HB 2021 in 2040 without overbuilding resources to ensure zero emissions at all hours of every day. PacifiCorp, however, continues to be actively engaged in identifying thoughtful, cost-effective solutions, and has been exploring new technology and energy market developments to meet that goal. For example, PacifiCorp began exploring new non-emitting nuclear-fueled generation technologies in its 2021 IRP and continues that trend in its 2023 IRP. PacifiCorp has also recently announced its intention to join WRAP and EDAM, that will provide access to more resources that should significantly lower costs for customers and increase overall system reliability.

The company also forecasts substantial load growth. Load in Oregon is projected to increase by 60 percent by 2030, and nearly 80 percent by 2040, compared to loads when baseline emissions were established. This presents two issues. First, while emissions per megawatt-hour are expected to decrease over time, the need for more generation to serve load growth could result in higher emissions on an absolute basis for some period until sufficient non-emitting resources can be procured. Second, with load growth comes the need for more generating capacity, which in turn increases the amount of resources required to comply with Oregon's small-scale renewables requirement. Gradual load growth can be accommodated through PacifiCorp procurement efforts addressing both utility and small-scale resources. Large, unforecasted load growth can create immediate procurement needs.

Additionally, as indicated in the company's 2023 IRP, market conditions confirm that it is economic for the company to increase its conversion of coal-fired units to operate on natural gas.

Oregon Senate Bill 1547 prohibits the use of coal-fired generation to serve customers after December 31, 2029. Gas conversions would provide valuable capacity to meet reliability requirements, while reducing PacifiCorp's use of coal as a fuel source. These conversions while forecasted to lower emissions compared to using coal as the fuel, would maintain the portfolio of thermal resources available to serve Oregon customers. As coal-fired resources, these units were otherwise expected to be removed from service to Oregon customers prior to 2030. The result is a potential hedge to support reliability and low costs, but only if the emissions can be managed to meet Oregon energy policy.

PacifiCorp, however, has been and continues to be actively engaged in finding thoughtful, cost-effective solutions. PacifiCorp's pursuit of viable new non-emitting generation technologies and energy market development will help address these issues. PacifiCorp's recently approved voluntary renewable energy tariff, Schedule 273 – Accelerated Commitment Tariff, provides an opportunity for large customers to pay for the addition of incremental renewable generation, including small-scale renewable resource, to offset their loads. Most importantly, PacifiCorp's 2023 IRP continues to show progress to decarbonizing the company's entire system resource portfolio. PacifiCorp is aware of the challenges, but believes that through thoughtful planning and the increased exchange of information with its communities, we are and will continue to be on a path to reduce emissions in line with Oregon energy policy. The company welcomes and looks forward to continuing these exciting and evolving discussions regarding Oregon's decarbonized energy future.

III. COMMUNITY ENGAGEMENT

Key Findings

PacifiCorp offers various opportunities for community engagement to foster a greater understanding of our communities and how we serve them and allow for input into PacifiCorp's planning processes. These engagement opportunities include:

- Community Benefits and Impacts Advisory Group (CBIAG)
- Integrated Resource Plan (IRP) Public Input Meetings
- Distribution System Planning (DSP) Local Stakeholder Workshops
- Clean Energy Plan (CEP) Engagement Series
- Transportation Electrification (TE) Workshops
- Tribal Nations Engagement Series

PacifiCorp has also developed consolidated information hubs where interested parties can access details on engagement opportunities, stakeholder comments and company responses, key issues, definitions, and other related materials. These dedicated webpages for PacifiCorp's CEP and Tribal Nations Engagement will host embedded links to resources and other information broken out by specific topics related to the CEP including DSP, the IRP process, and transportation electrification, and Tribal Nations Engagement.

Developing Community Engagement Strategy

Following Commission guidance, PacifiCorp filed a draft CEP Engagement Strategy to provide insight into the company's preliminary vision on engaging stakeholders in the Oregon clean energy planning process on April 21, 2022. In that filing, the company described its intent to use its IRP public input meetings and its DSP Community Input Group (CIG) process to provide meaningful engagement opportunities for the development and implementation of its CEP.

Throughout spring and early summer of 2022, PacifiCorp received comments on the filing and solicited input and feedback on its draft CEP Engagement Strategy through various existing outreach channels including PacifiCorp's May and June DSP workshops, the June IRP public input meeting, and various Commission docket UM 2225 workshops sponsored by the Commission.

PacifiCorp filed an updated CEP Engagement Strategy with the Commission on August 4, 2022. Consistent with HB 2021. This engagement strategy outlined: a vision for stakeholder engagement; lessons from prior engagement strategies; the role of advisory groups; a plan to establish the company's CBIAG; and other public engagement methods. The CEP Engagement Strategy provided detail on how PacifiCorp will address stakeholder input, with the acknowledgement that planning, and community engagement processes are iterative and will continue to be refined over time with ongoing engagement activities.

Vision for Community Engagement

The company is committed to advancing stakeholder engagement, leveraging previous learnings, and deepening our community lens using data to understand unique community characteristics that impact planning and implementation of clean energy efforts and initiatives. PacifiCorp's stakeholder engagement spaces will continue to adapt to foster inclusion, accessibility, and collaboration for their diverse participating audiences.

Equity in planning and program implementation includes addressing barriers to participation and promoting equity and inclusion through partnerships and actions. Through these efforts, stakeholders may connect to new tools, approaches, and resources. As a result, people and organizations can share best practices, support one another in reaching a shared understanding of critical concepts, and help inform solutions.

Leveraging Previous Learnings

PacifiCorp applied lessons-learned from ongoing engagement activities to expand opportunities for CEP engagement. The DSP Community Engagement and steps to establish the Washington Equity Advisory Group are timely examples that helped support expansion of community engagement opportunities in Oregon.

DSP Community Engagement Activities

As a foundational piece of PacifiCorp's DSP community engagement, the company surveyed over 4,600 Oregon customers to:

- Better understand and prioritize the benefits associated with cleaner energy and concerns about energy transition;
- Identify challenges facing communities and individuals; measure awareness of company communications; and
- Measure satisfaction with the company's level of outreach and engagement; among other topics.

Survey participants included residential and business customers, frontline customers, and stakeholders. The study was conducted using online and phone surveys in English and in Spanish. The survey was conducted between February 1 and February 28, 2022, with 130 completed phone surveys, 4,497 completed web surveys and 24 interviews conducted with stakeholder organizations.

Although the survey was designed to help inform PacifiCorp's DSP efforts, key findings will also guide the company's evolving community engagement strategies on several topics,

including CEP engagement. A summary of the survey results was provided to stakeholders in the May 5, 2022, DSP meeting.⁶

According to the survey results, the top challenges facing communities within the company's service area are affordable housing and the high cost of living. Residential customers' primary challenges are the high cost of living, climate change, and healthcare, although noticeable differences were identified in the challenges facing communities across the state. The most important benefits participants noted related to a cleaner energy future are reducing the impact of climate change, preparing for natural disasters, decreasing reliance on fossil fuels, spending less on energy bills, and reducing the environmental impact of the electric system. Those customers located in Portland are more likely to consider the impacts of climate change and environmental issues as highly important.

Costs and potential bill increases are the primary concerns with the transition to cleaner energy. The dependability of renewable sources and the potential impact of materials required for clean energy technology also concern more than half of the surveyed participants.

Washington's Equity Advisory Group

In May 2019, Governor Jay Inslee signed Washington's Clean Energy Transformation Act into law. The legislation combined directives for utilities to pursue a clean energy future with assurances that benefits from a transformation to clean power are equitably distributed among all Washingtonians at a reasonable cost. Similar to the requirement of HB 2021 to establish a CBIAG, a key component of Washington's Clean Energy Transformation Act required PacifiCorp to establish an equity advisory group to advise on energy equity issues in the planning and implementation process by providing a seat at the table for affected communities. Successes and challenges in developing the equity advisory group were beneficial in setting up the CBIAG.

The Role of Advisory Groups

PacifiCorp has historically considered input throughout the planning process from the company's existing IRP public input meeting process. PacifiCorp added a public input process for DSP consistent with the Commission's direction in docket UM 2005. These processes continue to inform how the company approaches long- and intermediate-term planning. PacifiCorp's system IRP, and its associated public input meeting process, addresses the broad system approach. PacifiCorp's DSP provides input on PacifiCorp's Oregon distribution system planning. More recently, PacifiCorp added the CBIAG which focuses on equity and inclusion matters although overlap will certainly exist between the advisory groups. Also, in 2022 and extending into 2023, the company held engagement sessions for developing its transportation electrification plan and is continuing to hold CEP specific workshops. These various efforts and groups are summarized in Figure 1 and discussed in more detail below.

⁶ Available at: https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/dsp/2022-05_Pacific_Power_DSP_Stakeholder_8_Survey_Results.pdf

Figure 1 – Oregon Stakeholder Engagement Venues



These various inputs were used to various degrees in developing the CEP.

Integrated Resource Planning Public Input Meetings

The purpose of the PacifiCorp Integrated Resource Plan Public Input Meeting process is to solicit feedback from the public on emerging modeling, portfolio, and market-related trends to inform the development of PacifiCorp’s biennial system IRP. This exercise also provides the opportunity for substantive discussions via stakeholder feedback form submissions, which are available to the public as a reference point for myriad topics.

The IRP is developed through a comprehensive analysis and public input process resulting in the selection of a least-cost, least- risk preferred portfolio and serves as the foundation for PacifiCorp’s CEP. Development of the IRP incorporates robust opportunities for stakeholder feedback through a series of public-input meetings.

While the CEP development process did and will continue to feature distinct, Oregon-specific engagement through other engagement efforts, the IRP public-input meeting process is a forum that discusses both system and state-specific policy updates that included information about the CEP and helped to inform where interested stakeholders can go for additional information. The IRP public-input process and preferred portfolio outcome informs the CEP and ultimately, PacifiCorp’s progress toward achieving the clean energy targets identified in HB 2021.

Distribution System Planning Local Stakeholder Workshops

The company hosts DSP-specific workshops to provide opportunities for stakeholders to be engaged, solicit feedback, and gain additional understanding of the company’s DSP process to increase transparency on how the company plans, invests, and implements solutions on its distribution system.

In addition to larger workshops, the DSP group initiated smaller, location-specific engagements. This community-specific engagement included meetings in Klamath Falls, Prineville, and Eagle Point Oregon in 2022 and 2023.⁷ PacifiCorp will continue to utilize its Regional Business Managers, local planning engineers and the DSP team to facilitate meetings with individuals or organizations at various points in the DSP process. The company anticipates that the outreach and engagement with the local community related to DSP may vary depending on the type of project, community preferences, and current activities and needs in the DSP process.

As PacifiCorp continues to evolve its DSP process it will use these workshops to solicit feedback from stakeholders to improve the DSP process and enhance discovery of community needs, opportunities, and priorities.

Clean Energy Plan Engagement Series

Navigating through the first CEP, the company identified the importance of initiating a complementary Clean Energy Plan Engagement Series along with the other engagements. As each of the other engagements have its own specific vision, the CEP engagement series was developed to focus on the CEP specifically and its intersectionality through the utility. This meeting series is to provide access to a broader audience to provide their feedback. This engagement's audience includes Staff, joint advocates, members of the CBIAG, and the public. Currently, the meeting series is planned through the year 2023 to socialize PacifiCorp's CEP and explore additional community input on the plan elements. Recordings and notes from the meetings are shared on PacifiCorp's Oregon Clean Energy Plan webpage.⁸

Transportation Electrification (TE) Workshops

To obtain input and feedback about the company's proposed TE investments and program offerings in the Oregon Transportation Electrification Plan, PacifiCorp held three virtual forums with industry stakeholders and six local workshop sessions in 2022. To learn more visit PacifiCorp's Oregon transportation electrification planning page.⁹ The goal of the engagement sessions with local community members was to gain an understanding of the barriers to TE that exist from a localized perspective and what potential program offerings or program improvements could help reduce or eliminate those barriers. While not specific to the CEP information and feedback, specifically on equity mapping provided helpful insight into related work for the CEP.

Establishing the CBIAG

PacifiCorp's CBIAG was established in October 2022 and brings together a diverse group of members representing environmental justice communities, community-based organizations, and community representatives, offering support services and diverse perspectives of community

⁷ PacifiCorp has additional meetings scheduled for Prineville and Eagle Point this year.

⁸ Available at: <https://pacificcorp.com/energy/oregon-clean-energy-plan.html>

⁹ Available at: <https://www.pacificpower.net/savings-energy-choices/electric-vehicles/or-transportation-electrification-planning.html>.

members residing within the service districts of which PacifiCorp serves. PacifiCorp's current CBIAG members include representatives from the following groups:

ACCESS	Mid-Willamette Valley Community Action
AllCare Health	Multnomah County
Community Action Program of East Central Oregon (CAPECO)	Rural Development Initiative
Community Energy Project	United Community Action Network
Ecumenical Ministries of Oregon	Coalición Fortaleza
Josephine County Food Bank	Clatsop Community Action
Klamath & Lake Community Action Services	NeighborImpact
	Oregon Coast Community Action

The CBIAG focuses on equity and a clean energy future in the state of Oregon in accordance with Oregon House Bill 2021. Through the CBIAG, we plan to continue seeking direct stakeholder feedback to build an inclusive and accessible process for consultation and collaboration. This includes:

- Increasing participation from communities that have not traditionally participated in utility planning processes;
- Providing us with a better understanding of community needs and perspectives;
- Identifying barriers to participation and input on how to address these barriers;
- Acting as a conduit to exchange information and ideas between us and stakeholder communities; and
- Assisting with community outreach.

PacifiCorp works in collaboration with the CBIAG to identify barriers to participation and how to address these barriers. Examples of external tools which have been developed and shaped with input and serve to support the CBIAG include development of an online information hub to support access to meeting content, program content and filing updates in both Spanish and English, customer facing program and informational materials, and Clean Energy Benefit Survey to help inform the CBIAG and Biennial Report.

In addition to working with the CBIAG, PacifiCorp has collaborated with Portland General Electric, Commission Staff, and Joint Advocates to test approaches, discuss findings, and surface shared understanding on various HB 2021 and Commission docket UM 2225 concepts. PacifiCorp values the degree of collaboration and ever-growing relationships to support, develop and foster more inclusive, effective, and equitable community benefits. Increased stakeholder impact includes creating a framework for sharing learnings and creating synergies, which:

- Identify and promote best practices and shared learnings so that unique community needs and perspectives are recognized;
- Share findings, insights, and achievements in the stakeholder engagement space to advance energy equity more efficiently and effectively;
- Align CBIAG practices to value, support, and recognize members' time, contribution, and impact in a manner that is consistent with current practices; and

- Offer transparent posting and sharing of meeting content and approach development.

At the recommendation of the Public Utility Commission of Oregon (OPUC or Commission) Staff, PacifiCorp has coordinated with Portland General Electric on the co-development of a CBIAG Charter template. The Charter will incorporate elements and agreements developed in collaboration with PacifiCorp's CBIAG. The Charter will remain a living document, be included in the Biennial Report, and be revisited for updates as needed.

Other Engagement Strategies

Consolidated Information Hub

PacifiCorp has developed a consolidated information hub for the CEP where interested parties can access details on engagement opportunities, stakeholder comments and company responses, key issues, definitions, and other related materials. This dedicated webpage will host embedded links to resources and other information broken out by specific topics related to the CEP including DSP, the IRP process, and transportation electrification.¹⁰

2023 Clean Energy Benefits Survey

The company is developing a revised survey to better understand customers' priorities related to clean energy, and how clean energy issues may impact customers. The information gathered from this survey will help inform and better track PacifiCorp's clean energy electricity programs and initiatives.

Tribal Nations Engagement

PacifiCorp's newly developed Clean Energy Series for Oregon Tribal Nations series supports and fosters collaboration, consultation, and shared understanding of Federal, State, and local programs, policies, and grants. The engagement series was formatted by informed feedback from outreach to Oregon Tribal members with whom PacifiCorp had an existing relationship and through new Tribal Nations relationship building. PacifiCorp plans to continue to directly engage Tribal communities located within/connected to the company's service area in conversations about the most effective means of obtaining their input when planning for a clean energy future.

The Oregon Tribal Nations Clean Energy-specific engagement series was started in March of 2023 after six months of direct outreach. The meetings occur virtually every other month to support accessibility. The sessions offer a menu of introductions to key topics for consideration and consultation. In addition, more in-depth supplemental sessions on Transportation Electrification Plans, Community Based Renewable Energy projects, and Grants have been

¹⁰ Available here: <https://www.pacificorp.com/energy/oregon-clean-energy-plan.html>

offered when interest is expressed.

PacifiCorp has also presented to the State Economic Development Cluster group comprising leadership representatives of Oregon's Nine Federally Recognized Tribes. PacifiCorp has offered invitations to the Clean Energy Plan Tribal Engagement Series as well as Transportation Electrification Plan updates, and overviews in the space. PacifiCorp continues to seek ways to amplify the invitation and expand outreach in a way that clearly conveys the opportunity for input, learning and collaboration.

PacifiCorp has developed a Tribal Nations Hub on its website.¹¹ The hub will continue to evolve as additional input from Tribal Nations representatives is identified. The hub for Tribal Nation engagement will be further developed to include:

- Engagement Series Links;
- Grant & Program links;
- Engagement + Presentation content;
- Feedback tracking tools;
- Calendar of key dates; and
- Key program and support teams mapping.

Proposed engagement approach and timelines are being shared via our Regional Business Managers and with Tribal Nations Economic Development Cluster delegation, and PacifiCorp external engagement spaces on our external website, with the intention of getting additional feedback to understanding and addressing barriers to participation and improve accessibility.

¹¹ Available at: <https://www.pacificorp.com/energy/tribal-relations.html>.

III. COMMUNITY BENEFIT INDICATORS

Key Findings

Community Benefit Indicators (CBI) are designed to demonstrate the impact of PacifiCorp's proposed programs, actions, and investments.

PacifiCorp defines CBIs as the desired outcome that utility actions could either incentivize, influence, or cause. Each CBI identifies a desired outcome, while metrics allow for PacifiCorp to monitor progress at achieving these outcomes.

To assess the progress of CBIs, PacifiCorp developed baseline metrics to understand the current state within its service regions.

PacifiCorp has identified six CBIs and 14 proposed metrics for the Company's Clean Energy Plan. PacifiCorp's CBIs fall into five categories:

- Resilience (System and Community)
- Health and Community Well-being
- Environmental Impacts
- Energy Equity (distributional and intergenerational equity), and
- Economic Impacts

PacifiCorp considers its CBIs and metrics as interim, meaning they will adapt over time. The continued development and refinement of PacifiCorp's CBIs will leverage continued stakeholder engagement and input. Stakeholder input will be critical to formalizing the CBIs and metrics.

Per guidance from Public Utility Commission of Oregon (OPUC or Commission) Order 22-390, for the first CEP, the utility should develop interim CBIs in coordination with the communities served by the utility and with input from stakeholders and OPUC staff. At a minimum, the utilities should use quantifiable and measurable interim CBIs in development of the first Clean Energy Plan (CEP) that address the following topic areas:

- Resilience (System and Community)
- Health and Community Well-being
- Environmental Impacts
- Energy Equity (distributional and intergenerational equity), and
- Economic Impacts

At a minimum, the Interim CBIs should include at least one metric for each of the following categories:

- Informational CBIs that may or may not directly inform Integrated Resource Plan (IRP) portfolio scoring;
- Community Based Renewable Energy (CBRE)-focused CBIs that inform and track progress on CBRE actions and should be reflected in the CBRE potential study and in IRP portfolio scoring; and
- Portfolio CBIs that address the impacts of the utility's portfolio on communities, that may or may not be tied to CBREs, and should be reflected in IRP portfolio scoring.

The utility should explain how their Interim CBIs address each of the five topic areas and note which of the three listed CBI categories each metric falls within. The utility should also explain its plans for further developing CBIs for the next CEP.

In this Chapter, PacifiCorp discusses: its coordination with stakeholders and OPUC Staff; Interim CBIs, and the relationship of these Interim CBIs to the five CBI categories.

Coordination with Stakeholders and OPUC Staff

PacifiCorp discussed its CBI creation process and the Interim CBIs and metrics with its Community Benefit Impact Advisory Group (CBIAG) at its monthly meetings in November 2022, December 2022, January 2023 and March 2023. Interim CBI progress updates were also provided to stakeholders as part of the February and May 2023 CEP Engagement Series, and PacifiCorp met with Oregon staff to discuss Interim CBIs in January 2023.

As part of Commission Order 22-390, Attachment A, PacifiCorp received 20 proposed CBIs and 61 proposed metrics from members of the Joint Advocate Group. The Joint Advocate Group includes members from the NW Energy Coalition, Coalition of Communities of Color, Verde, Rogue Climate, and the Columbia River Inter-Tribal Fish Commission. PacifiCorp prepared a mapping of the Joint Advocates proposed CBIs and proposed metrics to the Interim CBIs and metrics and held a meeting in February 2023 to discuss these relationships and methodologies for incorporating Joint Advocate input throughout the development of the company’s CEP.

Of the Joint Advocate’s 20 proposed CBIs and 61 proposed metrics, seven CBIs and 17 proposed metrics are addressed in the company’s CEP. These seven Joint Advocate CBIs and 17 metrics are illustrated within the context of PacifiCorp’s supporting Interim CBIs and metrics in Table 1 and Table 2.

Table 1 – Joint Advocate Recommended and PacifiCorp’s adopted Interim CBIs

Joint Advocate CBI	PacifiCorp Interim CBI
Community employment opportunities	Increase community-focused efforts and investments

Reduce number of customers suffering from high energy burdens	Decrease proportion of households experiencing high energy burden
Reduce GHG emissions	Increase energy from non-emitting resources and reduce carbon dioxide (CO ₂) emissions to meet House Bill (HB) 2021 targets
Increase in neighborhood safety	Improve resilience of vulnerable communities during energy outages
Reduce residential disconnections	Decrease number of residential disconnections
Reduce frequency and duration of blackouts or brownouts in target communities	Reduce frequency and duration of energy outages, and improve resilience of vulnerable communities during outages
Reduction in recovery time and increase in survivability from outages	Improve resilience of vulnerable communities during energy outages

Table 2 – Joint Advocate Recommended and PacifiCorp’s adopted CBI Metric

Joint Advocate Metric	PacifiCorp Metric
Reduce Tribal energy burden	Report energy burden for Tribal customers
Phase-out fossil fuel resources	Report CO ₂ emissions associated with Oregon retail sales and percent of renewable and non-emitting resources serving Oregon retail customers
Reduce in number of customers suffering from high energy burden in highly impacted communities	Report energy burden by census tract and with demographic data
Reduce number of customers suffering from high energy burden in vulnerable populations	Report energy burden by census tract along with demographic data
Reduce number of customers suffering from high energy burden for participants in bill assistance programs	Report energy burden for bill assistance participants
Reduce number of customers suffering from high energy burden for known low-income customers	Reporting energy burden for low-income customers
Reduce number of customers suffering from high energy burden for other residential customers with high energy burden	Report energy burden for all residential customers

Continuously reduce overall greenhouse gas emissions in the utility service area	Report CO ₂ emissions associated with Oregon retail sales
Reduce frequency and length of outages due to major disasters, wildfires, and extreme weather events through cost-effective investments to reduce risk	Report SAIDI, SAIFI, and CAIDI including major events at census tract level
Reduce number and percentage of residential customer disconnections	Report number of residential customer disconnections by census tract
Reduce number and percentage of residential customer disconnections by location (and demographic info) of residential customer disconnections (zip code/census tract; renter; known low-income; highly impacted communities; and BIPOC customers)	Report the number of residential customer disconnections by census tract, including demographic data such as; renter status, poverty, race and ethnicity for each census tract
Improve SAIDI and SAIFI, particularly in communities that have experienced long service interruptions	Report SAIDI, SAIFI, and CAIDI including major events at census tract level
Increase capacity of local communities to respond to local disasters or weather events	Report SAIDI, SAIFI, and CAIDI including major events at census tract level
Increased number of local environmental justice and low-income communities' representation in clean energy apprenticeships and training programs in the state	Report pre-apprenticeship / educational program participation
Increased representation of low-income and vulnerable communities for contractors selected in local program delivery	Report headcount of DSM program delivery staff & grants
Increased electrification of transit services	Report public charging stations
Increase in number of living wage/union jobs sustained	Report resource development workforce and local diversity spend for Oregon resources

Interim Community Benefit Indicators

CBIs are designed to demonstrate the impact of PacifiCorp’s proposed programs, actions, and investments. PacifiCorp defines CBIs as the desired outcome that utility actions could either incentivize, influence, or cause. Each CBI identifies a desired outcome, while metrics allow for PacifiCorp to monitor progress at achieving these outcomes. To assess the progress of CBIs, PacifiCorp developed baseline metrics to understand the current state within its service regions. Future measurements in subsequent CEPs will be compared to the baseline to track incremental changes over time. Table 3 below provides PacifiCorp’s Interim CBIs and their associated metrics.

Table 3 – PacifiCorp’s Interim CBIs and Metrics

CBI Category	Interim CBIs	Interim CBI Metrics
Resilience (System and Community)	-Improve resilience of vulnerable communities during energy outages -Reduce frequency and duration of energy outages	-SAIDI, SAIFI and CAIDI at area level including major events -Energy Not Served (ENS) for IRP portfolios are included as an output from portfolio development
Health and Community Well-being	Decrease number of residential disconnections	Number of residential customer disconnections
Environmental Impacts	Increase energy from non-emitting resources and reduce CO ₂ emissions to meet House Bill 2021 targets	Oregon CO ₂ emission from Oregon allocated resources
Energy Equity (Distributional and Intergenerational Equity)	Decrease proportion of households experiencing high energy burden	-Energy burden by census tract -Energy burden for low-income customers, bill assistance participants and Tribal members
Economic Impacts	Increase community-focused efforts and investments	-Headcount of DSM program delivery staff & grants -Public charging stations -Pre-apprenticeship / educational program participation -Resource development workforce and spend

PacifiCorp’s Interim CBIs for Resilience, Health and Community Well-Being, Environmental Impacts, Energy Equity, and Economic Impacts, are discussed below.

Resilience (System and Community)

Resilience and reliability are often used interchangeably, though they have different definitions. Power system resilience is a concept separate and distinct from power system reliability. Resilience is the ability of power systems to withstand and rapidly restore power delivery to customers following non-routine disruptions of severe impact or duration. Resilience includes the ability to withstand and recover from deliberate attacks, accidents, or naturally occurring events such as earthquakes or catastrophic wildfires.

Meanwhile, reliability is focused on ensuring an adequate power supply under a reasonably expected range of conditions, including forecasted demand growth, equipment failures, and weather impacts on energy demand, resource availability, and transmission capacity.

For its CEP, PacifiCorp has established two resilience focused Interim CBIs: (1) Improve Resilience of Vulnerable Communities During Energy Outages; and (2) Reduce Frequency and Duration of Energy Outages.

Improve Resilience of Vulnerable Communities During Energy Outages

PacifiCorp established the Interim CBI of Improving Resilience of Vulnerable Communities During Energy Outages to focus on the resilience of vulnerable communities in the company's service regions. PacifiCorp envisions developing a program to support development of CBREs in prioritized communities. With significant engagement with communities and stakeholders, the company anticipates a multi-phase approach to successfully achieve this objective, including:

- Establish Community Level Reliability and Resilience Framework (Reliability SAIDI, SAIFI and CAIDI and socioeconomic data) to prioritize communities;
- Socialize straw proposal Pilot with CBIAG, CEP Engagement, and Tribal stakeholders;
- Refine framework based on input;
- Design CBRE resilience program and establish progress metrics;
- Implement community focused resilience program; and
- Track progress and refine framework for subsequent CEPs.

Establish Framework

PacifiCorp will first establish a framework for identifying vulnerable communities that have the potential for the greatest impact from energy outages. This will require the use of existing industry measurements of System Average Interruption Duration Index (SAIDI), System Average Interruption Frequency Index (SAIFI) and Customer Average Interruption Duration Index (CAIDI) scores.

Generally, total performance including major events is an indicator of resilience, while data excluding major events is an indicator of reliability. Producing these metrics for census tracts¹²

¹² Census tracts are small, relatively permanent statistical subdivisions of a county or statistically equivalent entity that can be updated by local participants. The primary purpose of census tracts is to provide a stable set of geographic units for the presentation of statistical data.

demonstrates how reliable and resilient our system is at the community level. The company is evaluating how to develop scores and prioritize investments using reliability metrics and socioeconomic data. It is important to note that this is a long-term objective and that year-to-year results may vary, including increases in the duration or frequency of outage resulting from weather events, fire activity, or other environmental factors. However over the long-term, the company expects to see measurable improvements in the metrics for this CBI.

With regard to SAIDI, SAIFI and CAIDI scores, the company relied on outage data at the transformer level within each census tract. The number of customers interrupted and customer minutes interrupted were summed for the entirety of 2022 for all transformers in each census tract. These values were then divided by the total number of customers per census tract to derive the relevant scores for each census tract. Of note, SAIDI, SAIFI and CAIDI scores are typically calculated using state or utility-level customer counts and outage information. PacifiCorp's approach for this CEP is more granular because it uses census tract customer counts and circuit level outage information. This granularity will skew individual results significantly higher compared to state or utility-level values. Because of this methodological difference, census tract-based reliability metrics cannot be compared to more general and broader state or utility level values.

Figures 2 – 4 illustrate these scores when including major events by census tract. Please see Appendix A for detailed list of 2022 SAIDI, SAIFI and CAIDI scores by census tract throughout PacifiCorp's Oregon service regions. The data presented below is illustrative and will be updated based on additional input from external stakeholders and internal findings.

Figure 2 – SAIDI for PacifiCorp’s Oregon Service Regions Census Tracts

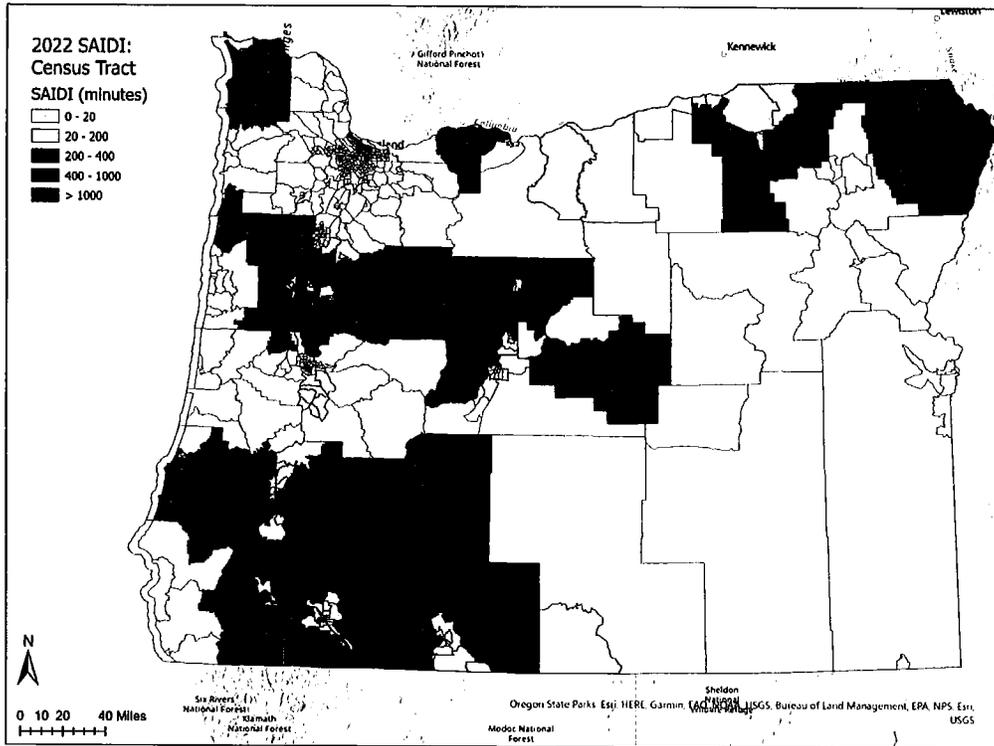


Figure 3 – SAIFI for PacifiCorp’s Oregon Service Regions Census Tracts

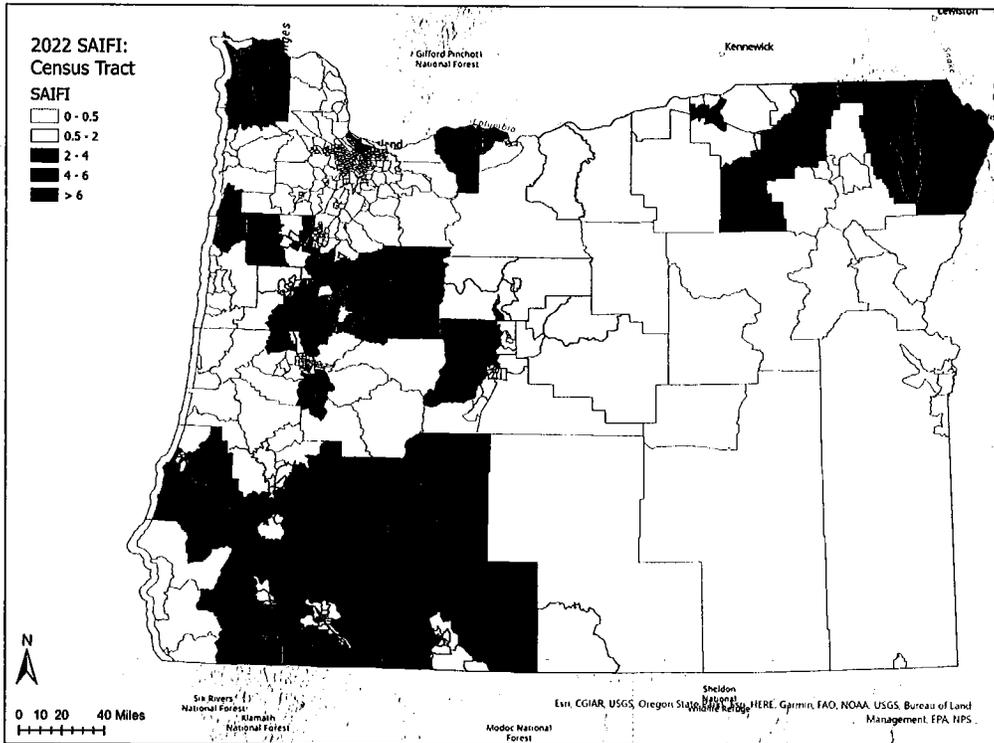
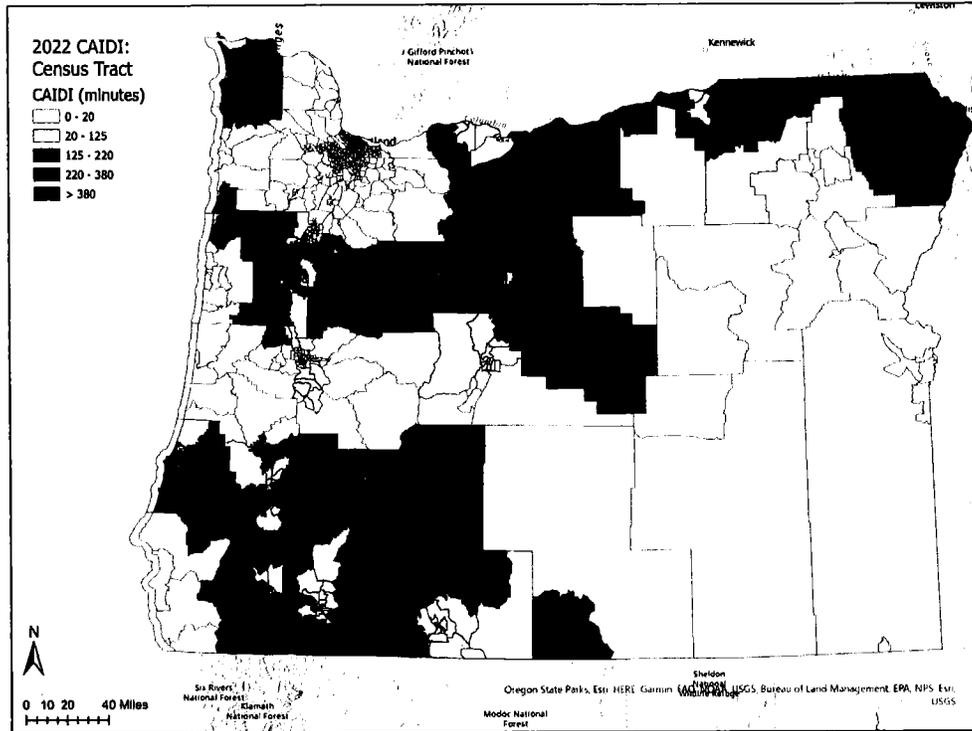


Figure 4 – CAIDI for PacifiCorp’s Oregon Service Regions Census Tracts



A key step in the analysis involves identifying the relevant socioeconomic factors that should be accounted for when prioritizing disadvantaged communities for reliability analyses. This should be a stakeholder informed decision, and the company will seek input from the various CEP stakeholders to vet the company’s demographic data and identification in of disadvantaged communities. This process will inform the company’s development process for the next and successive CEPs.

Once PacifiCorp formalizes a framework for identifying vulnerable communities experiencing the greatest impact from outages, the company will then develop a proposal for how to prioritize communities for further reliability analysis. This approach will allow for improving and rebuilding the framework to meet stakeholder goals.

The company foresees the application of this reliability framework in a variety of scenarios. One example is in the continued development of a straw proposal Community-Based Renewable Energy Project Grant Pilot, which will be proposed to PacifiCorp Engagement Channels in the coming months. Development of this Pilot is currently in an early phase and stakeholder feedback will help guide its direction, but a reliability framework could also provide important information used in both Pilot development and project prioritization. Additional information about this CBRE-focused straw proposal pilot can be found in Chapter V of this CEP.

Refine Framework/Track Progress

PacifiCorp envisions this process to evolve beyond the initial development phase and refinement will be needed over time. Further, to measure progress for Improving the Resilience of

Vulnerable Communities During Energy Outages, PacifiCorp will track the metrics that will ultimately be determined during the program design phase.

Reduce Frequency and Duration of Energy Outages

Serving customers reliably and planning for a resilient system is a primary objective for PacifiCorp, and the company continues to build on a strong track record of serving its customers safely, reliably, and affordably. To this end, PacifiCorp established the Interim CBI of Reduce Frequency and Duration of Energy Outages, measured in part by the average Energy Not Served (ENS). ENS is a result of IRP development and indicates how reliable a portfolio is. A portfolio with a relatively higher ENS score indicates that it is less reliable, whereas a portfolio with a relatively low ENS score indicates it is more reliable.

ENS reliability metrics for the portfolios analyzed in the CEP are provided in Table 15 of Chapter VI Resource Planning. The company's portfolio analyses indicate that the CEP portfolio, the CBRE portfolio, the Small-scale Renewable (SSR) sensitivity portfolio and the No Purchases portfolio are expected to increase reliability. On an Oregon-allocated basis, ENS as a percentage of Oregon load is lower for each of these portfolios relative to the 2023 IRP Preferred portfolio. Please refer to Chapter VI Resource Planning for additional portfolio detail.

Health and Community Well-being

Access to energy affects the provision and sustainability of basic human needs. For example, utility disconnections could be the result of a customer's decision to not pay utility bills, and instead pay for other basic needs like rent, food, or purchasing prescription drugs. Tracking disconnections by census tract provides an indicator of how communities may be struggling with their basic well-being.

For its CEP, PacifiCorp established the Interim CBI of Decrease the Number of Residential Disconnections, tracked by the number of residential customer disconnections by census tract. Table 4 below provides the ten census tracts with the highest number of disconnections in 2019. PacifiCorp is using 2019 disconnection data for the baseline due to the moratorium on disconnections in 2020 and 2021 as well as other temporary customer disconnection protections in place to protect customers while administrative rules were being adopted in 2022. On October 1, 2022, permanent rules to help prevent disconnection were adopted and PacifiCorp will use 2019 baseline disconnection data to help evaluate the impact of the newly adopted rules moving forward regarding the number of disconnections for non-payment.

As provided in Table 4, eight of the ten census tracts have an equal or higher proportion of families below poverty relative to the statewide proportion of families below poverty. Seven of the ten census tracts have a higher proportion of families below poverty than the overall service regions. Please see Appendix B for a complete list of all disconnections by census tract throughout PacifiCorp's Oregon service regions.

Table 4 – Ten Census Tracts with Highest Residential Customer Disconnections (2019)

Geography	Customers	FBP	W	BL/ AA	AIAN	A	PI	OR	2+	H
Total OR Regions	19,557	8%	84%	2%	1%	4%	0%	3%	5%	13%
CT 3616, Josephine County	315	21%	96%	0%	1%	1%	0%	0%	2%	5%
CT 27, Jackson County	230	8%	95%	1%	1%	0%	0%	2%	2%	5%
CT 14, Jackson County	227	6%	94%	1%	0%	0%	0%	2%	3%	7%
CT 1200, Douglas County	220	16%	93%	2%	2%	1%	0%	0%	3%	6%
CT 2.02, Jackson County	215	18%	85%	0%	2%	0%	0%	8%	5%	47%
CT 13.02, Jackson County	204	16%	89%	2%	1%	1%	0%	0%	7%	26%
CT 81, Multnomah County	196	21%	60%	14%	0%	13%	4%	2%	7%	11%
CT 9602, Lake County	187	19%	89%	1%	3%	2%	0%	1%	5%	10%
CT 7, Jackson County	185	5%	91%	1%	1%	1%	0%	1%	5%	15%
CT 7, Coos County	178	15%	80%	1%	2%	1%	0%	5%	11%	8%

FBP: Families Below Poverty; W: White; BL/AA: Black/African American; AIAN: American Indian and Alaskan Native; A: Asian; PI: Pacific Islander; OR: Other Races, 2+: Two or More Races; H: Hispanic and Latino.¹³

Environmental Impacts

HB 2021 calls for substantial reduction of carbon emitting resources and increases in renewable and non-emitting resources that currently power Oregon's grid. Emission reductions are measured by the percent of emissions reduced from PacifiCorp's emissions baseline, defined as the average annual emissions of greenhouse gas in 2010, 2011 and 2012 for electricity sold to Oregon retail electricity customers as reported under ORS 468A.280. For its CEP, PacifiCorp has established the Interim CBI of Increase Energy from Non-emitting Resources and Reduce CO₂ Emissions to Meet HB 2021 Targets. The company will measure and track progress for this CBI with current Oregon-allocated emissions that the company reports annually to the Oregon Department of Environmental Quality. Table 5 below provides the company's baseline CO₂ emissions, relevant HB 2021 CO₂ emissions, and percent of current reported emissions from baseline.

Table 5 – PacifiCorp's Baseline, Current, and Percent of Reported Emissions from Baseline

Emissions	Metric Tons CO ₂
Oregon Baseline	8,994,448
2021 Emissions	8,124,478
Emissions from Baseline	869,970
Percent of Emissions from Baseline	9.67%

¹³ Source: PacifiCorp and Census Bureau, American Community Survey, 2019.

In addition to tracking Oregon-allocated CO₂ emissions, for its CEP PacifiCorp proposes a metric for percent renewables/non-emitting resource mix. Table 6 indicates that PacifiCorp's 2021 Oregon-allocated fuel mix contained 24.7 percent renewable and non-emitting percentage of electricity used to serve Oregon retail customers. Renewable energy includes biomass, geothermal, solar and wind generation where the company maintains the renewable energy credits. Non-emitting energy represents hydroelectric generation.

Table 6 – Oregon Allocated Renewable/Non-emitting Resources (%)

Source	2021 Oregon Fuel Mix
Renewable	19.9%
Non-emitting	4.8%
Total	24.7%

Oregon-allocated CO₂ emissions for the portfolios analyzed within the CEP are provided in Table 15 of Chapter VI Resource Planning. The company's portfolio analyses indicate that the CEP portfolio, the CBRE portfolio, the small-scale Renewable (SSR) sensitivity portfolio and the No Purchases portfolio are expected to reduce CO₂ emissions relative to the 2023 IRP Preferred Portfolio. On an Oregon allocated basis, CO₂ emissions for each of these portfolios ranges between 2.1 percent and 16.2 percent lower than CO₂ emissions for the 2023 IRP Preferred portfolio. Please refer to Chapter IV Resource Planning for additional portfolio detail.

Energy Equity

Energy equity is the concept that all members of society should be able to afford and have access to a necessary and basic supply of energy. Energy burdened households spend a disproportionate amount of their income on home energy costs. Tracking energy burden by census tract provides an indicator of energy equity for communities in PacifiCorp's Oregon service regions.

Energy burden is average annual housing energy costs divided by average annual household income. PacifiCorp will aim to mitigate and not disproportionately allocate costs to highly impacted communities and vulnerable populations. PacifiCorp defines a customer as experiencing high energy burden when they spend six percent or more of their income on home energy costs. This threshold is based on the definition of "high" energy burden used by the American Council for an Energy-Efficient Economy (ACEEE).¹⁴

For its CEP, PacifiCorp has established the Interim CBI of Decrease Proportion of Households Experiencing High Energy Burden. The company's energy burden estimates by census tract rely on the Department of Energy's Low-Income Energy Affordability Data (LEAD) Tool.¹⁵ The

¹⁴ Drenthobl, Ariel, Ross, Lauren, and Ayala, Roxana. *How High Are Household Energy Burdens? An Assessment of National and Metropolitan Energy Burden across the United States.* (ACEEE; September 2020) (available online: <https://www.aceee.org/sites/default/files/pdfs/u2006.pdf>).

¹⁵ Additional information regarding the LEAD Tool Methodology available at www.openai.org.

company will track progress by measuring average energy burden within each census tract in Oregon. Table 7 below provides the estimated energy burden for households in Oregon.

As provided in Table 7, there are five census tracts in PacifiCorp’s Oregon service regions that meet the definition of high energy burden as demonstrated through energy burden estimates of six percent or greater. Of note, three of the five census tracts have poverty rates higher than the state of Oregon, while one census tract has a higher proportion of its population as American Indian/Alaska Native, relative to the state. The proportion of Hispanic or Latino populations in one census tract is higher than the state. Please see Appendix C for a complete list of energy burden estimates for all census tracts throughout PacifiCorp’s Oregon service regions.

Table 7 – Energy Burden for those Census Tracts with High Energy Burden within Oregon Service Area

Geography	EB	FBP	W	BL/AA	AIAN	A	PI	OR	2+	H
State of Oregon	3%	8%	84%	2%	1%	4%	0%	3%	5%	13%
PacifiCorp Oregon Service Area	3%	10%	88%	2%	1%	2%	0%	2%	4%	11%
CT 9701, Klamath County	8%	11%	98%	1%	0%	0%	0%	0%	2%	5%
CT 9712, Klamath County	7%	19%	79%	0%	7%	2%	0%	0%	12%	13%
CT 9506.01, Lincoln County	6%	6%	94%	0%	1%	2%	1%	0%	2%	1%
CT 1, Jackson County	6%	27%	90%	0%	1%	0%	3%	2%	4%	36%
CT 9703, Klamath County	6%	4%	95%	0%	0%	0%	1%	0%	4%	1%

EB: Energy Burden; FBP: Families Below Poverty; W: White; BL/AA: Black/African American; AIAN: American Indian and Alaskan Native; A: Asian; PI: Pacific Islander; OR: Other Races; 2+: Two or More Races; H: Hispanic and Latino.¹⁶

Given stakeholder feedback, in addition to evaluating energy burden by census tract, the company relied on its 2021 Residential Survey to evaluate energy burden for low-income customers, bill assistance program participants, and Native American or Alaska Native customers in its Oregon service area (see Table 8). Additionally, based on 2021 Residential Survey results it is estimated that 12.0 percent of households in PacifiCorp’s Oregon service area are energy burdened.

Table 8 – Energy Burden for Oregon Low Income and Billing Assistance Participants¹⁷

Energy Burden by Group	Energy Burden
Low Income	7%
Bill Assistance Participants	5%
Native American or Alaskan Native	5%

¹⁶ Source: U.S. Department of Energy, Low-Income Energy Affordability Data (LEAD) Tool, website (<https://www.energy.gov/scep/slsc/lead-tool>).

¹⁷ Sources: PacifiCorp Residential Survey (2021) for self-reported 2020 household income, program participation and customer billing records.

Economic Impacts

The purpose of this CBI is to focus investments so that communities more equitably receive benefits. Impacts from these investments will have positive implications on communities. For its CEP, PacifiCorp has established the Interim CBI of Increase Community-Focused Efforts and Investments. The company will measure and track progress for this CBI through the tracking of DSM program staff delivery headcount, number of public electric vehicle (EV) charging stations, pre-apprenticeship and educational program participation and resource development workforce and diversity business expenditures. Additional information regarding these metrics are provided below.

Headcount of DSM program delivery staff & grants

As part of demand-side management (DSM) program delivery, ETO conducts vendor training programs and provides grants to community-based organizations (CBOs) to conduct energy outreach activities within their service area. Of note, DSM program delivery relies on implementers within communities to install energy efficiency measures. PacifiCorp will work with the Energy Trust of Oregon (ETO) to document the headcount of DSM program delivery throughout Oregon.

Public charging station

Over the last four years, PacifiCorp has supported transportation electrification projects through an electric mobility grant program, which has awarded more than \$4.5 million to communities to enable innovative clean transportation projects. This support continues to grow through rebate programs, energy provider-owned programs and more. As part of the CEP, PacifiCorp plans to document and track the number of public charging stations in its service regions.

Pre-apprenticeship / educational program participation

PacifiCorp is investing in the future of the communities it serves by providing opportunities for young people to gain valuable skills and knowledge that will prepare them for successful careers in the electrical industry. The company is supporting Crater Lake Electrical Joint Apprenticeship Training Center in developing and identifying funding opportunities for an electrician pre-apprenticeship program for high school students in rural communities. The program provides students with hands-on training and classroom instruction in electrical theory, safety, and code requirements. A pilot program during the 2022-23 academic year proved successful and expansion to additional rural schools is planned for subsequent years. As part of the CEP, PacifiCorp plans to document and track participation in this pre-apprenticeship program.

Resource development workforce and spend

Workforce reporting is required for PacifiCorp contracted and owned resources acquired through the 2022 all-source request for proposals (AS RFP) in all states. This is a new process and data is currently being collected by the company. PacifiCorp plans to report the following data for each energy supply facility contracted through the 2022 AS RFP and built in Oregon:

- The number of local and state workers employed during construction of the facility
- Diverse business expenditures report. Diversity spend is the portion of the total spend provided by a diversity business including women, minority, disabled and veteran-owned business suppliers and contractors. Does not include lease, real estate and utility spend figures

Community Benefit Indicator Categories

This section describes how each of the company's Interim CBIs are characterized relative to Informational, Community Based Renewable Energy, and Portfolio CBI Categories.

Informational Community Benefit Indicators

Informational CBIs provide a lens to identify topics of interest for communities and it is not yet understood how these CBIs may be impacted by resource actions in the IRP or the CEP. For the CEP, the company characterizes three of the five Interim CBIs as Information CBIs, including: Decrease Number of Residential Disconnections; Decrease Proportion of Households Experiencing High Energy Burden; and Increase Community-Focused Efforts and Investments.

Community Based Renewable Energy Focused Community Benefit Indicators

A CBRE-focused CBI may be designed to set goals and track progress on specific outcomes that the utility intends to achieve through CBRE actions. For the CEP, the company characterizes the Interim CBI of Reducing Frequency and Duration of Energy Outages and the Interim CBI of Improve Resilience of Vulnerable Communities During Energy Outages as CBRE CBIs. As described above and in Chapter VI, both the CEP portfolio and the CBRE portfolio result in improved ENS scores relative to the preferred portfolio.

Portfolio Community Benefit Indicators

A portfolio CBI addresses the impacts of a utility's portfolio on communities and may or may not be tied to CBREs. For the CEP, the company characterizes the Interim CBI of Increasing Energy from Non-emitting Resources and Reducing CO₂ Emissions to meet HB 2021 Targets as a Portfolio CBI. As described above and in Chapter VI (Table 15), the CEP portfolio and the CBRE portfolio result in lower CO₂ emissions relative to the preferred portfolio.

IV. RESILIENCYKey Findings

PacifiCorp's long-term resiliency objective is to include resilience risk scores in project and program prioritization.

PacifiCorp considers local community and resilience stakeholder input fundamental to the process of defining resiliency, establishing resiliency goals, and developing metrics for tracking electric system and community resilience.

This is critical given the breadth and depth of what could be considered appropriate resiliency opportunities, and the lack of an industry consensus on resiliency analyses.

PacifiCorp intends to incorporate discussion of these topics into stakeholder meetings to solicit input and feedback. These sessions provide the appropriate forum to investigate and resiliency metrics and processes that are community-utility-specific.

House Bill (HB) 2021 requires utility Clean Energy Plans to include a "risk-based examination of resiliency opportunities that includes costs, consequences, outcomes and benefits based on reasonable and prudent industry resiliency standards and guidelines."¹⁸ During the course of the Commission's investigation of HB 2021, the Commission requested a report from the U.S. Department of Energy's Grid Modernization Lab Consortium (GMLC) to research various resiliency-related issues and guidelines that the Commission and utilities should consider for Clean Energy Plans (GMLC Report).¹⁹

The GMLC Report is a thoughtful and helpful survey of resiliency-related issues, and will continue to be a clearinghouse of information for resiliency efforts. In this Chapter, PacifiCorp draws from the company's resiliency experience in Washington and the GMLC Report, and describes the company's proposed process for developing resilience metrics, defines resilience, and provides a methodology for assessing electric system and community resilience for resilience related programs, including Distribution System Planning (DSP), Integrated Resource Planning (IRP), Community-Based Renewables (CBRE) and Small-Scale Renewables (SSR).

PacifiCorp's long-term resiliency objective is to include resilience risk scores in project and program prioritization. Given the breadth and depth of what could be considered appropriate resiliency opportunities, and the lack of Commission and industry consensus on resiliency analyses (for example, the GMLC Report only discusses three states that have had initial resiliency discussions), the company expects and welcomes additional opportunities to refine resiliency-related issues in future stakeholder discussions.

¹⁸ ORS § 469A.415(4)(c).

¹⁹ "Considerations for Resilience Guidelines for Clean Energy Plans," Homer, JS, et. al, at 1 (U.S. DOE GMLC; Sept. 2022) (available here: <https://edocs.puc.state.or.us/efdocs/HAH/um2225shah113046.pdf>).

Resiliency Analysis Framework

Consistent with the GMLC Report's proposed resiliency planning analysis process, PacifiCorp intends to apply a risk analysis framework similar to the analysis performed for wildfire risk mitigation. This analysis framework includes:

- Defining resiliency and resiliency goals;
- Developing electric system and community resilience metrics;
- Identifying threats including probabilities and consequences; and
- Evaluating effectiveness and cost of resilience measures or risk-spend efficiency for avoiding or mitigating threats.

PacifiCorp considers local community and resilience stakeholder input fundamental to the process of defining resiliency, establishing resiliency goals, and developing metrics for tracking electric system and community resilience. As discussed in the Community Engagement discussion (Chapter II), PacifiCorp intends to incorporate discussion of these topics into existing or planned stakeholder meetings to solicit input and feedback. These sessions provide the appropriate forum to investigate and resiliency metrics and processes that are community-utility-specific.

Defining resiliency and resiliency goals

The critical first step to begin incorporating resilience into CEP programs is defining resiliency and corresponding strategic objectives and targets. PacifiCorp intends to develop an initial definition and strategic goals for its resiliency program through recurring stakeholder meetings as discussed in Chapter II above. PacifiCorp expects this to include definitions of utility resilience, community resilience, and community-utility resilience, which will serve as the overall concept for resilience that informs subsequent analysis and planning.

PacifiCorp describes its definition of utility resilience and associated metrics in the Community Benefits Indicator chapter above.

Regarding Community Resilience, as discussed in the Community Benefits Indicator chapter, PacifiCorp intends to calculate a community resilience score for each census tract to define a composite community-utility resilience score. To identify appropriate community characteristics and socio-economic factors, PacifiCorp references National Risk Index (NRI) data prepared by the Federal Emergency Management Agency (FEMA). The NRI includes two components: a community resilience score (BRIC) and a social vulnerability (SOVI) score.²⁰ Community resilience evaluates the resilience of communities as individual entities while social vulnerability assess the resilience of the residents of a particular community.

The community resilience score contains 49 variables including data related to human well-being, the economic and financial health of communities, local infrastructure, the institutional

²⁰ For more information on the National Risk Index, FEMA provides detailed technical documentation at <https://www.fema.gov/flood-maps/products-tools/national-risk-index>.

capacity of the community to respond to disasters, and environmental characteristics including the likelihood of various types of hazard events. Social vulnerability contains 29 socio-economic variables including wealth and income, the racial and ethnic composition of a community, age, and the access and function needs (AFN) population. Combined, BRIC and SOVI provide a comprehensive community resilience score with robust publicly available documentation that has been validated and applied by government agencies for emergency response planning.

Developing community-utility resilience metrics

PacifiCorp intends to combine census tract level community and utility resilience scores into a composite community-utility resilience score. This score will be used to identify and prioritize census tracts for additional analysis of system performance including outages and major events.

Identifying threats including probabilities and consequences

Consistent with Energy Advocates comments and Staff recommendations, once the initial resilience analysis is completed, PacifiCorp intends to conduct a historical and forward-looking trend analysis to establish baseline data for future resiliency program planning. This proposed framework is similar to the analysis and planning conducted for wildfire risk mitigation. Using the utility resilience scores, PacifiCorp intends to perform root cause analysis of major events and outage trends per census tract. As part of this analysis, PacifiCorp intends to use measurable historical system performance data to identify the primary initiating event for each major event, outage causes, and customer impacts during major events.

Evaluating effectiveness and cost of resilience measures

Once the locations with highest resilience related risks and corresponding risk drivers have been identified, PacifiCorp plans to use a risk-spend efficiency (RSE) or cost-benefit analysis (CBA) methodology that accounts for the resilience risk reduction or resilience benefits achieved at a specific project location and the costs required to do so. Combined, the community resilience scores, utility resilience risk drivers, and RSE or CBA will inform project planning and prioritization processes recurring periodically under resiliency related programs such as DSP or IRP. The data inputs used for these calculations will be updated periodically to account for changing environmental conditions, community characteristics, and mitigations already implemented. PacifiCorp expects the proposed metrics and processes described above to be refined over time as PacifiCorp includes additional input from resiliency stakeholders and an ongoing evaluation of program effectiveness toward achieving resiliency goals into its overall resiliency program.

Proposed Timeline and Milestones

The company's proposed timeline and milestones regarding future resiliency analyses are included in Table 9 below:

Table 9 – Proposed Resiliency Timeline and Milestones

Milestone	Target Completion	Notes
Complete utility resilience analysis	3/1/23	Completed
Complete community resilience analysis	7/1/23	
Develop composite community-utility resilience scores	8/1/23	
Complete major event root cause analysis for high-risk areas	12/1/23	
Incorporate community-utility resilience scores and risk drivers into CEP program planning	3/1/24	

V. COMMUNITY-BASED RENEWABLE ENERGY

Key Findings

Community-Based Renewable Energy (CBRE) projects are defined as one or more energy systems that interconnect to utility distribution or transmission assets, and may be combined with microgrids, storage systems, demand response measures, or energy-related infrastructure that promotes climate resiliency. The Oregon Department of Energy (ODOE) has been tasked with examining opportunities to encourage the development of small-scale renewable and CBRE projects, including how either could contribute to economic development and local energy resilience.

The Company has developed an Initial CBRE Potential Study and Initial CBRE Action Plan, along with next steps to review these with stakeholders. Following this collaborative process, the Company will provide updated versions of its CBRE Potential Study and CBRE Action Plan.

PacifiCorp's Initial CBRE Potential Study has identified approximately 95 megawatts of future potential CBRE capacity over the period from 2024 – 2030.

CBRE projects are energy systems that interconnect to utility distribution or transmission assets, and may be combined with microgrids, storage systems, demand response measures, or energy-related infrastructure that promotes climate resiliency.²¹ Additionally, CBRE projects must: (1) directly benefit particular communities through community-benefit agreements or direct ownership by local government, nonprofit entities, or federally recognized Indian tribes; or (2) increase resiliency or community stability, local jobs, economic development, or direct energy cost savings to families and small businesses.²² Utility Clean Energy Plans (CEP) must examine both the costs and opportunities that CBRE projects can potentially provide when determining what mix of resources are most appropriate to offset energy generated from fossil fuels.²³

House Bill (HB) 2021 directed the ODOE to convene a work group to examine opportunities to encourage the development of small-scale renewable and CBRE projects, including how either could contribute to economic development and local energy resilience.²⁴ Relevant here, ODOE was tasked to explore issues related to small-scale and CBRE projects, including:

- Opportunities and barriers to development;
- Opportunities and potential models for diverse access and ownership of small-scale renewables and CBRE projects in Oregon;
- Economic, resilience and other benefits and costs; and

²¹ ORS § 469A.400(2).

²² *Id.*

²³ ORS § 469A.415(4)(e).

²⁴ HB 2021 § 18.

- Potential rate impacts of developing small-scale renewables and CBRE projects in Oregon.²⁵

ODOE convened the workgroup in December 2021, which included a broad spectrum of representatives from various sectors and stakeholder groups. ODOE delivered its Study on Small-Scale and Community-Based Renewable Energy Projects (ODOE Study) to the Oregon Legislature in September 2022.²⁶

The ODOE Study reflects the workgroup’s perspectives on the current status and considerations related to small-scale renewables, current programs, incentives and efforts to encourage development, as well as a frank acknowledgement of the challenges presented by further development of small-scale renewable and CBRE projects in Oregon.

Given the diverse set of interests and perspectives, the ODOE work group was not able to reach consensus on specific recommendations for the study.²⁷ Instead, the work group generally agreed that small-scale renewable and CBRE projects can play a role in addressing climate change, achieving state energy and climate goals, reducing impacts on land and natural resources, supporting local economic development, and providing local energy resilience for communities and organizations.²⁸ While small-scale renewable and CBRE projects “can have unique benefits that are customized to meet local and community expectations and goals,” the ODOE Study cautioned that the “individualized nature of these types of projects also make it difficult to provide an overarching assessment on the energy, environmental, economic, and social benefits and challenges of small-scale and community-based projects writ large.”²⁹ This is because these types of projects “involve trade-offs, and for small-scale and community-based projects those trade-offs will vary significantly but will also be more flexible to address community or local concerns and needs.”³⁰

To the point, the ODOE Study acknowledged that there is “the potential for increasing rate pressure on utility customers when discussing the costs of incentivizing small-scale and community-based renewable energy project development and agreed that future policy decisions should be based on a principle of equitable distribution of costs and benefits.”³¹ This is because there were “differing perspectives on the appropriateness of using regulated utility rates to pay for benefits that do not necessarily contribute to delivery of safe and reliable service at just and reasonable rates for all electricity customers.”³² Accordingly, the ODOE Study concluded that “policymakers will need to consider the difference between economic and other societal and local benefits versus utility system benefits” when evaluating the overall value of small-scale

²⁵ *Id.* § 18(2)(a)-(g).

²⁶ ODOE Study on Small-Scale and Community-Based Renewable Energy Projects (Sept. 2022) (available <https://www.oregon.gov/energy/Data-and-Reports/Documents/2022-Small-Scale-Community-Renewable-Projects-Study.pdf>).

²⁷ *Id.* at 32.

²⁸ *Id.* at 43.

²⁹ *Id.*

³⁰ *Id.*

³¹ *Id.*

³² *Id.*

renewable and CBRE projects in meeting the goals of HB 2021.³³

In parallel with the ODOE Study, in early 2022 the Commission opened docket UM 2225 to establish regulatory frameworks to guide implementation of HB 2021. After a series of workshops, the Commission issued guidelines in October and December 2022 relating to the establishment and reporting of CBRE projects for initial utility CEPs.

For the Commission's community lens workstream, these CBRE guidelines recommend that utilities consider the following in their Clean Energy Plans:

- A potential study (or studies) that identify opportunities for CBRE projects, developed in coordination with relevant utility stakeholders. The potential study should: (a) inform or directly identify annual CBRE acquisition targets that appropriately balance cost, risk, resiliency benefits, the pace of greenhouse gas emissions reductions, and community impacts and benefits; (b) measure community impacts and benefits based on interim CBIs established by the utility; and (c) describe how the utility plans to further develop the potential study for the next CEP.
- Discuss specific actions in the action plan window that the utility will take to reach any acquisition targets (e.g., utility procurements, programs, partnerships, or projections for other customer and community-driven actions; and details for specific projects including timelines, project status, and any other relevant information).
- Discuss how the utility complies with the state's goal for CBRE projects in ORS 469A.210 and explain how the CBRE targets align with this strategy.
- CBRE actions should reference DSP processes and engagement where appropriate.
- Incorporate CBRE acquisition targets in IRP portfolio modeling to account for expected CBRE costs and benefits, including impacts to resource dispatch and fuel burn, portfolio emissions, resource adequacy needs, and resource additions.
- Quantify system-wide benefits, if any, for potential CBRE projects consistent with IRP methods when evaluating the CBRE opportunities. System-wide benefits are not limited to, but may include, resource adequacy contributions, energy value, avoided GHG emissions, and avoided transmission.³⁴

Taken together, the CBRE potential study, Interim CBIs and preliminary resilience measures all need to receive stakeholder input and feedback before they can be used to inform the company's final CBRE potential study and action plan.

Several of the Commission guidelines overlap with the ODOE Study, in which both the ODOE and utilities were asked to outline opportunities, benefits, costs and potential barriers associated with development of small-scale renewables and CBRE resources. The company recognizes the depth and breadth of the workgroup formed to support the ODOE Study, and the quality of the

³³ *Id.*

³⁴ *In re House Bill 2021 Investigation into Clean Energy Plans*, Docket No. UM 2225, Order 22-390 (Oct. 25, 2022).

research and discussions that framed the study. Given this overlap and caliber of work product, the company believes the ODOE Study provides an excellent foundation for discussing CBRE projects and borrows liberally from the Study for this CEP.

CBRE projects may also qualify as part of the small-scale renewable projects under ORS 469A.210. The company, however, also expects that there could be a wide array of CBRE projects, some of which will be net-metered and therefore not eligible to meet its small-scale renewable goals. Accordingly, some CBRE projects may be able to participate in any company competitive solicitations to acquire small-scale renewable generation. More details will emerge as PacifiCorp further develops its procurement strategy for small-scale renewable projects.

PacifiCorp's ongoing CBRE strategy will also be informed by feedback from stakeholder groups in relation to CBRE project opportunities, generally, and the CBRE Project Grant Pilot in particular. Continued collaboration with communities seeking federal and state ODOE grant funding will further inform additional CBRE opportunities.

The company has developed an Initial CBRE Potential Study and Initial CBRE Action Plan, along with next steps to review these Initial CBRE elements in various stakeholder engagement channels in the months following filing of the initial CEP. Following this collaborative process, the company will provide updated versions of its CBRE Potential Study and CBRE Action Plan. This phased approach will ensure that the true intent of the HB 2021 legislation, which underscores the prioritization of community input during the CEP and CBRE development process, is met.

The remainder of this Chapter discusses the company's work toward advancement of CBRE projects, and includes the following sections:

CBRE Inventory: Provides an overview of existing and potential CBRE projects and summarizes communities within PacifiCorp's Oregon service area that have, or are developing, energy or sustainability plans.

Initial CBRE Potential Study: Outlines the approach and methodology used to develop the initial study, key assumptions, initial results and general conclusions.

CBRE Projects in the IRP Modeling: Explains how proxy CBRE projects were modeled in the IRP to address specific guidelines and requirements.

Initial CBRE Action Plan. Outlines key next steps for the continued assessment of needs and opportunities as well as supporting activities and efforts to support implementation.

CBRE Inventory

While HB 2021 and Commission docket UM 2225 formally defined and increased the focus on CBRE, projects like these are not new to the company. When conducting an inventory, multiple

existing programs and projects were identified throughout the company’s Oregon service area that qualify as CBRE projects under HB 2021.

The inventory was based on an internal review of company programs, review of ODOE grant requests and collaboration with Energy Trust of Oregon (ETO) to examine future CBRE opportunities. In addition, the company conducted informal surveys across its Oregon service area to understand if communities are engaged in various forms of community energy planning (e.g., climate action plans, sustainability plans or specific energy plans). This CBRE inventory includes potential and future projects associated with current programming, as well as projects proposed to the company as possible future opportunities.

Internally, many projects identified in the company’s Oregon Community Solar Program, Blue Sky Usage and Block programs, and Community Resiliency Battery Storage Pilot program may qualify as CBRE projects. Externally, applications to the ODOE Community Renewable Energy Grant Program and projects identified in collaboration with ETO may qualify as CBRE projects.

Additionally, the company’s community survey identified 17 communities that have (or are engaged in) some level of community-specific energy planning that could heighten interest in CBRE opportunities. Twelve of the 17 communities have formally adopted plans, and the remaining five are currently developing plans or organizations to support energy planning. Of the 12 communities with adopted plans:

- Ten communities established targets or goals for energy supply (Utility-scale) level changes including GHG emission reductions, fossil fuel reductions, or renewable targets;
- Eleven communities established targets or goals for customer-scale renewables energy supply, or local resilience; and
- Four communities established targets or goals for electric vehicles and transportation adoption or infrastructure.

These results provide insight into additional opportunities for engagement and development with communities that may be more inclined to move forward with CBRE projects in the near term.

Table 10 outlines the CBRE opportunity channels identified during the inventory process. They are organized into general categories of either CBRE projects that are already developed or projected as future potential projects within the channel. Together, these categories amount to approximately 95 megawatts of future potential CBRE capacity over the period from 2024 – 2030, and each CBRE category are detailed below.

Table 10 – Inventory of Existing and Potential CBRE Opportunities

CBRE Opportunities (Existing or New)	Existing	Future Potential
Oregon Community Solar Program (Existing)	Two operational projects (~ 0.5 megawatts (MW) capacity)	51 additional identified opportunities (65 MW Total).

		52 MW Pre-certified, with 13 MW carveout available. Included in “Group 1” Existing Program Potential
Oregon Blue Sky Usage and Block Programs (Existing)	128 operational projects (10.7 MW total capacity)	4.3 MW Total (Average capacity additions of ~714 kilowatts/yr. over 6 yrs.); Included in “Group 1” Existing Program Potential
Community Resilience Battery Storage Grant Pilot (Existing)	2 project grants approved, funding provided upon completion (no installed capacity as of May 2023)	20 communities expressed interest, 10 received technical assessments; Potential is included in “Group 2” of CBRE Potential Study
ETO (Existing)	ETO delivers all energy efficiency programs for PacifiCorp in Oregon and provides technical and financial assistance to development of renewable projects (thousands of megawatt hours of energy savings and generation capacity over past 21 years)	Continued management of energy efficiency programs
ETO (New)		Small community focused hydro: 14 identified opportunities – 17 MW Total Small community focused solar: ~ 50 identified opportunities – 5.6 MW Total; Included in “Group 1” Existing Program Potential
ODOE CREP Grants (New)	<u>Round 1 (July 2022):</u> 4 projects approved for funding (2 planning grants and 2 construction grants)	<u>Round 1:</u> 13 additional projects submitted applications <u>Round 2 (February 2023):</u> 3 projects applied, awaiting results;

		Potential is included in “Group 2” of CBRE Potential Study
PacifiCorp Opportunities from Input Received from Communities (New)		Round 1: conceptual Several pre-project; Potential is included in “Group 2” of CBRE Potential Study

Oregon Community Solar Program

In 2016 the Oregon Legislature established the Oregon Community Solar Program (OCSP) and directed the Commission to establish rules for the program.³⁵ The Commission adopted rules in 2017, and the OCSP is administered by Energy Solutions and the Energy Trust of Oregon, and is funded by Oregon customers of Portland General Electric, PacifiCorp and Idaho Power Company, and OCSP participants.³⁶

The goal of the OCSP is to expand access to solar energy for customers as an alternative to traditional solar rooftop systems, including but not limited to renters, people who live in multifamily buildings, low-income customers, and small businesses in rented or leased space. Participants purchase energy from a community solar project—such as a large solar system on a business, school or church—and receive a credit on their monthly utility bill for the electricity from their portion of the project.

The initial capacity for OCSPs was limited to 2.5 percent of each utility’s 2016 system peak load, which for PacifiCorp was approximately 65 MW.³⁷ Of that total capacity, 25 percent is reserved for projects that meet certain eligibility criteria, such as a greater focus on low-income participation, or association with a non-profit entity, public entity or renewable energy cooperative.

Currently, PacifiCorp’s OCSP queue is full, and includes a waitlist. The bulk of the capacity in the carveout queue, however, remains available. Of the 53 projects in PacifiCorp’s service area that have been pre-certified in the program, only four meet the carveout-eligibility requirements.

As of the date of this submission, there are two operational projects in PacifiCorp’s service regions: the Oregon Shakespeare Community Solar Project and the Wallowa County Community Solar Project.

Blue Sky Usage and Blue Sky Block Renewable Energy Programs

Blue Sky is a customer-powered, opt-in program offered by PacifiCorp that helps residents, small businesses, and municipalities support renewable energy and environmental stewardship in

³⁵ 2016 OR Laws Ch. 28, § 22.

³⁶ See *In re CSP Rulemaking*, Docket AR 603; *In re CSP Implementation*, Docket UM 1930.

³⁷ OAR 860-088-060(2).

their communities. Blue Sky has ranked in National Renewable Energy Lab's (NREL)³⁸ top 10 voluntary programs for more than 20 years based on participation and sales. Blue Sky allows customers to purchase and support renewable energy, above and beyond what the company generates or acquires for its basic generation mix and offers customers the opportunity to support the delivery of newly developed renewable energy to the regional power pool now and help build a larger market for renewable energy. Blue Sky participants pay the incremental cost of acquiring the additional renewable energy, plus the costs associated with offering the program. Since 2000, Blue Sky participants have supported more than 12 million megawatt-hours of renewable energy. Based on typical residential customers that use approximately 826 kilowatt-hours per month, this is enough energy to power more than 1,210,653 homes for a year.

With the passage of Senate Bill (SB) 1149 in 1999, the Oregon State Legislature required investor-owned utilities in Oregon to provide all residential and small non-residential electric customers with a portfolio of voluntary options to support renewable energy. The restructuring law was designed to give consumers more options while at the same time encouraging the development of a competitive energy market. As a result of SB 1149, PacifiCorp offered two new green pricing options to Oregon residential and small non-residential customers – Blue Sky Usage and Blue Sky Habitat. These options are in addition to basic service and allow participants to support a blend of renewable energy equivalent to their actual monthly usage. Both these options allow participants to support a blend of wind and solar from the western region for an additional \$0.0105 per kilowatt-hour. The Blue Sky Habitat option also adds a \$2.50 monthly donation to help restore and preserve habitats for native fish, including salmon, in Oregon. These funds are directed to a non-profit program administrator (currently The Freshwater Trust). More than 90 river miles have been improved through these funds.

The Blue Sky Block option, originally launched in 2000, allows customers to support renewable energy in 100 kilowatt-hour increments (called “blocks”). Blue Sky Block participants match a portion of their electricity use for a fixed price by purchasing blocks of western region wind and solar energy. In 2004, Blue Sky QS (quantity savings) was introduced to support large commercial and industrial customers by providing quantity-based savings for bulk purchases. In 2006 a provision was added to the Block tariffs that allowed funds not spent after covering program costs and matching renewable energy purchases to Block purchases to be used to fund Qualifying Initiatives. The intent of this process was to use the positive liability balances as a catalyst for reducing barriers to the construction of small and medium sized community-based renewable energy projects and increase the benefits extended to Blue Sky Block customers and the communities in which they live, while educating customers on renewable energy technologies. Since 2006 PacifiCorp has used these funds to provide grants for nearly 150 community-based renewable energy projects at schools, libraries, municipal buildings, and community groups in local communities. By reducing operating costs through renewable energy savings, more money can be used in other ways to support these vital organizations.

Blue Sky participants are helping to drive demand for new renewable energy in the West while creating local jobs and supporting community-based renewable energy projects and native fish habitat restoration right here in Oregon. Since 2008, the program has been Green-e Energy

³⁸ The National Renewable Energy Laboratory is a national laboratory of the U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, operated by the Alliance for Sustainable Energy LLC.

certified, which requires that the renewable resources supported at minimum meet the Green-e Energy standard; the program must abide by a professional code of conduct that governs the marketing and business practices, conform to the Green-e Energy customer disclosure requirements, submit to an annual supply verification process audit and comply with a marketing compliance review to ensure no false or misleading claims are being made about the program.

Enrollment has grown steadily over time. Currently nearly 80,000 customers in PacifiCorp service regions are participating in one of the Blue Sky options. This equates to 14 percent of customers who are enrolled in the Program.

As noted in the ODOE Study, PacifiCorp's renewable energy programs, including the Blue Sky programs, "routinely land among the top 10 programs in the nation—for sales, participation, and more—according to the National Renewable Energy Laboratory."

Community Resilience Battery Storage Grant Pilot

In 2015 the Oregon Legislature directed the Commission to require utilities to procure one or more 5 MW energy storage systems by 2018.³⁹ The Commission subsequently adopted guidelines in 2016 to inform utility development of energy storage projects and programs.⁴⁰ Consistent with these guidelines, PacifiCorp created its initial Community Resilience Pilot program and proposed two energy storage projects in 2017, and subsequently refined those proposed projects in 2018.⁴¹

Under its original Community Resilience Pilot proposal, PacifiCorp sought authorization to spend up to \$1.8 million to fund technical assistance and install energy storage resources for community resiliency purposes. On July 18, 2018, PacifiCorp, Staff, and the Oregon Citizens' Utility Board filed a stipulation requesting, among other things, Commission authorization for PacifiCorp to recover up to \$200,000 to fund a limited number of initial studies (Phase I of the Community Resilience Pilot). As part of that stipulation, after completing Phase I PacifiCorp agreed to file a final report and revised plan estimating costs and anticipated benefits of expanding the Community Resilience Pilot into Phase II.

PacifiCorp filed its final Phase I report for the Community Resilience Pilot in 2020. That report contained several notable learnings:

- 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;
- 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 suffered lower-than-expected participation and follow-through from initial conversations with many potential program participants;

³⁹ 2015 OR Laws Ch. 312.

⁴⁰ *In re HB 2193 Implementation*, Docket No. UM 1751, Order 16-504 (Dec. 28, 2016).

⁴¹ *See In re PacifiCorp's Draft Storage Potential Evaluation*, Docket No. UM 1857.

- 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; and
- As adoption of commercial-scale battery energy storage resources increases, PacifiCorp will need to develop its capabilities to effectively manage these resources to harness the associated grid services benefits for its ratepayers.⁴²

Based on those learnings, PacifiCorp determined that expanded community resiliency (through battery storage systems) provide an array of benefits for critical facility customers and the communities they serve, PacifiCorp's customers, and the Oregon battery energy storage industry.

Subsequently, PacifiCorp launched its revised Community Resilience Pilot that extended the availability of technical assistance to facilities that are critical to community emergency management and disaster response and began developing the grant program.⁴³ PacifiCorp proposed to run the Community Resiliency Pilot through early 2023. During that time, technical assistance studies were offered on a rolling basis, and two grant application windows were opened: October 11, 2021 to February 18, 2022, and August 1, 2022 to October 31, 2022. To date, PacifiCorp has delivered ten technical assessments to critical facilities and has approved grant funding for 100 percent of the cost of 2 battery storage projects.

ODOE Community Renewable Energy Grant Program Grants

In 2021 the Oregon Legislature created a new \$50 million fund to provide Community Renewable Energy Grant Program (CREP) grants and directed the ODOE to establish guidelines for the program.⁴⁴ The ODOE established guidelines and rules for the CREP grant program in 2022 that included:

- Program processes, including periodic opportunity announcements, information required in applications, completeness and competitive reviews, and performance agreements between the department and successful applicants;
- Eligibility requirements and criteria that the department must use to prioritize applications;
- Allocation and distribution of grant funds; and
- Compliance and recovery of grant funds.⁴⁵

⁴² *In re PacifiCorp's Draft Storage Potential Evaluation*, Docket No. UM 1857, Final Phase 1 Report (Dec. 18, 2020).

⁴³ *In re PacifiCorp's Draft Storage Potential Evaluation*, Docket No. UM 1857, Order 21-270 (Aug. 26, 2021).

⁴⁴ 2021 OR Laws Ch. 508, §§ 29-32.

⁴⁵ 2022 OR Admin. Reg. Ch. 330, DOE 1-2022 (Feb. 28, 2022) (more information available here: <https://www.oregon.gov/energy/Incentives/Pages/CREP.aspx>).

The CREP grant program is open to Oregon Tribal Nations, public bodies, and consumer-owned utilities. Public bodies include counties, municipalities, and special government bodies such as ports and irrigation districts. Grants are awarded on a competitive basis and priority will be given to projects that support program equity goals, demonstrate community energy resilience, and include energy efficiency and demand response.

At least half of the grant funds will be awarded for projects that serve environmental justice communities, including communities of color, lower-income communities, rural communities, and others. Similarly, at least half of the grant funds will be awarded to projects that support community energy resilience. Of the \$50 million allocated to the grant program, a minimum of \$1 million is reserved for planning projects that qualify as community energy resilience projects, and an additional \$1 million that do not.

The first application window for CREP grants closed July 8, 2022, and on October 18, 2022, ODOE announced that 21 applicants would receive CREP grants—amounting to \$12 million in total grants.⁴⁶ Of the 17 applications submitted by public entities in PacifiCorp’s service regions, four were selected to receive funding. These four are projects affiliated with the Academy for Character Education, Wallowa County, the City of Mosier, and the City of Pendleton.

The second application window for grant funding closed on February 15, 2023. Three applicants reached out to PacifiCorp and received letters of coordination for their respective CREP grant applications. Award notifications for this second round of funding are expected to be announced in May of 2023.

Projects Identified by Energy Trust of Oregon

Part of the work of the ETO involves partnering with communities interested in identifying, planning and developing small-scale renewable and resilience-related projects. During this CBRE inventory, PacifiCorp engaged in a series of conversations to learn more about this pipeline of work. ETO identified 14 future small hydropower projects that could be included in the company’s CBRE inventory. Each of these projects are supported by either public or community-based entities in PacifiCorp regions. Of these projects, four are currently in the design phase and ten are in the conceptual stage.

Additionally, ETO identified approximately 50 public or community-related solar projects that have completed initial feasibility assessments and are under consideration in the company’s Oregon service area.

Additional Opportunities Identified by the Company

A number of additional CBRE opportunities were identified through coordination with PacifiCorp’s Regional Business Managers (RBMs), who serve as the company’s primary points of contact with communities. The RBMs confirmed several projects that were identified in the potential list and provided one additional opportunity along with some additional, early-stage potential opportunities. The potential opportunities have been captured and reflected in Group 2

⁴⁶ More information available here: <https://energyinfo.oregon.gov/blog/2022/10/18/oregon-department-of-energy-grant-program-supports-renewable-energy-projects-from-ashland-to-ontario>.

of the Initial CBRE Potential Study.

Initial CBRE Potential Study

This section provides the results of the company's Initial CBRE Potential Study and outlines anticipated CBRE benefits and costs.

This Study is based on the company's CBRE Inventory (OCSP, Blue Sky Programs, Community Battery Storage Pilot, ODOE CREP grants, ETO projects, internal company opportunities, and community surveys), small-scale renewable resources, recent interest in community resilience and the opportunities to utilize solar + storage to support critical facilities and enhance local resilience during potential electricity interruptions.

The study is not informed by Interim CBIs and has not received specific input from communities, Tribal Nations, stakeholders, or Staff. Rather, it reflects the company's expected potential CBRE resources from known CBRE categories and includes high-level assumptions for inclusion in the company's IRP modeling. The Initial Potential Study does not currently reflect a discreet "supply curve" of potential CBRE resources, rather the study focuses on characterization of potential capacity from CBREs. The company expects to review the Initial CBRE Potential Study elements with communities (including Tribal Nations), stakeholders and Staff in the months following this CEP. The CBRE Action Plan in this section provides information on planned engagement and input mechanisms.

Results

The company's Initial CBRE Potential Study, analyzing existing and forecasted opportunities, expanded upon in the CBRE Inventory, identified approximately 95 MW of incremental CBRE capacity from 2023 through 2029. This includes 92 MW from existing programs, and 3.5 MW from potential small-scale and community-focused renewable projects from 2025 through 2029.

The channels used to identify this capacity were determined to fall into two distinct groups. The first group is inclusive of established programs and projects confidently identified by the Energy Trust of Oregon. The second group is representative of CBRE opportunities that will be identified in collaboration with individual communities, based on CBRE and resilience goals and priorities. Projects in both groups will be proactively sought after and supported by the company but will require different forms and levels of backing.

Group 1: The estimated 92 MW of potential capacity from current CBRE programs includes:

- 65 MW from OCSP for the years 2022 – 2029. This includes 52 MW of currently approved or in-operation OCSP (there are currently two projects in operation with approximately 0.5 MW capacity), and 13 MW of carve-out projects that support vulnerable, environmental justice or tribal communities, or that are associated with non-profits or government entities.

- 4.3 MW from Blue Sky Grant projects for years 2024 – 2029. This forecast assumes that all future program grants will support community projects that align with CBREs, and that annual capacity for years 2024 – 2029 match the average annual capacity added over the past three years (or 714 kilowatts/year for years 2019 – 2022).
- ETO Identified Opportunities – Two opportunity types totaling approximately 23 MW:
 - 17 MWs from ETO-identified potential small, community-focused hydro opportunities for the years 2023 – 2029. This forecast assumes that each project becomes operational by 2029, consists entirely of small qualifying facilities in PacifiCorp’s service area (in-conduit hydroelectric generation resources), and would be subject to standard Public Utility Policies Act (PURPA) qualifying facility (QF) contracting processes.
 - 5.6 MW from ETO-identified potential community-focused, non-residential solar opportunities that have completed an initial feasibility assessment.

Group 2: The estimated 3.5 MW of potential capacity from small-scale and community-focused renewable projects from 2025 – 2029 assumes that two community solar + storage projects will be implemented annually beginning in 2025, and that each has an average capacity of 350 kilowatts, resulting in 700 kilowatts of total capacity annually.

This modest amount of potential capacity is a projection based on the company’s experience partnering with communities in its Community Resilience Battery Storage Pilot. Levels of interest and ability of community-based critical facilities to install battery storage systems while using grant awards from the pilot were leveraged to estimate a completion rate of two projects annually, but do not include projects completed in the ODOE CREP grant program. Without firm market information to guide sizing of these types of projects, capacity assumptions were based on CBRE proposal submissions to the ODOE CREP grant program as well as potential projects outlined in technical studies provided to critical facilities via the Community Resilience Battery Storage Pilot.

These projects are imagined to be actualized in a Community-Based Renewable Energy Project Grant Pilot that the company proposes to develop. This Pilot would be an expansion of the current Community Resilience Battery Storage Pilot. The company intends to provide a “straw proposal” of the expanded pilot program for consideration and refinement in the CEP Engagement Series.

These Initial CBRE Potential Study results are a placeholder and do not represent CBRE acquisition targets. Specific CBRE acquisition targets and mechanisms are expected to be established through the company’s engagement channels in the coming months, as also explained in the Initial CBRE Action Plan.

It is also important to note that, when considering projects in the CBRE Potential Study, the company has prioritized enhancing community resilience over acquiring additional capacity. As has already been mentioned, when estimating the sizing of potential CBRE projects, decisions

were made using the company's actual experience working with communities. This experience indicates that community-centered projects intended to enhance specific aspects of local resilience (e.g.: solar + storage at a critical facility, community center resilience hub, etc.) are typically modest in capacity. More accurate information related to project sizing, pricing and interest levels will come from future requests for proposal as well as the Initial CBRE Action Plan.

Anticipated Benefits

There are several potential benefits related to renewable resources that may also result from CBRE projects. These include:

- Emissions reductions from renewable/non-emitting resources compared to the average emissions profile for system generated energy;
- Local installation of renewable resources can help to defer upgrades on local distribution and transmission infrastructure (depending on the type of renewable resource, grid conditions and grid needs);
- Reduced fuel costs from renewable/non-emitting resources compared to resources that have variable generation costs (e.g., natural gas, coal);
- Potential economic benefits for renewable resource owner(s) from monthly energy bill offsets; and
- Potential workforce or employment opportunities in the areas where renewable projects are implemented.

There are additional benefits that can result if CBRE projects were to be paired with energy storage resources (e.g., battery storage). These benefits include the potential to:

- Provide backup power during system outages (value depends on end-use and community). For example, storage + renewable resources can provide continued operation of critical facilities (water or wastewater facilities, health care facilities, emergency response facilities, etc.), or electrical stability for evacuation centers, community resilience hubs, or emergency operations centers;
- Shift load from peak to off-peak periods;
- Provide additional energy and capacity during peak load periods;
- Reduce demand during peak load periods; and
- Create potential value from price arbitrage, where energy stored during periods when electricity costs are lower can be discharged when electricity costs are higher.

The ODOE Study also considered the potential benefits associated with small-scale and CBRE projects. For example, the ODOE Study outlined the following:

Some benefits of renewable energy projects are obvious: improving clean air and clean water, reducing greenhouse gas emissions, decreasing dependence on foreign

energy sources, enhancing local economic development, increasing tax revenue for communities, and providing high-paying jobs in the state.

The key question for this study is: “Which benefits are specifically unique to small-scale and community-based renewable energy projects?” *The key unique benefit for small-scale or community-based projects is local resilience.* Other benefits include an easier and potentially faster siting process, the opportunity to develop a skilled workforce with knowledge about developing and operating renewable energy projects, as well as a potential for local revenue.⁴⁷

The ODOE Study highlighted several additional community resilience and economic benefits. For community resilience, workgroup members identified important services that investments in community energy resilience could support. These include providing power to: for cooling/warming centers; critical infrastructure; vehicle chargers; cell towers and phone chargers; refrigerators for food and medications; and water pumps

For economic benefits, workgroup members identified benefits that may be associated with small-scale and community-based renewable energy projects, though most are common to all projects, regardless of size. These include: further reductions in solar energy costs, as increased demand brings down overall costs; deferred investment in grid infrastructure; reduced fossil fuel consumption; reduced customer energy costs through net metered systems; local economic development through local job creation, increased high-skilled labor, worker training, diversification of local economies, and increased local tax revenues; fully maximizing existing infrastructure by efficiently using existing excess capacity through smaller projects that can be integrated more readily than larger projects, and using existing skilled labor in areas sited near larger projects; and Potential gross revenues from power sales.⁴⁸

PacifiCorp’s agrees with the ODOE Study Workgroup’s assessment regarding unique benefits of small-scale, CBRE projects, specifically that the majority of benefits from renewables are common to all projects, regardless of size, and that “*the key unique benefit for small-scale or community-based projects is local resilience.*”⁴⁹

Anticipated Costs

While CBREs can provide energy at a low cost once installed by largely producing energy without the cost of fuel, significant costs will be required to plan, install, configure, and maintain CBRE projects.

The types of CBRE costs that must be evaluated include:

- **Planning and Design Costs:** electrical design and specifications, budget development, cost/benefit analysis, and implementation planning. It is anticipated that these costs would be lower for a simple solar installation on a

⁴⁷ ODOE Study, at 18–19, Figure 6 (emphasis added).

⁴⁸ *Id.*

⁴⁹ *Id.* at 19.

- single building and higher for more complex configurations (e.g., solar + storage, multiple buildings, and microgrids).
- Contracting, Financing and Approvals: e.g., the time and effort required to establish required contracts, financing, and receive any required regulatory approvals.
 - Equipment Costs: solar panels, inverters, conductors, batteries, and controllers.
 - Implementation, Installation and Configuration Costs: costs to install, configure and verify proper operation of the resource.
 - On-going Operations and Maintenance Costs: resources have a certain level of on-going costs for operation and maintenance. Simple CBRE projects may have lower costs for operations and maintenance, while more complex installations, for example solar + storage, multiple building and micro-grid configurations, will likely have significantly higher annual O&M costs.
 - Integration Costs: related to impacts that the local generation has on the utility grid.

The ODOE Study confirms that CBRE costs could be significantly more than other resources. For example, smaller renewable projects do not benefit from economies of scale of larger utility-scale projects, where certain fixed costs generally decrease as projects gets larger and can be “spread over more kilowatts, providing a volume discount.”⁵⁰ Because of these realities, CBRE projects are often “only economically feasible at rates higher than the cost of the largely carbon-free electricity that can be purchased from [the Bonneville Power Administration].”⁵¹ To the point, the ODOE Study determined that costs for small solar commercial installations are 30 to 105 percent higher than utility scale solar installations,⁵² and a recent National Renewable Energy Lab study (NREL Study) indicates that similar small commercial solar installations are nearly twice the cost per kilowatt of a comparable 100 MW utility scale solar installation (\$0.87/kilowatt for 100 MW utility-Scale compared to \$1.63/kilowatt for 200 kilowatts Commercial Rooftop installation).⁵³

The company’s analyses of anticipated costs, confirmed by the ODOE Study and NREL Study, underscore the reality of CBRE costs—small-scale renewable resources and CBREs have the tendency to be substantially more costly compared to utility-scale renewable resources. Additionally, current cost estimates are not based on recent market input. Actual costs may be significantly different, especially with recent supply chain disruptions and high demand for electrical products and infrastructure.

CBRE Potential Study Conclusions

Throughout HB 2021, Commission docket UM 2225, the ODOE Study and the NREL Study,

⁵⁰ *Id.* at 23.

⁵¹ *Id.* at 30.

⁵² *Id.* at 24, Figure 6.

⁵³ “U.S. Solar Photovoltaic System and Energy Storage Cost Benchmarks, With Minimum Sustainable Price Analysis: Q1 2022,” Ramasamy, V., et al (NREL Technical Report; Sept. 2022) (available here: <https://www.nrel.gov/docs/fy22osti/83586.pdf>).

there is broad recognition of the potential for localized benefits from certain CBRE projects. For example: “The benefits of renewable energy projects (notably, the value of replacing fossil fuels with emissions-free energy) for society are great, regardless of the size and ownership structure of the project.”⁵⁴ Similarly, CBREs provide uniquely local benefits: “While large-scale renewable energy projects produce clean power at economies of scale that greatly reduce greenhouse gas emissions and mitigate the effects of climate change for all, small-scale projects may have additional benefits of improving local energy resilience, local control over energy choices, and local job and infrastructure investments, among others. These unique benefits of small-scale and community-based projects accrue to the project owners.”⁵⁵

However, these unique local benefits are nearly twice as expensive as utility scale renewable alternatives. This led the ODOE Study to conclude that: “Workgroup members held differing perspectives on the appropriateness of using regulated utility rates to pay for benefits that do not necessarily contribute to delivery of safe and reliable service at just and reasonable rates for all electricity customers.”⁵⁶ In the end, the ODOE Study workgroup was unable to reach consensus on any specific recommendations, and instead offered guiding principles for future discussion.

The company restates those principles here, as PacifiCorp believes they are instructive and could help inform the Commission’s future CBRE policies. The ODOE Study concluded that small-scale renewables and CBRE policies should:

- Assist Oregon in meeting state goals as defined in HB 2021;
- Promote equitable outcomes, including the state’s environmental justice goals;
- Maintain affordable energy and rates;
- Promote an equitable distribution of costs and benefits, recognizing the difference between economic and other societal and local benefits versus utility system benefits;
- Support project transparency;
- Consider diverse stakeholder perspectives;
- Support economic development in Oregon; and
- Support unique contributions of small-scale projects, including local energy resilience; nimbleness due to smaller project size; community or local ownership; utilization and synergy of local available resources, including hydro and bioenergy; waste stream management when waste is used for bioenergy projects.⁵⁷

There have been lengthy conversations regarding the costs and benefits associated with CBRE projects, and while there are important community benefits from these projects, CBRE resources will be significantly more expensive than utility-scale resources. There is no consensus on how to pay for these above-market costs. The company expects to continue discussions throughout its engagement channels to solicit input from communities, stakeholders and staff, and to explore productive opportunities to resolve these issues and balance the perspectives various stakeholder

⁵⁴ ODOE Study, at 13.

⁵⁵ *Id.* at ii.

⁵⁶ *Id.* at 32.

⁵⁷ *Id.* at 33.

groups and regulators.

CBRE Modeling

Methodology and Results

The IRP model is used to develop and analyze portfolios to support PacifiCorp's entire system across six states. As such, the IRP model does not provide meaningful results relative to overall portfolio selections based on small incremental resource additions (e.g., less than 20 MW). To accommodate for this modeling reality, the results of the Initial CBRE Potential Study were simplified as follows for incorporation in the IRP model.

The 95 MW of CBRE potential solar and hydro resources outlined in the Initial CBRE Potential Study were aggregated into a five 20 MW resource "blocks" for a total of 100MW of CBRE capacity. The CBRE potential capacity and accompanying energy were then used as inputs to into the IRP model in 20 MW increments over four years (2024 – 2027) for a total of 80 MW of solar capacity, with an additional 20 MW of hydro capacity added in 2027.

For modeling, the IRP inputs assumed a price of \$97/megawatt-hour for the combined CBRE energy output. This value was taken from the OCSP retail rate credit for solar project generation. It serves as a placeholder, much like the amount of capacity determined in the Initial CBRE Potential Study. It should be noted that good market data for potential CBRE costs were not available as inputs for IRP modeling, and it is possible that actual costs could be much higher than this. The company expects to learn more from feedback in its engagement channels as well as its planned RFPs, and to incorporate learnings in the next round of CBRE modeling.

The results from the CBRE sensitivity study are summarized in Chapter VI Resource Planning, Table 15 along with results from the IRP Preferred Portfolio and CEP Portfolio.

As noted in Chapter VI, the CBRE Sensitivity assumes that the 100 MW of CBRE resources replace 100 MW of required small-scale renewables modeled in the CEP Portfolio. As such, emissions and ENS are identical for the CEP Portfolio and the CBRE Sensitivity. There are slight improvements in both emissions and Energy Not Served (ENS) between the CBRE Portfolio and the IRP Preferred Portfolio, reflective of the higher level of local renewables in the CEP and CBRE Portfolios. While emissions and ENS may be similar between the CEP and CBRE portfolios, the substitution of CBREs for small-scale renewables incurs a steep cost increase of \$131 million on a present value revenue requirement basis over the period from 2023 – 2042.

Relationship between Modeling and Customer Benefit Indicators

As described above, as well as in Chapter VI Resource Planning, Table 15, CBREs are expected to provide resiliency benefits. To this end, PacifiCorp established the Interim CBI of Reduce Frequency and Duration of Energy Outages, measured by the average ENS as a percentage of the company's Oregon load. ENS is a result of IRP development and indicates how reliable a

portfolio is. A portfolio with a relatively higher ENS score indicates that it is less reliable, whereas a portfolio with a relatively low ENS score indicates it is more reliable.

This ENS reliability metric is evaluated for three scenarios: the 2023 IRP preferred portfolio, and alternative portfolios with varying levels of small-scale renewables and CBREs. As described in Chapter VI, the company's IRP analyses indicate that both the small-scale renewable portfolio and the CEP portfolio are expected to increase reliability (see Table 15).

In addition to improved reliability, small-scale renewable investments have positive environmental impacts. As provided in Chapter VI, Table 15, both the CEP and CBRE portfolios results in lower carbon dioxide (CO₂) emissions as compared to the IRP Preferred Portfolio (Comparable emissions of 64,689 thousand tons for the IRP Portfolio compared to 62,937 thousand tons for the CEP and CBRE portfolios). As described in Chapter III, CO₂ emissions are the metrics for which to measure progress toward the Interim CBI of Increase Energy from Non-emitting Resources and Reduce CO₂ Emissions to Meet HB 2021 Targets.

Initial CBRE Action Plan

PacifiCorp recognizes CBRE to be a critical and exciting component of its CEP. As they develop, the projects and programs identified in the Initial CBRE Potential Study will be informed by other streams of work in this CEP, such as the refinement of CBIs and the use of resilience metrics to identify the needs in, and opportunities of, communities across the service regions.

In addition to being informed by them, CBRE projects serve as a complement to these other elements articulated in the CEP. This “dovetailing” could also extend to company actions that have been shared elsewhere. In the 2023 IRP, for example, demand response programs and energy efficiency measures are prominent company strategies for enhancement toward a clean energy future. Coinciding efforts made to reduce carbon emissions, as well as efforts to support communities as they enhance local resilience are in line with how the company foresees its commitment to the development of CBRE projects.

Continued Assessment of Needs and Opportunities

The work to conduct the Initial CBRE Potential Study revealed a range of opportunities for the development of CBRE projects. Some of those fell into what was called Group 1 of the Study: existing programs which include the OCSP, Blue Sky Renewable Energy Programs, and the opportunities identified in collaboration with ETO. The company will continue efforts to support the opportunities in this first path.

The second path identified in the Initial Potential Study involves further examination of the potential small-scale renewables and CBREs outlined in Group 2 of the Initial CBRE Potential Study. The Group 2 Potential was informed by several inputs, including:

- Feedback received from previous engagement opportunities, such as the Community Resilience Battery Storage Pilot, projects identified through RBMs;

- Learnings from the ODOE Study and NREL Study;
- Interim CBI metrics developed in collaboration with the CBIAG; and
- Resilience metrics and prioritization on the types of CBREs to consider or target, as well as identifying communities in PacifiCorp's Oregon service regions that might benefit most from prioritized CBRE project development.

The company will continue to engage its three distinct CEP engagement channels (CBIAG, CEP Engagement Series and Tribal Nations Engagement Series) in the coming months. The company anticipates facilitating discussion on the proposals in this CEP and soliciting and consolidating feedback.

Conversations with these groups will subsequently be tailored to identify additional needs and opportunities as they relate to the development of CBRE projects. Having already provided relevant CEP background information, including the bullet points above, PacifiCorp anticipates facilitating several specific conversations. These potential conversations include considering the community-specific costs and benefits of CBREs; discussing potential CBRE screening and evaluation criteria; opportunities to leverage CBIs and resilience metrics to identify and evaluate potential CBREs; methods to engage within communities to better identify CBRE opportunities; community preferences on the approach toward CBREs (e.g., a preference for a Green Tariff to allow community flexibility, prescriptive pipeline programs that encourage CBRE planning and development); and focusing on opportunities for community CBRE participation and development. Additional topics will likely emerge as priorities from this targeted engagement. The feedback and guidance received during these stakeholder sessions will be used to drive decision-making and ultimately an update to the Initial CBRE Action Plan.

Additionally, as mentioned elsewhere in this chapter, the company will continue to seek a better understanding of CBRE-related opportunities outside of its formally identified CEP engagement channels. These include opportunities to collaborate with, and learn from, communities as they seek ODOE CREP and federal grant funds, through regular RBM interactions and during DSP Local Stakeholder and Transportation Electrification workshops.

Direct CBRE Implementation Actions

In addition to the prioritization of the assessment of additional needs and opportunities, the company has identified specific and immediate paths to action which will advance development of CBRE projects.

Resilience Partnership with the Energy Trust of Oregon

PacifiCorp has taken recent strides to further strengthen its collaborative efforts with the Energy Trust of Oregon. The company meets regularly on battery storage and resilience topics and sits on ETO Advisory Committees. PacifiCorp also hopes to complement and support both existing program offers and the energy resilience program offerings that ETO has proposed to develop through their utility specific action plan, which will be designed to provide support to Oregon communities as they seek state and federal funding for the development of CBRE projects that support critical facilities and community resilience hubs.

Federal Grant Opportunities

After the Infrastructure Investment and Jobs Act (IIJA) became law in 2021, IIJA funds were channeled to federal agencies, including the U.S. Department of Energy (DOE), to distribute money (through grants, loans, etc.) and to carry out the law's intent. The IIJA includes federal executive branch Justice40 Initiative requirements, which intend to deliver at least 40 percent of the overall benefits from federal investments in climate and clean energy to disadvantaged communities—including decreased energy burden, access to low-cost capital and job training, among other benefits. DOE grant applications require 'community benefits plans,' to honor these IIJA and Justice40 social commitments. Well-designed, measurable community benefits plans are critical to PacifiCorp's potential success in applying for three valuable (\$50 to \$240 million), highly competitive DOE Grid Resilience Innovation Partnership (GRIP) grants: 40101c, 40103b and 40107. These three GRIP grant applications, along with three other federal applications being pursued by the company, each and all include support for potential CBRE development in Oregon.

Future Request for Proposals

The company intends to issue a request for proposals for small-scale renewable projects, to which CBRE projects may qualify. More information on this small-scale renewable RFP can be found in the Chapter VIII action plan discussion.

Updated CBRE Potential Study and Action Plan

The results of this RFP will largely inform an updated CBRE Potential Study, which will be filed as part of the 2025 PacifiCorp CEP submission. The company expects that the updates will also include:

- Incorporated feedback and input received in the Engagement Channels.
- Additional learnings and actions stemming from direct engagement with local communities, ETO and market participants.
- Leveraged market inputs from RFPs to inform availability, performance and cost of potential CBRE opportunities.
- Takeaways from resilience projects completed within the existing Community Resilience Battery Storage Grant Pilot.
- The results of an examination of whether the CBRE Potential Study could be improved by using an alternate methodology or best practices as identified by national energy laboratories and other industry thought leaders.

Learning outcomes that emerge from the company's continued focus on advancing an understanding on CBRE needs and opportunities, as well as the inputs used to inform an updated CBRE Potential Study, will also determine how the company advances an updated CBRE Action Plan. Community input and feedback from engagement groups will remain critically important as these aspects of the CEP evolve over time. Outreach to communities which have published energy, sustainability and/or resilience goals will provide particularly informative feedback. The company also intends to conduct a survey to better gauge future interest in different types of CBRE projects, and plans to incorporate findings into these two updates.

CBRE Grant Pilot Straw Proposal

A final proposed action is development of a straw proposal for potential expansion of the existing Community Resilience Battery Storage Grant Pilot, which was outlined earlier in the CBRE Inventory. The current pilot offers technical assessments to critical facilities. This proposed Community-Based Renewable Energy Project Pilot would continue that offering to community-centered critical facilities interested in learning more about CBRE project opportunities on site. The grant portion could be expanded to include funding for a renewable energy source paired with battery energy storage systems to develop community resilience hubs.

PacifiCorp plans to develop a straw proposal that will be presented to the CEP Engagement Channels in the coming months. Guidance from stakeholders will be critical as the company considers the most effective ways to support individual community resilience efforts in the planning and development of unique projects that meet their most critical needs and goals.

VI. RESOURCE PLANNINGKey Findings

PacifiCorp's 2023 Integrated Resource Plan (IRP) establishes a system-wide portfolio of resources that is optimized for the company's six-state service territory and provides the basis for analyzing House Bill (HB) 2021 requirements. This system-wide portfolio ensures that Oregon customers retain the benefits of multistate system planning and operations, that provides both access to West-wide resources and markets and mitigates risk through the delivery of reliable energy from a broad range of lower-cost resources.

As a natural outgrowth of PacifiCorp's least-cost and least-risk decarbonization trajectory over the past several IRP cycles, PacifiCorp's 2023 IRP positions the company to comply with HB 2021's decadal requirements. To highlight a few examples, PacifiCorp's 2023 IRP preferred portfolio includes:

- 1,792 MW of wind, 495 MW of solar additions with 200 megawatts (MW) of battery storage capacity from the 2020 All-Source Request for Proposals (RFP), which are expected to come online prior to 2026.
- The acquisition and repowering of 93 MW of Wyoming wind projects.
- 500 MW of advanced nuclear generation from the Natrium™ demonstration project, anticipated to come online by 2030, an additional 1,000 MW of advanced nuclear resources by 2032, and through 2037, 1,240 MW of non-emitting peaking resources. Developing these two technologies will be critical to manage the transition from our coal resources and minimize impacts to our employees and communities.
- 9,114 MW of new wind and 7,855 MW of new solar over the 20-year planning horizon.
- Over 1,000 miles of new transmission assets to access renewable generation.

PacifiCorp also developed a small-scale renewable portfolio in its IRP processes to ensure that 10 percent of the company's generation portfolio for Oregon will be comprised of small-scale renewables (20 MW or less), by 2030. The company anticipates that 4.6 percent of this requirement can be met with existing small-scale renewable resources, leaving a gap of approximately 5.4 percent, or 490 MW of nameplate capacity. Due to anticipated load growth and procurement activities, this gap is anticipated to grow to 802 MW across the 20-year study period, peaking in 2037.

After additional economic analysis, this small-scale renewable portfolio ultimately serves as the company's Oregon-Allocated Clean Energy Plan (CEP) Portfolio. While it results in an additional \$268 million in the Oregon-allocated present value revenue requirement compared to the 2023 IRP, it most effectively balances the company's compliance obligations, risks, costs, and benefits. PacifiCorp compared this portfolio against several alternative sensitivity studies, including accelerating the pace and amount of small-scale renewable procurement, examining costs and benefits from Community Based Renewable Energy (CBRE), and eliminating market purchases in year 2040. These sensitivities confirm that the company's CEP portfolio is the most reasonable portfolio to begin meeting HB 2021's requirements.

PacifiCorp is a multi-state utility with a large geographic footprint that provides access to diverse renewable resource zones that are connected to load centers by a robust transmission system. This diversity and transmission infrastructure unlocks efficiencies and operational flexibility that benefits all customers within PacifiCorp's six-state service area. For this system, PacifiCorp's primary focus is to deliver reliable and affordable electricity to our customers. Our focus on reliability is rooted in our obligation to supply sufficient electricity as demand changes over time. Our focus on affordability drives us to consider costs and risks as we evaluate alternatives in our planning activities. And a resilient system of resources and transmission assets helps us operate through—and recover from—major disruptions. As PacifiCorp's fleet of resources continues to transition to more intermittent renewable resources in a world with more extreme weather events, planning for a reliable and resilient energy future is even more crucial and more complex than ever. PacifiCorp continues to build on its strong track record of serving its customers safely, reliably, and affordably.

Consistent with these long-term priorities, the potential resources and transmission assets that are needed to serve Oregon customers to comply with HB 2021 are identified using the same modeling tools that were used to develop PacifiCorp's 2023 IRP. The IRP is a comprehensive planning document that covers many topics, and one key focus is the selection of an optimal set of resources and transmission assets needed to serve all of PacifiCorp's customers. The Company's modeling tools help identify the timing, location, size, and type of technologies that can reliably serve customers as demand changes over time. These tools also identify high-voltage transmission investments that are needed to transmit new generation resources to load areas throughout PacifiCorp's six-state service area. These analyses are optimized to identify the combination of resources and transmission assets that minimize customer costs relative to other alternatives. In the context of the IRP, the least-cost, least-risk portfolio is referred to as the preferred portfolio.

For the development of the company's CEP, the company began with the 2023 IRP preferred portfolio and then incorporated Oregon specific requirements to ensure that the resource selections comply with HB 2021. This CEP portfolio development process has three primary stages, that begin with the 2023 IRP preferred portfolio, layer on Oregon's small-scale renewable portfolio requirements, and finally considered several compliance pathways that provide flexibility for the company's greenhouse gas emissions reduction strategies.

In the sections that follow, the company shares the methods and assumptions for its 2023 IRP Preferred Portfolio, Small-Scale Renewable Portfolio, and Oregon CEP Portfolio. The Oregon CEP Portfolio is then compared against several sensitivity studies to assess the reasonableness of the portfolio against available alternatives.

2023 IRP Preferred Portfolio

PacifiCorp's 2023 IRP provides the foundation for the company's CEP. These planning processes are a natural outgrowth of PacifiCorp's least-cost and least-risk decarbonization trajectory over the past several IRP cycles, and this system-wide optimal portfolio of resources ensures Oregon customers still enjoy the benefits of multi-state system planning and operations.

As a starting point for developing the CEP, the system preferred portfolio already includes 370 MW of renewables that count toward the small-scale renewables target set forth in HB 2021. This section discusses the company's 2023 IRP methodologies, including the development of the resource portfolio, reliability assessments, costs and risk analyses, and ultimate portfolio selection. Following methodologies, the company discusses the various generation resources, transmission assets, and emissions reductions that result from the 2023 IRP Preferred Portfolio.

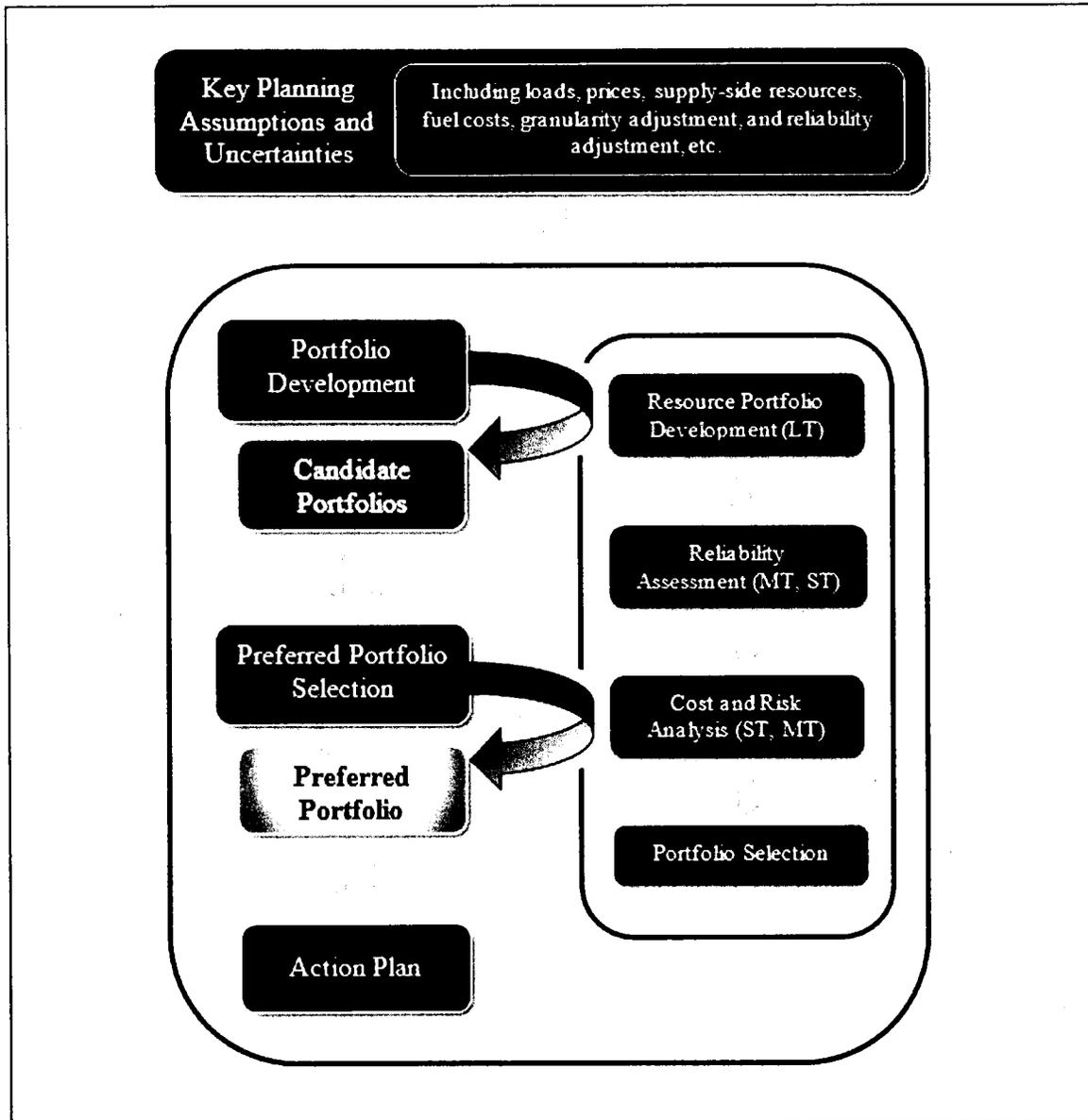
Methodology

The company's IRP modeling assesses the comparative costs, risks, and reliability attributes of different resource and transmission portfolios, and these portfolio attributes form the basis of an overall quantitative portfolio performance evaluation. This process involves several steps.

At the initial step, the company develops "Key Planning Assumptions and Uncertainties" for various factors. For example, these include forecasted utility loads, various market price forecasts, operational characteristics of the company's supply-side resources, and several granularity and reliability adjustments to ensure that all of the planning information is aligned.

These Key Planning Assumptions and Uncertainties then inform the company's primary modeling and evaluation steps: (1) portfolio development; and (2) portfolio screening. For both of these steps, PacifiCorp developed unique resource and transmission portfolios, analyzed deterministic cost and stochastic risk metrics for each portfolio, and selected, based on comparative cost and risk metrics, the specific portfolios considered in the next modeling and evaluation step. The result of the final screening step is selection of the preferred portfolio, and ultimately the Oregon CEP Action Plan. These modeling methodologies and processes are reflected below in Figure 5.

Figure 5 – IRP Evaluation Steps



Within this multi-step process, PacifiCorp uses three distinct modeling tools provided by the PLEXOS modeling system, the long-term (LT), medium-term (MT) and short-term (ST) models. These models work together on an integrated basis to inform the optimal combination of resources by type, timing, size, and location over PacifiCorp’s 20-year planning horizon. The PLEXOS tools also allow for improved endogenous modeling of resource options simultaneously, and greatly reduces the volume of individual portfolios needed to evaluate impacts of varying resource decisions.

In the first step, resource portfolios are developed using the LT model. This is the initial Resource Portfolio Development Stage, where the LT model operates by minimizing operating

costs for existing and prospective new resources, subject to system load balance, reliability, and other constraints. Over the 20-year planning horizon, the model optimizes resource additions subject to resource costs and load constraints. These constraints include seasonal loads, operating reserves, and regulation reserves plus a minimum capacity reserve margin for each load area represented in the model.

To accomplish these optimization objectives, the LT model performs a least-cost dispatch for existing and potential planned generation, while considering cost and performance of existing contracts and new demand-side management alternatives within PacifiCorp's transmission system. Resource dispatch is based on representative data blocks for each of the 12 months of every year. Dispatch also determines optimal electricity flows between zones and includes spot market transactions for system balancing. The model minimizes the system present value revenue requirement (PVRR), which includes the net present value cost of existing contracts, market purchase costs, market sale revenues, generation costs (fuel, fixed and variable operation and maintenance, decommissioning, emissions, unserved energy, and unmet capacity), costs of demand-side management (DSM) resources, amortized capital costs for existing coal resources and potential new resources, and costs for potential transmission upgrades.

Each initial portfolio must have sufficient capacity to be reliable over the IRP's 20-year planning horizon, subject to the limitations of the LT model. The resource portfolios reflect a combination of planning assumptions such as resource retirements, carbon dioxide (CO₂) prices, wholesale power and natural gas prices, load growth net of assumed private generation penetration levels, cost and performance attributes of potential transmission upgrades, and new and existing resource cost and performance data, including assumptions for new supply-side resources and incremental DSM resources.

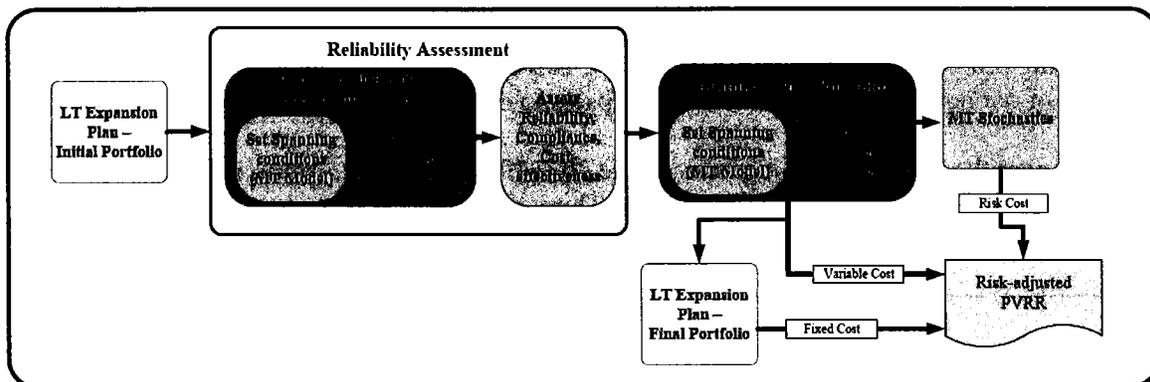
In the next step of the modeling process, the ST model conducts a reliability assessment. The ST model begins with a portfolio from the LT model that has not yet benefited from a reliability assessment conducted at an hourly level. The ST model is first run at an hourly level for 20 years in order to retrieve two critical pieces of data: (1) shortfalls by hour; and (2) the value of every potential resource to the system. This information is then used to determine the most cost-effective resource additions needed to meet reliability shortfalls, leading to a reliability-modified portfolio. The ST model is then run again with the modified portfolio to calculate an initial PVRR, which is risk-adjusted by outcomes of MT model stochastics that occurs in the third step of the process.

Finally, resource portfolios developed by the LT model and adjusted for reliability by the ST model are simulated in the MT model to produce metrics that support comparative cost and risk analysis among the different resource portfolio alternatives. The stochastic simulation in the MT model produces a dispatch solution that accounts for chronological commitment and dispatch constraints. The MT simulation incorporates stochastic risk in its production cost estimates by using the Monte Carlo sampling of stochastic variables, which include load, wholesale electricity and natural gas prices, hydro generation, and thermal unit outages. The MT results are used to calculate a risk adjustment which is combined with ST model system costs to achieve a final risk-adjusted PVRR.

Together, these three tools create an iterative process, where the outcomes of each modeling and

evaluation step can inform the need for additional studies to test or refine assumptions in a subsequent screening analysis: The LT model involves initial resource portfolio development; the ST model performs a reliability assessment; and the MT model performs a stochastic risk analyses. These tools and process are generally reflected in Figure 6 below.

Figure 6 – Portfolio Production Process



Ultimately, these processes and tools inform the company’s resource portfolio selection. This process is based on modeling results from the resource portfolio development and cost and risk analysis steps. The screening criteria are based on the PVRR of system costs, assessed across a range of price-policy scenarios on a deterministic basis and on an upper-tail stochastic risk basis. Portfolios are ranked using a risk-adjusted PVRR metric, a metric that combines the deterministic PVRR with upper-tail stochastic risk PVRR. The final selection process considers cost-risk rankings, robustness of performance across pricing scenarios and other supplemental modeling results, including reliability and CO₂ emissions data as an indicator of risks associated with greenhouse gas emissions.

For additional discussion of PacifiCorp’s modeling steps and processes, please refer to the company’s 2023 IRP.⁵⁸

Results

The cost and risk metrics, reliability assessments, and economic analyses discussed above evaluate a wide range of possible resource portfolios. Ultimately, PacifiCorp selected an IRP preferred portfolio that builds on its vision to deliver energy affordably, reliably, and responsibly through near-term investments in transmission infrastructure that will facilitate continued growth in new resources while maintaining substantial investment in energy efficiency and demand response programs. These generation and transmission selections, and resulting emissions reductions trajectories, are supported by comprehensive data analysis and an extensive public-input process.

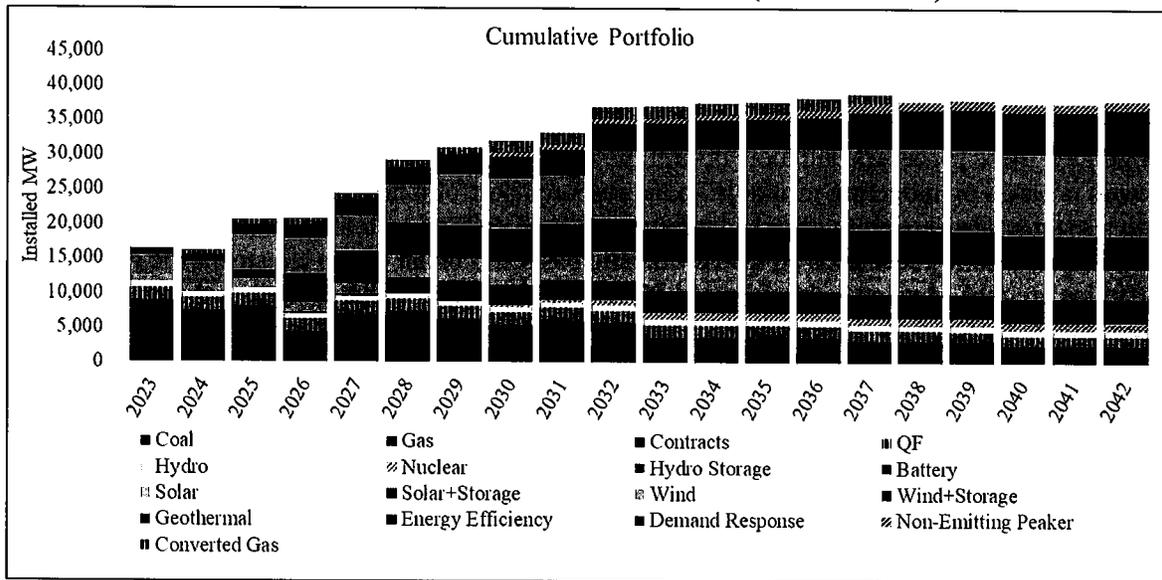
The preferred portfolio continues to include substantial new renewables, facilitated by incremental transmission investments, DSM resources, significant storage resources, advanced

⁵⁸ PacifiCorp’s 2023 IRP is available at <https://www.pacificorp.com/energy/integrated-resource-plan.html>.

nuclear, and non-emitting peaking resources. For example, the 2023 IRP includes 1,792 MW of wind, 495 MW of solar additions with 200 MW of battery storage capacity from the 2020 all-source request for proposals (AS RFP) that will come online prior to 2026. During this time, the preferred portfolio also includes the acquisition and repowering of Rock River I (50 MW) and Foote Creek II-IV (43 MW) wind projects located in Wyoming. The 2023 IRP preferred portfolio also includes the 500 MW advanced nuclear Natrium™ demonstration project, anticipated to achieve online status by summer 2030. By the end of 2032, the preferred portfolio includes 1,000 MW of additional advanced nuclear resources, and through 2037, 1,240 MW of non-emitting peaking resources. Advancing these two technologies will be critical to the planned transition of our coal resources to minimize impacts to our employees and our communities.

Together, over the 20-year planning horizon the 2023 IRP preferred portfolio includes 9,114 MW of new wind and 7,855 MW of new solar. These resources are reflected in Figure 7 below.

Figure 7 – 2023 IRP Preferred Portfolio (All Resources)



To facilitate the delivery of these new renewable energy resources to PacifiCorp customers across the West, the preferred portfolio also includes substantial additional transmission investments. Specifically, the 2023 IRP preferred portfolio includes the Energy Gateway South transmission line, a new 416-mile high-voltage 500-kilovolt transmission line and associated infrastructure running from the new Aeolus substation near Medicine Bow, Wyoming, to the Clover substation near Mona, Utah. The 2023 IRP preferred portfolio also includes the Energy Gateway West Subsegment D.1 project. This is a new 59-mile, high-voltage (230-kilovolt) transmission line from the Shirley Basin substation in southeastern Wyoming to the Windstar substation near Glenrock, Wyoming. Both transmission lines will come online by the end of 2024.

The 2023 IRP preferred portfolio also includes a 290-mile high-voltage 500-kilovolt transmission line known as Boardman-to-Hemingway, that connects the new Longhorn substation near the town of Boardman in Oregon to the Hemingway substation in Idaho, and will

come online in 2026. By exchanging certain transmission assets with Idaho Power Company, PacifiCorp will receive additional transmission rights between Hemingway and the Populus substation in Idaho, which is closely tied to existing and future PacifiCorp transmission connecting to Utah and Wyoming. At the Oregon end of the Boardman-to-Hemingway line, additional transmission upgrades are planned to connect Boardman-to-Hemingway to growing loads.

New since the 2021 IRP, the 2023 IRP preferred portfolio includes a 200-mile high-voltage 500-kilovolt transmission line from Anticline substation in central Wyoming to Populus substation in southeastern Idaho known as Energy Gateway West Sub-Segment D.3, planned to come online in 2028.

Further, the 2023 IRP preferred portfolio includes near-term and long-term transmission upgrades across the system that will facilitate continued and long-term growth in new resources needed to serve our customers. New for the 2023 IRP, many of these transmission upgrades and the accompanying resources reflect the results of PacifiCorp's interconnection "cluster study" process for evaluating proposed resource additions. By evaluating all newly proposed resource additions in an area at the same time, the cluster study process identifies collective solutions that can allow projects that are ready to move forward to do so in a timely fashion. As a result, many of the transmission upgrades and resource additions in the first five years of the IRP preferred portfolio reflect cluster study requests submitted in the past two years.

The 2023 IRP also has implications for the company's greenhouse gas emissions reductions trends. Driven in part by ongoing cost pressures on existing coal-fired facilities and dropping costs for new resource alternatives, of the 22 coal units currently serving PacifiCorp customers, the preferred portfolio includes retirement or gas conversion of 13 units by 2030 and 20 units by year-end 2032. The final two coal units retire by 2039, three years ahead of the end of the planning period, with the path to decarbonization supported by new non-emitting technologies.

In addition to the coal unit exits, retirements, and gas conversions outlined above, the preferred portfolio reflects 2,660 MW natural gas retirements through 2042. This includes Gadsby at the end of 2032, Naughton Units 1, 2, and 3 at the end of 2036, Hermiston at the end of 2036, and Jim Bridger Units 1, 2, 3, and 4 at the end of 2037.

In the current 2023 IRP, emissions are higher than projected in the 2021 IRP until 2026 with a slight increase in 2028. This is a result of higher load forecasted in the 2023 IRP. In addition, the 2023 IRP contains several coal units converting to gas, but with higher dispatch of gas contributing to the additional uptick in emissions. By 2030, average annual CO_{2e} emissions are down 11 percent relative to the 2021 IRP preferred portfolio, and by 2040 emissions are comparable to the 2021 IRP while generation has increased by 25 percent. This indicates that the overall emissions rate is lower under the 2023 IRP preferred portfolio. By the end of the planning horizon, system CO_{2e} emissions are projected to fall from 40.1 million metric tons in 2023 to 5.6 million tons in 2042—a reduction of 86 percent.

Small-Scale Renewable Portfolio Development

After the 2023 IRP preferred portfolio was developed, the company layered in additional requirements to comply with Oregon’s small-scale renewable standard that increased from 8 to 10 percent by 2030.⁵⁹

To comply with this standard, projects must be 20 MW or less and be certified by the Oregon Department of Energy (ODOE) and registered in the Western Renewable Energy Generation Information System (WREGIS). The ODOE certification and WREGIS registration ensures that small-scale renewables are approved for the Oregon Renewable Portfolio Standard (RPS). The eligible portion of a project’s capacity for compliance purposes is the percentage of annual project costs paid for by Oregon retail customers.⁶⁰ Qualifying resources do not need to be located in Oregon, and certain community-based renewable energy (CBRE) projects are assumed to qualify as small-scale renewable energy projects and satisfy the procurement standard. In the CEP, small-scale renewable resources are assumed to cost more than utility-scale renewable resources (on a per-unit basis) that benefit from economies of scale and scope. However, small-scale renewables may potentially provide other, non-economic benefits.

Based on current projections, the company assumes that by 2030, 370 MW of existing and planned small-scale renewable resources will be available to comply with Oregon’s procurement standard. These resources are summarized in Table 11, and amounts to approximately 4.6 percent of Oregon’s total allocated capacity—leaving a gap of approximately 5.4 percent, or 490 MW of nameplate capacity—that need to be procured by 2030.

Table 11 – 2023 IRP Preferred Portfolio Existing Small-Scale Renewables for Oregon

Fuel Type	Estimated Existing and Planned and Planned Capacity in 2030 (MW)
Solar	156.1
Wind	109.5
Water	58.9
Biomass	40.7
Geothermal	2.8
Methane	1.9
Total	370

Because the small-scale requirement is calculated as a percentage of Oregon’s aggregate electrical capacity, and the company’s capacity is forecasted to increase over the 20-year planning horizon, the company’s need for small-scale renewables grows rapidly between 2030 and 2037. What was initially a need for 490 MW of incremental resources in 2030 is projected to peak at 802 MW of incremental resources by 2037. After 2037, the incremental requirement declines gradually to a need for 664 MWs of resources in 2042. This decline is based on the

⁵⁹ ORS § 469A.210(2).

⁶⁰ OAR 860-091-0030.

assumption that the company is not adding substantial amounts of new resources to the portfolio, and that certain existing qualifying facilities (QF) originating in Oregon and other existing facilities expire or retire. These assumptions reduce the size of Oregon’s aggregate capacity and corresponding small-scale requirement. Table 12 reports this distribution on a nameplate capacity basis.

Table 12 – Annual Small-Scale Target Shortfall (MW)

2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
490	494	672	754	757	759	773	802	743	756	681	667	664

These compliance targets were based on a small-scale renewable analysis to determine the incremental capacity needed to satisfy Oregon’s compliance requirement. This analysis used the same modeling tools and strategies from the 2023 IRP, including the LT optimization model, to select additional resources to meet the incremental small-scale resource capacity gap. The use of IRP modeling tools ensures that each resource addition is optimal in terms of locations, sizes, technology type and timing across the company’s 20-year modeling horizon.

The assumptions for small-scale renewable resources used in portfolio development are included in PacifiCorp’s 2023 IRP.⁶¹ Consistent with the assumption of transmission displacement opportunities, small-scale renewables are proposed to serve local load, provide local benefits, and are not assumed to provide increased sales to markets. These assumptions indicate that while more expensive than utility-scale projects, these local load serving resources have the opportunity to displace transmission options that might otherwise be required to achieve sufficient interconnection to PacifiCorp’s grid. Additionally, the small-scale resource options that the company modeled are considered “proxy resources,” because they represent unknown projects that may be developed and ultimately procured at a later date. Accordingly, the costs and benefits information from actual projects will differ from the assumptions used for these proxy resources, based on the results of future small-scale renewables resource procurement efforts. However, the assumptions for these proxy resources are the company’s current best estimates of the costs and benefits that these resources can provide.

Because of the company’s proxy resource assumptions, and because small-scale resources are added incrementally to the 2023 IRP preferred portfolio, the small-scale portfolio is more expensive for customers compared to the 2023 IRP preferred portfolio. As shown in Table 13 below, the small-scale renewables portfolio results in an additional \$106 million present-value revenue requirement for Oregon customers compared to the costs of the 2023 IRP portfolio without small-scale renewables.

That said, the small-scale portfolio also results in improved emissions and reliability relative to the 2023 IRP preferred portfolio. The company’s interim Community Benefit Indicator (CBI) of “Increasing Energy from Non-Emitting Resources and Reducing CO₂ Emissions to meet HB 2021 Targets” can be applied to the small-scale renewables portfolio based on these proxy resources. Against this CBI, the small-scale renewables portfolio results in lower CO_{2e} emissions, and increases the percent of energy from non-emitting resources: the portfolio

⁶¹ See PacifiCorp’s 2023 IRP, Chapter 7 – Resource Options, Supply-side Resource Tables 7.1 and 7.2

decreases unserved energy by 0.00013 percent, and reduces emissions by 8.8 million tons relative to the 2023 IRP preferred portfolio. Table 13 compares system-wide 2023 IRP outcomes to the small-scale renewables portfolio on these key measures. Oregon-allocated results are discussed below.

Table 13 – System-wide PVRR(d) of 2023 IRP Relative to Small-Scale Renewables Portfolio

Study	PVRR (\$m)	ST PVRR + 5% of 95 th Percentile Stochastic (\$m)	ENS ⁶² (% of system load)	CO ₂ e Emissions 2023-2042 (Thousand tons)
2023 IRP preferred portfolio	38,398	38,350	0.00449	261,468
Small-scale renewables portfolio	38,504	38,432	0.00475	252,679
Incremental change	106	82	(0.00013)	(8,789)

Of note, while small-scale renewable options can be located in five states (Idaho, Oregon, Utah, Washington and Wyoming), the company's portfolio optimization processes determined that the most current cost-effective locations for small-scale renewable resources are located in Oregon. This outcome aligns well with Oregon energy policy objectives, and allows more non-economic project benefits to accrue to Oregon customers. However, the small-scale renewables portfolio was based on proxy resources, and actual procurement of small-scale resources will vary based on project location and economics. These state-blind small-scale renewable acquisition efforts will help Oregon customers avoid excessive costs or cost shifting between communities that would otherwise result from limiting procurement to one state.

The company's procurement strategies to address these 490 to 802 MW small-scale renewable procurement targets are covered in the Chapter VIII Action Plan.

Oregon-Allocated CEP Analysis

After the small-scale renewables portfolio is layered on to the 2023 IRP preferred portfolio, it serves as the basis for developing the final Oregon CEP portfolio. This portfolio is tested against all CEP requirements to determine what additional steps must be taken for full compliance with HB 2021's emissions reductions targets for 2030, 2035, and 2040. In this final step to create an Oregon CEP portfolio, PacifiCorp determined that no additional resources beyond the small-scale requirements would effectively contribute to meeting the targets. As a consequence, the small-scale portfolio is adapted as the CEP portfolio to determine the company's emissions reduction compliance pathways, and additional considerations are necessary to achieve full compliance. These additional steps are described below in Chapter VII Greenhouse Gas Emissions.

Table 14 presents the outcomes from the company's initial 2023 IRP preferred portfolio

⁶² Energy Not Served, or ENS.

compared to the Oregon-Allocated outcomes from the Oregon CEP portfolio for the same key measures provided for a system-wide basis. The Oregon CEP results in a \$268 million increase of the PVRR compared to the 2023 IRP, and reduces emissions by 1.75 million tons. Emissions are allocated based on the current 2020 allocation protocols to facilitate a meaningful comparison.

Table 14 – Oregon-Allocated 2023 IRP PVRR(d) Relative to Small-Scale Renewables Portfolio

Study	PVRR (\$m)	ENS (% of Oregon load)	CO ₂ e Emissions 2023-2042 (Thousand tons)
2023 IRP preferred portfolio	11,543	0.00461	64,689
Oregon CEP portfolio	11,810	0.00447	62,9377
Incremental change from 2023 IRP to CEP portfolio	268	-0.00014	1,752

Sensitivity Studies

In addition to its optimized portfolios for the 2023 IRP and CEP, PacifiCorp has prepared multiple studies that represent the comparative results that would otherwise occur from accelerating the Company's pace and volume of small-scale renewable procurements, the costs and benefits from CBRE impacts, and the elimination of market purchases in year 2040. These sensitivities confirm that, when considering the Company's relevant metrics (PVRR, PVRR(d)),⁶³ ENS, and Emissions Reductions), that the Oregon CEP Portfolio is the preferred portfolio to examine the Company's HB 2021 compliance pathways. Table 5 summarizes the results of these studies, followed by an analysis of each. For the PVRR(d), each study is compared to the CEP Portfolio to determine a relative cost or benefit.

⁶³ Present value revenue requirement delta, or PVRR(d) is a comparison of PVRR calculations.

Table 15 – CEP Sensitivity Study Comparison

Study	Incremental Resource Additions	PVRR (\$m)	PVRR(d) (\$m)	ENS (% of Oregon load)	CO ₂ e Emissions 2023-2042 (Thousand tons) ⁶⁴
2023 IRP Preferred Portfolio	---	11,543	(268)	0.00461	2020 Protocol: 64,689
CEP Portfolio	802 MW SSR	11,810	---	0.00447	Path 1: 56,802 Path 2: 54,516 2020 Protocol: 62,937
CBRE	702 MW SSR solar + 100 MW Oregon CBRE	11,941	131	0.00447	Path 1: 56,815 Path 2: 54,516 2020 Protocol: 62,937
SSR 15%	1,203 MW SSR solar	11,934	123	0.00447	Path 1: 56,692 Path 2: 54,516 2020 Protocol: 62,633
SSR 2028	802 MW SSR solar	12,075	265	0.00447	Path 1: 56,495 Path 2: 54,214 2020 Protocol: 62,560
No purchases 2040	802 MW SSR solar + 1,035 MW of non-emitting peaking	11,855	45	0.00448	Path 1: 57,157 Path 2: 54,824 2020 Protocol: 63,309

CEP Portfolio

The CEP portfolio is the small-scale renewables study optimized to meet the 10 percent target as previously discussed. On an Oregon-allocated basis, the additional cost of small-scale resources to meet the 10 percent target for Oregon is estimated to be \$268 million dollars in net present value terms, on top of expenditures already selected as part of the optimized system-wide preferred portfolio.

Table 16 summarizes annual portfolio costs allocated to Oregon customers on an average annual basis over three time periods for each sensitivity. The first period covers 2023-2029, the years leading up to the 80 percent emissions reduction target. The second period covers years 2030-2039, the years leading up to the 100 percent emissions reduction target. The third period covers years 2040-2042, beginning with the 100 percent emissions reduction and covering the remainder of the 20-year study horizon.

The relative estimate of Oregon-allocated portfolio costs depends on assumptions regarding the future cost allocation of resources. Table 16 presents three views of cost allocations. The first section “Base Cost Allocation Compared to Preferred Portfolio” is consistent with the 2020 PacifiCorp Interjurisdictional Allocation Protocol (2020 Protocol). But for emissions

⁶⁴ Path 1 and Path 2 refer to the pathways discussed in Chapter VII.

compliance, two additional pathways are shown (Pathway 1 and Pathway 2). These two pathways to emissions compliance are described in detail in the next chapter, Chapter VII. Any additional actions taken to make the CEP portfolio emissions-compliant will result in more incurred costs. These cost projections are estimates of the additional cost of compliance to Oregon customers and are in no way final, but present the Company's expectations of the reasonable range of possible costs.

As can be seen in the row labeled "CEP Portfolio" under the Pathway 1 section of the table, the costs of the additional small-scale begin to show up significantly in 2030 when the additional capacity is first built, with an average cost of cost of \$212 million per year in each year through 2039. In the last period from 2040 to 2042 (and beyond), the average annual cost increases to \$394 million per year on a nominal basis. Over the last 13 years of the planning horizon, 2030-2042, the CEP portfolio incurs approximately \$671 million more in total nominal costs than in the preferred portfolio before considering emissions compliance; the net present value of these incremental costs appears diminished to \$268 million due to the time value of money. Under pathway 1 to compliance, the total increased nominal cost from 2030 to 2042 is \$3.30 billion. Under pathway 2 to compliance, the total increased nominal cost from 2030 to 2042 is \$2.04 billion.

Table 16 – Average Annual Cost Compared to the 2023 IRP Preferred Portfolio (\$millions)

	Years 2023-2029	Years 2030-2039	Years 2040-2042
2023 IRP Preferred Portfolio	-	-	-
Base Cost Allocation Compared to Preferred Portfolio			
CEP Portfolio	\$3	\$36	\$103
CBRE	\$15	\$51	\$109
SSR 15%	\$3	\$54	\$154
SSR 2028	\$20	\$74	\$137
No Purchases 2040	(\$2)	\$30	\$218
Pathway 1 Cost Allocation			
CEP Portfolio	\$3	\$212	\$394
CBRE	\$15	\$227	\$399
SSR 15%	\$3	\$232	\$444
SSR 2028	\$20	\$251	\$427
No Purchases 2040	(\$2)	\$201	\$515
Pathway 2 Cost Allocation			
CEP Portfolio	\$12	\$143	\$204
CBRE	\$24	\$158	\$209
SSR 15%	\$12	\$162	\$254
SSR 2028	\$29	\$182	\$237
No Purchases 2040	\$7	\$135	\$297

Community Based Renewable Energy

The CBRE portfolio assumes that 100 MW of CBRE resources replace 100 MW of small-scale renewables, and that the CBRE resources are eligible to be counted as small-scale for the purposes of meeting small-scale targets. This portfolio is used in the CBRE analysis presented in Chapter V on Community-Based Renewable Energy, and is presented here for completeness. The substitution of CBREs for small-scale renewables incurs a steep cost increase of \$131 million on a present value revenue requirement basis, or roughly \$1.3 million per megawatt of CBRE capacity.

As can be seen in the row labeled “CBRE” under the Pathway 1 section of Table 16, the costs of the CBRE portfolio compared to the preferred portfolio show up significantly in 2030 when the small-scale resources are built, however, the 100 MW of CBRE resource are added incrementally from 2026 to 2030. The CBRE portfolio costs an average of \$227 million per year in each 2030 through 2039. In the last period from 2040 to 2042 (and beyond), the average annual cost increases to \$399 million per year on a nominal basis. Over the last 13 years of the planning horizon, 2030-2042, the CBRE portfolio incurs approximately \$841 million more in total costs than in the preferred portfolio before considering emissions compliance; the net present value of these costs appears diminished to \$399 due to the time value of money. Under pathway 1 to compliance, the total increased nominal cost from 2030 to 2042 is \$3.47 billion. Under pathway 2 to compliance, the total increased nominal cost from 2030 to 2042 is \$2.21 billion.

SSR 15% (small-scale renewables increased to 15% by 2030)

This sensitivity examines the costs and benefits of increasing the amount of small-scale renewables adopted, where each year’s small-scale selections increase by half, moving from 10 percent of Oregon capacity to 15 percent of Oregon capacity. No appreciable gains are noted in reliability, however CO₂ emissions are reduced by 1.7 million tons at an increased portfolio cost of \$391 million on a net present value basis, before consider emissions compliance. Under pathway 1, this sensitivity increases cost in the 2030-2039 period by an average of \$232 million per year, and \$162 million per year under pathway 2. In the 2040-2042 period, costs increase by an average of \$444 million per year under pathway 1 and \$254 million per year under pathway 2.

SSR 2028 (small-scale renewables to meet 10% by 2028)

This sensitivity tests the impacts of early adoption of small-scale renewables from 2030 to 2028. This results in small emissions reduction, does not improve system reliability, and increases costs by \$533 million on a net present value basis, before considering emissions compliance. While early acquisition of small-scale resource appears uneconomic, PacifiCorp will appropriately pursue economic small-scale projects in its procurement processes. Under pathway 1, this sensitivity increases cost in the 2030-2039 period by an average of \$251 million per year, and \$182 million per year under pathway 2. In the 2040-2042 period, costs increase by an average of \$427 million per year under pathway 1 and \$237 million per year under pathway 2.

No Purchases 2040

In this sensitivity, no purchases are allowed for Oregon in years 2040-2042, in alignment with a strict view of zero emissions goals by year 2040. While the increased cost of \$45m over the 20-year study period may not initially appear extreme, the impacts stem from cost changes in years 2040 through 2042 where the increased cost is more the \$200 million per year. Under pathway 1, this sensitivity increase cost in the 2030-2039 period by an average of \$201 million per year, and \$135 million per year under pathway 2. In the 2040-2042 period, costs increase by an average of \$515 million per year under pathway 1 and \$297 million per year under pathway 2.

Conclusion

The Company's economic analyses confirms that the least-risk, least-cost portfolio to serve as the basis to develop the Company's HB 2021 compliance strategies is the Small-Scale Renewable Portfolio as allocated to Oregon. This Oregon CEP portfolio, and the additional steps described in the two pathways discussed below, outline the Company's emission reduction strategies.

VII. GREENHOUSE GAS EMISSIONS

Key Findings

PacifiCorp forecasts that it can meet the goals set by House Bill (HB) 2021, but it will rely on certain future assumptions.

There were three important components of the planning landscape that informed all three phases of the company's development of the Clean Energy Plan (CEP).

- First, PacifiCorp expects substantial load growth for Oregon over the planning horizon. We project load that is 60 percent higher by 2030, and nearly 80 percent higher by 2040, than load in 2010 to 2012 when the emissions baseline was set. While emissions per megawatt-hour are expected to decrease over time, load growth results in higher emissions on an absolute basis. Load growth requires more generating capacity, which in turn, creates a proportional need for more small-scale renewables to maintain a 10 percent small-scale capacity ratio.
- Second, the 2023 Integrated Resource Plan (IRP) preferred portfolio indicates that increased conversion of coal-fired units to natural gas is economic for customers. This had the unexpected result of increasing the portfolio of thermal resources available to serve Oregon customers, but hedges against reliability risk.
- Third, the IRP and CEP are both informed by assumptions around cost allocations, which directly influences Oregon's ability to achieve HB 2021 emissions targets while maintaining the benefits associated with being part of a multi-state system.

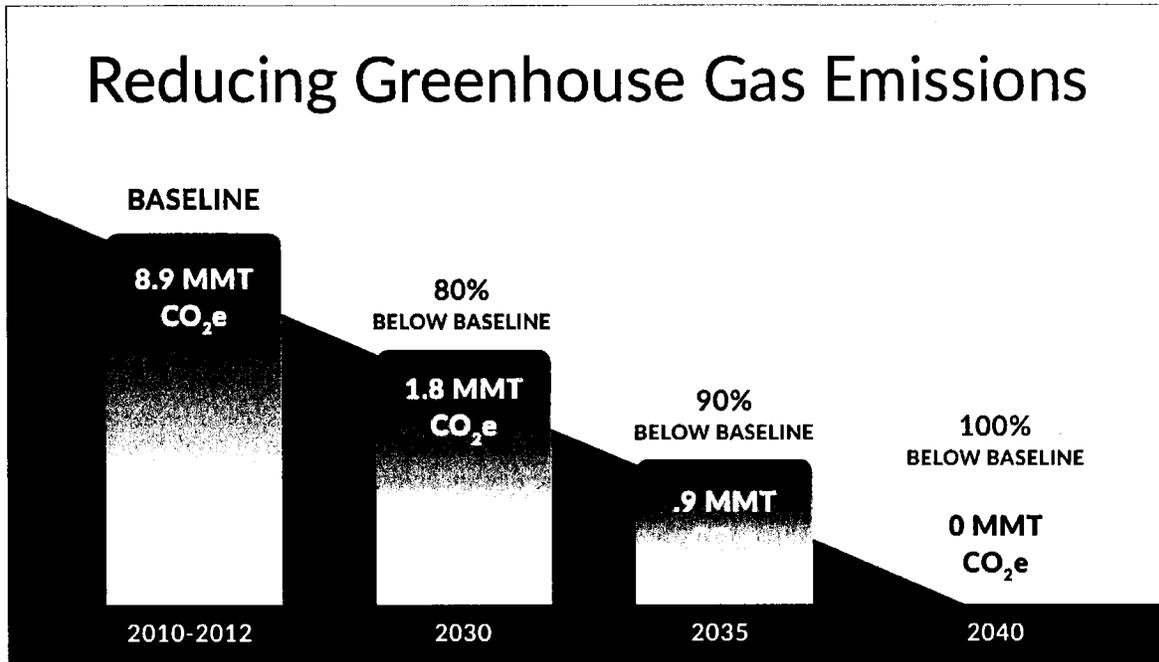
Due to these complexities of significant additional load, increased natural gas generation, and the dynamic nature of the multi-state process, PacifiCorp's CEP proposes two compliance pathways to meet the emissions targets set forth in HB 2021.

The first relies on managing dispatch from natural gas fueled resources. This has the benefit of hedging against the risk of new technology to maintain reliability. The second is through the ongoing multi-state negotiations on the allocation of costs and benefits from PacifiCorp resource portfolio among the six states the Company serves. This would allow states to set energy policies that call for a more rapid transition than PacifiCorp is contemplating on a system-basis. With a state accepting more of the cost and benefits of new non-emitting resources, but must also prevent leaning on other resources to maintain reliability. Both are viable options and are not mutually exclusive.

HB 2021 sets targets to reduce emissions associated with Oregon retail sales from a baseline, calculated as the average emissions from years 2010 through 2012, by 80 percent in 2030, 90 percent by 2035 and 100 percent by 2040. The law also increased Oregon's small-scale renewable energy project purchase requirement from 8 to 10 percent by 2030. PacifiCorp's emissions baseline in terms of million metric tons of carbon dioxide (MMT CO_{2e}) emitted per year, and corresponding emissions reductions for the relevant HB 2021 target years are reflected in Figure 8 below. In effect, HB 2021 accelerates PacifiCorp's ongoing system emissions

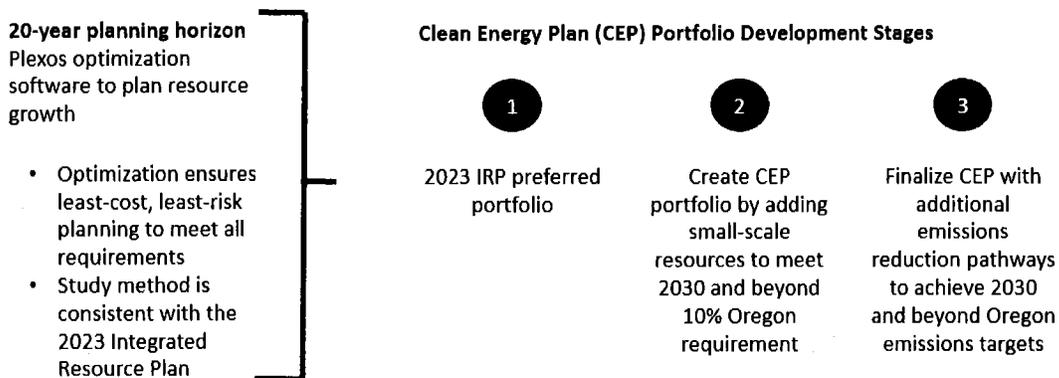
reductions plans for the company’s customers in Oregon.

Figure 8 – HB 2021 Emissions Targets for PacifiCorp



PacifiCorp’s CEP follows a three-phase process to achieve these emissions reduction targets and to comply with the small-scale requirements of HB 2021. The three phases are: development of the 2023 IRP preferred portfolio in Phase 1; creation of the Oregon CEP portfolio by incrementally adding small-scale resources sufficient to meet and maintain Oregon’s 10 percent small-scale renewable requirement in Phase 2; and consideration of how system resources are allocated to Oregon to meet load, while maintaining the emissions reduction trajectory to meet HB 2021 targets, in Phase 3. These three phases are reflected in Figure 9.

Figure 9 – Phases of CEP Development



PacifiCorp’s 2023 IRP is the basis for analyzing the Oregon CEP portfolio requirements by establishing a system-wide portfolio, optimized for the company’s entire six-state area. In the IRP preferred portfolio, many requirements specific to PacifiCorp’s Oregon CEP are already met. This is a natural outgrowth PacifiCorp’s decarbonization trajectory over the past several IRP cycles.

There were three important components of the planning landscape that informed all three phases of the company’s development of the CEP.

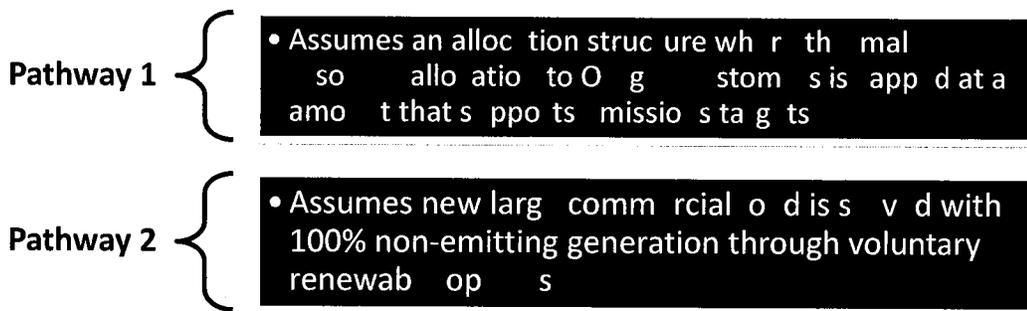
First, PacifiCorp expects substantial load growth for Oregon over the planning horizon. We project load that is 60 percent higher by 2030, and nearly 80 percent higher by 2040, than load in 2010 when the emissions baseline was set. While emissions per megawatt-hour are expected to decrease over time, load growth results in higher emissions on an absolute basis. Load growth requires more generating capacity, which in turn, creates a proportional need for more small-scale renewables to maintain a 10 percent small-scale capacity ratio.

Second, the 2023 IRP preferred portfolio indicates that increased conversion of coal-fired units to natural gas is economic for customers. This had the unexpected result of increasing the portfolio of thermal resources available to serve Oregon customers, as compared to the expectation of coal generation exits under Senate Bill 1547.

Third, the IRP and CEP are both informed by assumptions around cost allocations, which directly influences Oregon’s ability to achieve HB 2021 emissions targets while maintaining the benefits associated with being part of a multi-state system.

Due to these complexities of significant additional load, increased natural gas generation, and the dynamic nature of the multi-state process, PacifiCorp proposes two compliance pathways to meet the emissions targets set forth in HB 2021 (Figure 10).

Figure 10 – Compliance Pathways



Both pathways can be achieved through operational changes or changes to PacifiCorp’s allocation methodology, are flexible in how they could be implemented, and demonstrate that PacifiCorp has alternatives to achieve HB 2021 targets, even in the face of substantial load growth and increased generation from natural gas.

In the sections that follow, the PacifiCorp discusses:

- Emissions Analysis Methodology and Assumptions;
- Emissions Trajectories;
- Achieving 100 Percent Carbon-Free Retail Sales;
- Pace of Emission Reductions;
- Renewable Energy Credit Accounting; and
- Impacts from Small-Scale Renewables.

Methodology and Assumptions

PacifiCorp’s greenhouse gas accounting framework, including emissions forecast and reduction targets, is based on the Oregon Department of Environmental Quality (ODEQ) authorities and guidance.

ODEQ is responsible for verifying utility emissions forecasts to determine compliance with HB 2021’s clean energy targets.⁶⁵ Consistent with this responsibility, ODEQ developed guidance for projecting and reporting emissions for HB 2021 purposes that leverages methodologies from the agency’s longstanding Greenhouse Gas Reporting Program.⁶⁶ This guidance includes proposed emission factors for utilities to use in emissions forecasts for 2023 CEPs.⁶⁷ In addition to emissions factors, ODEQ provided guidance for multi-jurisdictional utility reporting, adjustments for netting wholesale sales or non-retail electricity, accounting for transmission losses, and accounting for electricity purchased from specified and unspecified sources.⁶⁸

Table 17 below provides more detailed descriptions of ODEQ’s assumptions when determining total forecasted utility emissions for compliance with HB 2021.

Table 17 – ODEQ Assumptions

Exclusions	Emissions from qualified facilities under the terms of the Public Utility Regulatory Policies Act (PURPA) and net metering programs are not regulated under HB 2021, and emissions from these sources are excluded from ODEQ’s determination of relevant emissions.
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⁶⁵ ORS § 469A.420; Oregon Department of Environmental Quality, “DEQ’s Evaluation of Clean Energy Targets: Overview of DEQ’s role in verification and determination of emissions data required by HB 2021” (available at <https://www.oregon.gov/deq/ghgp/Documents/CEPBackground.pdf>).

⁶⁶ OAR 340-215-0010 through -0125; Oregon Department of Environmental Quality, “GHG Emissions Accounting for House Bill 2021 Reporting and projecting emissions from electricity using DEQ methodology” (available at <https://www.oregon.gov/deq/ghgp/Documents/HB2021EFGuidance.pdf>).

⁶⁷ Oregon Department of Environmental Quality, “Greenhouse Gas Emission Factors for HB 2021 Electricity Sector Emission Projections” (available at <https://www.oregon.gov/deq/ghgp/Documents/HB2021-EmissionFactors.xlsx>).

⁶⁸ Oregon Department of Environmental Quality, “Multi-jurisdictional Utilities: Instructions for reporting greenhouse gas emissions” (available at <https://www.oregon.gov/deq/aa/Documents/GHGRP-MultijurisdictionalProtocol.pdf>).

Emission factor for existing specified resources	ODEQ assigns emission factors to PacifiCorp’s existing facilities based on historical data, and are available on the ODEQ’s website.
Emission Factors for future resources	In cases where a facility-specific emission factor is either not available or not applicable, DEQ provides default emission factors by fuel type to be used by utilities. When possible, these emission factors are based on U.S. Environmental Protection Agency’s (EPA) 2022 Greenhouse Gas Emission Factors hub, which is available on EPA’s website. When not available, emission factors from EPA’s 2020 Emissions & Generation Resources Integrated Database (eGRID) Technical Guide were used.
Emissions for coal to gas converted resources	<p>Allowed utilities to propose alternative emissions factors where appropriate for ODEQ consideration and approval.</p> <p>PacifiCorp received approval from ODEQ to use PLEXOS Modeled emissions for coal-to-gas conversion units, as IRP modeling produced higher emissions than would have been calculated using ODEQ’s default emissions factors for natural gas fuel types.</p>
Emission factors for unspecified resources	OAR 340-215-120(2)(a) requires the use of the default emission factor of 0.428 MTCO ₂ e/megawatt-hour for energy originating from an unspecified source. This includes purchases from centralized market purchases such as the Western Energy Imbalance Market.
Transmission Losses	OAR 340-215-120(1)(b)(B)(i) requires electricity suppliers to include a 2 percent transmission loss correction factor when calculating emissions from generation not measured at the busbar.
Wholesale or non-retail sales	<p>Energy and emissions from the sale of wholesale power are not included in annual Oregon emissions totals. Rather, a utility must remove the energy and emissions associated with those non-retail sales from its calculations and reporting of emissions associated with the electricity the utility supplied to its Oregon retail customers. Utilities may account for non-retail sales with 3 approaches, based on the nature of each individual sale:</p> <p>Sales of specific power. Non-retail sales of a specific resource or set of resources are accounted for by removing that power and any associated emissions from a utility’s emissions reported to ODEQ.</p> <p>Sales of unspecified power. Unspecified power purchased by a utility and then re-sold to non-retail customers is removed (both the power and emissions) from the amount of unspecified power included in a utility’s emissions reported to ODEQ.</p> <p>Sales of the utilities’ overall resource mix. Non-retail sales of a utility’s power, without specification of any particular portion of the utility’s portfolio, are removed by proportionately subtracting it across the utility’s overall resource mix for that year.</p>

<p>Multi-state jurisdictional accounting</p>	<p>Oregon rules allow for multi-jurisdictional utilities like PacifiCorp to rely upon a cost allocation methodology approved by the Oregon PUC for allocating emissions associated with the generation of electricity that serves Oregon customers.</p> <p>The most current multi-jurisdictional cost allocation methodology approved by the Oregon PUC is referred to as “The 2020 Protocol.” The 2020 Protocol does not extend through the planning horizon of the CEP, and is only contemplated through 2024 with a 2-year extension currently under consideration.</p> <p>Under the currently approved cost allocation methodology, the utility reports a percentage of its entire multi-state system emissions based on the share of the power served in Oregon. The CEP includes a sensitivity where emissions results are projected through 2040, assuming continuation of the 2020 Protocol through the planning horizon. For the purpose of the CEP proposal, two alternative compliance pathways are contemplated using two alternative cost allocation structures that differ from the 2020 Protocol:</p> <p>Pathway 1 – Assumes a cost allocation where thermal resource allocations to Oregon customers is capped at an amount that supports Oregon emissions targets. This pathway could be applied multiple ways. For example, coal to gas conversions can be excluded from serving Oregon categorically, or specific gas units may be excluded from serving Oregon.</p> <p>Pathway 2 – Assumes that existing Oregon load is served with system resources, but any new large commercial load is served with 100 percent non-emitting generation through voluntary renewable options, and that there are sufficient non-emitting resources to meet customer sustainability goals in all years. Similar to Pathway 1, capping of certain thermal generation continues to be necessary to achieve targets because there is load growth that cannot be assumed to be met by a voluntary program.</p> <p>Under all cost allocation structures, it is assumed that no coal is allocated to Oregon starting in 2030 consistent with ORS § 457.518, and that no thermal resources or market purchases are allocated to Oregon as a post-model adjustment starting 2040.</p>
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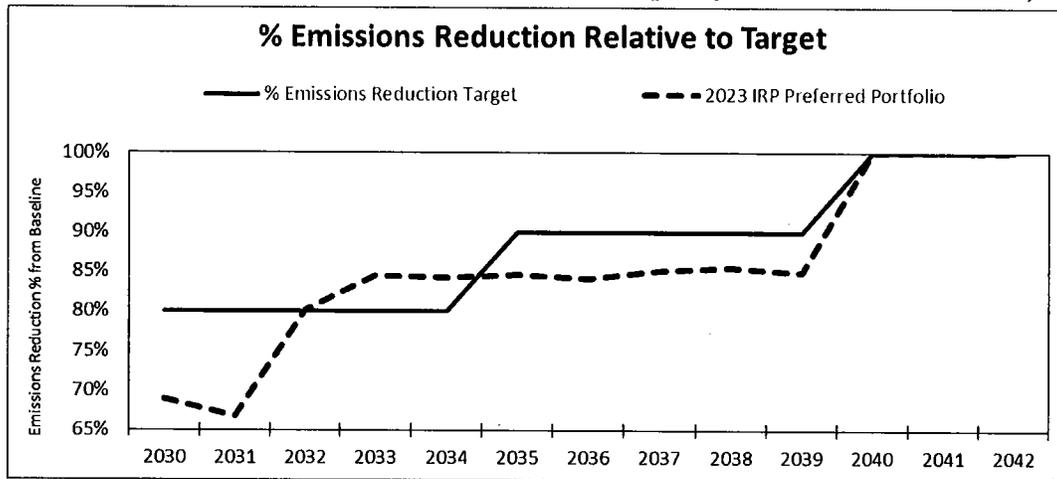
Emissions Trajectories

PacifiCorp’s CEP followed a three-phase process to generate a portfolio and allocation approach that achieved compliance with the emissions and small-scale renewable requirements of HB 2021. The following is a summary of the emissions positions for each phase.

Phase 1 - 2023 IRP Preferred Portfolio Emissions

PacifiCorp’s 2023 IRP Preferred Portfolio demonstrated a significant reduction in emissions for its six-state system as a whole. Figure 11 below shows the 2023 Preferred Portfolio’s emissions reduction trajectory for Oregon relative to HB 2021 targets. This graph shows the results of applying 2020 cost allocation protocols and assuming that it is extended through the planning horizon. These results are prior to including the incremental small-scale renewable capacity mandate.

Figure 11 – 2023 IRP Preferred Portfolio Allocated to Oregon by Extending 2020 Protocol (No Additional Assumptions for Small-Scale Capacity or Resource Allocation)



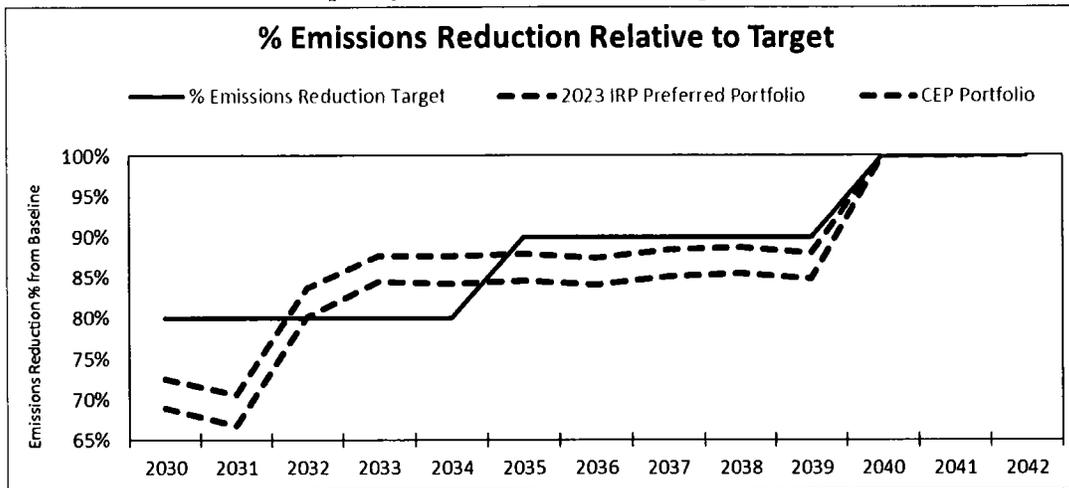
RESULTS

The 2023 IRP preferred portfolio, allocated to Oregon assuming the extension of the 2020 protocol with no other adjustments, shows that emissions reduction targets in 2032 through 2034 are achieved and do not achieve targets in other years.

Phase 2 – CEP Emissions Assuming 2020 Protocol Extension

In the next phase of CEP Portfolio development, small-scale renewable capacity was added in sufficient quantity to meet and maintain the 10 percent small-scale requirement for Oregon under HB 2021. This portfolio is called the “CEP Portfolio.” See Figure 12 below.

Figure 12 – CEP Portfolio Allocated to Oregon by extending 2020 Protocol (Includes Additional Small-Scale Capacity; No Additional Assumptions for Resource Allocation)



RESULTS

Adding small-scale renewables results in some improvement of emissions but does not resolve the emissions target shortfalls. Additional emissions reduction pathways are required to resolve emissions target shortfalls in 2030, 2031 and 2035-2040.

Phase 3 – CEP Paths to Emissions Targets

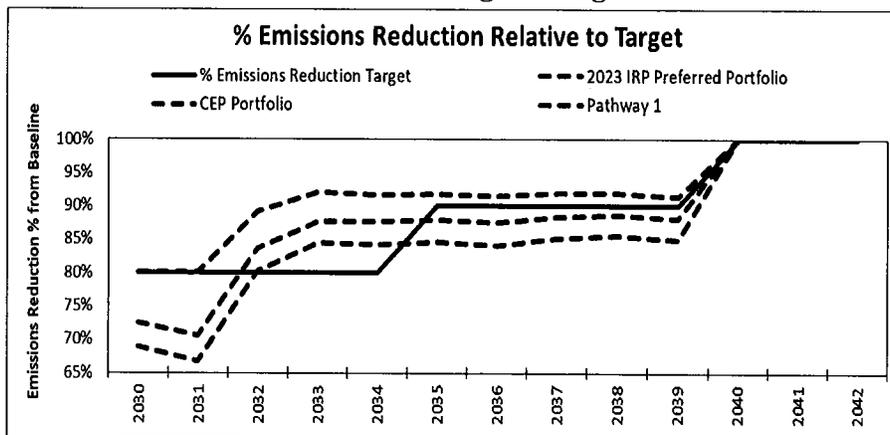
Based on Phase 1 and 2 emissions analyses, PacifiCorp’s CEP identifies two potential pathways to achieve HB 2021’s emission reduction targets. Both are described below.

Pathway 1

- Pathway 1 { • Assumes an allocation structure where thermal so allocation to Oregon is applied at a amount that supports emissions targets

Under Pathway 1, generation from both gas, as well as coal to gas converted units, are capped proportionally. In practice, this approach could be applied in multiple ways. For example, coal to gas conversions can be excluded from serving Oregon categorically, or specific gas units may be excluded from serving Oregon. Figure 13 shows emissions reduction under Pathway 1 relative to the emission reduction targets set forth in HB 2021. For comparison, the figure also includes emission reductions from Phase 1 (2023 IRP Preferred Portfolio Emissions) and Phase 2 (the CEP assuming the 2020 PacifiCorp Interjurisdictional Allocation Protocol, or 2020 Protocol, is extended).

Figure 13 – CEP Portfolio Allocated to Oregon Using Allocations under Pathway 1

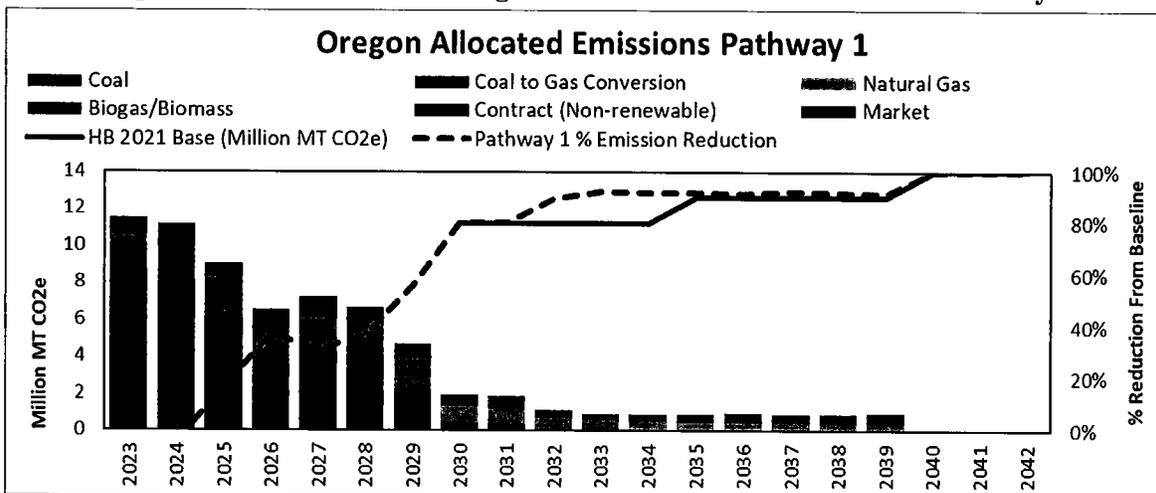


RESULTS

Thermal allocation capping achieves 90 percent reduction by 2033, which is two years earlier than required under HB 2021.

Figure 14 shows the source of the emissions attributed to Oregon retail sales and the emissions reduced relative to targets. Emissions from coal resources are reduced over time and eliminated by 2030. The main source of emissions in Oregon for the 2030-2040 period are from gas and market purchases.

Figure 14 – CEP Portfolio Oregon allocated Resource Mix under Pathway 1

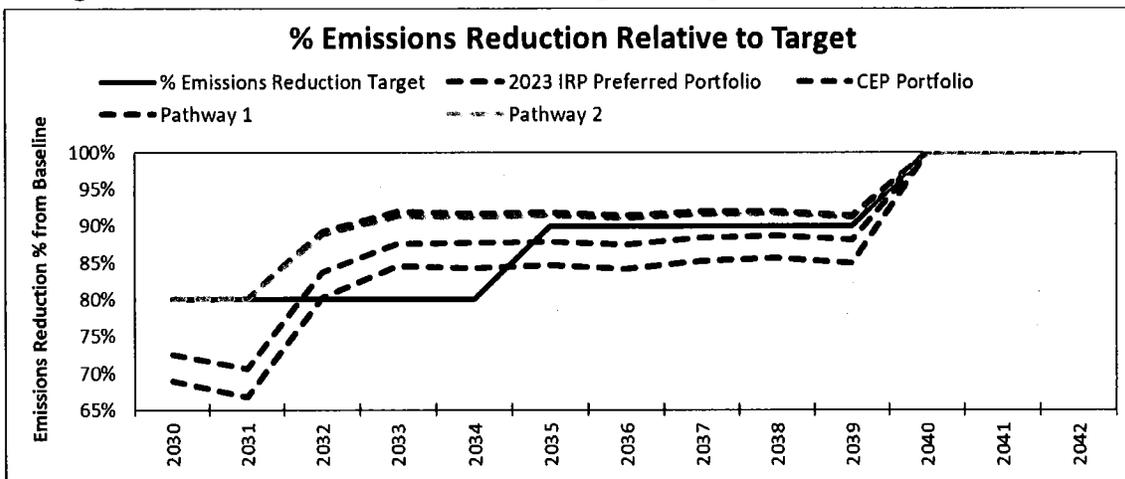


Pathway 2

- Assumes new large commercial load is served with 100% non-emitting generation through voluntary rewire program

Under Pathway 2, new large commercial load is assumed to be served with voluntary program options where Oregon retail customers get the benefit of non-emitting generation. Existing Oregon load is assumed to be served with system resources with allocations that are consistent with the 2020 Protocol methodology. This pathway assumes there is sufficient supply to meet customers' sustainability goals in all years. Certain capping of thermal generation as is done under Pathway 1 continues to be necessary to achieve targets. See Figure 15 below.

Figure 15 – CEP Portfolio Allocated to Oregon Using Allocations under Pathway 2

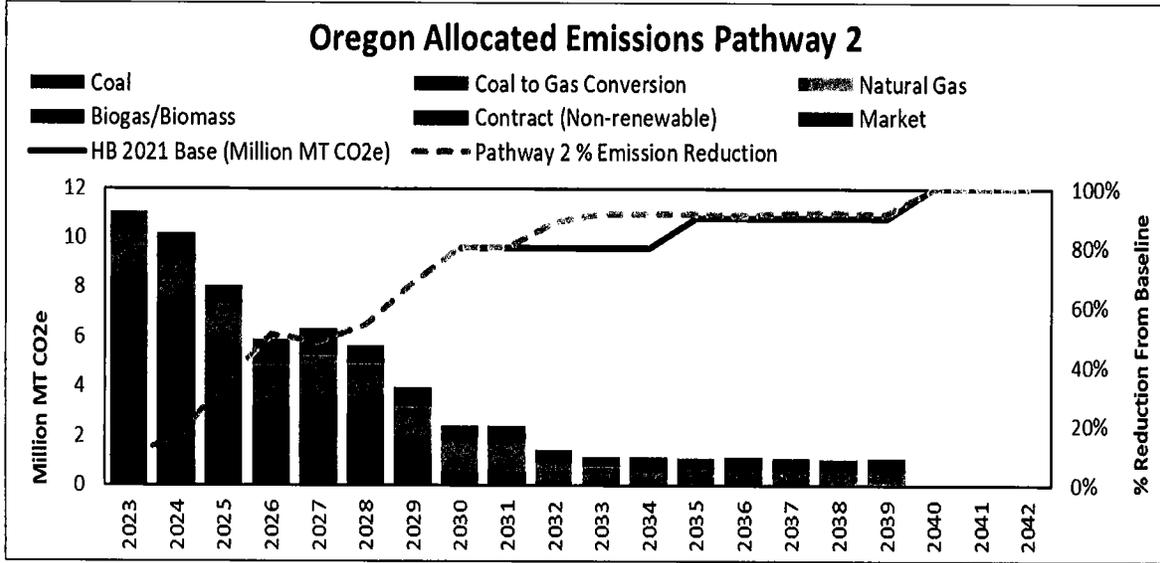


RESULTS

This approach achieves targets and reaches 90 percent emissions reduction by 2033. Requires some adjustment of thermal resource allocation factors in years 2030 and 2031.

Figure 16 shows the source of the emissions attributed to Oregon retail sales and the emissions reduction relative to targets. Emissions from coal resources are reduced over time and eliminated by 2030. The main source of emissions in Oregon for the 2030-2040 period are from gas and market purchases.

Figure 16 – CEP Portfolio Oregon allocated Resource Mix under Pathway 2



Under Pathway 2, there are more emissions reduction prior to 2030 because less existing emitting resources are allocated to Oregon, and there is more situs assignment of non-emitting resources to serve commercial load. The pattern of emissions reduction after 2030 is similar to Pathway 1.

Achieving 100 Percent Carbon-Free Retail Sales

PacifiCorp’s CEP assumes that in 2040 no thermal generation serves Oregon retail sales, and that no emissions are derived from market purchases. These outcomes will be dependent on emergence of new technologies and would require 100 percent clean energy markets to develop.

Today, thermal resources fueled by natural gas and coal provide operational flexibility that is critical to maintain reliability. For example, natural gas resources that have the ability change output levels on very short timeframes (i.e., ten minutes or less) provide operating reserves that allow PacifiCorp to quickly respond to changes in system conditions (i.e., a quick change in load, a sudden loss of output from other resources on the system). Similarly, coal resources can increase output over the course of several hours during the evening to replace energy production lost from solar resources as the sun sets each day. And other gas-fired resources that are offline for most of the year, can be turned on in response to extended extreme weather events, that can last multiple days or more, to provide incremental supply needed for reliable service for our customers. When natural gas and coal-fired thermal resources are eliminated from the system to achieve emissions reduction targets, replacement resources that have flexible operating capabilities will be needed to maintain reliable service.

There are various types of storage technologies available in the marketplace today that have operating characteristics that can replace some of the flexible operating characteristics of natural

gas and coal-fired thermal resources (i.e., with sufficient energy available for charging, batteries can be used to replace solar generation as the sun sets each day). However, new, non-emitting technologies will be needed to supplement the collective operating characteristics of renewable resources with storage. For instance, long-duration storage with sufficient energy available for charging, or green-hydrogen-fired generation resources.

Without access to market or dispatchable resources held in reserve, PacifiCorp is concerned about its ability to reliably serve customers. That being said, PacifiCorp is actively engaged in exploring new technologies and market development to address these issues.

Pace of Emission Reductions

The Commission expects that the first CEP will set a roadmap of actions that leads to a year-over-year emissions reductions.⁶⁹ With the exception of year 2027, PacifiCorp's CEP demonstrates a drastic reduction in emissions over time, as well as year-over-year for both emissions reduction pathways. The increase in emissions observed in 2027 relative to 2026 is driven by two factors: (1) a ramp up in load, and (2) change in the forward price curve. The forward price curve is showing a decrease relative to historically high gas and electricity prices during the same period that may be favoring thermal dispatch in the forecast model. While this relative uptick in emissions is observed in the data projections, actual operations will be monitored closely during these years to minimize the risk of emissions increasing.

Renewable Energy Credit Accounting

To facilitate additional data transparency, the Commission recommends that utility CEPs include a table that describes the utility's annual plan for the use of Renewable Energy Certificates (RECs) associated with the renewable energy generated by, or contracted to, the utility in the Preferred Portfolio under the reference case.⁷⁰ In additional discussions with the Commission, PacifiCorp was asked to consider including discussion on treatment of its RECs, and include a table that clearly delineates between RECs that are expected to be:

- Retired on behalf of Oregon customer load for RPS compliance in Oregon;
- Retired on behalf of Oregon customer load for voluntary sales;
- Retired on behalf of customer load in a different state (for either compliance or voluntary sales);
- Banked for future Oregon compliance;
- Banked for compliance in a different state where the utility serves customers;
- And report the approximate number of megawatt hours not associated with RECs in the referenced table that are generated from renewable energy technologies.

⁶⁹ *In re HB 2021 Investigation*, Docket No. UM 2225, Order No. 23-060.

⁷⁰ *In re HB 2021 Investigation*, Docket No. UM 2225, Order No. 22-446.

Additionally, the Commission requested additional discussion of the company’s REC practices. As a multi-state utility, PacifiCorp’s customers in each state share RECs based on their associated resource’s energy allocation under the Multi-State Protocol. One state’s share is tracked, managed, and reported independent of other state shares. Figures 17 and 18 shows PacifiCorp’s Oregon-allocated share of energy by resource type for Emission Reduction Pathway 1 and 2. Renewable resources, such as wind and solar, are categorized based on the company’s claim to the RECs on behalf of Oregon retail customers from the underlying energy. Renewable energy where the RECs are not retained by the company are reported as “Unspecified.” Voluntary customer enabled renewables where the voluntary program customer gets REC claims but the non-emitting generation goes to serve Oregon customers, are categorized as “Customer Enabled Non-emitting.”

Figure 17 – Oregon allocated CEP Portfolio RECs Pathway 1

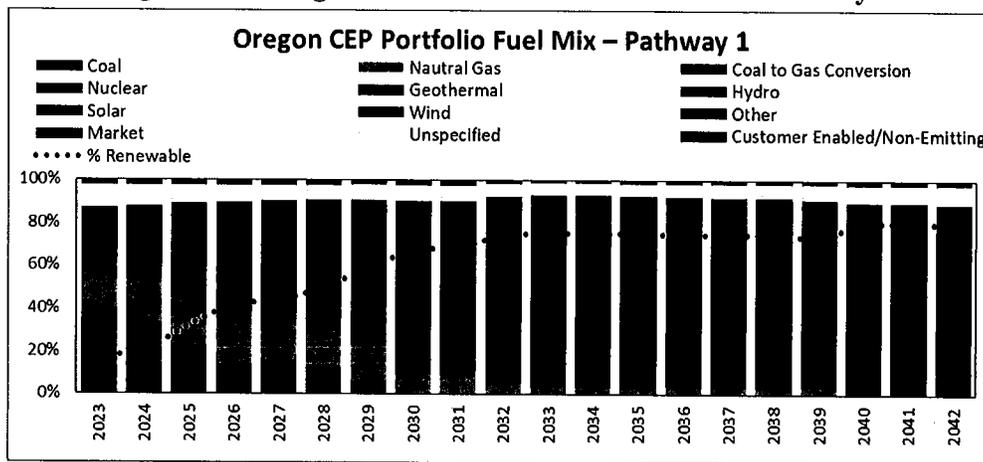
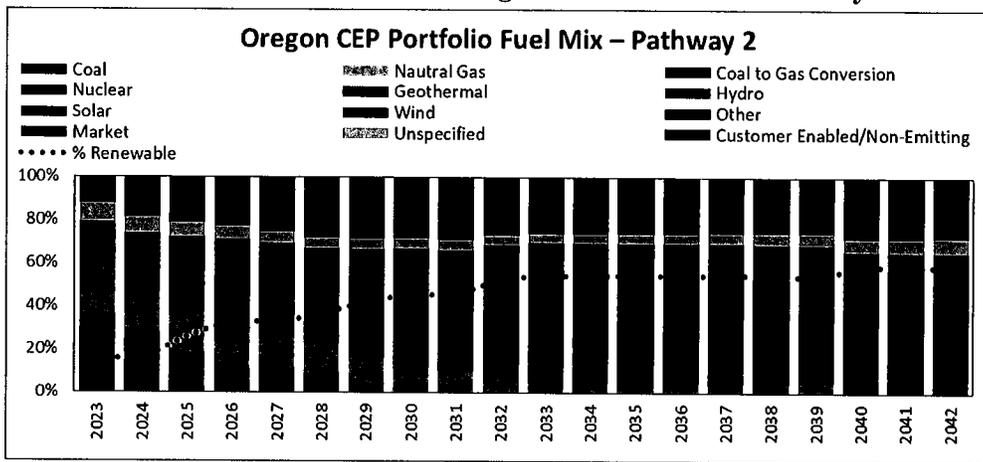


Figure 18 – CEP Portfolio Oregon allocated RECs Pathway 2



For historical information and compliance with existing requirements for Renewable Portfolio Standards (RPS) and voluntary programs, PacifiCorp provides the company’s RPS compliance filings, Western Renewable Energy Generation Information System (WREGIS) retirement

reports and Renewable Implementation Plan on its webpage.⁷¹ These reports provide specific resource generation and WREGIS certificate retirements on behalf of PacifiCorp's Oregon customers to meet the annual RPS requirements. If there are excess RECs that are not retired on behalf of PacifiCorp's Oregon customers, the excess RECs are banked for future compliance with Oregon RPS requirements.⁷²

⁷¹ See generally, [Oregon Renewable Portfolio Standard Reports \(pacificpower.net\)](http://pacificpower.net)

⁷² PacifiCorp's CEP includes a workpaper that provide details on the allocation and use of RECs for Oregon.

VIII. ACTION PLAN**Community Engagement**

- Continue offering community engagement activities around key Clean Energy Plan topics and other program and planning processes.

Community Benefit Indicators

- Monitor and evaluate its six interim Community Benefit Indicators and 14 metrics, while refining its Community Benefit Indicators through continued stakeholder engagement and input.

Resiliency

- Leverage its community engagement activities to establish a working definition of resiliency, establishing resiliency goals, and developing metrics for tracking electric system and community resilience.

Community Based Renewable Energy

- Present its Initial Community Based Renewable Energy Potential Study and Initial Community-Based Renewable Energy Action Plan to stakeholders, and update these items based on input received.
- Develop a straw proposal for a Community Based Renewable Energy Project Pilot focused on a renewable energy source paired with battery energy storage to develop community resilience hubs.
- Conduct a survey to better gauge future interest in different types of Community-Based Renewable Energy projects, and plans to incorporate findings into these two updates, along with opportunities to leverage other public funding sources.

Capacity Additions

- Complete the 2022 all-source request for proposals process.
- Conduct a new 2023-2024 all source request for proposals, expected to solicit, acquire, and evaluate specific energy supply resources through the end of 2028.

Small-Scale Generation

- Evaluate appropriate criteria for assessing bids in specific small-scale renewable resource request for proposals.

Transmission

- Energy Gateway South, a new 416-mile 500-kilovolt transmission line and associated infrastructure running from the new Aeolus substation near Medicine Bow, Wyoming, to the Clover substation near Mona, Utah.
- Energy Gateway West Subsegment D.1, a new 59-mile 230-kilovolt transmission line from the Shirley Basin substation in southeastern Wyoming to the Windstar substation near Glenrock, Wyoming.
- Boardman-to-Hemingway, a new 290-mile 500-kilovolt transmission line from the new Longhorn substation near the town of Boardman, Oregon to the Hemingway substation in Idaho.
- Energy Gateway West Sub-Segment D.3, a new 200-mile 500-kilovolt transmission line from Anticline substation in central Wyoming to Populus substation in southeastern Idaho.

Other Actions

- Develop operational procedures to dispatch natural gas resources to serve PacifiCorp's Oregon customers to meet emissions requirements until 2040, while pursuing new non-emitting technologies.
- Continue to work on the development of an allocation methodology that provides options to meet each state's energy policy as new resources are developed.

Community Engagement

PacifiCorp will continue offering stakeholder engagement meetings around key Clean Energy Plan (CEP) topics and other program and planning processes. The community engagement activities will continue to adapt in response to input and learnings to foster inclusion, accessibility, and collaboration for their diverse participating audiences.

PacifiCorp is committed to continuing to develop its stakeholder relationships and using a data-driven lens to understand unique community characteristics that impact equity, including stakeholder input to establish the clean energy benefits survey.

The company will build upon its online Consolidated Information Hub to support access to information and participation accessibility methods transparently. The company will also continue to evolve and grow the Oregon Tribal Nations hub as an additional program content and information repository.

PacifiCorp will work with the advisory groups to gather input on the development of a biennial report that assesses community benefits and impacts.

Community Benefit Indicators

PacifiCorp will continue to develop its Community Benefit Indicators (CBI) in the months following the May 2023 filing of its CEP. Although CBIs and metrics will be adjusted, modified, and/or expanded over time, the company expects the interim CBIs and their affiliated metrics to be more fully developed throughout 2023. For example, the focus of the June 2023 CBIAG meeting is expected to be energy efficiency programs. Energy efficiency is an important non-emitting resource available to PacifiCorp, allowing customers to lower bills and gain non-energy benefits, such as a more comfortable home environment. PacifiCorp envisions robust stakeholder input regarding CBIs and metrics around energy efficiency throughout 2023.

The continued development and refinement of PacifiCorp's CBIs will leverage continued stakeholder engagement and input. Stakeholder input will be critical to formalizing the CBIs and metrics.

Resilience

PacifiCorp has completed its utility resilience analysis and is working on a community resilience analysis, expected to be complete in the third quarter of 2023. PacifiCorp will use those analyses to develop composite community-utility resilience scores and complete a major event root cause analysis for identified high-risk areas, incorporating the scores and risk drivers into future planning efforts.

Community Based Renewable Energy

Learning outcomes that emerge from the company's continued focus on advancing an understanding on Community Based Renewable Energy (CBRE) needs and opportunities, as well as the inputs used to inform an updated CBRE Potential Study, will determine how the company advances an updated CBRE Action Plan. Community input and feedback from engagement groups will remain critically important as these aspects of the CEP evolve over time. Outreach to communities which have published energy, sustainability, and/or resilience goals will provide particularly informative feedback. The company also intends to conduct a survey to better gauge future interest in different types of CBRE projects and plans to incorporate findings into these two updates.

The company will also develop a straw proposal for expansion of its existing Community Resilience Battery Storage Grant Pilot. The current pilot offers technical assessments to critical facilities. This proposed Community-Based Renewable Energy Project Pilot would continue that offering to community-centered critical facilities interested in learning more about CBRE project opportunities on site. The grant portion could be expanded to award funding for a renewable energy source paired with battery energy storage systems to develop community resilience hubs.

Compliance Pathways

As a multistate utility serving six states, PacifiCorp engages in a biannual public participation process to develop an Integrated Resource Plan (IRP) and identify the optimal least-cost, least-risk portfolio of resources to serve its customers. Following the identification of resource need during an IRP, PacifiCorp engages in a request for proposal (RFP) process to identify resources to fulfill the identified need through a competitive process. The IRP planning processes are tested and confirmed in the marketplace following the completion of each filing process.

The outcomes of the 2021 IRP and 2023 IRP follow this cycle of identification and targeted procurement. Based on PacifiCorp continued identification of non-emitting resources in the 2023 IRP as the best options for its customers, and PacifiCorp's greenhouse gas emissions analysis discussed in Chapter VIII above, PacifiCorp does not, at this time, envision a need to procure specific resources only for its Oregon customers to meet HB 2021 targets. This continues to be an option, but may increase risk and cost, and become less necessary as PacifiCorp decarbonizes its system portfolio.

Resource Procurement Planning

IRP preferred portfolio resources are comprised of well-researched and vetted assumptions ("proxy" resources), any resources identified in an RFP must be confirmed via a competitive market solicitation process. Aligned with the strategy for small-scale renewables procurement, proxy resources selected for the Oregon CEP portfolio represent the company's best available

forecast of future resource availability in terms of cost, technology types, locations, and operational characteristics. Due to the iterative nature of the methodology used to ensure small-scale renewables compliance, these final incremental resource additions are a combination of small-scale and traditional utility-scale selections. As with small-scale resource planning, additional detail is obtained from downstream procurement activities to solicit bids and plan projects which leave the realm of long-term proxy analysis and enter into the realm of evaluating actual proposed projects solicited from the market.

PacifiCorp envisions separate RFPs for utility-scale and small-scale renewable resources. The decision to separate the two RFPs is rooted in the need to pursue small-scale renewables with focused solicitation so as to not to obscure the independent importance of procuring this specific type of resource. As with small-scale renewables, if the all-source RFP does not yield sufficient resources, additional efforts will be determined as a consequence of market depth and interest.

2023-2024 All Source Request for Proposals

PacifiCorp expects to issue a new 2023-2024 all-source RFP to solicit, acquire and evaluate specific energy supply resources through the end of 2028. This procurement will align with the targets in the 2023 IRP, subject load and system needs as they develop.

Small-Scale Renewables Procurement Strategies

The 2023 CEP preferred portfolio has identified 490 megawatts (MW) of incremental small-scale renewable resources by the year 2030 and 802 MW by 2037. There were no small-scale resources submitted for consideration in the 2022 all-source RFP. The lack of resource submission in the 2022 all-source RFP provides no insight into the accuracy of the small-scale renewable proxy resource price forecast. The large number of small-scale projects required to satisfy the 2030 requirement will likely result in resource bids over the proxy resource price estimate.

All new resources are required to have an interconnection study that outlines an interconnection schedule that is consistent with the proposed commercial operation date of the resource. PacifiCorp's Federal Energy Regulatory Commission (FERC) approved Open Access Transmission Tariff (OATT) publicly provides the process and timeline for a resource to participate in the transmission cluster study to obtain interconnection approval. The annual transmission cluster study deadline for interconnection approval is May 15th, and the results from the study are returned in November of the same year. There is currently an aggregate of 145 MW of small-scale renewable resources with interconnection studies from the 2000-2022 cluster studies and up to 38 MW of small-scale renewable resources with executed interconnection agreements that are not yet in service. Additional resources will need to be identified to meet the targets in the upcoming years. There is generally a three-year lead time between resource contracting and the in-service Commercial Operation Date (COD) after an approved transmission interconnection. Resources that submit into the next cluster study, May 15, 2024, could be contracted in the year 2025 and COD by December 31, 2028. There is an urgency to procure all resources necessary for compliance with the small-scale renewable resources requirement in the next cluster study submission.

PacifiCorp will issue a targeted small-scale renewable resource RFP in the fourth quarter of 2023 to communicate to the marketplace the need to procure resources and increase the submissions to the 2024 cluster study by the May 15, 2024, deadline. Bids for this targeted small-scale renewable RFP are anticipated to be requested later in 2024 or early 2025. This small-scale resource RFP is below the threshold of Oregon's competitive bidding requirements, but PacifiCorp anticipates that it may need to apply the competitive bidding rules to the RFP, including retaining an independent evaluator for the procurement process. PacifiCorp will be submitting benchmark small-scale resources to ensure compliance with meeting required procurement targets as well as for economic consideration.

RFP and Contracted Resources: Equity and Customer Impacts

Section 26 of HB 2021⁷³ requires any large-scale project⁷⁴ developer and construction contractor in Oregon to file with the Oregon Department of Energy (ODOE) a signed attestation or declaration stating to the best of their knowledge and belief that during all periods of construction, all contractors and subcontractors working on the construction or repowering project will:

- Participate in an apprenticeship program registered with the State Apprenticeship and Training Council such that 15 percent of the total work hours on a given large-scale project is performed by workers in apprenticeship occupations;
- Establish and execute a plan for outreach, recruitment and retention of women, minority individuals, veterans, and people with disabilities to perform work under the contract, with the aspirational target of having at least 15 percent of total work hours performed by individuals in one or more of those groups;
- Have policies in place that are designed to limit or prevent workplace harassment and discrimination and that promote workplace diversity, equity and inclusion for communities who have been underrepresented in the clean energy sector, including women, veterans and Black, Indigenous and People of Color; and
- Maintain a license and good standing to perform the work and remain eligible to receive a contract or subcontract for public works under ORS 279C.860.

Developers and contractors are required to provide reasonable documentation of compliance and report to ODOE on a regular basis with copies to the utility. ODOE established a website to oversee compliance and receive attestations for new large-scale renewable developments located in Oregon. ODOE's role is to be the collector and enforcer of labor requirements required of all renewable developments in Oregon 10 MW or larger.

⁷³ [HB2021 \(oregonlegislature.gov\)](https://olis.oregonlegislature.gov/liz/2021R1/Downloads/MeasureDocument/HB2021/EnrolledHB4059)

[https://olis.oregonlegislature.gov/liz/2021R1/Downloads/MeasureDocument/HB2021/EnrolledHB4059 \(oregonlegislature.gov\)](https://olis.oregonlegislature.gov/liz/2021R1/Downloads/MeasureDocument/HB2021/EnrolledHB4059)

<https://olis.oregonlegislature.gov/liz/2022R1/Downloads/MeasureDocument/HB4059/Enrolled>

⁷⁴ Defined as a renewable energy generation, sequestration or storage facility with a capacity rating of 10 megawatts or greater

In addition to the requirements above any 10 MW or larger renewable development or repower in Oregon shall require all contractors and subcontractors working on the construction or repowering project to:

- Pay the area wage standard for an hour's work in the same trade or occupation in the locality where the labor is performed. Area wage standard includes the calculation of wages and fringe benefits per trade and locality and will be treated as standards defined in ORS 279C.800 et seq.
- Offer health care and retirement benefits to the employees performing the labor on the project.

The rules require the developer to provide quarterly reporting and recordkeeping to the project owner or electric utility and respond to records requests and verification.

PacifiCorp has endeavored to encourage bidders both within and outside of Oregon to offer bid alternatives which consider equity by offering a second price for bids with a higher level of supplier, contractor and/or work force diversity. While PacifiCorp has not obligated bidders to meet any specified level of diversity targets, it has encouraged the marketplace to offer its most competitive solution in consideration of equity goals. Furthermore, PacifiCorp has added a reporting requirement to all new energy supply contracts related to supplier/contractor/workforce diversity as well as local labor outsourcing and safety incident reporting.

Beyond the HB 2021 rules and the labor attestations collected by ODOE, PacifiCorp's procurement process includes several additional mechanisms aimed at meeting environmental and equity goals in Oregon, including measuring how bids contribute to the company's renewable energy and greenhouse gas reduction goals.

IX. CONCLUSION

PacifiCorp is committed to meeting Oregon's emissions goals. The company also recognizes the enormous challenges for the utility and our customers as we navigate a rapidly changing industry. As the planning for 2040 gets underway, we must be thoughtful and prudent to avoid unintended consequences. Utilities may need to invest in new and novel technologies to reduce emissions while providing reliable service to their customers and meet requirements to support the larger electric grid. Continued refinement of resource plans and built-in optionality will be key. Underlying all of this is the expanded exchange of information through community engagement. Educating our customers on the issues, and constructive engagement on solutions will be critical to implementation. PacifiCorp looks forward to this process and collaborating with stakeholders, our customers and the communities that we serve as we decarbonize our electrical system and transition to non-emitting energy.

Appendix A

Appendix A: Detailed List of 2022 SAIDI, SAIFI and CAIDI Scores by Census Tract, ACS 2019 (5-year average)

Geography	SAIDI	SAIFI	CAIDI	SOVI SCORE	SOVI RATNG	FBP	>65	W	BL/AA	AIAN	A	PI	OR	2+	H
CT 56, Multnomah County, Oregon	304.5	0.8	396.9	35.1	Relatively High	10%	20%	75%	5%	2%	11%	2%	2%	3%	9%
CT 203.03, Polk County, Oregon	256.7	2.1	120.6	33.1	Relatively Moderate	12%	20%	84%	1%	1%	4%	0%	2%	8%	9%
CT 203.04, Polk County, Oregon	431.0	2.5	169.7	31.4	Relatively Moderate	13%	20%	80%	5%	1%	4%	1%	7%	4%	19%
CT 36.02, Multnomah County, Oregon	256.4	1.1	230.3	30.0	Relatively Low	3%	20%	74%	18%	0%	3%	0%	3%	2%	3%
CT 57, Multnomah County, Oregon	35.9	0.3	104.9	27.5	Relatively Low	7%	24%	80%	1%	0%	11%	0%	1%	7%	7%
CT 203.02, Polk County, Oregon	247.1	1.8	136.2	33.0	Relatively Moderate	10%	23%	89%	0%	0%	0%	0%	8%	2%	38%
CT 17.02, Multnomah County, Oregon	497.3	2.9	173.6	31.5	Relatively Moderate	8%	23%	77%	2%	1%	11%	0%	2%	7%	20%
CT 18, Jackson County, Oregon	226.7	1.7	135.9	33.8	Relatively Moderate	14%	42%	93%	1%	1%	2%	0%	1%	3%	7%
CT 17.01, Multnomah County, Oregon	672.3	3.9	172.9	30.6	Relatively Low	3%	22%	78%	3%	1%	11%	0%	1%	6%	5%
CT 308, Linn County, Oregon	99.3	0.4	261.9	34.3	Relatively Moderate	9%	30%	91%	0%	0%	1%	0%	3%	5%	11%
CT 27, Marion County, Oregon	131.1	0.9	142.1	30.7	Relatively Low	2%	42%	91%	0%	1%	2%	0%	0%	6%	7%
CT 9512, Umatilla County, Oregon	1130.4	7.5	150.0	30.4	Relatively Low	14%	21%	89%	0%	1%	0%	1%	6%	2%	47%
CT 9510, Umatilla County, Oregon	1049.4	4.4	235.9	35.2	Relatively High	25%	29%	89%	1%	0%	3%	0%	4%	3%	33%
CT 82.02, Multnomah County, Oregon	360.0	2.0	180.8	35.8	Relatively High	15%	23%	73%	5%	2%	9%	4%	2%	5%	16%
CT 206, Linn County, Oregon	320.0	3.0	105.3	35.3	Relatively High	3%	33%	94%	1%	0%	1%	0%	0%	3%	12%
CT 25.02, Multnomah County, Oregon	181.9	1.5	119.2	29.4	Relatively Low	8%	15%	88%	4%	0%	4%	0%	1%	4%	13%
CT 29.03, Multnomah County, Oregon	838.2	4.5	186.6	31.7	Relatively Moderate	7%	34%	76%	8%	0%	12%	0%	0%	3%	6%
CT 74, Multnomah County, Oregon	60.5	0.2	292.3	33.0	Relatively Moderate	33%	18%	67%	16%	1%	3%	0%	1%	11%	27%
CT 9717, Klamath County, Oregon	50.1	1.0	48.2	33.2	Relatively Moderate	24%	26%	90%	0%	5%	1%	0%	1%	3%	10%
CT 9720, Klamath County, Oregon	89.8	1.3	68.1	33.1	Relatively Moderate	7%	40%	93%	0%	1%	2%	0%	1%	2%	6%
CT 14, Jackson County, Oregon	99.5	2.1	47.8	32.3	Relatively Moderate	6%	39%	94%	1%	0%	0%	0%	2%	3%	7%
CT 203, Linn County, Oregon	99.0	1.0	95.5	30.4	Relatively Low	8%	27%	90%	0%	1%	2%	0%	4%	4%	6%
CT 53, Polk County, Oregon	271.9	2.7	99.9	32.8	Relatively Moderate	3%	50%	93%	0%	2%	1%	0%	1%	3%	14%
CT 9502, Umatilla County, Oregon	344.4	0.9	375.3	37.6	Relatively High	19%	28%	83%	0%	6%	1%	0%	7%	4%	52%
CT 29.02, Multnomah County, Oregon	624.5	3.9	159.1	28.7	Relatively Low	1%	24%	81%	0%	1%	13%	0%	2%	3%	6%
CT 75, Multnomah County, Oregon	153.4	1.1	140.9	32.9	Relatively Moderate	8%	18%	75%	10%	2%	6%	0%	0%	6%	13%

The columns have been abbreviated as follows: SAIDI, SAIFI, and CAIDI represent the Company’s reliability metrics given census tracts; SOVI Score represents Social Vulnerability Index score; SOVI Rank represents the relative ranking of the SOVI score; FBP represents the percent of families below the poverty line; >65 represents households with one person over the age of 65; W, BL/AA, AIAN, A, PI, OR, 2+, and H represents respondents that identify as White, Black or African American, American Indian and Alaska Native, Asian, Pacific Islander, Other Race, Two or More Races, and Hispanic or Latino, respectively.

Geography	SAIDI	SAIFI	CAIDI	SOVI SCORE	SOVI RATNG	FBP	>65	W	BL/AA	AIAN	A	PI	OR	2+	H
CT 17, Lane County, Oregon	45.7	2.1	22.1	32.0	Relatively Moderate	5%	43%	91%	0%	0%	1%	0%	2%	6%	4%
CT 207, Linn County, Oregon	146.6	2.6	55.8	33.1	Relatively Moderate	7%	27%	89%	0%	0%	0%	0%	3%	8%	15%
CT 9713, Klamath County, Oregon	71.6	1.2	58.7	31.0	Relatively Low	16%	38%	90%	0%	1%	1%	0%	2%	6%	10%
CT 3612, Josephine County, Oregon	55.4	0.3	198.3	38.3	Relatively High	24%	29%	94%	0%	1%	3%	0%	0%	2%	11%
CT 208.02, Linn County, Oregon	81.9	1.9	42.2	36.6	Relatively High	21%	21%	77%	0%	2%	1%	0%	17%	2%	22%
CT 81, Multnomah County, Oregon	390.6	1.7	233.0	36.4	Relatively High	21%	26%	60%	14%	0%	13%	4%	2%	7%	11%
CT 9, Jackson County, Oregon	169.8	1.0	162.7	32.2	Relatively Moderate	17%	33%	95%	0%	0%	1%	1%	0%	3%	16%
CT 3611, Josephine County, Oregon	94.5	0.4	212.1	35.1	Relatively High	12%	40%	89%	1%	1%	1%	0%	2%	6%	8%
CT 9719, Klamath County, Oregon	124.0	1.7	71.8	33.2	Relatively Moderate	18%	20%	79%	1%	2%	0%	0%	8%	10%	17%
CT 202.04, Polk County, Oregon	440.8	1.9	233.6	32.2	Relatively Moderate	5%	40%	93%	0%	2%	1%	0%	0%	4%	3%
CT 201, Linn County, Oregon	231.6	2.2	103.5	30.6	Relatively Low	3%	28%	86%	1%	2%	2%	0%	4%	4%	10%
CT 202.02, Polk County, Oregon	330.3	1.3	260.0	35.6	Relatively High	9%	42%	93%	0%	0%	3%	0%	1%	3%	6%
CT 205, Polk County, Oregon	428.3	1.3	322.1	33.3	Relatively Moderate	3%	44%	92%	0%	1%	1%	0%	5%	1%	7%
CT 16.02, Jackson County, Oregon	105.9	1.1	96.6	34.0	Relatively Moderate	7%	40%	91%	1%	0%	2%	0%	4%	2%	14%
CT 52, Multnomah County, Oregon	0.1	0.0	17.8	29.9	Relatively Low	0%	16%	83%	3%	2%	3%	1%	1%	8%	6%
CT 3613, Josephine County, Oregon	824.0	2.4	348.2	32.0	Relatively Moderate	7%	52%	93%	0%	2%	1%	1%	2%	2%	7%
CT 9712, Klamath County, Oregon	85.2	1.3	67.3	35.0	Relatively Moderate	19%	36%	79%	0%	7%	2%	0%	0%	12%	13%
CT 204, Linn County, Oregon	49.5	0.7	73.1	32.7	Relatively Moderate	15%	26%	86%	0%	1%	1%	0%	5%	8%	11%
CT 30, Multnomah County, Oregon	148.6	0.4	364.0	27.0	Very Low	2%	22%	83%	4%	3%	6%	0%	1%	4%	6%
CT 9506, Umatilla County, Oregon	168.4	1.0	161.5	33.8	Relatively Moderate	13%	30%	81%	2%	3%	3%	0%	5%	5%	8%
CT 31, Multnomah County, Oregon	317.9	0.8	385.8	27.6	Relatively Low	1%	21%	86%	3%	1%	6%	0%	1%	4%	4%
CT 107.01, Marion County, Oregon	104.8	1.0	108.8	32.5	Relatively Moderate	7%	28%	88%	2%	1%	1%	0%	0%	9%	18%
CT 22.03, Multnomah County, Oregon	55.3	0.7	78.8	32.2	Relatively Moderate	2%	10%	79%	12%	1%	3%	0%	1%	4%	5%
CT 309.03, Linn County, Oregon	132.1	0.5	241.3	34.5	Relatively Moderate	14%	38%	96%	0%	0%	1%	0%	0%	4%	6%
CT 33.01, Multnomah County, Oregon	4.6	0.0	139.6	28.2	Relatively Low	18%	10%	76%	16%	0%	2%	0%	0%	6%	9%
CT 6.01, Jackson County, Oregon	64.8	0.9	70.4	30.6	Relatively Low	4%	44%	93%	0%	1%	3%	0%	0%	3%	8%
CT 9711, Klamath County, Oregon	64.7	1.2	55.2	33.2	Relatively Moderate	2%	31%	92%	2%	3%	2%	0%	0%	3%	17%
CT 36.01, Multnomah County, Oregon	41.7	0.2	197.0	29.7	Relatively Low	8%	17%	71%	20%	1%	2%	0%	2%	5%	6%
CT 301, Linn County, Oregon	604.1	2.0	297.8	32.8	Relatively Moderate	5%	33%	93%	1%	1%	0%	0%	1%	3%	2%

The columns have been abbreviated as follows: SAIDI, SAIFI, and CAIDI represent the Company's reliability metrics given census tracts; SOVI Score represents Social Vulnerability Index score; SOVI Rank represents the relative ranking of the SOVI score; FBP represents the percent of families below the poverty line; >65 represents households with one person over the age of 65; W, BL/AA, AIAN, A, PI, OR, 2+, and H represents respondents that identify as White, Black or African American, American Indian and Alaska Native, Asian, Pacific Islander, Other Race, Two or More Races, and Hispanic or Latino, respectively.

Geography	SAIDI	SAIFI	CAIDI	SOVI SCORE	SOVI RATNG	FBP	>65	W	BL/AA	AIAN	A	PI	OR	2+	H
CT 51, Multnomah County, Oregon				26.7	Very Low	3%	27%	81%	7%	0%	6%	1%	1%	5%	8%
CT 32, Multnomah County, Oregon	43.5	0.2	289.0	26.9	Very Low	3%	21%	83%	8%	0%	2%	0%	0%	6%	4%
CT 34.01, Multnomah County, Oregon	28.4	0.2	121.9	27.4	Relatively Low	22%	13%	67%	19%	0%	6%	0%	1%	7%	8%
CT 3605, Josephine County, Oregon	303.0	2.7	113.9	36.8	Relatively High	20%	36%	91%	2%	0%	0%	0%	1%	6%	7%
CT 79, Multnomah County, Oregon	231.4	0.9	268.0	31.6	Moderate	8%	23%	73%	7%	2%	11%	1%	1%	5%	10%
CT 3607.02, Josephine County, Oregon	124.5	1.8	70.1	35.6	Relatively High	9%	37%	85%	1%	3%	0%	0%	6%	5%	10%
CT 11, Jackson County, Oregon	153.5	1.4	107.9	33.0	Relatively Moderate	4%	40%	92%	0%	2%	0%	0%	1%	6%	7%
CT 309.04, Linn County, Oregon	193.5	0.9	223.2	34.4	Relatively Moderate	18%	30%	86%	0%	2%	1%	0%	2%	8%	5%
CT 11.01, Lane County, Oregon	58.6	2.1	27.6	31.4	Relatively Moderate	4%	36%	91%	0%	2%	2%	0%	2%	3%	5%
CT 23.03, Multnomah County, Oregon	104.1	0.6	175.4	33.5	Relatively Moderate	4%	25%	81%	4%	1%	4%	0%	1%	9%	7%
CT 9716, Klamath County, Oregon	74.1	1.4	54.6	37.0	Relatively High	34%	24%	81%	1%	7%	0%	0%	9%	3%	32%
CT 5.02, Jackson County, Oregon	52.9	0.5	104.0	38.5	Relatively High	24%	27%	85%	1%	3%	5%	1%	3%	2%	13%
CT 3603, Josephine County, Oregon	103.4	1.9	54.4	35.7	Relatively High	11%	44%	92%	0%	2%	1%	0%	1%	5%	5%
CT 9504, Umatilla County, Oregon	80.3	0.4	202.6	29.1	Relatively Low	15%	26%	84%	3%	2%	1%	1%	5%	5%	13%
CT 37.01, Multnomah County, Oregon	307.1	2.2	136.5	31.9	Relatively Moderate	11%	25%	71%	16%	1%	6%	0%	1%	5%	16%
CT 9701, Morrow County, Oregon	190.2	1.1	175.8	33.9	Relatively Moderate	12%	26%	88%	0%	2%	1%	0%	6%	3%	46%
CT 3606, Josephine County, Oregon	82.1	0.5	166.1	36.4	Relatively High	6%	39%	94%	2%	0%	0%	0%	0%	4%	7%
CT 38.03, Multnomah County, Oregon	60.0	0.4	152.8	29.4	Relatively Low	11%	16%	75%	13%	0%	7%	1%	1%	3%	9%
CT 309.02, Linn County, Oregon	711.6	2.9	243.2	32.0	Relatively Moderate	4%	50%	93%	1%	3%	1%	0%	0%	3%	2%
CT 9508, Umatilla County, Oregon	40.9	0.4	99.6	29.6	Relatively Low	21%	25%	89%	2%	1%	0%	0%	4%	4%	28%
CT 108.02, Marion County, Oregon	863.8	5.6	153.7	32.5	Relatively Moderate	7%	31%	83%	1%	1%	1%	0%	6%	9%	20%
CT 9505, Umatilla County, Oregon	276.1	1.6	171.4	34.1	Relatively Moderate	6%	34%	90%	1%	3%	1%	0%	1%	5%	9%
CT 9511, Umatilla County, Oregon	932.4	3.9	241.0	35.0	Relatively Moderate	8%	30%	86%	1%	0%	0%	0%	10%	3%	41%
CT 4.05, Jackson County, Oregon	37.4	0.3	139.1	35.0	Relatively Moderate	19%	26%	87%	2%	0%	1%	4%	0%	7%	19%
CT 304.02, Linn County, Oregon	1521.2	3.4	449.8	33.3	Relatively Moderate	7%	39%	92%	2%	1%	0%	0%	1%	4%	3%
CT 38.01, Multnomah County, Oregon	359.1	3.0	118.1	31.2	Relatively Low	5%	18%	80%	6%	3%	0%	2%	1%	8%	9%
CT 35.01, Multnomah County, Oregon	29.0	0.4	76.0	29.2	Relatively Low	8%	19%	72%	11%	0%	5%	0%	5%	7%	13%

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Geography	SAIDI	SAIFI	CAIDI	SOVI SCORE	SOVI RATNG	FBP	>65	W	BL/AA	AIAN	A	PI	OR	2+	H
CT 204, Polk County, Oregon	1371.7	5.5	248.2	37.0	Relatively High	12%	34%	83%	1%	9%	1%	0%	0%	5%	4%
CT 30.01, Jackson County, Oregon	643.0	3.3	195.6	34.3	Relatively Moderate	15%	44%	96%	0%	0%	2%	0%	0%	2%	4%
CT 202, Linn County, Oregon	183.4	2.1	89.3	30.1	Relatively Low	9%	25%	91%	0%	1%	0%	0%	1%	7%	18%
CT 76, Multnomah County, Oregon	202.6	1.5	134.8	35.1	Relatively Moderate	8%	17%	77%	1%	3%	8%	0%	4%	7%	35%
CT 34.02, Multnomah County, Oregon	15.1	0.1	166.8	30.3	Relatively Low	11%	13%	73%	15%	0%	3%	0%	3%	7%	8%
CT 80.01, Multnomah County, Oregon	232.2	0.8	273.7	34.0	Relatively Moderate	2%	31%	66%	11%	4%	13%	2%	1%	4%	6%
CT 9718, Klamath County, Oregon	127.7	1.6	77.7	38.7	Relatively High	22%	14%	79%	4%	5%	0%	0%	3%	8%	13%
CT 4.06, Jackson County, Oregon	125.9	0.7	169.3	37.1	Relatively High	11%	29%	88%	0%	0%	2%	1%	2%	7%	16%
CT 305, Linn County, Oregon	837.0	3.0	283.5	32.4	Relatively Moderate	9%	39%	96%	0%	1%	0%	0%	2%	2%	6%
CT 27, Jackson County, Oregon	380.2	4.0	94.8	36.5	Relatively High	8%	44%	95%	1%	1%	0%	0%	2%	2%	5%
CT 4.03, Lane County, Oregon	62.5	0.6	98.4	32.9	Relatively Moderate	11%	25%	92%	0%	1%	1%	0%	5%	1%	10%
CT 35.02, Multnomah County, Oregon	145.7	0.5	311.5	24.9	Very Low	2%	19%	84%	4%	5%	4%	0%	0%	3%	8%
CT 2.01, Jackson County, Oregon	599.9	2.2	270.8	33.9	Relatively Moderate	33%	16%	85%	1%	9%	1%	0%	0%	4%	14%
CT 13.02, Lane County, Oregon	72.3	2.4	29.8	36.1	Relatively High	12%	36%	89%	2%	1%	0%	0%	1%	7%	11%
CT 19, Multnomah County, Oregon				27.1	Very Low	2%	30%	88%	2%	0%	6%	0%	0%	4%	3%
CT 9602.01, Jefferson County, Oregon	132.7	1.5	88.1	38.4	Relatively High	20%	29%	70%	0%	9%	0%	0%	15%	5%	40%
CT 9715, Klamath County, Oregon	94.4	1.8	53.8	35.7	Relatively High	23%	38%	75%	1%	7%	4%	0%	6%	7%	18%
CT 25.01, Multnomah County, Oregon	243.5	1.0	250.2	25.2	Very Low	1%	37%	90%	1%	0%	4%	0%	0%	5%	4%
CT 3614, Josephine County, Oregon	2575.9	4.5	572.2	34.6	Relatively Moderate	22%	47%	91%	0%	3%	0%	0%	0%	7%	9%
CT 4.04, Lane County, Oregon	34.5	0.7	50.8	34.2	Relatively Moderate	10%	41%	91%	0%	0%	0%	0%	7%	1%	14%
CT 108.01, Marion County, Oregon	415.9	2.8	147.6	32.1	Relatively Moderate	6%	32%	92%	0%	2%	1%	1%	0%	4%	11%
CT 3608, Josephine County, Oregon	316.5	1.9	166.9	35.7	Relatively High	10%	53%	96%	1%	1%	0%	0%	1%	1%	12%
CT 5.01, Jackson County, Oregon	92.2	2.0	46.4	31.8	Relatively Moderate	15%	23%	89%	0%	2%	0%	1%	2%	5%	14%
CT 21, Jackson County, Oregon	585.9	3.4	172.6	33.6	Relatively Moderate	6%	43%	93%	3%	0%	3%	0%	0%	2%	4%
CT 3616, Josephine County, Oregon	2726.2	8.7	312.5	34.6	Relatively Moderate	21%	51%	96%	0%	1%	1%	0%	0%	2%	5%
CT 3610, Josephine County, Oregon	1371.2	4.4	311.5	34.3	Relatively Moderate	6%	51%	94%	0%	1%	3%	0%	0%	2%	5%
CT 208.01, Linn County, Oregon	90.6	1.7	52.3	33.4	Relatively Moderate	13%	22%	81%	0%	3%	3%	0%	5%	8%	17%
CT 3607.01, Josephine County, Oregon	118.0	1.7	71.2	36.2	Relatively High	13%	22%	94%	1%	0%	1%	0%	1%	4%	12%

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Geography	SAIDI	SAIFI	CAIDI	SOVI SCORE	SOVI RATNG	FBP	>65	W	BL/AA	AIAN	A	PI	OR	2+	H
CT 4.02, Lane County, Oregon	1267.1	5.1	250.0	31.4	Relatively Moderate	8%	44%	92%	0%	1%	1%	0%	1%	5%	7%
CT 33.02, Multnomah County, Oregon	5.5	0.0	117.4	28.6	Relatively Low	5%	19%	71%	16%	0%	5%	0%	1%	7%	9%
CT 12.02, Lane County, Oregon	98.5	2.8	34.9	35.4	Relatively High	11%	37%	93%	0%	0%	0%	0%	0%	7%	6%
CT 9513, Umatilla County, Oregon	410.5	6.3	65.6	33.0	Relatively Moderate	10%	30%	86%	0%	1%	0%	0%	8%	4%	27%
CT 205, Linn County, Oregon	175.3	1.9	89.9	36.5	Relatively High	13%	36%	83%	1%	1%	2%	2%	4%	8%	22%
CT 28.01, Multnomah County, Oregon	214.6	3.3	65.7	29.4	Relatively Low	0%	27%	82%	1%	0%	9%	0%	3%	4%	8%
CT 304.01, Linn County, Oregon	932.7	1.9	479.6	35.0	Relatively Moderate	11%	41%	92%	0%	0%	3%	0%	3%	2%	8%
CT 27.02, Multnomah County, Oregon	96.6	2.0	48.3	29.4	Relatively Low	4%	16%	83%	6%	0%	3%	0%	3%	5%	7%
CT 3604, Josephine County, Oregon	377.1	3.4	110.0	33.6	Relatively Moderate	7%	55%	96%	0%	0%	0%	0%	1%	2%	2%
CT 80.02, Multnomah County, Oregon	372.9	1.2	321.8	33.0	Relatively Moderate	7%	35%	70%	6%	3%	13%	1%	1%	6%	12%
CT 9603.01, Jefferson County, Oregon	671.5	3.8	178.7	34.5	Relatively Moderate	8%	55%	93%	0%	0%	0%	0%	1%	5%	4%
CT 107.02, Marion County, Oregon	158.3	0.8	206.0	35.7	Relatively High	8%	40%	90%	0%	0%	2%	1%	1%	6%	7%
CT 307, Linn County, Oregon	361.7	2.5	143.7	33.3	Relatively Moderate	5%	42%	94%	0%	2%	1%	0%	1%	2%	2%
CT 24.02, Multnomah County, Oregon	102.9	0.8	123.5	32.9	Relatively Moderate	3%	32%	83%	6%	2%	4%	0%	1%	5%	5%
CT 22, Jackson County, Oregon	161.9	1.3	129.3	32.8	Relatively Moderate	12%	38%	94%	1%	0%	1%	1%	0%	3%	5%
CT 24, Marion County, Oregon	832.8	6.1	136.4	30.4	Relatively Low	5%	39%	94%	0%	0%	2%	0%	1%	3%	10%
CT 72.02, Multnomah County, Oregon	532.1	3.7	142.4	32.6	Relatively Moderate	6%	37%	62%	18%	0%	11%	1%	3%	6%	9%
CT 9603.02, Jefferson County, Oregon	360.5	1.9	192.6	33.8	Relatively Moderate	5%	37%	81%	0%	1%	1%	0%	12%	5%	28%
CT 12.01, Lane County, Oregon	146.1	3.2	45.0	34.1	Relatively Moderate	7%	32%	88%	1%	5%	1%	0%	1%	3%	5%
CT 2.03, Jackson County, Oregon	114.1	0.9	131.4	33.0	Relatively Moderate	19%	16%	89%	1%	2%	0%	0%	4%	4%	25%
CT 37.02, Multnomah County, Oregon	86.9	0.6	157.6	27.6	Relatively Low	1%	20%	73%	19%	3%	1%	0%	0%	4%	2%
CT 78, Multnomah County, Oregon	491.1	2.8	174.5	31.1	Relatively Low	13%	21%	79%	1%	0%	10%	0%	6%	4%	25%
CT 10.01, Jackson County, Oregon	25.7	0.6	45.7	33.4	Relatively Moderate	5%	35%	88%	0%	5%	1%	1%	4%	1%	11%
CT 9602.02, Jefferson County, Oregon	138.6	1.4	102.0	34.6	Relatively Moderate	9%	37%	85%	1%	6%	2%	0%	4%	2%	23%
CT 9708, Wasco County, Oregon	9.6	0.1	128.1	40.2	Relatively High	8%	40%	80%	0%	15%	1%	0%	0%	3%	4%
CT 9709, Klamath County, Oregon	343.9	3.1	112.3	33.3	Relatively Moderate	17%	41%	86%	2%	6%	2%	0%	3%	1%	12%

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Geography	SAIDI	SAIFI	CAIDI	SOVI SCORE	SOVI RATNG	FBP	>65	W	BL/AA	AIAN	A	PI	OR	2+	H
CT 302, Linn County, Oregon	1763.1	4.8	365.1	32.9	Relatively Moderate	8%	45%	86%	1%	1%	1%	0%	2%	10%	7%
CT 28, Marion County, Oregon	1007.8	5.3	190.6	31.6	Relatively Moderate	11%	35%	88%	1%	1%	2%	0%	2%	6%	14%
CT 9509, Umatilla County, Oregon	31.1	0.1	242.7	33.1	Relatively Moderate	16%	23%	93%	3%	1%	0%	0%	3%	1%	39%
CT 16.01, Jackson County, Oregon	37.5	0.4	87.8	36.1	Relatively High	11%	46%	87%	0%	1%	1%	0%	7%	6%	27%
CT 29.01, Multnomah County, Oregon	246.9	2.5	97.1	31.0	Relatively Low	3%	28%	87%	1%	0%	7%	1%	2%	3%	9%
CT 38.02, Multnomah County, Oregon	309.2	2.5	122.6	28.7	Relatively Low	6%	20%	85%	2%	0%	5%	1%	4%	4%	12%
CT 202.03, Polk County, Oregon	270.2	1.1	248.6	31.8	Relatively Moderate	20%	20%	94%	1%	0%	0%	0%	0%	4%	4%
CT 9514, Umatilla County, Oregon	450.1	5.0	90.6	30.4	Relatively Low	7%	42%	92%	0%	3%	1%	0%	0%	4%	5%
CT 3, Jackson County, Oregon	57.0	1.2	46.9	34.5	Relatively Moderate	17%	26%	85%	0%	8%	2%	0%	1%	4%	21%
CT 106, Multnomah County, Oregon	0.2	0.0	17.8	32.3	Relatively Moderate	0%	28%	80%	8%	2%	5%	0%	0%	5%	6%
CT 4.03, Jackson County, Oregon	117.7	1.1	109.1	32.5	Relatively Moderate	8%	47%	92%	1%	0%	1%	0%	2%	4%	14%
CT 9714, Klamath County, Oregon	91.8	1.6	56.2	32.6	Relatively Moderate	10%	24%	89%	0%	2%	0%	0%	2%	7%	17%
CT 11.02, Lane County, Oregon	66.3	2.2	30.7	33.2	Relatively Moderate	9%	36%	95%	0%	1%	1%	1%	1%	3%	6%
CT 306, Linn County, Oregon	255.0	2.3	110.5	28.6	Relatively Low	16%	29%	89%	0%	0%	0%	0%	5%	6%	10%
CT 4.04, Jackson County, Oregon	45.9	0.2	235.2	31.3	Relatively Moderate	4%	45%	95%	1%	0%	1%	1%	0%	2%	7%
CT 2.02, Jackson County, Oregon	506.4	1.7	296.6	36.2	Relatively High	18%	23%	85%	0%	2%	0%	0%	8%	5%	47%
CT 24, Jackson County, Oregon	156.0	1.2	128.1	33.8	Relatively Moderate	6%	48%	96%	1%	0%	2%	0%	1%	1%	9%
CT 24.01, Multnomah County, Oregon	288.6	1.1	264.6	24.3	Very Low	1%	26%	92%	6%	0%	2%	0%	0%	1%	3%
CT 9501, Umatilla County, Oregon	432.0	2.8	157.0	34.5	Relatively Moderate	8%	41%	85%	0%	1%	2%	1%	1%	10%	12%
CT 25, Jackson County, Oregon	459.1	2.6	178.5	31.4	Relatively Moderate	1%	48%	95%	3%	0%	0%	0%	0%	1%	2%
CT 10.02, Jackson County, Oregon	21.7	0.4	61.8	29.9	Relatively Low	11%	28%	93%	0%	2%	2%	0%	2%	2%	16%
CT 13.01, Lane County, Oregon	115.3	3.1	36.8	36.7	Relatively High	20%	45%	96%	0%	1%	1%	0%	1%	1%	9%
CT 82.01, Multnomah County, Oregon	715.2	3.7	191.2	37.8	Relatively High	6%	44%	76%	2%	2%	17%	3%	0%	1%	10%
CT 30.02, Jackson County, Oregon	1262.0	6.3	200.7	34.6	Relatively Moderate	12%	50%	96%	0%	0%	1%	0%	1%	3%	6%
CT 9400, Umatilla County, Oregon	381.1	2.4	158.6	44.6	Very High	12%	37%	51%	0%	37%	2%	1%	0%	9%	5%
CT 9708, Klamath County, Oregon	107.0	1.4	78.0	31.6	Relatively Moderate	11%	42%	89%	1%	4%	2%	0%	0%	4%	4%
CT 26, Multnomah County, Oregon	53.9	0.9	60.6	26.6	Very Low	3%	27%	84%	2%	0%	7%	0%	0%	6%	2%
CT 9400, Jefferson County, Oregon	267.2	1.7	158.0	55.4	Very High	29%	26%	4%	1%	92%	0%	0%	1%	3%	9%
CT 9707, Klamath County, Oregon	189.0	1.7	108.4	34.8	Relatively Moderate	6%	33%	96%	0%	0%	0%	0%	1%	3%	24%

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Geography	SAIDI	SAIFI	CAIDI	SOVI SCORE	SOVI RATNG	FBP	>65	W	BL/AA	AIAN	A	PI	OR	2+	H
CT 28.02, Multnomah County, Oregon	177.8	2.3	77.8	29.4	Relatively Low	2%	23%	89%	1%	0%	5%	0%	2%	4%	4%
CT 9608, Tillamook County, Oregon	2503.4	10.0	250.6	37.6	Relatively High	14%	46%	94%	0%	0%	1%	0%	1%	4%	16%
CT 77, Multnomah County, Oregon	21.2	0.2	119.5	28.8	Relatively Low	6%	21%	66%	6%	2%	17%	0%	1%	8%	10%
CT 1, Jackson County, Oregon	237.3	1.8	133.4	36.6	Relatively High	27%	18%	90%	0%	1%	0%	3%	2%	4%	36%
CT 9710, Klamath County, Oregon	84.9	1.3	66.9	32.5	Moderate	2%	36%	95%	0%	3%	0%	0%	1%	2%	2%
CT 9603, Wallowa County, Oregon	1206.7	6.5	185.2	37.3	Relatively High	9%	45%	95%	0%	1%	0%	0%	1%	3%	3%
CT 9706, Klamath County, Oregon	108.8	1.3	85.8	35.5	Relatively High	13%	35%	90%	2%	0%	0%	0%	5%	2%	49%
CT 9504, Lincoln County, Oregon	455.4	3.2	143.0	34.1	Moderate	13%	43%	84%	1%	1%	4%	0%	3%	7%	9%
CT 3601, Josephine County, Oregon	857.3	5.2	166.3	32.7	Moderate	17%	51%	96%	1%	0%	0%	0%	0%	2%	6%
CT 27.01, Multnomah County, Oregon	164.4	2.0	82.5	24.5	Very Low	0%	31%	89%	1%	0%	4%	0%	1%	7%	5%
CT 9601, Tillamook County, Oregon	4126.1	17.3	239.2	34.9	Moderate	2%	51%	95%	0%	1%	1%	1%	1%	1%	2%
CT 36.03, Multnomah County, Oregon	54.4	0.3	155.9	31.6	Relatively Moderate	8%	26%	68%	19%	1%	5%	0%	0%	8%	2%
CT 9602, Lake County, Oregon	161.8	1.0	163.9	34.4	Moderate	19%	40%	89%	1%	3%	2%	0%	1%	5%	10%
CT 9503.04, Lincoln County, Oregon	248.9	2.5	98.2	37.0	Relatively High	19%	45%	92%	0%	4%	1%	0%	0%	4%	13%
CT 9704, Klamath County, Oregon	368.1	3.2	113.4	37.9	Relatively High	6%	55%	90%	0%	6%	0%	0%	0%	4%	8%
CT 303, Linn County, Oregon	3595.1	7.3	493.9	33.1	Moderate	7%	41%	95%	0%	2%	0%	0%	1%	2%	4%
CT 9706, Wasco County, Oregon	851.4	7.7	110.5	34.5	Moderate	8%	32%	95%	0%	0%	1%	0%	2%	2%	26%
CT 26, Jackson County, Oregon	669.9	4.3	157.5	33.5	Moderate	12%	55%	95%	0%	2%	0%	0%	0%	3%	4%
CT 9601, Jefferson County, Oregon	204.9	1.1	179.0	31.9	Moderate	6%	37%	82%	3%	5%	0%	0%	6%	4%	10%
CT 9702, Klamath County, Oregon	517.6	3.5	147.2	37.6	Relatively High	19%	46%	78%	0%	19%	2%	0%	0%	2%	7%
CT 3609, Josephine County, Oregon	1539.6	5.9	259.9	32.0	Moderate	4%	54%	89%	0%	0%	3%	0%	2%	7%	7%
CT 9703, Klamath County, Oregon	637.7	5.0	126.6	33.9	Moderate	4%	53%	95%	0%	0%	0%	1%	0%	4%	1%
CT 9503, Umatilla County, Oregon	131.9	0.6	217.2	32.6	Moderate	8%	41%	91%	0%	4%	1%	0%	1%	3%	1%
CT 9701, Klamath County, Oregon	1238.5	8.1	153.7	35.9	Relatively High	11%	46%	98%	1%	0%	0%	0%	0%	2%	5%
CT 3615, Josephine County, Oregon	1651.5	5.1	325.7	35.9	Relatively High	12%	48%	93%	0%	3%	2%	0%	1%	1%	2%
CT 9501, Lincoln County, Oregon	2586.2	9.0	288.3	35.3	Relatively High	17%	35%	92%	0%	4%	0%	0%	1%	4%	9%
CT 9601, Wallowa County, Oregon	1202.9	8.7	138.8	36.3	Relatively High	6%	41%	99%	0%	0%	0%	0%	0%	1%	3%
CT 9501, Sherman County, Oregon	160.0	0.7	243.2	34.8	Moderate	9%	39%	92%	0%	1%	0%	1%	1%	5%	5%
CT 3, Lane County, Oregon	255.7	2.1	123.1	31.6	Moderate	9%	42%	95%	0%	0%	0%	2%	1%	1%	5%

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Geography	SAIDI	SAIFI	CAIDI	SOVI SCORE	SOVI RATNG	FBP	>65	W	BL/AA	AIAN	A	PI	OR	2+	H
CT 9503.03, Lincoln County, Oregon	338.6	2.9	118.8	35.4	Relatively High	10%	58%	88%	0%	4%	5%	0%	0%	4%	3%
CT 9705, Klamath County, Oregon	563.0	4.5	124.9	38.7	Relatively High	18%	42%	88%	1%	3%	0%	0%	2%	7%	5%
CT 106, Marion County, Oregon	2967.4	6.3	472.7	35.6	Relatively High	7%	39%	92%	0%	1%	0%	0%	0%	7%	2%
CT 9602, Wallowa County, Oregon	1836.8	8.5	215.1	34.8	Moderate	16%	36%	92%	0%	3%	0%	0%	1%	3%	3%
CT 9507, Umatilla County, Oregon	193.4	0.8	245.2	31.8	Relatively Moderate	2%	33%	84%	0%	2%	3%	0%	8%	3%	15%
CT 9506.01, Lincoln County, Oregon	874.5	4.2	210.3	35.3	Relatively High	6%	54%	94%	0%	1%	2%	1%	0%	2%	1%
CT 23, Jackson County, Oregon	542.9	4.0	135.3	29.8	Relatively Low	8%	58%	92%	0%	2%	0%	0%	1%	6%	11%
CT 73, Multnomah County, Oregon	110.3	0.9	128.0	25.1	Very Low	0%	28%	78%	11%	1%	0%	2%	3%	4%	14%
CT 5.03, Coos County, Oregon	50.4	0.4	117.9	33.7	Moderate	11%	41%	81%	1%	3%	1%	0%	11%	4%	19%
CT 104, Benton County, Oregon	882.8	3.8	233.8	34.2	Moderate	7%	34%	88%	0%	0%	1%	0%	9%	2%	16%
CT 9, Deschutes County, Oregon	55.4	0.2	226.0	35.1	Relatively High	17%	25%	86%	0%	1%	1%	0%	9%	3%	17%
CT 9504, Hood River County, Oregon	385.2	3.8	101.6	34.2	Moderate	1%	33%	84%	0%	1%	1%	0%	8%	6%	58%
CT 103, Benton County, Oregon	682.4	1.9	358.6	33.0	Moderate	6%	39%	92%	0%	1%	0%	0%	6%	2%	9%
CT 9502, Hood River County, Oregon	269.5	2.8	98.0	31.8	Moderate	1%	33%	87%	1%	1%	3%	0%	6%	3%	19%
CT 7, Coos County, Oregon	399.0	1.3	315.8	33.3	Moderate	15%	27%	80%	1%	2%	1%	0%	5%	11%	8%
CT 108, Benton County, Oregon	458.8	1.2	392.7	31.3	Moderate	8%	22%	85%	0%	0%	3%	0%	4%	8%	10%
CT 109, Benton County, Oregon	345.7	1.2	297.4	27.7	Relatively Low	5%	29%	84%	0%	1%	8%	0%	4%	2%	7%
CT 10, Coos County, Oregon	3095.4	3.0	1031.4	37.4	Relatively High	9%	55%	90%	1%	1%	0%	0%	4%	4%	6%
CT 8, Deschutes County, Oregon	64.8	0.5	126.4	35.6	Relatively High	11%	29%	90%	1%	0%	0%	0%	4%	5%	11%
CT 11.01, Benton County, Oregon	10.8	0.5	20.9	31.0	Relatively Low	33%	9%	72%	0%	1%	16%	1%	3%	7%	8%
CT 15, Jackson County, Oregon	155.0	1.9	81.4	34.7	Moderate	5%	57%	95%	0%	0%	0%	1%	3%	1%	7%
CT 8, Coos County, Oregon	1227.0	2.7	458.8	31.5	Moderate	4%	44%	83%	0%	0%	2%	1%	3%	11%	11%
CT 9503, Crook County, Oregon	79.8	0.5	159.8	34.9	Moderate	13%	45%	92%	2%	1%	0%	1%	3%	1%	8%
CT 5, Deschutes County, Oregon	206.0	2.0	102.5	31.5	Moderate	4%	42%	91%	0%	0%	1%	0%	3%	5%	8%
CT 9503, Clatsop County, Oregon	1136.5	2.9	387.4	32.2	Moderate	10%	39%	90%	2%	1%	0%	1%	3%	4%	12%
CT 9502, Crook County, Oregon	218.6	1.3	171.0	33.9	Moderate	3%	37%	92%	0%	2%	0%	0%	2%	4%	8%
CT 9501, Hood River County, Oregon	1030.3	6.4	162.0	34.1	Moderate	4%	36%	92%	0%	1%	2%	0%	2%	2%	27%
CT 5, Benton County, Oregon	106.1	0.5	197.2	32.0	Moderate	5%	46%	88%	2%	0%	6%	0%	2%	2%	6%
CT 17, Deschutes County, Oregon	193.1	2.5	78.4	32.2	Moderate	15%	29%	91%	2%	0%	2%	0%	2%	3%	12%
CT 19.02, Deschutes County, Oregon	51.3	1.3	38.7	32.0	Moderate	7%	33%	92%	0%	0%	2%	0%	2%	4%	9%
CT 9505, Clatsop County, Oregon	1952.7	6.5	302.7	33.2	Moderate	2%	33%	87%	0%	0%	1%	1%	2%	9%	10%

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Geography	SAIDI	SAIFI	CAIDI	SOVI SCORE	SOVI RATNG	FBP	>65	W	BL/AA	AIAN	A	PI	OR	2+	H
CT 9511, Clatsop County, Oregon	1702.6	9.5	179.1	35.5	Relatively High	12%	40%	89%	1%	1%	3%	0%	2%	5%	10%
CT 6, Coos County, Oregon	579.3	2.8	206.4	36.9	Relatively High	11%	40%	88%	2%	0%	2%	0%	2%	7%	7%
CT 18, Deschutes County, Oregon	67.5	1.3	51.5	36.8	Relatively High	6%	41%	93%	1%	2%	1%	0%	2%	2%	13%
CT 2.02, Benton County, Oregon	366.3	1.6	222.0	31.7	Relatively Moderate	7%	30%	82%	4%	0%	8%	0%	2%	5%	2%
CT 5.02, Coos County, Oregon	1204.4	2.1	586.6	35.3	Relatively High	13%	50%	91%	0%	1%	3%	0%	2%	2%	5%
CT 1500, Douglas County, Oregon	130.1	1.7	77.1	31.3	Relatively Low	8%	33%	92%	1%	0%	0%	0%	2%	5%	6%
CT 5.04, Coos County, Oregon	364.3	1.8	203.7	41.9	Relatively High	16%	37%	86%	1%	3%	1%	0%	2%	8%	9%
CT 1, Benton County, Oregon	8.3	0.0	328.9	30.3	Relatively Low	6%	19%	88%	2%	0%	5%	0%	1%	4%	9%
CT 16, Deschutes County, Oregon	186.0	2.0	93.6	34.6	Relatively Moderate	10%	22%	92%	1%	0%	3%	0%	1%	3%	21%
CT 1000, Douglas County, Oregon	1711.5	4.4	386.8	34.8	Relatively Moderate	10%	34%	94%	1%	0%	0%	0%	1%	3%	7%
CT 7, Jackson County, Oregon	131.8	1.9	68.5	33.0	Relatively Moderate	5%	32%	91%	1%	1%	1%	0%	1%	5%	15%
CT 11.02, Benton County, Oregon	38.2	0.8	48.8	29.3	Relatively Low	6%	11%	83%	0%	2%	10%	0%	1%	4%	6%
CT 20, Deschutes County, Oregon	114.1	1.8	63.0	30.4	Relatively Low	10%	33%	92%	0%	0%	2%	1%	1%	3%	10%
CT 11, Deschutes County, Oregon	257.2	2.2	119.6	29.9	Relatively Low	5%	29%	91%	0%	1%	3%	0%	1%	4%	5%
CT 1900, Douglas County, Oregon	183.0	1.6	115.0	34.2	Relatively Moderate	16%	43%	88%	0%	5%	1%	0%	1%	4%	3%
CT 12, Jackson County, Oregon	58.7	0.6	92.7	31.2	Relatively Low	14%	27%	87%	1%	0%	2%	0%	1%	9%	13%
CT 9512, Clatsop County, Oregon	1066.2	2.5	426.0	31.8	Relatively Moderate	7%	39%	95%	1%	1%	0%	0%	1%	2%	4%
CT 9501, Crook County, Oregon	86.4	0.7	126.7	35.6	Relatively High	11%	37%	94%	0%	1%	1%	0%	1%	4%	10%
CT 4, Benton County, Oregon	139.4	1.1	132.6	29.8	Relatively Low	5%	31%	83%	1%	1%	12%	0%	1%	3%	4%
CT 9506, Clatsop County, Oregon	759.5	2.5	307.0	31.2	Relatively Low	6%	33%	92%	1%	1%	1%	1%	1%	3%	10%
CT 15, Deschutes County, Oregon	78.9	1.3	60.8	30.5	Relatively Low	8%	15%	93%	1%	1%	2%	0%	1%	4%	9%
CT 101, Benton County, Oregon	360.3	1.6	223.6	28.5	Relatively Low	4%	37%	92%	0%	1%	3%	0%	1%	3%	5%
CT 10.01, Benton County, Oregon	34.7	0.1	235.9	33.0	Relatively Moderate	22%	22%	80%	5%	1%	6%	0%	1%	7%	20%
CT 9502, Clatsop County, Oregon	506.1	2.0	247.8	34.9	Relatively Moderate	3%	34%	90%	1%	1%	0%	0%	1%	7%	5%
CT 1100, Douglas County, Oregon	513.0	2.8	183.2	34.9	Relatively Moderate	4%	52%	94%	0%	2%	0%	2%	1%	2%	7%
CT 1600, Douglas County, Oregon	510.0	3.4	148.6	33.3	Relatively Moderate	12%	53%	90%	0%	2%	2%	0%	1%	5%	11%
CT 1300, Douglas County, Oregon	66.6	0.7	102.1	33.3	Relatively Moderate	9%	33%	91%	0%	0%	0%	0%	1%	8%	4%
CT 600, Douglas County, Oregon	289.5	1.6	182.4	34.6	Relatively Moderate	5%	57%	93%	1%	1%	1%	0%	1%	2%	10%
CT 700, Douglas County, Oregon	213.9	2.0	108.5	33.3	Relatively Moderate	3%	51%	90%	0%	1%	0%	0%	1%	8%	5%
CT 2000, Douglas County, Oregon	120.2	1.4	86.5	37.3	Relatively High	17%	42%	88%	0%	2%	0%	0%	1%	9%	6%

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Geography	SAIDI	SAIFI	CAIDI	SOVI SCORE	SOVI RATNG	FBP	>65	W	BL/AA	AIAN	A	PI	OR	2+	H
CT 29, Jackson County, Oregon	799.1	4.4	183.5	34.3	Relatively Moderate	8%	49%	95%	0%	2%	0%	0%	1%	2%	5%
CT 107.02, Benton County, Oregon	61.8	1.3	46.6	32.4	Relatively Moderate	13%	17%	74%	2%	0%	16%	1%	1%	6%	6%
CT 9501, Clatsop County, Oregon	384.0	2.6	147.4	32.9	Relatively Moderate	8%	30%	88%	0%	0%	2%	0%	1%	10%	17%
CT 17, Jackson County, Oregon	65.2	1.0	67.4	35.5	Relatively High	8%	31%	90%	0%	1%	5%	0%	1%	3%	14%
CT 10.02, Benton County, Oregon	66.0	0.4	174.4	29.6	Relatively Low	9%	24%	84%	0%	1%	7%	0%	1%	8%	4%
CT 21, Deschutes County, Oregon	111.0	1.3	85.1	30.4	Relatively Low	8%	31%	93%	0%	1%	0%	0%	1%	5%	4%
CT 10.01, Deschutes County, Oregon	13.3	0.1	155.7	31.9	Relatively Moderate	8%	31%	93%	2%	0%	0%	0%	1%	3%	9%
CT 2100, Douglas County, Oregon	736.7	5.1	144.8	35.3	Relatively High	18%	41%	93%	0%	2%	0%	0%	1%	5%	7%
CT 9601, Gilliam County, Oregon	167.5	0.8	197.6	32.8	Relatively Moderate	3%	41%	92%	0%	4%	1%	1%	1%	2%	6%
CT 106, Benton County, Oregon	250.3	1.2	216.3	31.0	Relatively Low	47%	14%	75%	1%	1%	14%	0%	1%	9%	8%
CT 11, Coos County, Oregon	1568.9	3.5	445.5	36.8	Relatively High	17%	46%	91%	0%	3%	0%	0%	1%	6%	2%
CT 14, Deschutes County, Oregon	100.8	1.1	93.8	29.1	Relatively Low	4%	28%	95%	1%	0%	1%	0%	1%	3%	4%
CT 13.01, Jackson County, Oregon	92.6	1.0	94.0	32.8	Relatively Moderate	15%	29%	92%	0%	0%	1%	0%	1%	6%	21%
CT 6, Benton County, Oregon	264.4	1.7	151.6	36.2	Relatively High	13%	35%	92%	2%	1%	4%	0%	0%	1%	14%
CT 4, Coos County, Oregon	115.5	1.5	74.6	34.6	Relatively Moderate	15%	38%	88%	0%	2%	4%	0%	0%	5%	7%
CT 3, Coos County, Oregon	151.0	1.5	98.1	34.0	Relatively Moderate	5%	38%	84%	1%	6%	1%	0%	0%	8%	7%
CT 9504, Crook County, Oregon	299.9	1.0	299.9	36.8	Relatively High	6%	47%	96%	0%	1%	1%	0%	0%	2%	2%
CT 10.02, Deschutes County, Oregon	73.8	1.4	53.5	30.4	Relatively Low	7%	35%	96%	0%	1%	1%	0%	0%	2%	4%
CT 500.01, Douglas County, Oregon	44.8	0.1	325.6	33.7	Relatively Moderate	9%	44%	96%	0%	1%	0%	0%	0%	3%	6%
CT 102, Benton County, Oregon	323.1	1.6	208.0	30.7	Relatively Low	2%	34%	90%	2%	0%	2%	0%	0%	6%	3%
CT 9507, Clatsop County, Oregon	2164.9	9.4	231.5	32.3	Relatively Moderate	2%	51%	95%	0%	0%	1%	0%	0%	3%	3%
CT 9513, Clatsop County, Oregon	1688.0	6.9	245.4	33.1	Relatively Moderate	6%	54%	95%	1%	1%	2%	0%	0%	1%	4%
CT 1, Coos County, Oregon	13.5	0.1	107.8	34.8	Relatively Moderate	9%	48%	96%	1%	1%	0%	0%	0%	1%	3%
CT 28, Jackson County, Oregon	449.2	4.2	106.9	33.0	Relatively Moderate	6%	45%	94%	0%	0%	1%	0%	0%	4%	4%
CT 13.02, Jackson County, Oregon	75.7	0.9	81.6	30.1	Relatively Low	16%	33%	89%	2%	1%	1%	0%	0%	7%	26%
CT 9, Coos County, Oregon	1327.5	2.9	457.6	35.7	Relatively High	8%	46%	94%	0%	2%	0%	0%	0%	4%	4%
CT 500.02, Douglas County, Oregon	39.8	0.2	166.9	36.7	Relatively High	18%	35%	96%	0%	0%	1%	0%	0%	2%	6%
CT 1700, Douglas County, Oregon	833.6	5.4	155.6	33.8	Relatively Moderate	9%	38%	93%	1%	3%	1%	0%	0%	2%	2%
CT 6.02, Jackson County, Oregon	72.1	0.6	114.1	40.7	Relatively High	10%	53%	91%	3%	0%	3%	0%	0%	2%	8%
CT 13, Deschutes County, Oregon	121.9	1.0	119.4	26.6	Very Low	4%	24%	94%	0%	0%	1%	0%	0%	4%	9%

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Geography	SAIDI	SAIFI	CAIDI	SOVI SCORE	SOVI RATNG	FBP	>65	W	BL/AA	AIAN	A	PI	OR	2+	H
CT 900, Douglas County, Oregon	81.1	0.9	94.3	36.0	Relatively High	12%	45%	93%	0%	1%	3%	0%	0%	3%	6%
CT 9503, Hood River County, Oregon	51.6	1.4	37.8	32.7	Relatively Moderate	0%	24%	95%	1%	0%	1%	0%	0%	4%	23%
CT 9, Benton County, Oregon	39.6	0.4	112.8	27.9	Relatively Low	10%	33%	89%	0%	0%	7%	1%	0%	2%	3%
CT 9504, Clatsop County, Oregon	1560.0	4.1	379.1	31.3	Relatively Moderate	3%	34%	96%	1%	0%	0%	0%	0%	3%	7%
CT 9509, Clatsop County, Oregon	907.8	7.7	117.6	35.3	Relatively High	2%	35%	97%	1%	1%	0%	0%	0%	1%	9%
CT 2, Coos County, Oregon	3334.1	7.3	459.3	35.2	Relatively High	6%	46%	96%	0%	2%	0%	0%	0%	2%	2%
CT 12, Deschutes County, Oregon	83.3	1.9	44.3	30.4	Relatively Low	3%	36%	98%	0%	0%	1%	0%	0%	1%	3%
CT 7, Deschutes County, Oregon	207.2	1.6	126.2	32.0	Relatively Moderate	7%	40%	94%	0%	3%	0%	2%	0%	1%	6%
CT 6, Deschutes County, Oregon	225.0	2.2	101.6	31.3	Relatively Low	2%	56%	97%	1%	1%	1%	0%	0%	1%	1%
CT 19.01, Deschutes County, Oregon	61.5	1.1	55.2	31.3	Relatively Moderate	3%	35%	94%	0%	2%	1%	0%	0%	3%	0%
CT 4.01, Deschutes County, Oregon	99.4	1.8	56.4	29.3	Relatively Low	12%	26%	97%	0%	2%	1%	0%	0%	1%	7%
CT 800, Douglas County, Oregon	54.0	0.7	82.9	34.4	Relatively Moderate	5%	50%	95%	0%	0%	4%	0%	0%	1%	4%
CT 1200, Douglas County, Oregon	151.9	1.7	89.9	35.4	Relatively High	16%	32%	93%	2%	2%	1%	0%	0%	3%	6%
CT 1400, Douglas County, Oregon	75.0	1.2	64.0	36.3	Relatively High	4%	38%	93%	0%	1%	1%	0%	0%	6%	10%
CT 1800, Douglas County, Oregon	433.9	3.3	132.0	37.9	Relatively High	15%	41%	92%	0%	2%	0%	0%	0%	7%	3%
CT 8, Jackson County, Oregon	614.7	3.4	178.3	35.6	Relatively High	14%	32%	92%	1%	2%	1%	0%	0%	5%	8%

The columns have been abbreviated as follows: SAIDI, SAIFI, and CAIDI represent the Company's reliability metrics given census tracts; SOVI Score represents Social Vulnerability Index score; SOVI Rank represents the relative ranking of the SOVI score; FBP represents the percent of families below the poverty line; >65 represents households with one person over the age of 65; W, BL/AA, AIAN, A, PI, OR, 2+, and H represents respondents that identify as White, Black or African American, American Indian and Alaska Native, Asian, Pacific Islander, Other Race, Two or More Races, and Hispanic or Latino, respectively.

Appendix B

Appendix B: Complete List of all 2019 Disconnections by Census Tract, ACS 2019 (5-year average)

Geography	Residential Customers	Proportion of Disconnections	FBP	>65	W	BL/AA	AIAN	A	PI	OR	2+	H
State of Oregon	19,557	100%	8%	31%	84%	2%	1%	4%	0%	3%	5%	13%
CT 3616, Josephine County, Oregon	315	2%	21%	51%	96%	0%	1%	1%	0%	0%	2%	5%
CT 27, Jackson County, Oregon	230	1%	8%	44%	95%	1%	1%	0%	0%	2%	2%	5%
CT 14, Jackson County, Oregon	227	1%	6%	39%	94%	1%	0%	0%	0%	2%	3%	7%
CT 1200, Douglas County, Oregon	220	1%	16%	32%	93%	2%	2%	1%	0%	0%	3%	6%
CT 2.02, Jackson County, Oregon	215	1%	18%	23%	85%	0%	2%	0%	0%	8%	5%	47%
CT 13.02, Jackson County, Oregon	204	1%	16%	33%	89%	2%	1%	1%	0%	0%	7%	26%
CT 81, Multnomah County, Oregon	196	1%	21%	26%	60%	14%	0%	13%	4%	2%	7%	11%
CT 9602, Lake County, Oregon	187	1%	19%	40%	89%	1%	3%	2%	0%	1%	5%	10%
CT 7, Jackson County, Oregon	185	1%	5%	32%	91%	1%	1%	1%	0%	1%	5%	15%
CT 7, Coos County, Oregon	178	1%	15%	27%	80%	1%	2%	1%	0%	5%	11%	8%
CT 3611, Josephine County, Oregon	177	1%	12%	40%	89%	1%	1%	1%	0%	2%	6%	8%
CT 107.01, Marion County, Oregon	172	1%	7%	28%	88%	2%	1%	1%	0%	0%	9%	18%
CT 208.02, Linn County, Oregon	170	1%	21%	21%	77%	0%	2%	1%	0%	17%	2%	22%
CT 5.04, Coos County, Oregon	165	1%	16%	37%	86%	1%	3%	1%	0%	2%	8%	9%
CT 304.02, Linn County, Oregon	163	1%	7%	39%	92%	2%	1%	0%	0%	1%	4%	3%
CT 5.02, Jackson County, Oregon	161	1%	24%	27%	85%	1%	3%	5%	1%	3%	2%	13%
CT 304.01, Linn County, Oregon	161	1%	11%	41%	92%	0%	0%	3%	0%	3%	2%	8%
CT 308, Linn County, Oregon	159	1%	9%	30%	91%	0%	0%	1%	0%	3%	5%	11%
CT 9506, Umatilla County, Oregon	153	1%	13%	30%	81%	2%	3%	3%	0%	5%	5%	8%
CT 203.02, Polk County, Oregon	148	1%	10%	23%	89%	0%	0%	0%	0%	8%	2%	38%
CT 3612, Josephine County, Oregon	147	1%	24%	29%	94%	0%	1%	3%	0%	0%	2%	11%
CT 500.02, Douglas County, Oregon	146	1%	18%	35%	96%	0%	0%	1%	0%	0%	2%	6%
CT 9702, Klamath County, Oregon	145	1%	19%	46%	78%	0%	19%	2%	0%	0%	2%	7%
CT 2.01, Jackson County, Oregon	143	1%	33%	16%	85%	1%	9%	1%	0%	0%	4%	14%
CT 13.01, Jackson County, Oregon	143	1%	15%	29%	92%	0%	0%	1%	0%	1%	6%	21%
CT 17, Jackson County, Oregon	142	1%	8%	31%	90%	0%	1%	5%	0%	1%	3%	14%

The columns have been abbreviated as follows: FBP represents the percent of families below the poverty line; >65 represents households with one person over the age of 65; W, BL/AA, AIAN, A, PI, OR, 2+, and H represents respondents that identify as White, Black or African American, American Indian and Alaska Native, Asian, Pacific Islander, Other Race, Two or More Races, and Hispanic or Latino, respectively.

Geography	Residential Customers	Proportion of Disconnections	FBP	>65	W	BL/AA	AIAN	A	PI	OR	2+	H
CT 1600, Douglas County, Oregon	141	1%	12%	53%	90%	0%	2%	2%	0%	1%	5%	11%
CT 8, Jackson County, Oregon	141	1%	14%	32%	92%	1%	2%	1%	0%	0%	5%	8%
CT 30.02, Jackson County, Oregon	140	1%	12%	50%	96%	0%	0%	1%	0%	1%	3%	6%
CT 16.02, Jackson County, Oregon	139	1%	7%	40%	91%	1%	0%	2%	0%	4%	2%	14%
CT 3, Jackson County, Oregon	137	1%	17%	26%	85%	0%	8%	2%	0%	1%	4%	21%
CT 1300, Douglas County, Oregon	135	1%	9%	33%	91%	0%	0%	0%	0%	1%	8%	4%
CT 16.01, Jackson County, Oregon	134	1%	11%	46%	87%	0%	1%	1%	0%	7%	6%	27%
CT 10.01, Jackson County, Oregon	131	1%	5%	35%	88%	0%	5%	1%	1%	4%	1%	11%
CT 9509, Clatsop County, Oregon	128	1%	2%	35%	97%	1%	1%	0%	0%	0%	1%	9%
CT 3613, Josephine County, Oregon	128	1%	7%	52%	93%	0%	2%	1%	1%	2%	2%	7%
CT 2.03, Jackson County, Oregon	127	1%	19%	16%	89%	1%	2%	0%	0%	4%	4%	25%
CT 29, Jackson County, Oregon	127	1%	8%	49%	95%	0%	2%	0%	0%	1%	2%	5%
CT 201, Linn County, Oregon	127	1%	3%	28%	86%	1%	2%	2%	0%	4%	4%	10%
CT 1, Jackson County, Oregon	125	1%	27%	18%	90%	0%	1%	0%	3%	2%	4%	36%
CT 106, Benton County, Oregon	124	1%	47%	14%	75%	1%	1%	14%	0%	1%	9%	8%
CT 1500, Douglas County, Oregon	124	1%	8%	33%	92%	1%	0%	0%	0%	2%	5%	6%
CT 202.02, Polk County, Oregon	124	1%	9%	42%	93%	0%	0%	3%	0%	1%	3%	6%
CT 204, Linn County, Oregon	123	1%	15%	26%	86%	0%	1%	1%	0%	5%	8%	11%
CT 9, Jackson County, Oregon	122	1%	17%	33%	95%	0%	0%	1%	1%	0%	3%	16%
CT 79, Multnomah County, Oregon	122	1%	8%	23%	73%	7%	2%	11%	1%	1%	5%	10%
CT 9400, Jefferson County, Oregon	120	1%	29%	26%	4%	1%	92%	0%	0%	1%	3%	9%
CT 9715, Klamath County, Oregon	119	1%	23%	38%	75%	1%	7%	4%	0%	6%	7%	18%
CT 9, Coos County, Oregon	116	1%	8%	46%	94%	0%	2%	0%	0%	0%	4%	4%
CT 3607.01, Josephine County, Oregon	116	1%	13%	22%	94%	1%	0%	1%	0%	1%	4%	12%
CT 2000, Douglas County, Oregon	114	1%	17%	42%	88%	0%	2%	0%	0%	1%	9%	6%
CT 3607.02, Josephine County, Oregon	114	1%	9%	37%	85%	1%	3%	0%	0%	6%	5%	10%
CT 9717, Klamath County, Oregon	114	1%	24%	26%	90%	0%	5%	1%	0%	1%	3%	10%

The columns have been abbreviated as follows: FBP represents the percent of families below the poverty line; >65 represents households with one person over the age of 65; W, BL/AA, AIAN, A, PI, OR, 2+, and H represents respondents that identify as White, Black or African American, American Indian and Alaska Native, Asian, Pacific Islander, Other Race, Two or More Races, and Hispanic or Latino, respectively.

Geography	Residential Customers	Proportion of Disconnections	FBP	>65	W	BL/AA	AIAN	A	PI	OR	2+	H
CT 900, Douglas County, Oregon	112	1%	12%	45%	93%	0%	1%	3%	0%	0%	3%	6%
CT 1900, Douglas County, Oregon	112	1%	16%	43%	88%	0%	5%	1%	0%	1%	4%	3%
CT 28, Jackson County, Oregon	108	1%	6%	45%	94%	0%	0%	1%	0%	0%	4%	4%
CT 11, Coos County, Oregon	107	1%	17%	46%	91%	0%	3%	0%	0%	1%	6%	2%
CT 9714, Klamath County, Oregon	107	1%	10%	24%	89%	0%	2%	0%	0%	2%	7%	17%
CT 207, Linn County, Oregon	107	1%	7%	27%	89%	0%	0%	0%	0%	3%	8%	15%
CT 2100, Douglas County, Oregon	105	1%	18%	41%	93%	0%	2%	0%	0%	1%	5%	7%
CT 11, Jackson County, Oregon	105	1%	4%	40%	92%	0%	2%	0%	0%	1%	6%	7%
CT 3606, Josephine County, Oregon	105	1%	6%	39%	94%	2%	0%	0%	0%	0%	4%	7%
CT 22.03, Multnomah County, Oregon	104	1%	2%	10%	79%	12%	1%	3%	0%	1%	4%	5%
CT 3605, Josephine County, Oregon	103	1%	20%	36%	91%	2%	0%	0%	0%	1%	6%	7%
CT 9501, Lincoln County, Oregon	103	1%	17%	35%	92%	0%	4%	0%	0%	1%	4%	9%
CT 302, Linn County, Oregon	103	1%	8%	45%	86%	1%	1%	1%	0%	2%	10%	7%
CT 4.05, Jackson County, Oregon	101	1%	19%	26%	87%	2%	0%	1%	4%	0%	7%	19%
CT 3603, Josephine County, Oregon	101	1%	11%	44%	92%	0%	2%	1%	0%	1%	5%	5%
CT 9504, Lincoln County, Oregon	100	1%	13%	43%	84%	1%	1%	4%	0%	3%	7%	9%
CT 72.02, Multnomah County, Oregon	99	1%	6%	37%	62%	18%	0%	11%	1%	3%	6%	9%
CT 4, Coos County, Oregon	98	1%	15%	38%	88%	0%	2%	4%	0%	0%	5%	7%
CT 1, Benton County, Oregon	97	0%	6%	19%	88%	2%	0%	5%	0%	1%	4%	9%
CT 9716, Klamath County, Oregon	97	0%	34%	24%	81%	1%	7%	0%	0%	9%	3%	32%
CT 10.02, Jackson County, Oregon	96	0%	11%	28%	93%	0%	2%	2%	0%	2%	2%	16%
CT 108.02, Marion County, Oregon	95	0%	7%	31%	83%	1%	1%	1%	0%	6%	9%	20%
CT 10.01, Deschutes County, Oregon	94	0%	8%	31%	93%	2%	0%	0%	0%	1%	3%	9%
CT 9719, Klamath County, Oregon	94	0%	18%	20%	79%	1%	2%	0%	0%	8%	10%	17%
CT 29.03, Multnomah County, Oregon	93	0%	7%	34%	76%	8%	0%	12%	0%	0%	3%	6%
CT 17.01, Multnomah County, Oregon	91	0%	3%	22%	78%	3%	1%	11%	0%	1%	6%	5%
CT 1800, Douglas County, Oregon	90	0%	15%	41%	92%	0%	2%	0%	0%	0%	7%	3%

The columns have been abbreviated as follows: FBP represents the percent of families below the poverty line; >65 represents households with one person over the age of 65; W, BL/AA, AIAN, A, PI, OR, 2+, and H represents respondents that identify as White, Black or African American, American Indian and Alaska Native, Asian, Pacific Islander, Other Race, Two or More Races, and Hispanic or Latino, respectively.

Geography	Residential Customers	Proportion of Disconnections	FBP	>65	W	BL/AA	AIAN	A	PI	OR	2+	H
CT 9709, Klamath County, Oregon	90	0%	17%	41%	86%	2%	6%	2%	0%	3%	1%	12%
CT 82.02, Multnomah County, Oregon	90	0%	15%	23%	73%	5%	2%	9%	4%	2%	5%	16%
CT 6.01, Jackson County, Oregon	89	0%	4%	44%	93%	0%	1%	3%	0%	0%	3%	8%
CT 9711, Klamath County, Oregon	89	0%	2%	31%	92%	2%	3%	2%	0%	0%	3%	17%
CT 306, Linn County, Oregon	89	0%	16%	29%	89%	0%	0%	0%	0%	5%	6%	10%
CT 9713, Klamath County, Oregon	88	0%	16%	38%	90%	0%	1%	1%	0%	2%	6%	10%
CT 3615, Josephine County, Oregon	87	0%	12%	48%	93%	0%	3%	2%	0%	1%	1%	2%
CT 9503.04, Lincoln County, Oregon	86	0%	19%	45%	92%	0%	4%	1%	0%	0%	4%	13%
CT 202.03, Polk County, Oregon	86	0%	20%	20%	94%	1%	0%	0%	0%	0%	4%	4%
CT 6, Benton County, Oregon	85	0%	13%	35%	92%	2%	1%	4%	0%	0%	1%	14%
CT 3, Coos County, Oregon	85	0%	5%	38%	84%	1%	6%	1%	0%	0%	8%	7%
CT 1400, Douglas County, Oregon	85	0%	4%	38%	93%	0%	1%	1%	0%	0%	6%	10%
CT 6.02, Jackson County, Oregon	85	0%	10%	53%	91%	3%	0%	3%	0%	0%	2%	8%
CT 206, Linn County, Oregon	85	0%	3%	33%	94%	1%	0%	1%	0%	0%	3%	12%
CT 9507, Umatilla County, Oregon	84	0%	2%	33%	84%	0%	2%	3%	0%	8%	3%	15%
CT 4.06, Jackson County, Oregon	83	0%	11%	29%	88%	0%	0%	2%	1%	2%	7%	16%
CT 5.01, Jackson County, Oregon	82	0%	15%	23%	89%	0%	2%	0%	1%	2%	5%	14%
CT 9703, Klamath County, Oregon	82	0%	4%	53%	95%	0%	0%	0%	1%	0%	4%	1%
CT 74, Multnomah County, Oregon	82	0%	33%	18%	67%	16%	1%	3%	0%	1%	11%	27%
CT 30.01, Jackson County, Oregon	81	0%	15%	44%	96%	0%	0%	2%	0%	0%	2%	4%
CT 9602.01, Jefferson County, Oregon	81	0%	20%	29%	70%	0%	9%	0%	0%	15%	5%	40%
CT 108.01, Marion County, Oregon	81	0%	6%	32%	92%	0%	2%	1%	1%	0%	4%	11%
CT 36.02, Multnomah County, Oregon	81	0%	3%	20%	74%	18%	0%	3%	0%	3%	2%	3%
CT 26, Jackson County, Oregon	80	0%	12%	55%	95%	0%	2%	0%	0%	0%	3%	4%
CT 10.01, Benton County, Oregon	78	0%	22%	22%	80%	5%	1%	6%	0%	1%	7%	20%
CT 9718, Klamath County, Oregon	78	0%	22%	14%	79%	4%	5%	0%	0%	3%	8%	13%
CT 36.01, Multnomah County, Oregon	78	0%	8%	17%	71%	20%	1%	2%	0%	2%	5%	6%

The columns have been abbreviated as follows: FBP represents the percent of families below the poverty line; >65 represents households with one person over the age of 65; W, BL/AA, AIAN, A, PI, OR, 2+, and H represents respondents that identify as White, Black or African American, American Indian and Alaska Native, Asian, Pacific Islander, Other Race, Two or More Races, and Hispanic or Latino, respectively.

Geography	Residential Customers	Proportion of Disconnections	FBP	>65	W	BL/AA	AIAN	A	PI	OR	2+	H
CT 9602.02, Jefferson County, Oregon	77	0%	9%	37%	85%	1%	6%	2%	0%	4%	2%	23%
CT 205, Linn County, Oregon	77	0%	13%	36%	83%	1%	1%	2%	2%	4%	8%	22%
CT 9505, Umatilla County, Oregon	77	0%	6%	34%	90%	1%	3%	1%	0%	1%	5%	9%
CT 9509, Umatilla County, Oregon	77	0%	16%	23%	93%	3%	1%	0%	0%	3%	1%	39%
CT 12, Jackson County, Oregon	76	0%	14%	27%	87%	1%	0%	2%	0%	1%	9%	13%
CT 9504, Umatilla County, Oregon	76	0%	15%	26%	84%	3%	2%	1%	1%	5%	5%	13%
CT 17.02, Multnomah County, Oregon	74	0%	8%	23%	77%	2%	1%	11%	0%	2%	7%	20%
CT 9505, Clatsop County, Oregon	73	0%	2%	33%	87%	0%	0%	1%	1%	2%	9%	10%
CT 9712, Klamath County, Oregon	73	0%	19%	36%	79%	0%	7%	2%	0%	0%	12%	13%
CT 309.03, Linn County, Oregon	73	0%	14%	38%	96%	0%	0%	1%	0%	0%	4%	6%
CT 107.02, Marion County, Oregon	72	0%	8%	40%	90%	0%	0%	2%	1%	1%	6%	7%
CT 29.02, Multnomah County, Oregon	72	0%	1%	24%	81%	0%	1%	13%	0%	2%	3%	6%
CT 9501, Clatsop County, Oregon	71	0%	8%	30%	88%	0%	0%	2%	0%	1%	10%	17%
CT 3610, Josephine County, Oregon	70	0%	6%	51%	94%	0%	1%	3%	0%	0%	2%	5%
CT 309.02, Linn County, Oregon	70	0%	4%	50%	93%	1%	3%	1%	0%	0%	3%	2%
CT 9511, Clatsop County, Oregon	69	0%	12%	40%	89%	1%	1%	3%	0%	2%	5%	10%
CT 9503, Hood River County, Oregon	69	0%	0%	24%	95%	1%	0%	1%	0%	0%	4%	23%
CT 309.04, Linn County, Oregon	69	0%	18%	30%	86%	0%	2%	1%	0%	2%	8%	5%
CT 5.02, Coos County, Oregon	68	0%	13%	50%	91%	0%	1%	3%	0%	2%	2%	5%
CT 9, Deschutes County, Oregon	68	0%	17%	25%	86%	0%	1%	1%	0%	9%	3%	17%
CT 33.01, Multnomah County, Oregon	68	0%	18%	10%	76%	16%	0%	2%	0%	0%	6%	9%
CT 9501, Crook County, Oregon	66	0%	11%	37%	94%	0%	1%	1%	0%	1%	4%	10%
CT 3614, Josephine County, Oregon	66	0%	22%	47%	91%	0%	3%	0%	0%	0%	7%	9%
CT 203, Linn County, Oregon	66	0%	8%	27%	90%	0%	1%	2%	0%	4%	4%	6%
CT 34.01, Multnomah County, Oregon	66	0%	22%	13%	67%	19%	0%	6%	0%	1%	7%	8%
CT 76, Multnomah County, Oregon	66	0%	8%	17%	77%	1%	3%	8%	0%	4%	7%	35%
CT 75, Multnomah County, Oregon	65	0%	8%	18%	75%	10%	2%	6%	0%	0%	6%	13%

The columns have been abbreviated as follows: FBP represents the percent of families below the poverty line; >65 represents households with one person over the age of 65; W, BL/AA, AIAN, A, PI, OR, 2+, and H represents respondents that identify as White, Black or African American, American Indian and Alaska Native, Asian, Pacific Islander, Other Race, Two or More Races, and Hispanic or Latino, respectively.

Geography	Residential Customers	Proportion of Disconnections	FBP	>65	W	BL/AA	AIAN	A	PI	OR	2+	H
CT 24.02, Multnomah County, Oregon	63	0%	3%	32%	83%	6%	2%	4%	0%	1%	5%	5%
CT 9502, Hood River County, Oregon	61	0%	1%	33%	87%	1%	1%	3%	0%	6%	3%	19%
CT 3608, Josephine County, Oregon	61	0%	10%	53%	96%	1%	1%	0%	0%	1%	1%	12%
CT 13.02, Lane County, Oregon	60	0%	12%	36%	89%	2%	1%	0%	0%	1%	7%	11%
CT 5.03, Coos County, Oregon	59	0%	11%	41%	81%	1%	3%	1%	0%	11%	4%	19%
CT 106, Marion County, Oregon	59	0%	7%	39%	92%	0%	1%	0%	0%	0%	7%	2%
CT 9400, Umatilla County, Oregon	59	0%	12%	37%	51%	0%	37%	2%	1%	0%	9%	5%
CT 23.03, Multnomah County, Oregon	58	0%	4%	25%	81%	4%	1%	4%	0%	1%	9%	7%
CT 77, Multnomah County, Oregon	58	0%	6%	21%	66%	6%	2%	17%	0%	1%	8%	10%
CT 8, Coos County, Oregon	57	0%	4%	44%	83%	0%	0%	2%	1%	3%	11%	11%
CT 37.01, Multnomah County, Oregon	57	0%	11%	25%	71%	16%	1%	6%	0%	1%	5%	16%
CT 205, Polk County, Oregon	57	0%	3%	44%	92%	0%	1%	1%	0%	5%	1%	7%
CT 9720, Klamath County, Oregon	56	0%	7%	40%	93%	0%	1%	2%	0%	1%	2%	6%
CT 9503, Crook County, Oregon	55	0%	13%	45%	92%	2%	1%	0%	1%	3%	1%	8%
CT 15, Jackson County, Oregon	55	0%	5%	57%	95%	0%	0%	0%	1%	3%	1%	7%
CT 3604, Josephine County, Oregon	55	0%	7%	55%	96%	0%	0%	0%	0%	1%	2%	2%
CT 25.02, Multnomah County, Oregon	55	0%	8%	15%	88%	4%	0%	4%	0%	1%	4%	13%
CT 32, Multnomah County, Oregon	55	0%	3%	21%	83%	8%	0%	2%	0%	0%	6%	4%
CT 34.02, Multnomah County, Oregon	55	0%	11%	13%	73%	15%	0%	3%	0%	3%	7%	8%
CT 80.01, Multnomah County, Oregon	53	0%	2%	31%	66%	11%	4%	13%	2%	1%	4%	6%
CT 11.02, Benton County, Oregon	52	0%	6%	11%	83%	0%	2%	10%	0%	1%	4%	6%
CT 9504, Clatsop County, Oregon	52	0%	3%	34%	96%	1%	0%	0%	0%	0%	3%	7%
CT 29.01, Multnomah County, Oregon	51	0%	3%	28%	87%	1%	0%	7%	1%	2%	3%	9%
CT 11.01, Lane County, Oregon	50	0%	4%	36%	91%	0%	2%	2%	0%	2%	3%	5%
CT 101, Benton County, Oregon	49	0%	4%	37%	92%	0%	1%	3%	0%	1%	3%	5%
CT 109, Benton County, Oregon	48	0%	5%	29%	84%	0%	1%	8%	0%	4%	2%	7%
CT 800, Douglas County, Oregon	48	0%	5%	50%	95%	0%	0%	4%	0%	0%	1%	4%

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Geography	Residential Customers	Proportion of Disconnections	FBP	>65	W	BL/AA	AIAN	A	PI	OR	2+	H
CT 108, Benton County, Oregon	47	0%	8%	22%	85%	0%	0%	3%	0%	4%	8%	10%
CT 9707, Klamath County, Oregon	47	0%	6%	33%	96%	0%	0%	0%	0%	1%	3%	24%
CT 4.03, Lane County, Oregon	47	0%	11%	25%	92%	0%	1%	1%	0%	5%	1%	10%
CT 305, Linn County, Oregon	47	0%	9%	39%	96%	0%	1%	0%	0%	2%	2%	6%
CT 57, Multnomah County, Oregon	47	0%	7%	24%	80%	1%	0%	11%	0%	1%	7%	7%
CT 202.04, Polk County, Oregon	47	0%	5%	40%	93%	0%	2%	1%	0%	0%	4%	3%
CT 1000, Douglas County, Oregon	46	0%	10%	34%	94%	1%	0%	0%	0%	1%	3%	7%
CT 301, Linn County, Oregon	46	0%	5%	33%	93%	1%	1%	0%	0%	1%	3%	2%
CT 78, Multnomah County, Oregon	46	0%	13%	21%	79%	1%	0%	10%	0%	6%	4%	25%
CT 4.03, Jackson County, Oregon	45	0%	8%	47%	92%	1%	0%	1%	0%	2%	4%	14%
CT 3601, Josephine County, Oregon	45	0%	17%	51%	96%	1%	0%	0%	0%	0%	2%	6%
CT 33.02, Multnomah County, Oregon	45	0%	5%	19%	71%	16%	0%	5%	0%	1%	7%	9%
CT 9506, Clatsop County, Oregon	44	0%	6%	33%	92%	1%	1%	1%	1%	1%	3%	10%
CT 4.04, Lane County, Oregon	44	0%	10%	41%	91%	0%	0%	0%	0%	7%	1%	14%
CT 12.01, Lane County, Oregon	44	0%	7%	32%	88%	1%	5%	1%	0%	1%	3%	5%
CT 208.01, Linn County, Oregon	44	0%	13%	22%	81%	0%	3%	3%	0%	5%	8%	17%
CT 9508, Umatilla County, Oregon	44	0%	21%	25%	89%	2%	1%	0%	0%	4%	4%	28%
CT 20, Deschutes County, Oregon	43	0%	10%	33%	92%	0%	0%	2%	1%	1%	3%	10%
CT 307, Linn County, Oregon	43	0%	5%	42%	94%	0%	2%	1%	0%	1%	2%	2%
CT 1100, Douglas County, Oregon	42	0%	4%	52%	94%	0%	2%	0%	2%	1%	2%	7%
CT 9705, Klamath County, Oregon	42	0%	18%	42%	88%	1%	3%	0%	0%	2%	7%	5%
CT 106, Multnomah County, Oregon	42	0%	0%	28%	80%	8%	2%	5%	0%	0%	5%	6%
CT 11.01, Benton County, Oregon	41	0%	33%	9%	72%	0%	1%	16%	1%	3%	7%	8%
CT 9502, Crook County, Oregon	41	0%	3%	37%	92%	0%	2%	0%	0%	2%	4%	8%
CT 4.01, Deschutes County, Oregon	41	0%	12%	26%	97%	0%	2%	1%	0%	0%	1%	7%
CT 25, Jackson County, Oregon	41	0%	1%	48%	95%	3%	0%	0%	0%	0%	1%	2%
CT 9708, Klamath County, Oregon	41	0%	11%	42%	89%	1%	4%	2%	0%	0%	4%	4%

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Geography	Residential Customers	Proportion of Disconnections	FBP	>65	W	BL/AA	AIAN	A	PI	OR	2+	H
CT 6, Coos County, Oregon	40	0%	11%	40%	88%	2%	0%	2%	0%	2%	7%	7%
CT 10.02, Benton County, Oregon	38	0%	9%	24%	84%	0%	1%	7%	0%	1%	8%	4%
CT 16, Deschutes County, Oregon	38	0%	10%	22%	92%	1%	0%	3%	0%	1%	3%	21%
CT 18, Deschutes County, Oregon	38	0%	6%	41%	93%	1%	2%	1%	0%	2%	2%	13%
CT 500.01, Douglas County, Oregon	38	0%	9%	44%	96%	0%	1%	0%	0%	0%	3%	6%
CT 9704, Klamath County, Oregon	38	0%	6%	55%	90%	0%	6%	0%	0%	0%	4%	8%
CT 30, Multnomah County, Oregon	38	0%	2%	22%	83%	4%	3%	6%	0%	1%	4%	6%
CT 11, Deschutes County, Oregon	37	0%	5%	29%	91%	0%	1%	3%	0%	1%	4%	5%
CT 21, Deschutes County, Oregon	37	0%	8%	31%	93%	0%	1%	0%	0%	1%	5%	4%
CT 9603.02, Jefferson County, Oregon	37	0%	5%	37%	81%	0%	1%	1%	0%	12%	5%	28%
CT 9603, Wallowa County, Oregon	37	0%	9%	45%	95%	0%	1%	0%	0%	1%	3%	3%
CT 31, Multnomah County, Oregon	36	0%	1%	21%	86%	3%	1%	6%	0%	1%	4%	4%
CT 3609, Josephine County, Oregon	34	0%	4%	54%	89%	0%	0%	3%	0%	2%	7%	7%
CT 9506.01, Lincoln County, Oregon	34	0%	6%	54%	94%	0%	1%	2%	1%	0%	2%	1%
CT 9502, Clatsop County, Oregon	33	0%	3%	34%	90%	1%	1%	0%	0%	1%	7%	5%
CT 12.02, Lane County, Oregon	33	0%	11%	37%	93%	0%	0%	0%	0%	0%	7%	6%
CT 8, Deschutes County, Oregon	32	0%	11%	29%	90%	1%	0%	0%	0%	4%	5%	11%
CT 9513, Umatilla County, Oregon	32	0%	10%	30%	86%	0%	1%	0%	0%	8%	4%	27%
CT 9503.03, Lincoln County, Oregon	31	0%	10%	58%	88%	0%	4%	5%	0%	0%	4%	3%
CT 9, Benton County, Oregon	29	0%	10%	33%	89%	0%	0%	7%	1%	0%	2%	3%
CT 104, Benton County, Oregon	29	0%	7%	34%	88%	0%	0%	1%	0%	9%	2%	16%
CT 9710, Klamath County, Oregon	29	0%	2%	36%	95%	0%	3%	0%	0%	1%	2%	2%
CT 28.02, Multnomah County, Oregon	29	0%	2%	23%	89%	1%	0%	5%	0%	2%	4%	4%
CT 204, Polk County, Oregon	29	0%	12%	34%	83%	1%	9%	1%	0%	0%	5%	4%
CT 107.02, Benton County, Oregon	28	0%	13%	17%	74%	2%	0%	16%	1%	1%	6%	6%
CT 9503, Umatilla County, Oregon	28	0%	8%	41%	91%	0%	4%	1%	0%	1%	3%	1%
CT 9601, Wallowa County, Oregon	28	0%	6%	41%	99%	0%	0%	0%	0%	0%	1%	3%

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Geography	Residential Customers	Proportion of Disconnections	FBP	>65	W	BL/AA	AIAN	A	PI	OR	2+	H
CT 4, Benton County, Oregon	27	0%	5%	31%	83%	1%	1%	12%	0%	1%	3%	4%
CT 222.07, Clackamas County, Oregon	27	0%	3%	24%	72%	1%	0%	21%	0%	0%	7%	7%
CT 7, Deschutes County, Oregon	27	0%	7%	40%	94%	0%	3%	0%	2%	0%	1%	6%
CT 4.04, Jackson County, Oregon	27	0%	4%	45%	95%	1%	0%	1%	1%	0%	2%	7%
CT 9706, Klamath County, Oregon	27	0%	13%	35%	90%	2%	0%	0%	0%	5%	2%	49%
CT 80.02, Multnomah County, Oregon	27	0%	7%	35%	70%	6%	3%	13%	1%	1%	6%	12%
CT 11.02, Lane County, Oregon	26	0%	9%	36%	95%	0%	1%	1%	1%	1%	3%	6%
CT 9503, Clatsop County, Oregon	25	0%	10%	39%	90%	2%	1%	0%	1%	3%	4%	12%
CT 1700, Douglas County, Oregon	25	0%	9%	38%	93%	1%	3%	1%	0%	0%	2%	2%
CT 202, Linn County, Oregon	25	0%	9%	25%	91%	0%	1%	0%	0%	1%	7%	18%
CT 9601, Gilliam County, Oregon	24	0%	3%	41%	92%	0%	4%	1%	1%	1%	2%	6%
CT 9603.01, Jefferson County, Oregon	24	0%	8%	55%	93%	0%	0%	0%	0%	1%	5%	4%
CT 9501, Umatilla County, Oregon	24	0%	8%	41%	85%	0%	1%	2%	1%	1%	10%	12%
CT 2.02, Benton County, Oregon	23	0%	7%	30%	82%	4%	0%	8%	0%	2%	5%	2%
CT 15, Deschutes County, Oregon	23	0%	8%	15%	93%	1%	1%	2%	0%	1%	4%	9%
CT 9514, Umatilla County, Oregon	23	0%	7%	42%	92%	0%	3%	1%	0%	0%	4%	5%
CT 24, Jackson County, Oregon	22	0%	6%	48%	96%	1%	0%	2%	0%	1%	1%	9%
CT 37.02, Multnomah County, Oregon	22	0%	1%	20%	73%	19%	3%	1%	0%	0%	4%	2%
CT 9602, Wallowa County, Oregon	22	0%	16%	36%	92%	0%	3%	0%	0%	1%	3%	3%
CT 73, Multnomah County, Oregon	21	0%	0%	28%	78%	11%	1%	0%	2%	3%	4%	14%
CT 9501, Sherman County, Oregon	21	0%	9%	39%	92%	0%	1%	0%	1%	1%	5%	5%
CT 2, Coos County, Oregon	19	0%	6%	46%	96%	0%	2%	0%	0%	0%	2%	2%
CT 12, Deschutes County, Oregon	19	0%	3%	36%	98%	0%	0%	1%	0%	0%	1%	3%
CT 13.01, Lane County, Oregon	19	0%	20%	45%	96%	0%	1%	1%	0%	1%	1%	9%
CT 303, Linn County, Oregon	19	0%	7%	41%	95%	0%	2%	0%	0%	1%	2%	4%
CT 38.03, Multnomah County, Oregon	19	0%	11%	16%	75%	13%	0%	7%	1%	1%	3%	9%
CT 9507, Clatsop County, Oregon	18	0%	2%	51%	95%	0%	0%	1%	0%	0%	3%	3%

The columns have been abbreviated as follows: FBP represents the percent of families below the poverty line; >65 represents households with one person over the age of 65; W, BL/AA, AIAN, A, PI, OR, 2+, and H represents respondents that identify as White, Black or African American, American Indian and Alaska Native, Asian, Pacific Islander, Other Race, Two or More Races, and Hispanic or Latino, respectively.

Geography	Residential Customers	Proportion of Disconnections	FBP	>65	W	BL/AA	AIAN	A	PI	OR	2+	H
CT 9512, Clatsop County, Oregon	18	0%	7%	39%	95%	1%	1%	0%	0%	1%	2%	4%
CT 23, Jackson County, Oregon	18	0%	8%	58%	92%	0%	2%	0%	0%	1%	6%	11%
CT 13, Deschutes County, Oregon	17	0%	4%	24%	94%	0%	0%	1%	0%	0%	4%	9%
CT 28.01, Multnomah County, Oregon	17	0%	0%	27%	82%	1%	0%	9%	0%	3%	4%	8%
CT 35.01, Multnomah County, Oregon	17	0%	8%	19%	72%	11%	0%	5%	0%	5%	7%	13%
CT 9513, Clatsop County, Oregon	16	0%	6%	54%	95%	1%	1%	2%	0%	0%	1%	4%
CT 10, Coos County, Oregon	16	0%	9%	55%	90%	1%	1%	0%	0%	4%	4%	6%
CT 17, Deschutes County, Oregon	15	0%	15%	29%	91%	2%	0%	2%	0%	2%	3%	12%
CT 27.02, Multnomah County, Oregon	15	0%	4%	16%	83%	6%	0%	3%	0%	3%	5%	7%
CT 14, Deschutes County, Oregon	14	0%	4%	28%	95%	1%	0%	1%	0%	1%	3%	4%
CT 19.02, Deschutes County, Oregon	13	0%	7%	33%	92%	0%	0%	2%	0%	2%	4%	9%
CT 35.02, Multnomah County, Oregon	13	0%	2%	19%	84%	4%	5%	4%	0%	0%	3%	8%
CT 24.01, Multnomah County, Oregon	11	0%	1%	26%	92%	6%	0%	2%	0%	0%	1%	3%
CT 9708, Wasco County, Oregon	11	0%	8%	40%	80%	0%	15%	1%	0%	0%	3%	4%
CT 600, Douglas County, Oregon	10	0%	5%	57%	93%	1%	1%	1%	0%	1%	2%	10%
CT 3, Lane County, Oregon	10	0%	9%	42%	95%	0%	0%	0%	2%	1%	1%	5%
CT 26, Multnomah County, Oregon	10	0%	3%	27%	84%	2%	0%	7%	0%	0%	6%	2%
CT 9504, Crook County, Oregon	9	0%	6%	47%	96%	0%	1%	1%	0%	0%	2%	2%
CT 5, Benton County, Oregon	8	0%	5%	46%	88%	2%	0%	6%	0%	2%	2%	6%
CT 27, Marion County, Oregon	8	0%	2%	42%	91%	0%	1%	2%	0%	0%	6%	7%
CT 25.01, Multnomah County, Oregon	8	0%	1%	37%	90%	1%	0%	4%	0%	0%	5%	4%
CT 82.01, Multnomah County, Oregon	8	0%	6%	44%	76%	2%	2%	17%	3%	0%	1%	10%
CT 9706, Wasco County, Oregon	7	0%	8%	32%	95%	0%	0%	1%	0%	2%	2%	26%
CT 38.01, Multnomah County, Oregon	6	0%	5%	18%	80%	6%	3%	0%	2%	1%	8%	9%
CT 38.02, Multnomah County, Oregon	6	0%	6%	20%	85%	2%	0%	5%	1%	4%	4%	12%
CT 27.01, Multnomah County, Oregon	5	0%	0%	31%	89%	1%	0%	4%	0%	1%	7%	5%
CT 53, Polk County, Oregon	5	0%	3%	50%	93%	0%	2%	1%	0%	1%	3%	14%

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Geography	Residential Customers	Proportion of Disconnections	FBP	>65	W	BL/AA	AIAN	A	PI	OR	2+	H
CT 203.03, Polk County, Oregon	5	0%	12%	20%	84%	1%	1%	4%	0%	2%	8%	9%
CT 10.02, Deschutes County, Oregon	4	0%	7%	35%	96%	0%	1%	1%	0%	0%	2%	4%
CT 36.03, Multnomah County, Oregon	4	0%	8%	26%	68%	19%	1%	5%	0%	0%	8%	2%
CT 102, Benton County, Oregon	3	0%	2%	34%	90%	2%	0%	2%	0%	0%	6%	3%
CT 103, Benton County, Oregon	3	0%	6%	39%	92%	0%	1%	0%	0%	6%	2%	9%
CT 700, Douglas County, Oregon	3	0%	3%	51%	90%	0%	1%	0%	0%	1%	8%	5%
CT 18, Jackson County, Oregon	3	0%	14%	42%	93%	1%	1%	2%	0%	1%	3%	7%
CT 9601, Jefferson County, Oregon	3	0%	6%	37%	82%	3%	5%	0%	0%	6%	4%	10%
CT 9701, Morrow County, Oregon	3	0%	12%	26%	88%	0%	2%	1%	0%	6%	3%	46%
CT 9501, Hood River County, Oregon	2	0%	4%	36%	92%	0%	1%	2%	0%	2%	2%	27%
CT 9504, Hood River County, Oregon	2	0%	1%	33%	84%	0%	1%	1%	0%	8%	6%	58%
CT 22, Jackson County, Oregon	2	0%	12%	38%	94%	1%	0%	1%	1%	0%	3%	5%
CT 28, Marion County, Oregon	2	0%	11%	35%	88%	1%	1%	2%	0%	2%	6%	14%
CT 9502, Umatilla County, Oregon	2	0%	19%	28%	83%	0%	6%	1%	0%	7%	4%	52%
CT 5, Deschutes County, Oregon	1	0%	4%	42%	91%	0%	0%	1%	0%	3%	5%	8%
CT 24, Marion County, Oregon	1	0%	5%	39%	94%	0%	0%	2%	0%	1%	3%	10%
CT 51, Multnomah County, Oregon	1	0%	3%	27%	81%	7%	0%	6%	1%	1%	5%	8%
CT 56, Multnomah County, Oregon	1	0%	10%	20%	75%	5%	2%	11%	2%	2%	3%	9%
CT 9511, Umatilla County, Oregon	1	0%	8%	30%	86%	1%	0%	0%	0%	10%	3%	41%

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Appendix C

Appendix C: Complete List of Energy Burden Estimates for all Census Tract, ACS 2019 (5-year average)*

Geography	EB	FBP	>65	W	BL/AA	AIAN	A	PI	OR	2+	H	RS
State of Oregon	3%	8%	31%	84%	2%	1%	4%	0%	3%	5%	13%	38%
CT 9701, Klamath County, Oregon	8%	11%	46%	98%	1%	0%	0%	0%	0%	2%	5%	30%
CT 9712, Klamath County, Oregon	7%	19%	36%	79%	0%	7%	2%	0%	0%	12%	13%	39%
CT 9506.01, Lincoln County, Oregon	6%	6%	54%	94%	0%	1%	2%	1%	0%	2%	1%	17%
CT 1, Jackson County, Oregon	6%	27%	18%	90%	0%	1%	0%	3%	2%	4%	36%	88%
CT 9703, Klamath County, Oregon	6%	4%	53%	95%	0%	0%	0%	1%	0%	4%	1%	6%
CT 9601, Tillamook County, Oregon	5%	2%	51%	95%	0%	1%	1%	1%	1%	1%	2%	23%
CT 106, Marion County, Oregon	5%	7%	39%	92%	0%	1%	0%	0%	0%	7%	2%	18%
CT 12.01, Lane County, Oregon	5%	7%	32%	88%	1%	5%	1%	0%	1%	3%	5%	23%
CT 2.01, Jackson County, Oregon	5%	33%	16%	85%	1%	9%	1%	0%	0%	4%	14%	77%
CT 9504, Lincoln County, Oregon	5%	13%	43%	84%	1%	1%	4%	0%	3%	7%	9%	54%
CT 9507, Clatsop County, Oregon	5%	2%	51%	95%	0%	0%	1%	0%	0%	3%	3%	29%
CT 9511, Clatsop County, Oregon	5%	12%	40%	89%	1%	1%	3%	0%	2%	5%	10%	45%
CT 9608, Tillamook County, Oregon	5%	14%	46%	94%	0%	0%	1%	0%	1%	4%	16%	20%
CT 9702, Klamath County, Oregon	5%	19%	46%	78%	0%	19%	2%	0%	0%	2%	7%	16%
CT 9715, Klamath County, Oregon	5%	23%	38%	75%	1%	7%	4%	0%	6%	7%	18%	41%
CT 9716, Klamath County, Oregon	5%	34%	24%	81%	1%	7%	0%	0%	9%	3%	32%	70%
CT 106, Benton County, Oregon	4%	47%	14%	75%	1%	1%	14%	0%	1%	9%	8%	84%
CT 11.01, Benton County, Oregon	4%	33%	9%	72%	0%	1%	16%	1%	3%	7%	8%	88%
CT 11.02, Benton County, Oregon	4%	6%	11%	83%	0%	2%	10%	0%	1%	4%	6%	76%
CT 3605, Josephine County, Oregon	4%	20%	36%	91%	2%	0%	0%	0%	1%	6%	7%	61%
CT 3607.01, Josephine County, Oregon	4%	13%	22%	94%	1%	0%	1%	0%	1%	4%	12%	52%
CT 3609, Josephine County, Oregon	4%	4%	54%	89%	0%	0%	3%	0%	2%	7%	7%	21%
CT 3611, Josephine County, Oregon	4%	12%	40%	89%	1%	1%	1%	0%	2%	6%	8%	42%
CT 3615, Josephine County, Oregon	4%	12%	48%	93%	0%	3%	2%	0%	1%	1%	2%	19%
CT 3616, Josephine County, Oregon	4%	21%	51%	96%	0%	1%	1%	0%	0%	2%	5%	30%

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Geography	EB	FBP	>65	W	BL/AA	AIAN	A	PI	OR	2+	H	RS
CT 9503.03, Lincoln County, Oregon	4%	10%	58%	88%	0%	4%	5%	0%	0%	4%	3%	23%
CT 9503.04, Lincoln County, Oregon	4%	19%	45%	92%	0%	4%	1%	0%	0%	4%	13%	52%
CT 1200, Douglas County, Oregon	4%	16%	32%	93%	2%	2%	1%	0%	0%	3%	6%	40%
CT 16.01, Jackson County, Oregon	4%	11%	46%	87%	0%	1%	1%	0%	7%	6%	27%	31%
CT 1900, Douglas County, Oregon	4%	16%	43%	88%	0%	5%	1%	0%	1%	4%	3%	29%
CT 500.02, Douglas County, Oregon	4%	18%	35%	96%	0%	0%	1%	0%	0%	2%	6%	37%
CT 73, Multnomah County, Oregon	4%	0%	28%	78%	11%	1%	0%	2%	3%	4%	14%	58%
CT 9514, Umatilla County, Oregon	4%	7%	42%	92%	0%	3%	1%	0%	0%	4%	5%	25%
CT 9714, Klamath County, Oregon	4%	10%	24%	89%	0%	2%	0%	0%	2%	7%	17%	21%
CT 9719, Klamath County, Oregon	4%	18%	20%	79%	1%	2%	0%	0%	8%	10%	17%	65%
CT 10.01, Jackson County, Oregon	4%	5%	35%	88%	0%	5%	1%	1%	4%	1%	11%	34%
CT 11, Coos County, Oregon	4%	17%	46%	91%	0%	3%	0%	0%	1%	6%	2%	31%
CT 12.02, Lane County, Oregon	4%	11%	37%	93%	0%	0%	0%	0%	0%	7%	6%	33%
CT 13.01, Lane County, Oregon	4%	20%	45%	96%	0%	1%	1%	0%	1%	1%	9%	31%
CT 13.02, Lane County, Oregon	4%	12%	36%	89%	2%	1%	0%	0%	1%	7%	11%	36%
CT 17, Jackson County, Oregon	4%	8%	31%	90%	0%	1%	5%	0%	1%	3%	14%	46%
CT 1800, Douglas County, Oregon	4%	15%	41%	92%	0%	2%	0%	0%	0%	7%	3%	24%
CT 1, Coos County, Oregon	4%	9%	48%	96%	1%	1%	0%	0%	0%	1%	3%	16%
CT 2.02, Jackson County, Oregon	4%	18%	23%	85%	0%	2%	0%	0%	8%	5%	47%	68%
CT 2.03, Jackson County, Oregon	4%	19%	16%	89%	1%	2%	0%	0%	4%	4%	25%	71%
CT 2000, Douglas County, Oregon	4%	17%	42%	88%	0%	2%	0%	0%	1%	9%	6%	33%
CT 204, Linn County, Oregon	4%	15%	26%	86%	0%	1%	1%	0%	5%	8%	11%	57%
CT 26, Jackson County, Oregon	4%	12%	55%	95%	0%	2%	0%	0%	0%	3%	4%	27%
CT 30.02, Jackson County, Oregon	4%	12%	50%	96%	0%	0%	1%	0%	1%	3%	6%	21%
CT 3, Coos County, Oregon	4%	5%	38%	84%	1%	6%	1%	0%	0%	8%	7%	52%
CT 4.02, Lane County, Oregon	4%	8%	44%	92%	0%	1%	1%	0%	1%	5%	7%	15%

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Geography	EB	FBP	>65	W	BL/AA	AIAN	A	PI	OR	2+	H	RS
CT 5.01, Jackson County, Oregon	4%	15%	23%	89%	0%	2%	0%	1%	2%	5%	14%	51%
CT 5.02, Coos County, Oregon	4%	13%	50%	91%	0%	1%	3%	0%	2%	2%	5%	22%
CT 5.02, Jackson County, Oregon	4%	24%	27%	85%	1%	3%	5%	1%	3%	2%	13%	77%
CT 5.04, Coos County, Oregon	4%	16%	37%	86%	1%	3%	1%	0%	2%	8%	9%	40%
CT 81, Multnomah County, Oregon	4%	21%	26%	60%	14%	0%	13%	4%	2%	7%	11%	62%
CT 82.02, Multnomah County, Oregon	4%	15%	23%	73%	5%	2%	9%	4%	2%	5%	16%	59%
CT 9503, Hood River County, Oregon	4%	0%	24%	95%	1%	0%	1%	0%	0%	4%	23%	49%
CT 9509, Clatsop County, Oregon	4%	2%	35%	97%	1%	1%	0%	0%	0%	1%	9%	61%
CT 9601, Gilliam County, Oregon	4%	3%	41%	92%	0%	4%	1%	1%	1%	2%	6%	33%
CT 9602, Lake County, Oregon	4%	19%	40%	89%	1%	3%	2%	0%	1%	5%	10%	34%
CT 9603.02, Jefferson County, Oregon	4%	5%	37%	81%	0%	1%	1%	0%	12%	5%	28%	26%
CT 9704, Klamath County, Oregon	4%	6%	55%	90%	0%	6%	0%	0%	0%	4%	8%	21%
CT 9705, Klamath County, Oregon	4%	18%	42%	88%	1%	3%	0%	0%	2%	7%	5%	20%
CT 9706, Klamath County, Oregon	4%	13%	35%	90%	2%	0%	0%	0%	5%	2%	49%	32%
CT 9707, Klamath County, Oregon	4%	6%	33%	96%	0%	0%	0%	0%	1%	3%	24%	24%
CT 9708, Wasco County, Oregon	4%	8%	40%	80%	0%	15%	1%	0%	0%	3%	4%	34%
CT 9709, Klamath County, Oregon	4%	17%	41%	86%	2%	6%	2%	0%	3%	1%	12%	28%
CT 9713, Klamath County, Oregon	4%	16%	38%	90%	0%	1%	1%	0%	2%	6%	10%	37%
CT 9717, Klamath County, Oregon	4%	24%	26%	90%	0%	5%	1%	0%	1%	3%	10%	60%
CT 9718, Klamath County, Oregon	4%	22%	14%	79%	4%	5%	0%	0%	3%	8%	13%	75%
CT 10.01, Benton County, Oregon	3%	22%	22%	80%	5%	1%	6%	0%	1%	7%	20%	69%
CT 106, Multnomah County, Oregon	3%	0%	28%	80%	8%	2%	5%	0%	0%	5%	6%	87%
CT 107.02, Benton County, Oregon	3%	13%	17%	74%	2%	0%	16%	1%	1%	6%	6%	83%
CT 1400, Douglas County, Oregon	3%	4%	38%	93%	0%	1%	1%	0%	0%	6%	10%	50%
CT 17.02, Multnomah County, Oregon	3%	8%	23%	77%	2%	1%	11%	0%	2%	7%	20%	45%
CT 29.03, Multnomah County, Oregon	3%	7%	34%	76%	8%	0%	12%	0%	0%	3%	6%	39%

The columns have been abbreviated as follows: EB represents percent of households within a census tract that experience an energy burden; FBP represents the percent of families below the poverty line; >65 represents households with one person over the age of 65; W, BL/AA, AIAN, A, PI, OR, 2+, and H represents respondents that identify as White, Black or African American, American Indian and Alaska Native, Asian, Pacific Islander, Other Race, Two or More Races, and Hispanic or Latino, respectively. RS represents the percent of respondents that rent their dwelling unit.

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Geography	EB	FBP	>65	W	BL/AA	AIAN	A	PI	OR	2+	H	RS
CT 33.01, Multnomah County, Oregon	3%	18%	10%	76%	16%	0%	2%	0%	0%	6%	9%	56%
CT 3601, Josephine County, Oregon	3%	17%	51%	96%	1%	0%	0%	0%	0%	2%	6%	19%
CT 3603, Josephine County, Oregon	3%	11%	44%	92%	0%	2%	1%	0%	1%	5%	5%	22%
CT 3604, Josephine County, Oregon	3%	7%	55%	96%	0%	0%	0%	0%	1%	2%	2%	10%
CT 3606, Josephine County, Oregon	3%	6%	39%	94%	2%	0%	0%	0%	0%	4%	7%	36%
CT 3607.02, Josephine County, Oregon	3%	9%	37%	85%	1%	3%	0%	0%	6%	5%	10%	54%
CT 3608, Josephine County, Oregon	3%	10%	53%	96%	1%	1%	0%	0%	1%	1%	12%	26%
CT 3610, Josephine County, Oregon	3%	6%	51%	94%	0%	1%	3%	0%	0%	2%	5%	16%
CT 3612, Josephine County, Oregon	3%	24%	29%	94%	0%	1%	3%	0%	0%	2%	11%	49%
CT 3613, Josephine County, Oregon	3%	7%	52%	93%	0%	2%	1%	1%	2%	2%	7%	16%
CT 3614, Josephine County, Oregon	3%	22%	47%	91%	0%	3%	0%	0%	0%	7%	9%	21%
CT 4.01, Deschutes County, Oregon	3%	12%	26%	97%	0%	2%	1%	0%	0%	1%	7%	31%
CT 6, Benton County, Oregon	3%	13%	35%	92%	2%	1%	4%	0%	0%	1%	14%	54%
CT 9400, Jefferson County, Oregon	3%	29%	26%	4%	1%	92%	0%	0%	1%	3%	9%	36%
CT 9400, Umatilla County, Oregon	3%	12%	37%	51%	0%	37%	2%	1%	0%	9%	5%	29%
CT 9503, Umatilla County, Oregon	3%	8%	41%	91%	0%	4%	1%	0%	1%	3%	1%	18%
CT 9508, Umatilla County, Oregon	3%	21%	25%	89%	2%	1%	0%	0%	4%	4%	28%	19%
CT 9511, Umatilla County, Oregon	3%	8%	30%	86%	1%	0%	0%	0%	10%	3%	41%	27%
CT 9601, Jefferson County, Oregon	3%	6%	37%	82%	3%	5%	0%	0%	6%	4%	10%	26%
CT 9602.01, Jefferson County, Oregon	3%	20%	29%	70%	0%	9%	0%	0%	15%	5%	40%	54%
CT 9603.01, Jefferson County, Oregon	3%	8%	55%	93%	0%	0%	0%	0%	1%	5%	4%	12%
CT 1100, Douglas County, Oregon	3%	4%	52%	94%	0%	2%	0%	2%	1%	2%	7%	13%
CT 1500, Douglas County, Oregon	3%	8%	33%	92%	1%	0%	0%	0%	2%	5%	6%	24%
CT 16.02, Jackson County, Oregon	3%	7%	40%	91%	1%	0%	2%	0%	4%	2%	14%	38%
CT 1700, Douglas County, Oregon	3%	9%	38%	93%	1%	3%	1%	0%	0%	2%	2%	18%
CT 2100, Douglas County, Oregon	3%	18%	41%	93%	0%	2%	0%	0%	1%	5%	7%	38%

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Geography	EB	FBP	>65	W	BL/AA	AIAN	A	PI	OR	2+	H	RS
CT 500.01, Douglas County, Oregon	3%	9%	44%	96%	0%	1%	0%	0%	0%	3%	6%	24%
CT 600, Douglas County, Oregon	3%	5%	57%	93%	1%	1%	1%	0%	1%	2%	10%	13%
CT 74, Multnomah County, Oregon	3%	33%	18%	67%	16%	1%	3%	0%	1%	11%	27%	54%
CT 76, Multnomah County, Oregon	3%	8%	17%	77%	1%	3%	8%	0%	4%	7%	35%	37%
CT 77, Multnomah County, Oregon	3%	6%	21%	66%	6%	2%	17%	0%	1%	8%	10%	20%
CT 78, Multnomah County, Oregon	3%	13%	21%	79%	1%	0%	10%	0%	6%	4%	25%	39%
CT 79, Multnomah County, Oregon	3%	8%	23%	73%	7%	2%	11%	1%	1%	5%	10%	48%
CT 900, Douglas County, Oregon	3%	12%	45%	93%	0%	1%	3%	0%	0%	3%	6%	25%
CT 9501, Crook County, Oregon	3%	11%	37%	94%	0%	1%	1%	0%	1%	4%	10%	32%
CT 9501, Umatilla County, Oregon	3%	8%	41%	85%	0%	1%	2%	1%	1%	10%	12%	26%
CT 9502, Crook County, Oregon	3%	3%	37%	92%	0%	2%	0%	0%	2%	4%	8%	22%
CT 9502, Umatilla County, Oregon	3%	19%	28%	83%	0%	6%	1%	0%	7%	4%	52%	37%
CT 9503, Crook County, Oregon	3%	13%	45%	92%	2%	1%	0%	1%	3%	1%	8%	35%
CT 9504, Crook County, Oregon	3%	6%	47%	96%	0%	1%	1%	0%	0%	2%	2%	15%
CT 9504, Umatilla County, Oregon	3%	15%	26%	84%	3%	2%	1%	1%	5%	5%	13%	36%
CT 9505, Umatilla County, Oregon	3%	6%	34%	90%	1%	3%	1%	0%	1%	5%	9%	32%
CT 9506, Umatilla County, Oregon	3%	13%	30%	81%	2%	3%	3%	0%	5%	5%	8%	47%
CT 9507, Umatilla County, Oregon	3%	2%	33%	84%	0%	2%	3%	0%	8%	3%	15%	57%
CT 9510, Umatilla County, Oregon	3%	25%	29%	89%	1%	0%	3%	0%	4%	3%	33%	43%
CT 9701, Morrow County, Oregon	3%	12%	26%	88%	0%	2%	1%	0%	6%	3%	46%	28%
CT 10.02, Jackson County, Oregon	3%	11%	28%	93%	0%	2%	2%	0%	2%	2%	16%	39%
CT 1000, Douglas County, Oregon	3%	10%	34%	94%	1%	0%	0%	0%	1%	3%	7%	42%
CT 107.01, Marion County, Oregon	3%	7%	28%	88%	2%	1%	1%	0%	0%	9%	18%	46%
CT 107.02, Marion County, Oregon	3%	8%	40%	90%	0%	0%	2%	1%	1%	6%	7%	23%
CT 108.01, Marion County, Oregon	3%	6%	32%	92%	0%	2%	1%	1%	0%	4%	11%	32%
CT 108.02, Marion County, Oregon	3%	7%	31%	83%	1%	1%	1%	0%	6%	9%	20%	28%

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Geography	EB	FBP	>65	W	BL/AA	AIAN	A	PI	OR	2+	H	RS
CT 108, Benton County, Oregon	3%	8%	22%	85%	0%	0%	3%	0%	4%	8%	10%	44%
CT 10, Coos County, Oregon	3%	9%	55%	90%	1%	1%	0%	0%	4%	4%	6%	38%
CT 11.02, Lane County, Oregon	3%	9%	36%	95%	0%	1%	1%	1%	1%	3%	6%	28%
CT 11, Jackson County, Oregon	3%	4%	40%	92%	0%	2%	0%	0%	1%	6%	7%	15%
CT 12, Jackson County, Oregon	3%	14%	27%	87%	1%	0%	2%	0%	1%	9%	13%	43%
CT 13.01, Jackson County, Oregon	3%	15%	29%	92%	0%	0%	1%	0%	1%	6%	21%	19%
CT 13.02, Jackson County, Oregon	3%	16%	33%	89%	2%	1%	1%	0%	0%	7%	26%	14%
CT 1300, Douglas County, Oregon	3%	9%	33%	91%	0%	0%	0%	0%	1%	8%	4%	55%
CT 14, Jackson County, Oregon	3%	6%	39%	94%	1%	0%	0%	0%	2%	3%	7%	22%
CT 15, Deschutes County, Oregon	3%	8%	15%	93%	1%	1%	2%	0%	1%	4%	9%	57%
CT 15, Jackson County, Oregon	3%	5%	57%	95%	0%	0%	0%	1%	3%	1%	7%	34%
CT 1600, Douglas County, Oregon	3%	12%	53%	90%	0%	2%	2%	0%	1%	5%	11%	39%
CT 18, Deschutes County, Oregon	3%	6%	41%	93%	1%	2%	1%	0%	2%	2%	13%	59%
CT 202.03, Polk County, Oregon	3%	20%	20%	94%	1%	0%	0%	0%	0%	4%	4%	50%
CT 203.02, Polk County, Oregon	3%	10%	23%	89%	0%	0%	0%	0%	8%	2%	38%	34%
CT 203.03, Polk County, Oregon	3%	12%	20%	84%	1%	1%	4%	0%	2%	8%	9%	65%
CT 203.04, Polk County, Oregon	3%	13%	20%	80%	5%	1%	4%	1%	7%	4%	19%	53%
CT 204, Polk County, Oregon	3%	12%	34%	83%	1%	9%	1%	0%	0%	5%	4%	21%
CT 205, Linn County, Oregon	3%	13%	36%	83%	1%	1%	2%	2%	4%	8%	22%	49%
CT 206, Linn County, Oregon	3%	3%	33%	94%	1%	0%	1%	0%	0%	3%	12%	42%
CT 207, Linn County, Oregon	3%	7%	27%	89%	0%	0%	0%	0%	3%	8%	15%	41%
CT 208.01, Linn County, Oregon	3%	13%	22%	81%	0%	3%	3%	0%	5%	8%	17%	68%
CT 20, Deschutes County, Oregon	3%	10%	33%	92%	0%	0%	2%	1%	1%	3%	10%	28%
CT 23, Jackson County, Oregon	3%	8%	58%	92%	0%	2%	0%	0%	1%	6%	11%	9%
CT 24, Jackson County, Oregon	3%	6%	48%	96%	1%	0%	2%	0%	1%	1%	9%	15%
CT 25, Jackson County, Oregon	3%	1%	48%	95%	3%	0%	0%	0%	0%	1%	2%	10%

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Geography	EB	FBP	>65	W	BL/AA	AIAN	A	PI	OR	2+	H	RS
CT 27, Jackson County, Oregon	3%	8%	44%	95%	1%	1%	0%	0%	2%	2%	5%	22%
CT 28, Jackson County, Oregon	3%	6%	45%	94%	0%	0%	1%	0%	0%	4%	4%	16%
CT 29, Jackson County, Oregon	3%	8%	49%	95%	0%	2%	0%	0%	1%	2%	5%	33%
CT 2, Coos County, Oregon	3%	6%	46%	96%	0%	2%	0%	0%	0%	2%	2%	22%
CT 30.01, Jackson County, Oregon	3%	15%	44%	96%	0%	0%	2%	0%	0%	2%	4%	18%
CT 301, Linn County, Oregon	3%	5%	33%	93%	1%	1%	0%	0%	1%	3%	2%	23%
CT 302, Linn County, Oregon	3%	8%	45%	86%	1%	1%	1%	0%	2%	10%	7%	24%
CT 304.01, Linn County, Oregon	3%	11%	41%	92%	0%	0%	3%	0%	3%	2%	8%	28%
CT 304.02, Linn County, Oregon	3%	7%	39%	92%	2%	1%	0%	0%	1%	4%	3%	32%
CT 305, Linn County, Oregon	3%	9%	39%	96%	0%	1%	0%	0%	2%	2%	6%	18%
CT 306, Linn County, Oregon	3%	16%	29%	89%	0%	0%	0%	0%	5%	6%	10%	25%
CT 307, Linn County, Oregon	3%	5%	42%	94%	0%	2%	1%	0%	1%	2%	2%	21%
CT 308, Linn County, Oregon	3%	9%	30%	91%	0%	0%	1%	0%	3%	5%	11%	52%
CT 309.03, Linn County, Oregon	3%	14%	38%	96%	0%	0%	1%	0%	0%	4%	6%	42%
CT 309.04, Linn County, Oregon	3%	18%	30%	86%	0%	2%	1%	0%	2%	8%	5%	32%
CT 3, Jackson County, Oregon	3%	17%	26%	85%	0%	8%	2%	0%	1%	4%	21%	50%
CT 4.03, Jackson County, Oregon	3%	8%	47%	92%	1%	0%	1%	0%	2%	4%	14%	30%
CT 4.03, Lane County, Oregon	3%	11%	25%	92%	0%	1%	1%	0%	5%	1%	10%	31%
CT 4.04, Lane County, Oregon	3%	10%	41%	91%	0%	0%	0%	0%	7%	1%	14%	39%
CT 4.05, Jackson County, Oregon	3%	19%	26%	87%	2%	0%	1%	4%	0%	7%	19%	62%
CT 4.06, Jackson County, Oregon	3%	11%	29%	88%	0%	0%	2%	1%	2%	7%	16%	55%
CT 4, Coos County, Oregon	3%	15%	38%	88%	0%	2%	4%	0%	0%	5%	7%	40%
CT 5.03, Coos County, Oregon	3%	11%	41%	81%	1%	3%	1%	0%	11%	4%	19%	42%
CT 5, Deschutes County, Oregon	3%	4%	42%	91%	0%	0%	1%	0%	3%	5%	8%	24%
CT 6.01, Jackson County, Oregon	3%	4%	44%	93%	0%	1%	3%	0%	0%	3%	8%	22%
CT 6.02, Jackson County, Oregon	3%	10%	53%	91%	3%	0%	3%	0%	0%	2%	8%	58%

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Geography	EB	FBP	>65	W	BL/AA	AIAN	A	PI	OR	2+	H	RS
CT 6, Coos County, Oregon	3%	11%	40%	88%	2%	0%	2%	0%	2%	7%	7%	34%
CT 700, Douglas County, Oregon	3%	3%	51%	90%	0%	1%	0%	0%	1%	8%	5%	13%
CT 7, Coos County, Oregon	3%	15%	27%	80%	1%	2%	1%	0%	5%	11%	8%	49%
CT 7, Deschutes County, Oregon	3%	7%	40%	94%	0%	3%	0%	2%	0%	1%	6%	22%
CT 7, Jackson County, Oregon	3%	5%	32%	91%	1%	1%	1%	0%	1%	5%	15%	28%
CT 80.01, Multnomah County, Oregon	3%	2%	31%	66%	11%	4%	13%	2%	1%	4%	6%	50%
CT 80.02, Multnomah County, Oregon	3%	7%	35%	70%	6%	3%	13%	1%	1%	6%	12%	27%
CT 82.01, Multnomah County, Oregon	3%	6%	44%	76%	2%	2%	17%	3%	0%	1%	10%	49%
CT 8, Coos County, Oregon	3%	4%	44%	83%	0%	0%	2%	1%	3%	11%	11%	24%
CT 8, Deschutes County, Oregon	3%	11%	29%	90%	1%	0%	0%	0%	4%	5%	11%	29%
CT 8, Jackson County, Oregon	3%	14%	32%	92%	1%	2%	1%	0%	0%	5%	8%	35%
CT 9501, Hood River County, Oregon	3%	4%	36%	92%	0%	1%	2%	0%	2%	2%	27%	33%
CT 9501, Lincoln County, Oregon	3%	17%	35%	92%	0%	4%	0%	0%	1%	4%	9%	27%
CT 9501, Sherman County, Oregon	3%	9%	39%	92%	0%	1%	0%	1%	1%	5%	5%	35%
CT 9503, Clatsop County, Oregon	3%	10%	39%	90%	2%	1%	0%	1%	3%	4%	12%	54%
CT 9512, Clatsop County, Oregon	3%	7%	39%	95%	1%	1%	0%	0%	1%	2%	4%	16%
CT 9513, Clatsop County, Oregon	3%	6%	54%	95%	1%	1%	2%	0%	0%	1%	4%	16%
CT 9601, Wallowa County, Oregon	3%	6%	41%	99%	0%	0%	0%	0%	0%	1%	3%	27%
CT 9602.02, Jefferson County, Oregon	3%	9%	37%	85%	1%	6%	2%	0%	4%	2%	23%	39%
CT 9602, Wallowa County, Oregon	3%	16%	36%	92%	0%	3%	0%	0%	1%	3%	3%	28%
CT 9603, Wallowa County, Oregon	3%	9%	45%	95%	0%	1%	0%	0%	1%	3%	3%	34%
CT 9708, Klamath County, Oregon	3%	11%	42%	89%	1%	4%	2%	0%	0%	4%	4%	18%
CT 9710, Klamath County, Oregon	3%	2%	36%	95%	0%	3%	0%	0%	1%	2%	2%	19%
CT 9711, Klamath County, Oregon	3%	2%	31%	92%	2%	3%	2%	0%	0%	3%	17%	36%
CT 9720, Klamath County, Oregon	3%	7%	40%	93%	0%	1%	2%	0%	1%	2%	6%	42%
CT 9, Coos County, Oregon	3%	8%	46%	94%	0%	2%	0%	0%	0%	4%	4%	25%

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Geography	EB	FBP	>65	W	BL/AA	AIAN	A	PI	OR	2+	H	RS
CT 9, Deschutes County, Oregon	3%	17%	25%	86%	0%	1%	1%	0%	9%	3%	17%	62%
CT 9, Jackson County, Oregon	3%	17%	33%	95%	0%	0%	1%	1%	0%	3%	16%	32%
CT 10.01, Deschutes County, Oregon	2%	8%	31%	93%	2%	0%	0%	0%	1%	3%	9%	31%
CT 10.02, Benton County, Oregon	2%	9%	24%	84%	0%	1%	7%	0%	1%	8%	4%	49%
CT 10.02, Deschutes County, Oregon	2%	7%	35%	96%	0%	1%	1%	0%	0%	2%	4%	10%
CT 101, Benton County, Oregon	2%	4%	37%	92%	0%	1%	3%	0%	1%	3%	5%	6%
CT 102, Benton County, Oregon	2%	2%	34%	90%	2%	0%	2%	0%	0%	6%	3%	16%
CT 103, Benton County, Oregon	2%	6%	39%	92%	0%	1%	0%	0%	6%	2%	9%	15%
CT 104, Benton County, Oregon	2%	7%	34%	88%	0%	0%	1%	0%	9%	2%	16%	25%
CT 17.01, Multnomah County, Oregon	2%	3%	22%	78%	3%	1%	11%	0%	1%	6%	5%	36%
CT 19.01, Deschutes County, Oregon	2%	3%	35%	94%	0%	2%	1%	0%	0%	3%	0%	3%
CT 19.02, Deschutes County, Oregon	2%	7%	33%	92%	0%	0%	2%	0%	2%	4%	9%	38%
CT 1, Benton County, Oregon	2%	6%	19%	88%	2%	0%	5%	0%	1%	4%	9%	50%
CT 27.02, Multnomah County, Oregon	2%	4%	16%	83%	6%	0%	3%	0%	3%	5%	7%	69%
CT 28.01, Multnomah County, Oregon	2%	0%	27%	82%	1%	0%	9%	0%	3%	4%	8%	19%
CT 28.02, Multnomah County, Oregon	2%	2%	23%	89%	1%	0%	5%	0%	2%	4%	4%	29%
CT 29.01, Multnomah County, Oregon	2%	3%	28%	87%	1%	0%	7%	1%	2%	3%	9%	29%
CT 29.02, Multnomah County, Oregon	2%	1%	24%	81%	0%	1%	13%	0%	2%	3%	6%	27%
CT 36.02, Multnomah County, Oregon	2%	3%	20%	74%	18%	0%	3%	0%	3%	2%	3%	24%
CT 36.03, Multnomah County, Oregon	2%	8%	26%	68%	19%	1%	5%	0%	0%	8%	2%	21%
CT 37.01, Multnomah County, Oregon	2%	11%	25%	71%	16%	1%	6%	0%	1%	5%	16%	45%
CT 37.02, Multnomah County, Oregon	2%	1%	20%	73%	19%	3%	1%	0%	0%	4%	2%	39%
CT 38.02, Multnomah County, Oregon	2%	6%	20%	85%	2%	0%	5%	1%	4%	4%	12%	38%
CT 38.03, Multnomah County, Oregon	2%	11%	16%	75%	13%	0%	7%	1%	1%	3%	9%	49%
CT 4, Benton County, Oregon	2%	5%	31%	83%	1%	1%	12%	0%	1%	3%	4%	35%
CT 5, Benton County, Oregon	2%	5%	46%	88%	2%	0%	6%	0%	2%	2%	6%	16%

The columns have been abbreviated as follows: EB represents percent of households within a census tract that experience an energy burden; FBP represents the percent of families below the poverty line; >65 represents households with one person over the age of 65; W, BL/AA, AIAN, A, PI, OR, 2+, and H represents respondents that identify as White, Black or African American, American Indian and Alaska Native, Asian, Pacific Islander, Other Race, Two or More Races, and Hispanic or Latino, respectively. RS represents the percent of respondents that rent their dwelling unit.

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Geography	EB	FBP	>65	W	BL/AA	AIAN	A	PI	OR	2+	H	RS
CT 72.02, Multnomah County, Oregon	2%	6%	37%	62%	18%	0%	11%	1%	3%	6%	9%	35%
CT 9509, Umatilla County, Oregon	2%	16%	23%	93%	3%	1%	0%	0%	3%	1%	39%	36%
CT 9512, Umatilla County, Oregon	2%	14%	21%	89%	0%	1%	0%	1%	6%	2%	47%	37%
CT 9513, Umatilla County, Oregon	2%	10%	30%	86%	0%	1%	0%	0%	8%	4%	27%	36%
CT 30, Multnomah County, Oregon	2%	2%	22%	83%	4%	3%	6%	0%	1%	4%	6%	14%
CT 31, Multnomah County, Oregon	2%	1%	21%	86%	3%	1%	6%	0%	1%	4%	4%	29%
CT 32, Multnomah County, Oregon	2%	3%	21%	83%	8%	0%	2%	0%	0%	6%	4%	29%
CT 33.02, Multnomah County, Oregon	2%	5%	19%	71%	16%	0%	5%	0%	1%	7%	9%	48%
CT 34.01, Multnomah County, Oregon	2%	22%	13%	67%	19%	0%	6%	0%	1%	7%	8%	47%
CT 35.01, Multnomah County, Oregon	2%	8%	19%	72%	11%	0%	5%	0%	5%	7%	13%	51%
CT 35.02, Multnomah County, Oregon	2%	2%	19%	84%	4%	5%	4%	0%	0%	3%	8%	49%
CT 36.01, Multnomah County, Oregon	2%	8%	17%	71%	20%	1%	2%	0%	2%	5%	6%	34%
CT 38.01, Multnomah County, Oregon	2%	5%	18%	80%	6%	3%	0%	2%	1%	8%	9%	41%
CT 75, Multnomah County, Oregon	2%	8%	18%	75%	10%	2%	6%	0%	0%	6%	13%	36%
CT 800, Douglas County, Oregon	2%	5%	50%	95%	0%	0%	4%	0%	0%	1%	4%	33%
CT 9, Benton County, Oregon	2%	10%	33%	89%	0%	0%	7%	1%	0%	2%	3%	36%
CT 109, Benton County, Oregon	2%	5%	29%	84%	0%	1%	8%	0%	4%	2%	7%	31%
CT 11.01, Lane County, Oregon	2%	4%	36%	91%	0%	2%	2%	0%	2%	3%	5%	22%
CT 11, Deschutes County, Oregon	2%	5%	29%	91%	0%	1%	3%	0%	1%	4%	5%	22%
CT 12, Deschutes County, Oregon	2%	3%	36%	98%	0%	0%	1%	0%	0%	1%	3%	13%
CT 13, Deschutes County, Oregon	2%	4%	24%	94%	0%	0%	1%	0%	0%	4%	9%	35%
CT 14, Deschutes County, Oregon	2%	4%	28%	95%	1%	0%	1%	0%	1%	3%	4%	35%
CT 16, Deschutes County, Oregon	2%	10%	22%	92%	1%	0%	3%	0%	1%	3%	21%	69%
CT 17, Deschutes County, Oregon	2%	15%	29%	91%	2%	0%	2%	0%	2%	3%	12%	37%
CT 17, Lane County, Oregon	2%	5%	43%	91%	0%	0%	1%	0%	2%	6%	4%	19%
CT 18, Jackson County, Oregon	2%	14%	42%	93%	1%	1%	2%	0%	1%	3%	7%	38%

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Geography	EB	FBP	>65	W	BL/AA	AIAN	A	PI	OR	2+	H	RS
CT 2.02, Benton County, Oregon	2%	7%	30%	82%	4%	0%	8%	0%	2%	5%	2%	41%
CT 201, Linn County, Oregon	2%	3%	28%	86%	1%	2%	2%	0%	4%	4%	10%	26%
CT 202.02, Polk County, Oregon	2%	9%	42%	93%	0%	0%	3%	0%	1%	3%	6%	34%
CT 202.04, Polk County, Oregon	2%	5%	40%	93%	0%	2%	1%	0%	0%	4%	3%	10%
CT 202, Linn County, Oregon	2%	9%	25%	91%	0%	1%	0%	0%	1%	7%	18%	45%
CT 203, Linn County, Oregon	2%	8%	27%	90%	0%	1%	2%	0%	4%	4%	6%	31%
CT 205, Polk County, Oregon	2%	3%	44%	92%	0%	1%	1%	0%	5%	1%	7%	23%
CT 208.02, Linn County, Oregon	2%	21%	21%	77%	0%	2%	1%	0%	17%	2%	22%	68%
CT 21, Deschutes County, Oregon	2%	8%	31%	93%	0%	1%	0%	0%	1%	5%	4%	31%
CT 21, Jackson County, Oregon	2%	6%	43%	93%	3%	0%	3%	0%	0%	2%	4%	48%
CT 22.03, Multnomah County, Oregon	2%	2%	10%	79%	12%	1%	3%	0%	1%	4%	5%	64%
CT 22, Jackson County, Oregon	2%	12%	38%	94%	1%	0%	1%	1%	0%	3%	5%	33%
CT 24, Marlon County, Oregon	2%	5%	39%	94%	0%	0%	2%	0%	1%	3%	10%	17%
CT 27, Marion County, Oregon	2%	2%	42%	91%	0%	1%	2%	0%	0%	6%	7%	13%
CT 28, Marion County, Oregon	2%	11%	35%	88%	1%	1%	2%	0%	2%	6%	14%	32%
CT 303, Linn County, Oregon	2%	7%	41%	95%	0%	2%	0%	0%	1%	2%	4%	20%
CT 309.02, Linn County, Oregon	2%	4%	50%	93%	1%	3%	1%	0%	0%	3%	2%	21%
CT 4.04, Jackson County, Oregon	2%	4%	45%	95%	1%	0%	1%	1%	0%	2%	7%	12%
CT 53, Polk County, Oregon	2%	3%	50%	93%	0%	2%	1%	0%	1%	3%	14%	17%
CT 56, Multnomah County, Oregon	2%	10%	20%	75%	5%	2%	11%	2%	2%	3%	9%	89%
CT 6, Deschutes County, Oregon	2%	2%	56%	97%	1%	1%	1%	0%	0%	1%	1%	16%
CT 9501, Clatsop County, Oregon	2%	8%	30%	88%	0%	0%	2%	0%	1%	10%	17%	47%
CT 9502, Clatsop County, Oregon	2%	3%	34%	90%	1%	1%	0%	0%	1%	7%	5%	50%
CT 9502, Hood River County, Oregon	2%	1%	33%	87%	1%	1%	3%	0%	6%	3%	19%	22%
CT 9504, Clatsop County, Oregon	2%	3%	34%	96%	1%	0%	0%	0%	0%	3%	7%	12%
CT 9504, Hood River County, Oregon	2%	1%	33%	84%	0%	1%	1%	0%	8%	6%	58%	25%

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Geography	EB	FBP	>65	W	BL/AA	AIAN	A	PI	OR	2+	H	RS
CT 9505, Clatsop County, Oregon	2%	2%	33%	87%	0%	0%	1%	1%	2%	9%	10%	34%
CT 9506, Clatsop County, Oregon	2%	6%	33%	92%	1%	1%	1%	1%	1%	3%	10%	23%
CT 19, Multnomah County, Oregon	1%	2%	30%	88%	2%	0%	6%	0%	0%	4%	3%	22%
CT 23.03, Multnomah County, Oregon	1%	4%	25%	81%	4%	1%	4%	0%	1%	9%	7%	90%
CT 26, Multnomah County, Oregon	1%	3%	27%	84%	2%	0%	7%	0%	0%	6%	2%	8%
CT 27.01, Multnomah County, Oregon	1%	0%	31%	89%	1%	0%	4%	0%	1%	7%	5%	3%
CT 52, Multnomah County, Oregon	1%	0%	16%	83%	3%	2%	3%	1%	1%	8%	6%	87%
CT 24.01, Multnomah County, Oregon	1%	1%	26%	92%	6%	0%	2%	0%	0%	1%	3%	19%
CT 24.02, Multnomah County, Oregon	1%	3%	32%	83%	6%	2%	4%	0%	1%	5%	5%	71%
CT 25.01, Multnomah County, Oregon	1%	1%	37%	90%	1%	0%	4%	0%	0%	5%	4%	7%
CT 25.02, Multnomah County, Oregon	1%	8%	15%	88%	4%	0%	4%	0%	1%	4%	13%	66%
CT 34.02, Multnomah County, Oregon	1%	11%	13%	73%	15%	0%	3%	0%	3%	7%	8%	74%
CT 3, Lane County, Oregon	1%	9%	42%	95%	0%	0%	0%	2%	1%	1%	5%	27%
CT 51, Multnomah County, Oregon	1%	3%	27%	81%	7%	0%	6%	1%	1%	5%	8%	76%
CT 57, Multnomah County, Oregon	1%	7%	24%	80%	1%	0%	11%	0%	1%	7%	7%	73%
CT 9706, Wasco County, Oregon	1%	8%	32%	95%	0%	0%	1%	0%	2%	2%	26%	33%

The columns have been abbreviated as follows: EB represents percent of households within a census tract that experience an energy burden; FBP represents the percent of families below the poverty line; >65 represents households with one person over the age of 65; W, BL/AA, AIAN, A, PI, OR, 2+, and H represents respondents that identify as White, Black or African American, American Indian and Alaska Native, Asian, Pacific Islander, Other Race, Two or More Races, and Hispanic or Latino, respectively. RS represents the percent of respondents that rent their dwelling unit.

*Ma, Ookie, Krystal Laymon, Megan Day, Ricardo Oliveira, Jon Weers, and Aaron Vimont. 2019. Low-Income Energy Affordability Data (LEAD) Tool Methodology. Golden, CO: National Renewable Energy Laboratory. NREL/TP-6A20-74249. <https://www.nrel.gov/docs/fy19osti/74249.pdf>



Clean Energy Plan Engagement Series Meeting

August 20, 2025



This meeting will be recorded

Oregon Clean Energy Plan

9:00 am – 12:00pm PT, August 20, 2025

Agenda

TIMING	GOAL	TOPIC
9:00am	-----	Meeting Opening
9:10am	Informational / Interactive	PacifiCorp's 2025 Clean Energy Plan <ul style="list-style-type: none"> • Overview • Other Updates • Oregon Environmental Justice Community Framework Update • IRP Public Input Meeting Series
10:20am	-----	Break
10:30am	Informational	Oregon General Regulatory Updates
10:40am	Informational / Interactive	Oregon RFP Updates <ul style="list-style-type: none"> • UM 2383 • 2025 OR Small-Scale RFP
11:00am	Interactive	Listening Session
11:30am	Interactive	Public Comment
11:40am	Interactive	Next Steps & Post-Engagement Survey

For a Better Meeting Experience



Let us know who is in the room by adding your organization (if applicable)

- Click "Participants" and the select the "Rename"

Spanish or ASL?

- Navigate to "Interpretation" at the bottom of ZOOM
- Select "ASL" under Watch or "Spanish" under Audio
- If the interpretation icon is missing, try the "More" icon



Use the Gallery View (icon at top right) when in group discussion

For technical support, chat "**Tag G/E Source**" as recipient, and send your message



Engagement is encouraged!

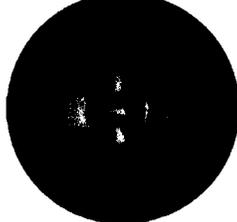
- Questions are welcome at any time
- Please mute until speaking
- Speak by clicking the "Raise Hand" in the tool bar

Collaborators

Clean Energy Planning



Kimberly Alejandro
Regulatory Manager,
Clean Energy Planning

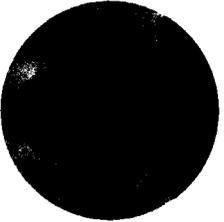


Rohini Ghosh
Director,
Clean Energy Planning



Cara Glennon-Olsen
CBI Advisor,
Clean Energy
Planning

Integrated Resource Planning

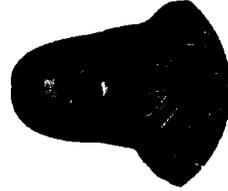


Randy Baker
Director,
Resource Planning



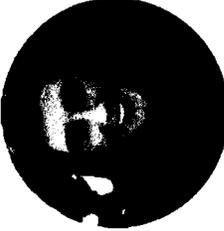
Samuel Zacharia
Resource Planning
& Valuation Analyst

Regulation



Amira Streeter
State Regulatory
Affairs Manager

Resource Planning & Acquisitions



Hannah Smith
Resource &
Commercial
Strategy



Source
Facilitation Team



Jeffrey Daigle



Morgan Westberry



Zanya Morgan

Just in: Policy Updates



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Federal Tax Policy

Impact:

- Now outdated assumptions
 - For example: While preparing the 2025 IRP and CEP, PacifiCorp was operating under then-current laws that included federal tax credits for new renewable or non-emitting resources
- Tax credit and qualification updates
 - For example: The OBBBA phases out and repeals tax credits, there is a narrow window of time in which new projects can qualify, and new Foreign Entity of Concern (FEOC) restrictions could potentially further limit the ability for project to qualify
- Increased uncertainty and risk
 - During the preparation of the 2025 CEP, PacifiCorp ran a sensitivity where the proxy resources selected in the preferred portfolio did not qualify for any new tax credits – increasing Oregon-allocated costs by over \$7 billion over the 21-year planning horizon

Event:



July 4, 2025

One Big Beautiful Bill Act (OCCBA) enacted, causing impact to costs and benefits of certain renewable & storage resources

HB 2021 Cost Cap Implementation



Event:



May 27, 2025

Oregon Public Utility Commission of Oregon (PUC or Commission) gave notice that the Commission was seeking comments on a draft order prepared by the Administrative Hearings Division (AHD) addressing the cost cap provisions set forth in Section 10 of House Bill 2021

Impact:

- The Commission identified key issues to address, asked for input on development of a “counterfactual portfolio” and proposed a hypothetical scenario
- Key issues identified:
 - Investments and costs eligible for cost cap inclusion
 - Forecasted costs
 - Interaction with Renewable Portfolio Standard (RPS) cost cap
 - Time period for cost cap application
- PacifiCorp and other parties submitted comments on August 12, 2025



2026 Protocol

Event:



July 1, 2025

PacifiCorp filed an application for approval of the 2026 Inter-Jurisdictional Allocation Protocol (2026 Protocol) in docket UM 2401

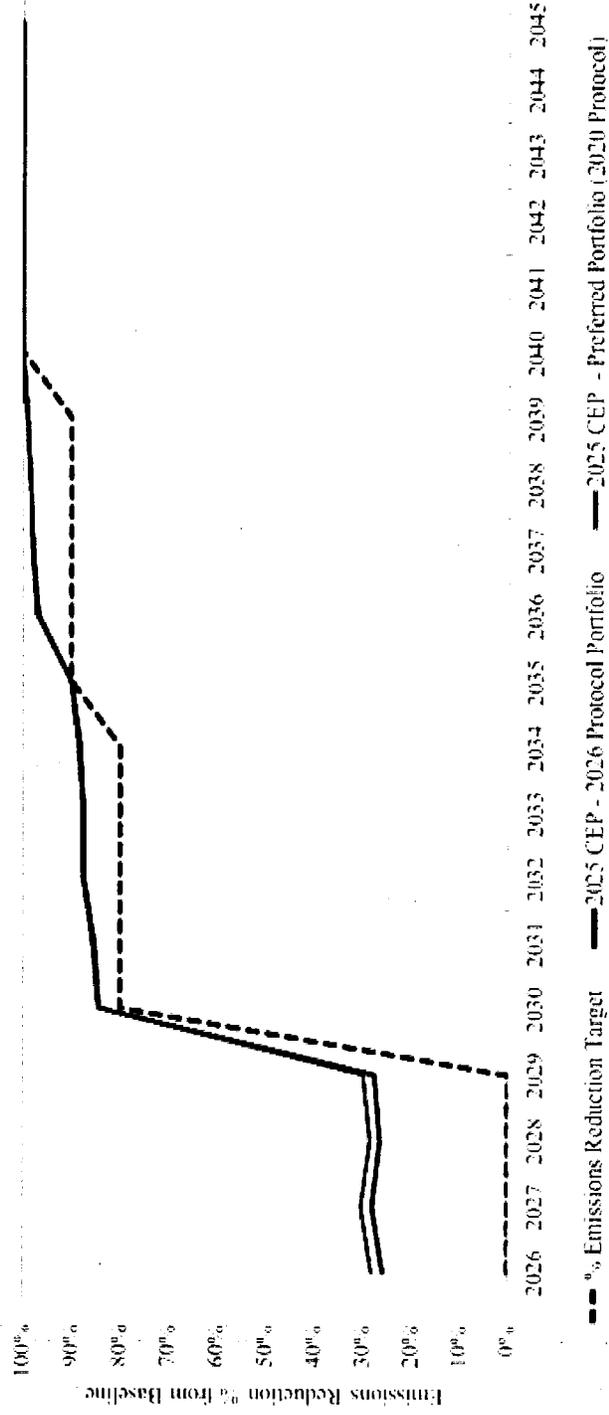
Impact:

- If approved, the 2026 Protocol will:
 - Replace the expiring 2020 Protocol as the multi-state cost allocation methodology applied to allocating resource costs and benefits for Oregon rate-making
 - Realign resources in light of state disallowances of carbon costs
 - Comply with Oregon state law (and other states' laws)
 - Set the stage for future cost allocation changes that support diverging state policies
- From a planning perspective the 2026 Protocol is expected to drive minimal changes to Oregon's forecast of allocated capacity and energy and is not expected to impact 2030 compliance with HB 2021's greenhouse gas reduction targets



2026 Protocol

Percentage greenhouse gas emission reductions from baseline defined under HB 2021



PacifiCorp's 2025 Clean Energy Plan



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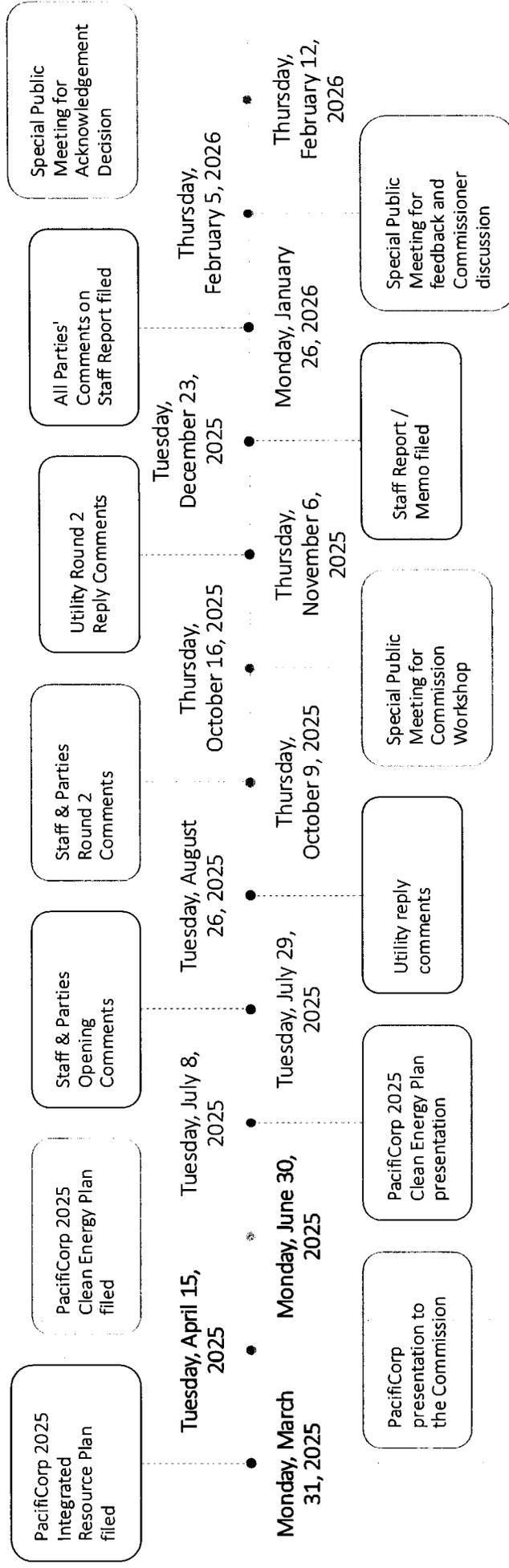
2025 Clean Energy Plan

On June 30, 2025, PacifiCorp filed its 2025 Clean Energy Plan with the Public Utility Commission of Oregon in Docket LC-85. PacifiCorp's 2025 Clean Energy Plan includes a near-term set of action items, a plan to reach near-term greenhouse gas emission reductions targets, and a discussion of key considerations regarding the longer-term compliance trajectory. There are potentially significant operational and financial impacts and risks associated with compliance over the next two decades.

PacifiCorp provided an informational presentation of its recently filed 2025 Clean Energy Plan to the Public Utility Commission of Oregon at the July 8, 2025, Regular Public Meeting.



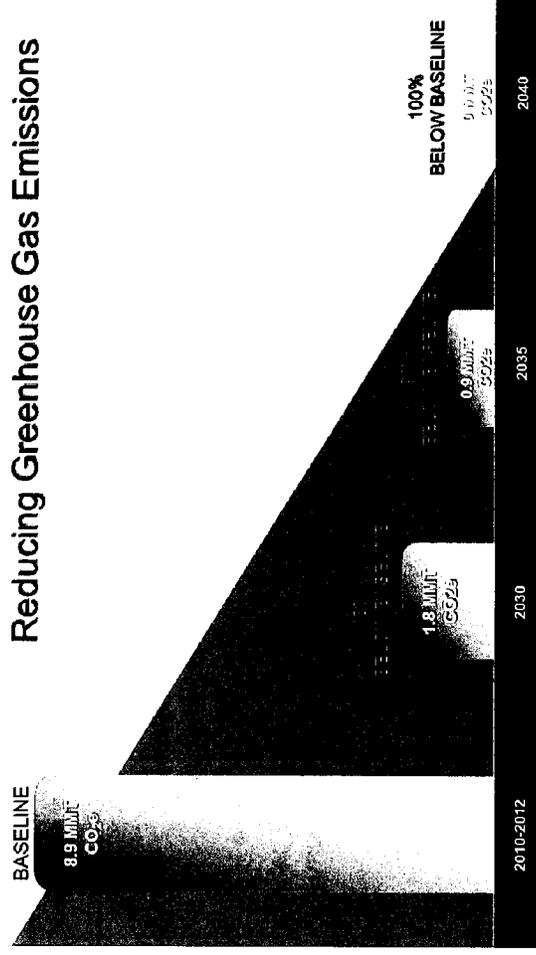
LC – 85 Timeline



2025 Clean Energy Plan

PacifiCorp's 2025 Clean Energy Plan (CEP) covers the following key topics:

- Continual Progress
- Community Engagement
- Community Benefit Indicators
- Resiliency
- Community Based Renewable Energy
- Resource Planning
- Resources, Costs and Emissions Reductions
- Action Plan





2025 CEP: Key Findings

- To meet ambitious HB 2021 decarbonization targets, the 2025 CEP preferred portfolio includes **11,837 megawatts (MW)** of new proxy resources to serve Oregon 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.
- In 2030, there is an additional need of 146 MW of small-scale renewables to meet the SSR mandate. By 2045, this need grows to 339 MW.
- The CEP preferred portfolio forecasts Oregon-allocated greenhouse gas emissions to fall 84.6 percent from baseline levels by 2030, 90.2 percent by 2035 and 100 percent by 2040.
- 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.
- Depending on whether compliance is measured annually or hourly, Oregon's HB 2021 greenhouse gas emissions reductions targets could, conservatively, cost between \$14.63 and \$45.59 billion over the next two decades. If federal tax credits for renewables and storage resources are eliminated, or a change is made to how incremental transmission resources are allocated to Oregon customers, these costs could increase substantially.



2025 CEP: Key Challenges

Estimated HB-2021 Average Annual Compliance Costs 2025-2045 (\$millions) and Percentage of 2025 Revenue Requirement (shown in parenthesis)

	Annual Cost with System Transmission	Annual Cost with Situs Transmission	Annual Cost with System Transmission (No PTC/ITCs)	Annual Cost with Situs Transmission (No PTCs/ITCs)
CEP Preferred Portfolio (Annual Clean)	\$135 (10%)	\$161 (11%)	\$214 (12%)	\$241 (14%)
Hourly Clean Portfolio	\$1,609 (91%)	\$1,800 (101%)	\$2,287 (129%)	\$2,479 (140%)



Continual Progress

- In 2024, PacifiCorp has reduced emissions by 18.68% from the HB 2021-defined baseline
- PacifiCorp has brought online or contracted 6.263 GW of HB-2021 supporting resources since 2019, contributing to actual and planned reductions in emissions
- PacifiCorp’s 2025 Oregon-situs request for proposals (RFP) and 2025 SSR RFP are the first steps to begin procuring these resources. PacifiCorp plans to evaluate opportunities to accelerate procurement of resources identified in the preferred portfolio in 2030 when evaluating proposals from both resource solicitations.

Year	Non-HB 2021 Emissions (MTCO2e)	HB 2021 Emissions (MTCO2e)	HB 2021 Emissions (% Reduction from Baseline)
2010	9,248,689		
2011	8,880,884		
2012	9,137,084		
2013	9,626,625		
2014	9,582,985		
2015	9,701,719		
2016	8,422,662		
2017	8,628,965		
2018	8,696,220		
2019	9,042,557		
2020	8,433,448		
2021	8,257,701		
2022	7,953,132	7,851,150	12.71
2023	7,653,943	7,570,127	15.84
2024*	7,318,603	7,314,573	18.68

*Preliminary estimates, subject to additional verification and review during the annual agency emissions reporting and verification processes.



Community Engagement

Community engagement will continue to foster a greater understanding of our communities and how we serve them. PacifiCorp's engagement opportunities include:

- Community Benefits and Impacts Advisory Group (CBIAG)
- Tribal Nations Community and Impacts Advisory Group (TN CBIAG)
- Clean Energy Plan (CEP) Engagement Series
- Integrated Resource Planning Public-Input Meetings
- Distribution System Planning (DSP) Workshops
- Transportation Electrification (TE) Engagement

PacifiCorp filed a Report on CEP Engagement in docket LC 82 at the end of 2024:

<https://apps.puc.state.or.us/edockets/edocs.asp?FileType=HAQ&FileName=lc82haq333830114.pdf&DocketID=23647&numSequence=208>



Community Benefit Indicators

- Building from the 2023 CEP and the proposed interim CBIs, PacifiCorp proposed an updated CBI framework in its 2025 CEP that includes 14 CBIs and 18 metrics categorized under one of four categories, each of which are in alignment with the broader concept of energy equity:
 - Resilience (System & Community)
 - Health and Community Well-Being
 - Environmental Impacts
 - Economic Impacts
- In the 2025 CEP, PacifiCorp developed and presented baseline metrics in the CEP and supporting work papers for all its CBIs, utilizing internal data and data from reliable external sources such as the American Community Survey (ACS), National Risk Index (NRI), and CDC PLACES.
- PacifiCorp also included a preliminary discussion on an **environmental justice community framework** to geographically define environmental justice communities in its service area at the census tract level. The framework is a work in progress and expected to be complete by the time the company files its 2027 CEP.



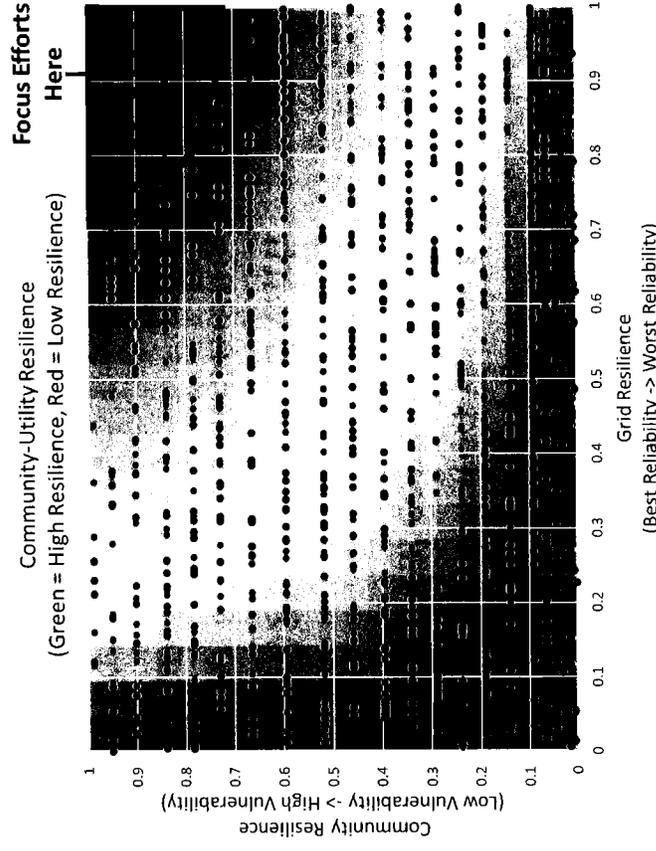
CBI Framework

No.	Category	CBI	Metric(s)	No.	Category	CBI	Metric(s)
1a	Resilience	Improve resilience of vulnerable communities during long duration outages	SAIDI at area level including major events	7b	Health & Community Well-Being	Decrease proportion of households experiencing high energy burden	Average energy burden for customers residing in census tracts identified as underserved or vulnerable.
1b	Resilience	Improve resilience of vulnerable communities during long duration outages	SAIFI including major events	7c	Health & Community Well-Being	Decrease proportion of households experiencing high energy burden	Low-Income Discount (LID) program participation
1c	Resilience	Improve resilience of vulnerable communities during long duration outages	CAIDI including major events	8	Health & Community Well-Being	Increase residential and small business energy efficiency for vulnerable communities	Count of customer participation in business and residential incentive programs by census tract
2	Resilience	Reduce frequency and duration of energy outages	Energy Not Served (ENS)	9	Health & Community Well-Being	Reduce barriers to participation in energy efficiency programs for vulnerable communities	Low-income energy efficiency program participation
3	Environmental Impacts	Increase energy from non-emitting and renewable resources	Amount of Oregon-allocated renewable and non-emitting energy (MWh)	10	Economic Impacts	DSM program delivery staff and grants	Headcount of DSM program delivery staff and grants awarded
4	Environmental Impacts	Reduce CO2 equivalent emissions	Amount of Oregon CO2 equivalent emissions, MT CO2e	11	Economic Impacts	Public charging station installations	Count of public charging stations installed in PacificCorp territory
5	Environmental Impacts	Reduce NOx and SO2 emissions	Amount of NOx and SO2 emissions produced ²⁰	12	Economic Impacts	Pre-apprenticeship and educational program participation	Headcount of participants in pre-apprenticeship programs
6	Health & Community Well-Being	Decrease residential disconnections	Number of residential disconnections and arrears by census tract	13	Economic Impacts	Local workforce development	Headcount of local and state workers during facility construction
7a	Health & Community Well-Being	Decrease proportion of households experiencing high energy burden	Average energy burden by census tract.	14	Economic Impacts	Diverse business expenditures	Spend on Disadvantaged Business Enterprise (DBE), tribal, women, minority, and/or veteran-owned resources during facility construction



Resiliency

- PacifiCorp defines resiliency as the combined ability of a community and the electric grid to withstand, respond to, and recover from events that result in long-duration power disruptions.
- Resiliency Analysis Framework:
 - PacifiCorp has developed a community-utility resiliency scoring methodology
 - The score captures both the vulnerability of a community and the historical reliability of the electric grid serving it
 - The score enables the company to prioritize outreach, guide resilience investments and support applications for grant opportunities where they may have a greater relative impact



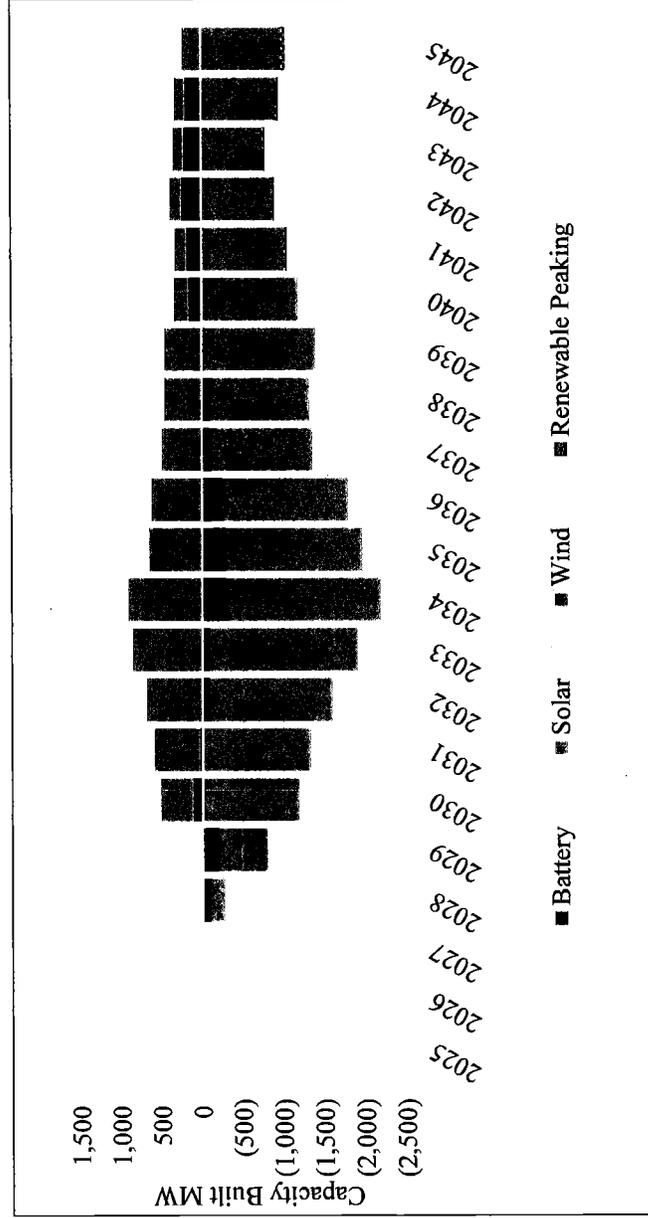


Community Based Renewable Energy

- Community-Based Renewable Energy (CBRE) projects are defined as energy systems that interconnect to utility distribution or transmission assets, and may be combined with microgrids, storage systems, demand response measures, or energy-related infrastructure that promotes climate resiliency.
- An updated review of CBRE potential inventory shows an estimated 95.59 MW of CBRE capacity by the end of 2029, including 71.69 MW of potential capacity from current CBRE programs and 23.9 MW from new pathways.
- PacifiCorp's CBRE Resiliency-Hub Pilot kicked off early 2025, developed with stakeholder engagement, provides much-needed support for development and implementation of local, community-led resilience opportunities.
 - Outreach was prioritized based on community-resilience scores
 - The Pilot is designed to uncover benefits to both ratepayers and critical facilities



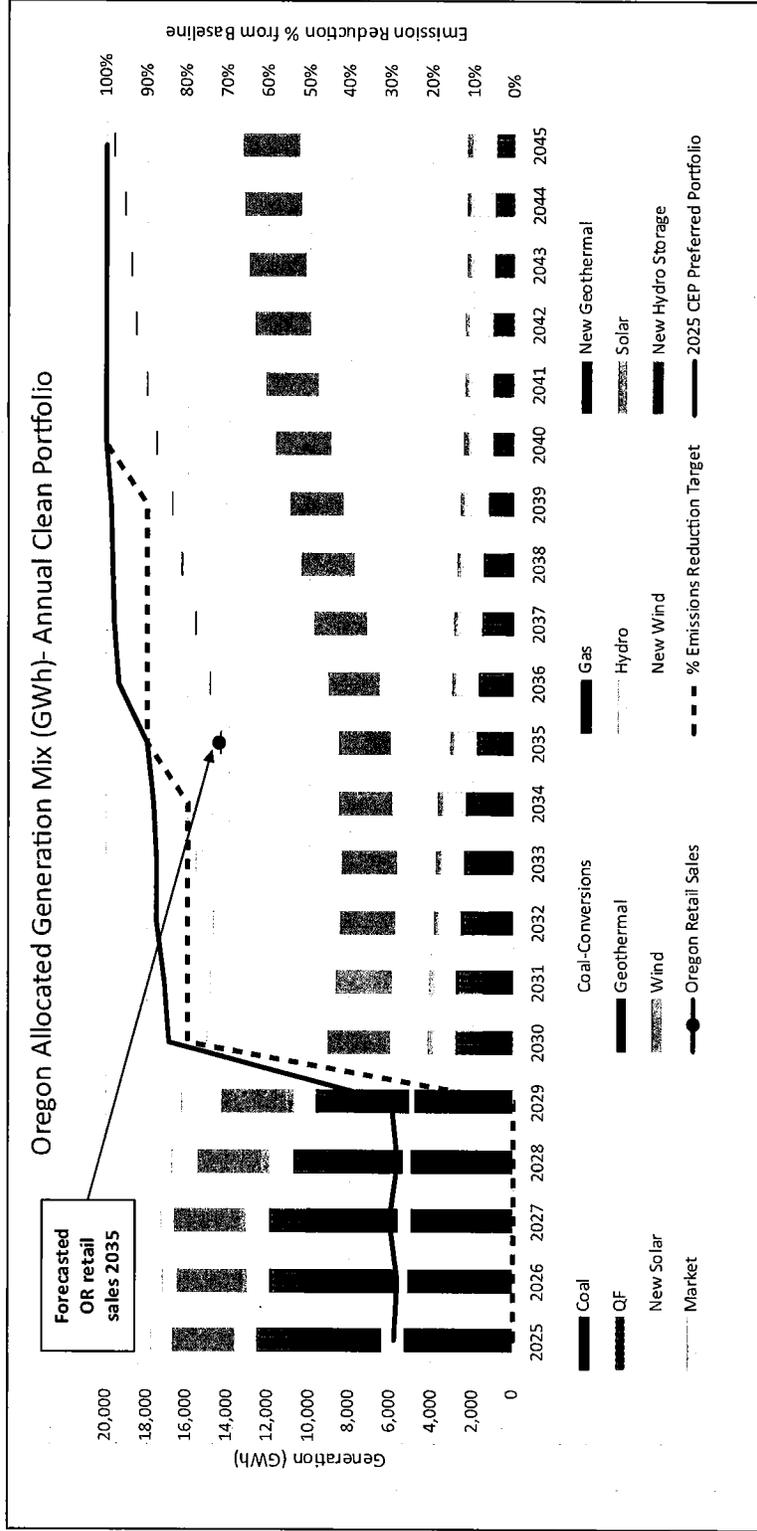
Resource Planning: Changes from the 2025 IRP



- Positive numbers indicate that more of a given resource was selected in the 2025 CEP
- The 2025 CEP preferred portfolio includes more wind resources and fewer solar and battery resources



Forecast Energy Mix and GHG Reductions



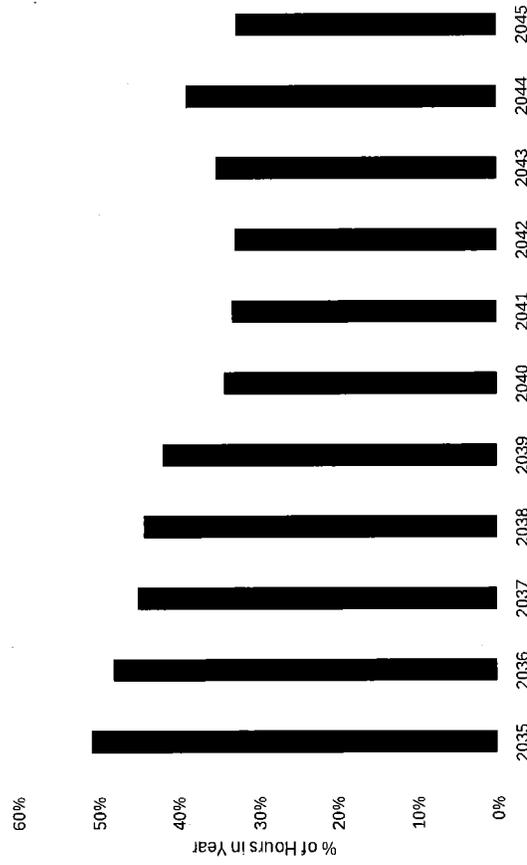
In 2035, OR generates just enough energy on an annual basis to cover retail sales.



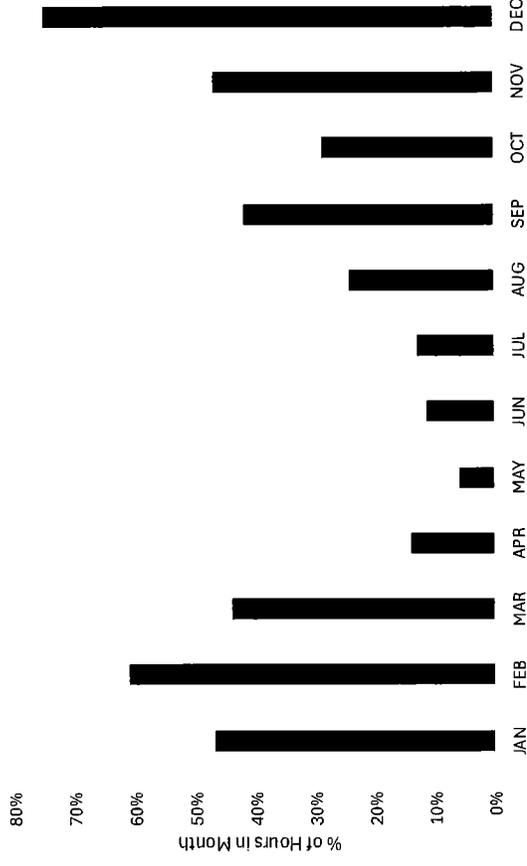
CEP Preferred Portfolio Clean Market Analysis

The CEP preferred portfolio achieves annual compliance consistent with the current Oregon DEQ methodology but has many individual hours in which Oregon's load is higher than its resource allocation. Access to a clean market or additional resources would be required.

Percent of Hours with Clean Market Purchases

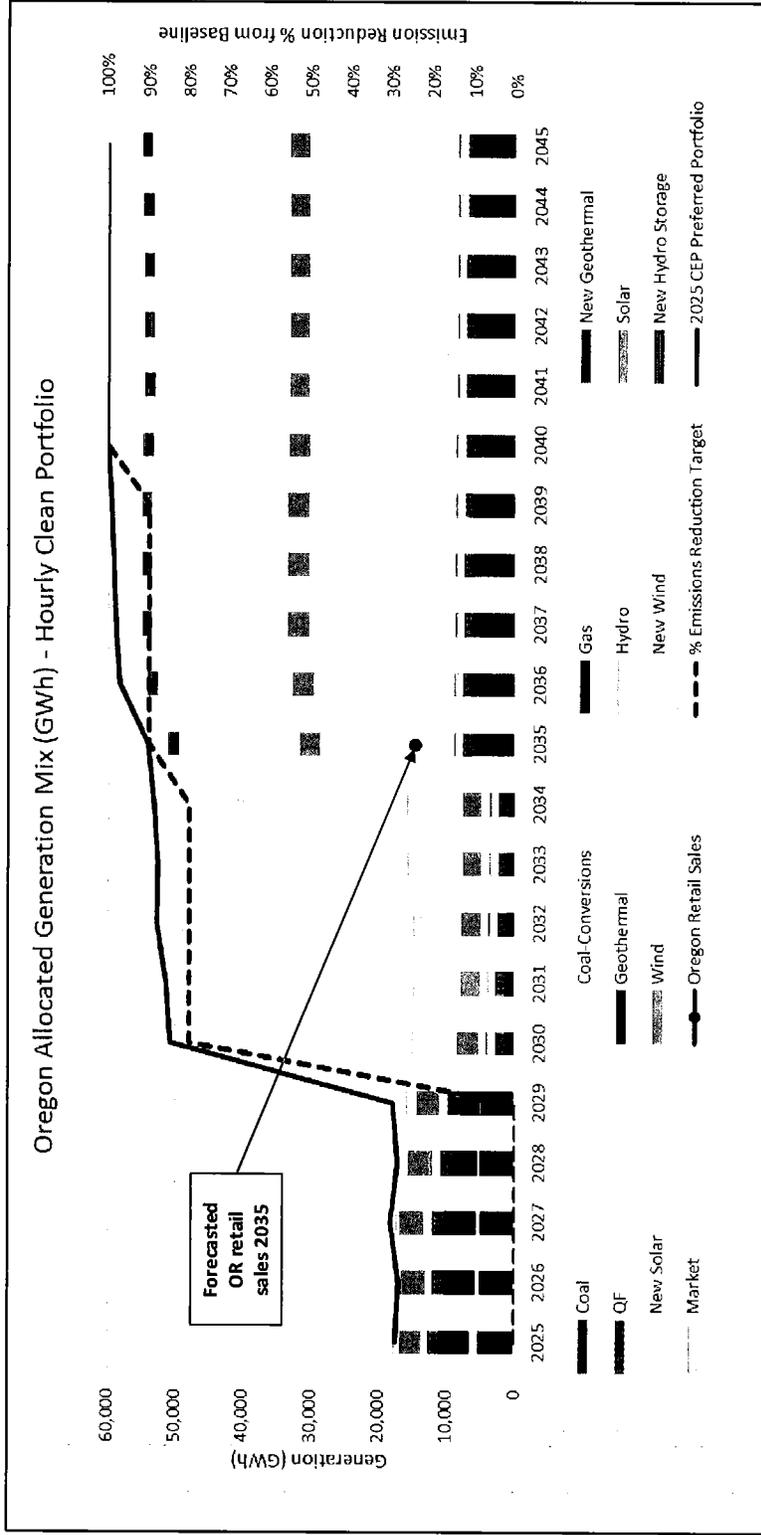


Percent of Hours with Clean Market Purchases 2040





Forecast Energy Mix and GHG Reductions



In 2035, OR generates a large excess of energy in most hours to achieve hourly clean compliance, far above forecasted retail sales on an annual basis

Action Plan

Action Item

- Existing Resource Actions
 - **Natural Gas Emissions Compliance Strategies:** dispatch and accounting considerations
- New Resource Actions
 - **Small-scale renewables:** 2025 OR SSR RFP was issued to market April 2025; PacifiCorp will evaluate and pursue bids
 - **Utility-scale resources:** 2025 OR Situs RFP draft was filed with Commission April 2025; upon approval will issue to market; PacifiCorp will evaluate and pursue bids with an online date before end 2029
 - **Transmission:** continue to analyze and pursue projects; expand consideration of impacts to EJ communities
- Demand-Side Management Actions
 - **Energy efficiency:** continue to collaborate with ETO to review their proposed multi-year-plan for 2026-2030
 - **Demand response:** continue to expand portfolio of DR programs by launching three new programs in 2025, looking to double total DR capacity by 2027
- CBRE Actions
 - Provide annual CBRE assessment, strengthen partnerships and consider a Blue Sky Grant Program “Go-Back” Strategy
- Community Engagement
 - Continue with planned CBIAG and Tribal Nations CBIAG and CEP engagement meetings in 2025
- Community Benefit Indicators
 - Solidify newly proposed CBI metrics with advisory groups and any other revisions to the framework
 - Work collaboratively to develop a proposal for environmental justice community framework
- Regulatory Actions
 - Engage with regulatory agencies in relevant upcoming rulemakings regarding GHG methodology and HB 2021 cost cap implementation
 - Continue to work with Commission and stakeholders to seek clarification on SSR mandate
 - Continue to engage with CAISO, regulators and other stakeholders to develop a GHG accounting and reporting framework for market participation

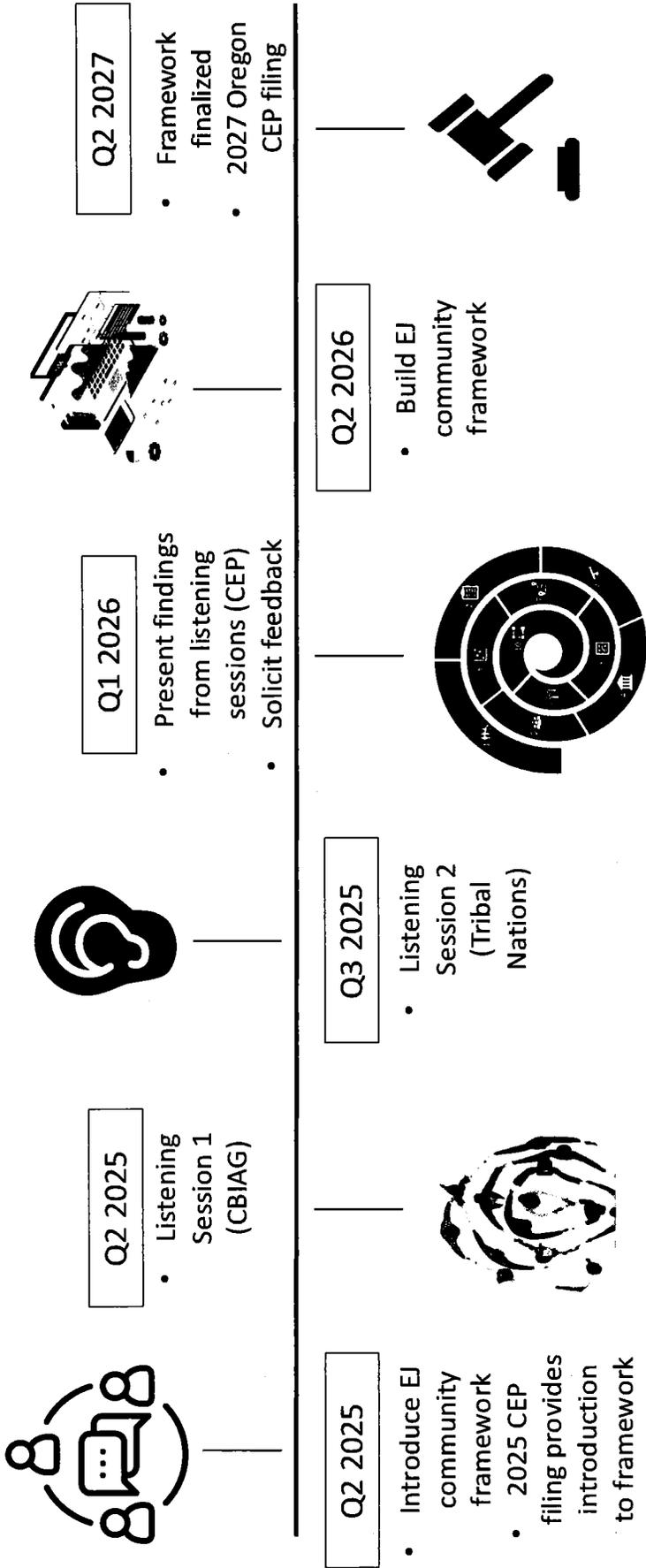


Other Updates





Community Benefit Indicator/ Environmental Justice Community Framework Update



NOTE: The development of an EJ community framework is expected to be iterative based on stakeholder feedback; as such, the timeline presented here should be considered flexible and subject to change.

Preliminary 2027 IRP Public Input Meeting (PIM) Schedule

	Event	Date
2025	Meeting #1	October 1, 2025
	Meeting #2	November 12, 2025
	Meeting #3	December 17, 2025
	Meeting #4	January 28 – 29, 2026
	Meeting #5	March 11 – 12, 2026
	Meeting #6	April 22 – 23, 2026
	Meeting #7	June 3 – 4, 2026
	Meeting #8	July 15 – 16, 2026
	Meeting #9	August 26 – 27, 2026
	Meeting #10	October 14 – 15, 2026
2026	Input Review	July 15, 2026
	Indicative Portfolios UT 3.3, 3.4	October 14, 2026
	Meeting #11	November 18 – 19, 2026
2027	Draft 2027 IRP WA (6)	November 30, 2026
	Meeting #12	January 28 – 29, 2027
	Present final evaluations UT 3.5	January 28, 2027
	Meeting #13	February 25 – 26, 2027
	File 2027 IRP	March 31, 2027

IRP Public Input Meeting Series

Utah Docket No. 23-035-10 September 24, 2024 Order

- UT 3.3** For future IRP cycles, PacifiCorp shall, prior to ranking resource portfolios, present indicative resource portfolios to stakeholders at a PIM at least five months before the planned filing date of the PacifiCorp's (final) IRP.
- UT 3.4** For future IRP cycles, the deadline established, in the third ordering paragraph above (3.3), for presenting indicative resource portfolios shall also function as the Data Lockdown Date; PacifiCorp shall not further alter modeling inputs after presenting indicative resource portfolios as the third ordering paragraph above requires and must wait to incorporate any late-breaking data until, at least, the subsequent IRP update filing.
- UT 3.5** For future IRP cycles, PacifiCorp shall present updated modeling results, including final evaluations and preferred portfolio selections, to stakeholders at a PIM meeting to be held at least two months before the planned filing date of PacifiCorp's (final) IRP

Washington WAC 480-100-625

- WA (3)** Draft IRP. No later than four months prior to the due date of the final IRP, the utility must file its draft IRP with the commission. At minimum, the draft IRP must include the preferred portfolio, CEAP, and supporting analysis, and to the extent practicable all scenarios, sensitivities, appendices, and attachments.
- (a) The commission will hear public comment on the draft IRP at an open meeting scheduled after the utility files its draft IRP. The commission will accept public comments electronically and in any other available formats, as outlined in the commission's notice for the open public meeting and opportunity to comment.
- (b) The utility must file with the commission completed presentation materials concerning the draft IRP at least five business days prior to the open meeting.

Break



Oregon Regulatory Updates





Schedule 103—Multnomah County Business Income Tax Recovery

Background:

- Submitted June 6, 2025 – effective date July 9, 2025
- Return approximately \$270,155 to customers over one year, with proposed rate of 0.12 percent

Impact:

- Affect approximately 89,000 customers in Multnomah County
- Change from -0.30 percent to the proposed rate of -0.12 percent (rate increase of approximately 0.18 percent to affected customers)
- Average residential customer using 900 kWh per month in Multnomah County will see a monthly bill increase of approximately \$0.29 per month

Schedule 190—Wildfire Mitigation Plan Cost Recovery Adjustment

Background:

- Submitted July 1, 2025 – effective date modified to October 31, 2025
- Recover the 2024 WMP outstanding deferral balance through October 2025
- Recovery of capital costs from April 1, 2024 through March 31, 2025
- Total recovery of \$18.8 million

Impact:

- Annual rate decrease of \$29.6 million or 1.5 percent
- The average residential customer using 900 kWh per month would see a bill decrease of \$2.76 per month

Table 1: Amounts for Recovery

	Total Company	Oregon Allocated
Incremental Capital Costs	213,915,416	160,694,497
Annual Revenue Requirement	28,343,917	19,083,997
2024 Outstanding Deferral Amortization		(38,277,576)
2025 Forecasted WMP O&M		38,030,000
Total 2025 WMP AAC		18,836,422



Schedule 94—Vegetation Management Cost Recovery Adjustment

Background:

- Submitted May 5, 2025 – effective date October 31
- Return approximately \$4.7 million over one year, with proposed rate of 0.2 percent

Impact:

- Affect approximately 667,000 customers
- Average residential customer using 900 kWh per month will see a monthly bill increase of approximately \$0.33 per month



FAIR Act – HB 3179

Regulation Changes for Customers

- No increases for residential customers between November 1 and March 31
- Clear representation of residential cost breakdown by category
- Annual report that lists all expected rate adjustments for the next year
- Spread out rate requests increases every 3 years starting 2027

Utility Operations

- Economic impact analysis that weighs cumulative economic burden
- Submit multi-year rate plans
- Expanded low-cost financing options – issue bonds or use securitization for cost recovery
- Increased formal suspension period of a proposed rate or schedule by up to 10 months

Link: <https://olis.oregonlegislature.gov/liz/2025R1/Downloads/MeasureDocument/HB3179/Enrolled>

Oregon RFP Updates



2025 Oregon Request for Proposals

2025 Oregon Small Scale Resource RFP - reissue

- The 2025 OR SSR RFP is in support of the 2025 Integrated Resource Plan, House Bill 2021 requirements and as a first step in addressing a non-wire solution for grid needs per UM2005
- The small-scale renewable RFP was originally issued on April 23, 2025, and bid closed on July 2, 2025
- PacifiCorp has re-issued this RFP with the following changes:
 - Resource nameplate capacity is now 100KW – 2MW
 - 4-hour stand-alone battery is eligible up to 2MW
 - Must be located on PacifiCorp's system in Oregon
 - Open to completed PacifiCorp Transmission Fast Track Process for interconnection only
 - Removed the Transmission Consulting Agreement studies
 - Removed the independent forecaster
 - Reduction of bid fees to \$1,000 per MW per bid
 - Bid close date has been moved to December 17, 2025
- Questions or comments regarding this RFP can be submitted at this email: 2025SSR_RFP@pacifiCorp.com
- RFP webpage: [2025 Oregon Small-Scale Request for Proposals](#)

2025 Oregon Situs RFP

- The PacifiCorp 2025 Integrated Resource Plan (IRP) established an action item to initiate a Request for Proposals (RFP) to procure resources for its Oregon customers that are aligned with the 2025 IRP preferred portfolio and that can achieve commercial operations by the end of December 2029.
- Based on current estimated projections, the 2025 IRP calls for:
 - 1,570 MW of utility scale solar resources,
 - 1,400 MW of utility-scale wind resources,
 - 320 MW of small-scale solar resources,
 - energy storage resources, including 509 MW of lithium-ion batteries with four-hour duration, and
 - 272 MW of iron-air storage with 100-hour duration.
- In Order No. 25-098, the Oregon Commission provided a directive that PacifiCorp should issue an RFP by June 1, 2025
- On April 16, PacifiCorp filed UM 2383, Expedited Application for Partial Waiver of OAR Chapter 860-089, Request to Engage Independent Evaluator, and Expedited Approval of 2025 Draft RFP to meet this June 1, 2025 directive.
- **PacifiCorp is awaiting a decision on this waiver from the Oregon Commission; all elements of the OR Situs RFP are pending**



2025 Oregon Small-Scale Renewable RFP

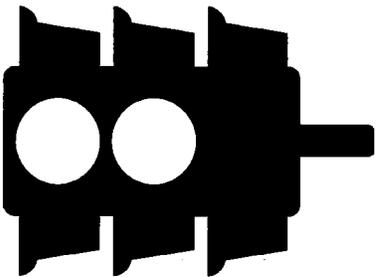
Proposed RFP Schedule

Event	Date
RFP issued to market and publicized	7/25/2025
Bidder workshop	7/30/2025
Last day for Bidder questions to PacifiCorp	11/19/2025
Bid submissions due	12/17/2025
Bid evaluations complete	1/14/2026
RFP final shortlist complete	1/28/2026
Contracts finalized and executed	6/30/2026
Guaranteed commercial operation date (GCOD)	12/31/2029

**The proposed 2025 OR SSR RFP schedule is subject to change
Any changes to the schedule will be posted on the 2025 OR SSR RFP website

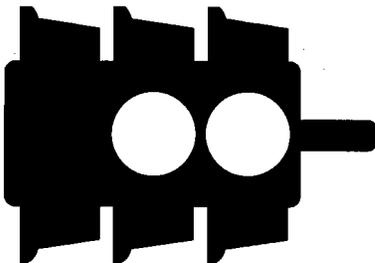


Next Steps



2025 Oregon Small Scale Resource RFP

- Continue responding to questions from potential bidders
- Continue moving forward with the process and published timelines for completion



2025 Oregon Situs RFP

- Awaiting decision from Oregon Commission before moving forward

Listening Session





Discussion Guardrails

- **Equity of Time**

Facilitators will aim to allow every participant an opportunity to speak before calling on participants a second time to allow for expanded access to diverse perspectives, to support inclusion and dialogue.
- **Open Dialogue**

Participants will be allowed to discuss a variety of clean energy planning topics during their time. If a speaker would like the facilitator to pull up a document, they can send a direct message with the link or image to Tag, Morgan, or Zanya.
- **Develop Clarity**

After each speaker, there will be time set aside for those seeking clarity and those wanting to further specific dialogue. The facilitator will call on participants in the order that they have used the raise hand-feature.
- **Be Present**

We ask all participants in dialogue to be on camera (if possible) so we can create meaningful connections with those on the line.
- **Be Respectful**

We ask all participants to engage each other with respect, understanding that each person brings their unique and valuable lived experiences and expertise.

Next Steps



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PACIFIC POWER

Public Comment

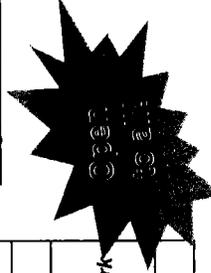


Portland, OR
September 15, 2011



PacifiCorp's Oregon Clean Energy Plan Engagement Series 2025 Meeting Schedule

If you have questions, feedback, or would like to be added to Pacific Power's Washington Clean Energy Implementation Plan distribution list, please email us at OregonCEP@PacifiCorp.com.



Date / Time / Meeting Format	Proposed Agenda Topics*
January 2025	No meeting
Date: February 19, 2025 (Wednesday) Time: 9 a.m. - 12 p.m. (PST) Format: Zoom Online	Clean Energy Plan Engagement Series Meeting #1 <ul style="list-style-type: none"> • Integrated Resource Plan Updates • Oregon Sensitivities • Proposed (New!) Customer Benefit Indicator: SO2 and NOx • Transportation Electrification Presentation • Small-Scale Renewables (SSRs) • Community-Based Renewable Energy (CBREs)
March 2025	No meeting
April 2025	No meeting
Date: May 28, 2025 (Wednesday) Time: 9 a.m. - 12 p.m. (PST) Format: Zoom Online	Clean Energy Plan Engagement Series Meeting #2 <ul style="list-style-type: none"> • Integrated Resource Plan Updates • Clean Energy Plan Updates • Community Benefits and Impacts • Community Benefit Indicators • Community Benefits and Impacts Advisory Group • Procurement Updates
June 2025	No meeting
July 2025	No meeting
Date: August 20, 2025 (Wednesday) Time: 9 a.m. - 12 p.m. (PST) Format: Zoom Online	Clean Energy Plan Engagement Series Meeting #3 <ul style="list-style-type: none"> • Overview of PacifiCorp's filed 2025 Oregon Clean Energy Plan • Integrated Resource Plan Updates • Oregon Request for Proposals (RFP) Updates
September 2025	No meeting
October 2025	No meeting
Date: November 19, 2025 (Wednesday) Time: 9 a.m. - 12 p.m. (PST) Format: Zoom Online	Special Session on PacifiCorp's Oregon Environmental Justice Community Framework
December 2025	No meeting

*Proposed agenda topics and timing may be subject to change
**Leading up to each session, meeting information can also be accessed here: [Oregon Clean Energy Plan](#)





Next Steps

Clean Energy Implementation Plan Engagement Series

Old: Clean Energy Plan Engagement Series #4
New: Special Session on PacifiCorp's Oregon Environmental Justice Community Framework

Date: November 19, 2025

Time: 9:00am-12:00 pm PST

Registration Link:

<https://esource.zoom.us/meeting/register/sXCsyIMJTB2b-BB6u4tjxg>

For more information:

[Oregon Clean Energy Plan](#)

Please email comments/questions to:

OregonCEP@PacifiCorp.com

Additional Engagement & Resources

Oregon Community Benefits & Impacts Advisory Group

September 18, 2025, 1:00-4:00 pm PST

<https://esource.zoom.us/j/82931051060?pwd=IWHpOMngBp6yzoNAeBWAXdhkBkrDhW.1>

Additional Resources:

[Oregon Feedback Tracker:](#)

[Oregon CEP Feedback Tracker 2025-Cycle.pdf](#)



(In-Zoom) Meeting Experience Survey

We value your feedback and want to continue shaping engagement spaces that resonate with participants and align with the feedback heard.

- ✓ There are a total of 3 questions
- ✓ Takes less than 5 minutes to complete
- ✓ Anonymously submitted to Pacific Power
- ✓ Tracks meeting satisfaction and understanding
- ✓ Your input will help shape future meeting topics (new or resurfacing)

Appendix

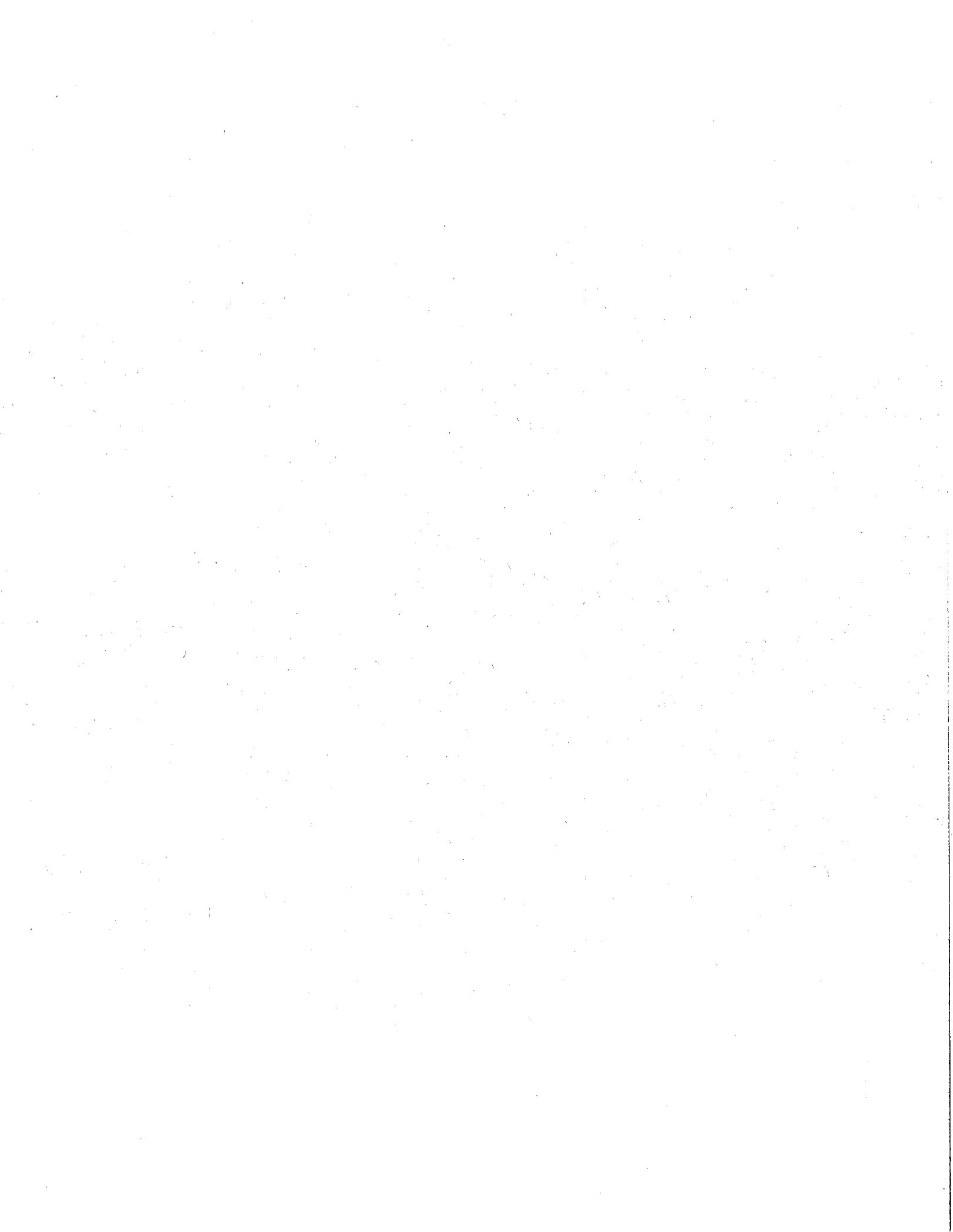


8-11-03 (03/04)
Page 10 of 17

2025 Clean Energy Plan -Key Sections



Continual Progress	Includes a clean energy plan background, key findings, and key challenges.
Clean Energy Planning Engagement	Explains how the utility ensures adequate steps to achieve HB 2021's emissions reductions required by law.
	Describes PacifiCorp's clean energy planning engagement efforts, including an initial summary of the company's advisory group spaces, goals, and ongoing commitments to improvement.
Resiliency	Demonstrates the impact of PacifiCorp's proposed programs, actions, and investments. Each CBI identifies a desired outcome, while the companion metrics allow PacifiCorp to monitor progress.
Community-Based Renewable Energy	Includes a risk-based examination of resiliency opportunities that includes costs, consequences, and outcomes.
Resource Planning	Examines the utility's Clean Energy Plan costs and opportunities for CBRE projects when determining what mix of resources are most appropriate to offset energy generated from fossil fuels.
Resources, Costs, and Emission Reductions	Focuses on resource selections optimized to meet Oregon customers' needs and state policy objectives.
Action Plan	Summarizes the near and long-term resources that are necessary to meet Oregon's state-specific planning requirements and emissions reductions, while continuing to serve customers reliably and with minimum -required cost impacts.
	Identifies steps that the utility will take over the next two-to-four years for Oregon customers.





April 1, 2024

VIA ELECTRONIC FILING

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

Re: Docket LC 82—In the Matter of PacifiCorp’s 2023 Integrated Resource Plan and Clean Energy Plan

Consistent with Order No. 24-073 issued in this proceeding, PacifiCorp d/b/a Pacific Power encloses for filing this Oregon Planning Supplement (Supplement) which provides the Public Utility Commission of Oregon (Commission) with the appropriate information necessary to demonstrate continual progress on PacifiCorp’s strategies to comply with HB 2021’s greenhouse gas emissions reductions requirement.

PacifiCorp appreciates the Commission’s and Stakeholders’ continued engagement on these important issues, and submits this informational filing for the Commission’s consideration. Consistent with Staff’s revised recommendations adopted in Order No. 24-073 and OAR 860-027-0400(11), the Company is not requesting acknowledgment of this Clean Energy Plan (CEP) Supplement, nor does the Company believe that additional actions or proceedings are necessary at this time.

If you have questions about this filing, please contact Stephanie Meeks at (503) 813-5867.

Sincerely,



Matthew McVee
Vice President, Regulatory Policy and Operations

Enclosure

OREGON CLEAN ENERGY PLANNING SUPPLEMENT

On March 19, 2024, the Commission issued Order No. 24-073 that, among other things, partially acknowledged PacifiCorp's 2023 Integrated Resource Plan (IRP) and declined to acknowledge the company's 2023 CEP. This included declining to require PacifiCorp to revise and resubmit its entire CEP.¹ Instead, the Commission adopted several recommendations that it expects PacifiCorp to incorporate in the 2025 IRP and CEP, and determined that the Commission "will assess continual progress" in the company's 2023 IRP Update. The Commission has noted IRP or CEP Updates are an appropriate proceeding to evaluate continual progress.²

This Oregon Clean Energy Planning Supplement responds to the Commission's directives, and provides adequate information for the Commission to evaluate PacifiCorp's continual progress. This Supplement includes five sections: (1) a discussion on continual progress; (2) projected system and Oregon-specific resource needs; (3) PacifiCorp's actual greenhouse gas emissions reductions as reported to the Oregon Department of Environmental Quality (ODEQ), and forecasted greenhouse gas emissions reductions that result from the 2023 IRP Update; (4) Oregon-specific compliance modeling that details how PacifiCorp incorporates the state's small-scale renewables, and various levers that the company could deploy to implement HB 2021's emissions reductions requirements; and (5) actions taken to implement the Commission's recommendations for the 2025 IRP and CEP.

This Supplement is based on analyses and information from PacifiCorp's 2023 IRP Update, which has been concurrently filed with the Supplement in this docket. Additional information on the methodologies or planning assumptions that underly this Supplement can be found in the 2023 IRP Update, and to avoid redundancy is not reproduced here.

The Company appreciates the Commission's and Stakeholders' continued engagement on these critical issues, and submits this informational filing for the Commission's consideration. The Company is not requesting acknowledgment of this CEP Supplement, nor does the Company believe that additional actions or proceedings are necessary at this time to evaluate the Company's continual progress.³

Continual Progress

Oregon requires PacifiCorp to reduce greenhouse gas emissions 80 percent below 2010-2012 baseline levels by 2030, 90 percent by 2035, and 100 percent by 2040.⁴

¹ Order No. 24-002, Appendix B, Recommendation 3 (Jan. 5, 2024) (Staff's revised recommendation three struck language that would have required PacifiCorp to file a revised CEP, and instead resulted in the Commission only declining to acknowledge the CEP).

² Order No. 24-002 at 29 ("We will evaluate continual progress regularly in connection with our proceedings for acknowledgment of IRPs and CEPs and review of IRP and CEP updates.").

³ See OAR 860-027-0400(11) (indicating that utility may, though is not required, to request acknowledgment of an IRP Update, though not specifying if this also applies to CEPs).

⁴ ORS 469A.410.

To ensure utilities are taking steps to achieve these significant goals, the law requires utility CEPs to demonstrate “continual progress within the planning period” towards meeting HB 2021’s clean energy targets, including demonstration of “a projected reduction of annual greenhouse gas emissions.”⁵ The law also requires the Commission to ensure that utilities demonstrate “continual progress,” and are “taking actions as soon as practicable that facilitate rapid reduction of greenhouse gas emissions at reasonable costs to retail electricity consumers.”⁶

The Commission has recently provided guidance on these requirements. In Order No. 24-002, the Commission noted that its “existing CEP and IRP review processes are appropriate for making regular determinations that utilities are achieving continual progress at an appropriate pace,” and that the Commission can “initiate additional processes if we need to direct utility action.”⁷

Importantly, the Commission declined to firmly define continual progress, nor require utilities “to pursue a linear trajectory of expected emissions reductions” or “solely or even primarily” measure progress on year-over-year emissions reductions reported to DEQ.⁸ This is because firm definitions of continual progress “would prevent us from giving meaning to the full phrases in HB 2021 section 4(6), which require us to understand tradeoffs around practicability, emissions reductions, and costs.”⁹ Rather, because “CEPs and IRPs are planning exercises, evaluating continual progress will similarly be directional, with the ability to look at actual performance in the next round of IRPs, CEPs, and updates and use that information to adjust forward direction and, ultimately, to inform rate case and compliance decisions.”¹⁰

While docket UM 2273 did not apply to initial utility CEPs that were created and filed before the Commission issued guidance in that proceeding, PacifiCorp believes that Order No. 24-002 is instructive for future CEPs, including this Supplement.

Applied here, PacifiCorp represents that this Supplement demonstrates that the company is making adequate continual progress to comply with HB 2021’s emissions reductions requirements. This is based on actual performance, and discussion of actions PacifiCorp has identified that will improve its greenhouse gas emissions compliance position.

Regarding actual performance, PacifiCorp has demonstrated continual emissions reductions associated with electricity provided to end-users in Oregon since at least 2019, with 9,042,557 million tonnes of carbon dioxide equivalent (MTCO_{2e}) in 2019, 8,448,143 MTCO_{2e} in 2020, 8,257,696 MTCO_{2e} in 2021, and 7,902,638 MTCO_{2e} in 2022. This represents a steady decline in actual greenhouse gas emissions over the past 4-year reporting period.

Regarding forecasted compliance, PacifiCorp is taking steps to demonstrate continual progress to comply with HB 2021. This includes significant system and Oregon-specific resource needs,

⁵ ORS 469A.415(4)(e).

⁶ ORS 469A.415(6).

⁷ Order No. 24-002, 25-26 (Jan. 5, 2024).

⁸ *Id.* at 28.

⁹ *Id.*

¹⁰ *Id.* at 30.

amounting to over 20 GWs of system assets (a portion of which is allocated to Oregon), and almost 2 GWs of Oregon-specific resources. Oregon-specific resource additions include small-scale renewable resources and additional utility-scale HB 2021-compliant resources. The 2025 IRP and CEP will discuss PacifiCorp's plans to procure these resources.

However, while the 2023 IRP Update included endogenous development of a resource portfolio based on Oregon policy requirements, including the small-scale resource requirement as well as the ODEQ emission rates and annual emissions limits associated with the greenhouse gas compliance requirement, the 2023 IRP Update does not yet provide a complete view of Oregon's greenhouse gas emissions compliance requirements. PacifiCorp continues to refine these modeling techniques and expects to develop and present these during the 2025 IRP public input process.

Accordingly, while the IRP Update does not achieve the same level of greenhouse gas emissions reductions across the planning horizon as was indicated by the 2023 CEP, this Supplement discusses multiple compliance actions, or "levers", that the company could pursue to make up these additional emissions reductions. These "levers" represent the likely multiple, non-exclusive, actions that could be pursued to achieve compliance.

PacifiCorp continues to stress that the company, the Commission, and stakeholders will need to thoughtfully consider these levers, and determine the appropriate balance and allocation of risks and costs in the upcoming decades as the company gets closer to HB 2021's 2030, 2035, and 2040 deadlines. These issues are detailed below.

Projected System and Oregon-Specific Resource Needs

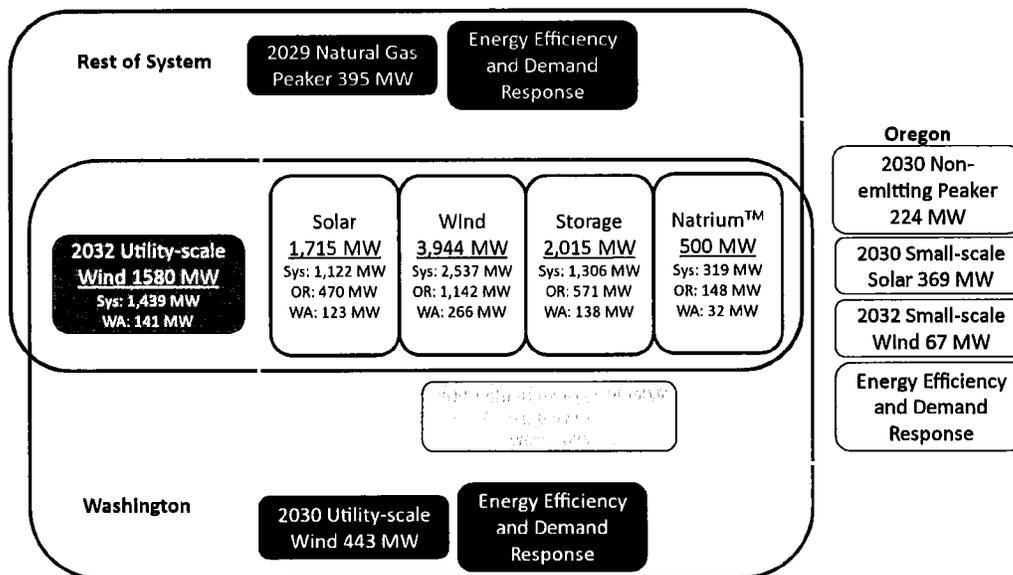
As discussed in the Executive Summary of the 2023 IRP Update, the Ozone Transport Rule (OTR) materially increased the volume and pace of PacifiCorp's procurement needs in the 2023 IRP. The 2023 IRP further showed that the least-cost, least-risk mix of incremental system energy and capacity resources to meet this need could be met with non-emitting resources that could also support state-specific policies. However the stay of the EPA's rejection of the Utah OTR plan, and the EPA's acceptance of the Wyoming OTR plan, removed these pressures to accelerate resource acquisitions. In particular, the Tenth Circuit Court of Appeals stay of the Utah OTR plan was on the basis that the plaintiffs were likely to succeed on the merits. The 2023 IRP Update preferred portfolio reflects these developments, and demonstrates that significant system benefits in scaling down and delaying these resource acquisitions that were originally identified in the 2023 IRP.

That said, while PacifiCorp's overall capacity needs for new assets are lower, and the projected dates to procure these resources are further in the future than what the 2023 IRP contemplated, the 2023 IRP Update continues to support the need for investments in generation, transmission, and distribution assets. For example, the 2023 IRP Update preferred portfolio includes the following generation resources through 2042:

- 9,818 megawatts of new wind resources (including 443 megawatts for Washington and 239 megawatts of small-scale wind for Oregon).
- 4,016 megawatts of storage resources, including batteries collocated with solar generation, standalone batteries, and pumped hydro storage resources (including 101 megawatts of standalone batteries for Oregon and Washington).
- 3,763 megawatts of new solar resources, mostly paired with battery storage (including 483 megawatts of small-scale solar for Oregon).
- 4,326 megawatts of capacity saved through energy efficiency programs.
- 1,123 megawatts of capacity saved through demand response programs.
- 500 megawatts of advanced nuclear (Natrium™ reactor demonstration project) in 2030.
- 5,385 megawatts of natural gas convertible peaking resources that meet high-demand energy needs (including 224 megawatts of clean-fueled peaking resources for Oregon).
- Installation of carbon capture technology on Jim Bridger Units 3 and 4.

To visualize how these resources are assumed to be allocated across PacifiCorp’s system in a given year, please refer to Figure 1 below. This Figure includes resources that were selected in the 2023 IRP Update preferred portfolio through 2032, which include resources allocated to Oregon to achieve its policy objectives.¹¹

Figure 1—Allocation of the 2023 IRP Update Preferred Portfolio Through 2032



The red rectangle depicts system resources, and resources that are not shared with Washington or Oregon, including: 395 megawatts of natural gas peakers and energy efficiency and demand response; and portions of 1,580 megawatts of utility-scale wind, 1,715 megawatts of solar, 3,944

¹¹ Additional information can be found in PacifiCorp’ 2023 IRP Update, Ch. 6 – Portfolio Development (Apr. 1, 2024).

megawatts of wind, 2,015 megawatts of storage, and 500 megawatts of clean baseload resources that are shared between the rest of the system, Oregon, and Washington.

The blue rectangle depicts Washington resources, including: a Washington-specific 443 megawatts of utility-scale wind and energy efficiency and demand response; portions of 134 megawatts of 4-hour batteries; and portions of the four resource categories shared with the rest of the system (portions of solar, wind, storage, and clean baseload resources).

The yellow rectangle depicts Oregon resources, including: an Oregon-specific 224 megawatts of non-emitting peakers, 369 megawatts of small-scale solar, 67 megawatt of wind, and energy efficiency and demand response; a share of the 134 megawatts of 4-hour batteries with Washington; and portions of the four resource categories shared with the rest of the system (portions of solar, wind, storage, and clean baseload resources).

The upcoming 2025 IRP and CEP will inform PacifiCorp's next steps for procuring these resources including all-source and small-scale procurement strategies.

Moving to transmission, PacifiCorp is also finalizing construction of the Energy Gateway South and Energy Gateway West Sub-Segment D1 transmission projects and partnering with Idaho Power to build the Energy Gateway Sub-Segment H (Boardman-to-Hemingway or B2H) transmission project. And the 2023 IRP Update supports two gigawatts of interconnection capacity through 2032—these are incremental to the increased capacity from Energy Gateway South, Energy Gateway West Sub-Segment D1, and B2H.

The impact of these resources on PacifiCorp's greenhouse gas emissions reductions, as well as additional incremental levers, are discussed below.

Greenhouse Gas Emissions Reductions

This section discusses PacifiCorp's actual greenhouse gas emissions reductions from recent years; forecasted greenhouse gas emissions reductions associated with the 2023 IRP Update preferred portfolio; as well as the company's potential incremental options to achieve HB 2021 compliance.

First, ORS 469A.420(4)(a) requires PacifiCorp to provide the Commission with its two most recent annual emissions reports that have been filed with the ODEQ. Information from these reports, for years 2021 and 2022 as well as from several prior years, are available on the ODEQ's website.¹² This data indicates that PacifiCorp has steadily reduced greenhouse emissions associated with electricity provided to end-users in Oregon since 2019, with 9,042,557 MTCO_{2e} in 2019, 8,448,143 MTCO_{2e} in 2020, 8,257,696 MTCO_{2e} in 2021, and 7,902,638 MTCO_{2e} in 2022.

¹² Available here: <https://www.oregon.gov/deq/ghgp/Pages/GHG-Emissions.aspx>.

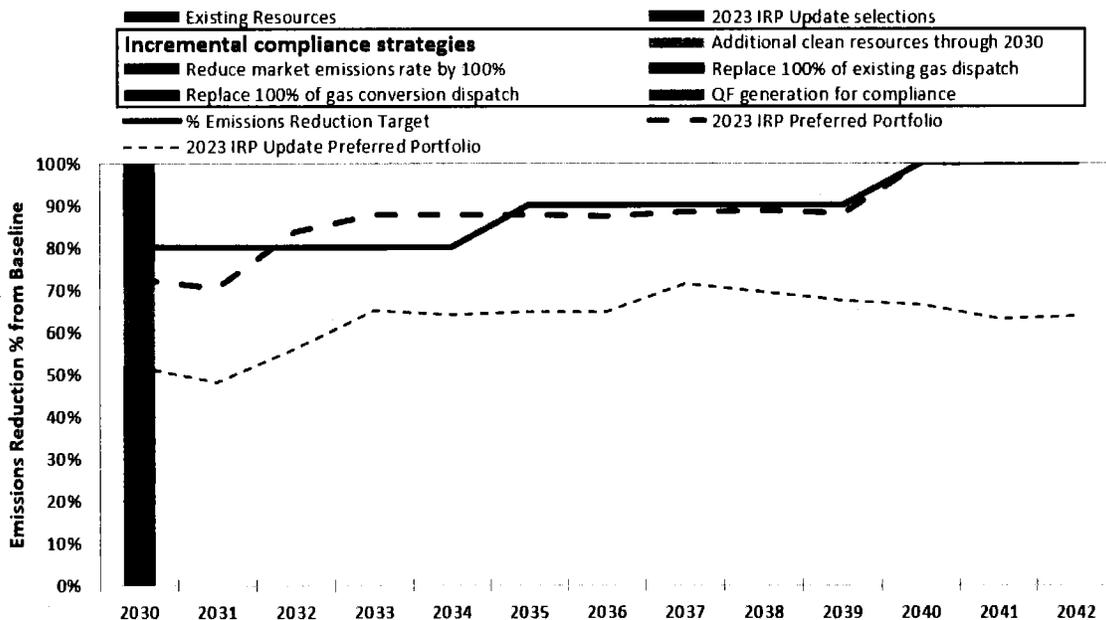
Second, PacifiCorp’s forecasted emissions reductions that could result from the 2023 IRP Update portfolio are compared to emissions reductions from the company’s 2023 IRP preferred portfolio in Figure 2, below. This figure serves two purposes.

First, it indicates that PacifiCorp’s 2023 IRP Update preferred portfolio under current resource allocations (reflected in the green dashed line), provides noticeably reduced emissions reductions

compared to those contemplated by the 2023 IRP (reflected in the brown dashed line). Oregon’s greenhouse gas emissions reductions requirements are also included to provide a reference for how the respective IRP preferred portfolios could have contributed to meeting HB 2021 emissions reduction targets (solid black line). The forecasted greenhouse gas emissions reductions from the 2023 IRP Update preferred portfolio are based on the least-cost system dispatch under a medium natural gas and CO₂ (MM) price-policy scenario, and does not attempt to dispatch resources and manage market transactions to comply with all state policies.

As described in the 2023 IRP Update, these increased emissions reflect the notable changes in PacifiCorp’s planning environment, namely, increased summer dispatch of gas and coal-fired resources in Wyoming and Utah that otherwise would not occur if the OTR was in place for each of those states. Because of the developments with the OTR, these resources are expected to see increased summer dispatch in the 2023 IRP Update, which has led to reduced and delayed needs for the procurement of additional non-emitting resources.

Figure 2—2023 IRP Update, 2023 IRP, and HB 2021 Emissions Reductions



Second, this Figure includes the greenhouse gas emissions that could result from the application of all of PacifiCorp’s various incremental HB 2021 compliance levers that are discussed in the next section. For reference, the gray bar in year 2030 represents the emissions reductions from

PacifiCorp's current HB 2021 compliant resources; the green bar represents forecasted emissions reductions that would result from resources identified from the 2023 IRP Update preferred portfolio; while the yellow, brown, red, blue, and purple bars represent the incremental emissions reductions that could result from the company's potential HB 2021 emissions reduction levers.

Importantly, these incremental greenhouse gas reductions only represent one possible combination of compliance levers, and each lever is a category of actions that could be considered. This is neither PacifiCorp's recommended nor preferred combination; rather it provides insights on how various levers could be toggled to establish different HB 2021 compliance pathways using resources in the 2023 IRP Update preferred portfolio.

The section below discusses these levers and provides greater transparency for the incremental actions that will be required to comply with the law. This will allow PacifiCorp, the Commission, and stakeholders to continue assessing the appropriate balance of benefits, risks, and costs to comply with Oregon's emissions reductions requirements. PacifiCorp looks forward to continuing these discussions in future CEP planning cycles.

Oregon Compliance Modeling

As discussed in Chapter 3 of the 2023 IRP Update, Oregon has several policies that impact resource selection and operations. These key policies include:

- **Renewable Portfolio Standard (RPS).** Renewable energy certificates (RECs) must be acquired to match a growing share of Oregon load on an annual basis, with certain limitations on technology types, and the procurement and banking of RECs.
- **No-Coal Requirement.** Under SB1547-B, coal-fired resources must be eliminated from Oregon's allocation of electricity by January 1, 2030.
- **Small-Scale Renewables Requirement.** At least ten percent of the nameplate capacity of generating resources used to serve Oregon customers (i.e. allocated to Oregon) must have a generating capacity of 20 megawatts or less, with a limited exception for larger biomass resources.¹³ To qualify, small-scale resources must also qualify and be certified as renewable for compliance with Oregon's RPS.
- **Greenhouse Gas Emissions Reductions.** HB 2021 directed utilities to reduce emissions below 2010-2012 baseline levels by 80% by 2030, 90% by 2035, and 100% by 2040.

In recent IRPs, up to and including the 2023 IRP, PacifiCorp did not model Oregon's resource allocations and compliance as part of a systemwide portfolio, and instead evaluated compliance with these state-specific policies in subsequent processes. Because compliance with Oregon's RPS could be achieved with the systemwide portfolio without any additional requirements, i.e. at no extra cost to customers beyond the system-wide, least-cost solution, additional modeling would not have changed the company's compliance outcome for this policy.

¹³ ORS 469A.210.

Yet this dynamic changed with HB 2021, as compliance with the small-scale resources requirement and greenhouse gas emissions reduction requirement will require changes in PacifiCorp's portfolio and/or forecasted operations and dispatch relative to the least-cost outcome.

The impact from these requirements, particularly Oregon's small-scale resources requirement and greenhouse gas emissions reductions, and how the company could pursue various levers to achieve these requirements, are discussed below.

Small-Scale Renewables

Of the two primary Oregon clean energy policies, the small-scale renewables requirement is less complex to incorporate in PacifiCorp's modeling processes compared to HB 2021. This is because the policy is tied to nameplate capacity, and is unaffected by system dispatch, at least in terms of determining PacifiCorp's overall compliance needs.

To incorporate this requirement, 10 megawatts of small-scale resources must be procured for every 100 megawatts of total resources. After accounting for the fact that small-scale resources must be accounted for in the Company's total nameplate capacity, this indicates that 90 megawatts of utility-scale resources can be added for each 10 megawatts of small-scale resources. Within PLEXOS, this relationship can be expressed with the following constraint:

$$0.1 * \text{Utility-scale capacity} - 0.9 * \text{Small-scale capacity} \leq 0$$

After incorporating this constraint, PacifiCorp's multi-state planning processes must determine how much capacity from a given resource can be allocated to comply with the requirement (for example a full or partial allocation the nameplate capacity of each resource). As an initial estimate, the company's modeling assumed that existing and new non-emitting resources had a system generation (SG) factor applied to their nameplate capacity. As a result, PLEXOS modeling assumes Oregon is assigned around 30% of each resource.

There are general exceptions to this 30% SG factor allocation. For example, Oregon will exit coal-fired resources by 2030, so Oregon's allocation factor for these resources is zero after 2030. Similarly, in 2040 the modeling assumes Oregon has exited existing natural gas-fired resources (this includes coal-fueled resources being converted to natural gas) for greenhouse gas compliance, and is not allocated any new natural gas resources. In 2030, Oregon will be allocated 100% of its own QFs, and zero percent for QFs from other states. Finally, while small-scale resources could potentially be cost-effective for other states, initial modeling did not indicate that this was likely, as the least-cost system portfolio and the Washington compliance portfolio did not include any small-scale resources. Given that outcome, 100% of all small-scale resources are assumed to be allocated to Oregon.

Taken together, the small-scale compliance resources allocated to Oregon from the 2023 IRP Update preferred portfolio would allow for allocation of over 4,600 megawatts of utility-scale resources to Oregon in 2030, rising to over 7,000 megawatts by the end of the study horizon (based

on 574 megawatts of small-scale resources in 2030, and 882 in 2042). These results are shown in Table 1 below.

Table 1— Small-Scale Resource Compliance Modeling

Nameplate (MW)	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Small-scale QF	171	171	169	169	169	169	168	147	144	136	136	136	136
Small-scale Existing	34	35	28	28	28	28	28	28	25	25	25	25	24
Small-scale Proxy	369	374	441	613	613	613	613	722	722	722	722	722	722
Small-scale Total	574	580	638	810	810	810	809	896	891	882	883	883	882
Potential Utility-scale	5,168	5,219	5,742	7,288	7,289	7,289	7,283	8,064	8,020	7,942	7,944	7,944	7,934
Total	5,742	5,799	6,380	8,097	8,099	8,099	8,092	8,960	8,911	8,824	8,827	8,827	8,816
Small-Scale %	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%

Note the significant increases in small-scale resources and potential utility-scale resources in 2033 and 2037. This reflects changes in utility-scale resources that are selected as part of the Oregon policy portfolio (and described in the 2023 IRP Update). 2033 is the first year that the Del Norte-Central Oregon 500 kilovolt transmission option was available for selection, and the Oregon policy portfolio included significant onshore wind additions using the interconnection capacity that the Del Norte-Central upgrade provides. This transmission upgrade would also provide additional transfer capability between PacifiCorp’s Southern Oregon and Central Oregon load areas, reducing transmission congestion and increasing the ability to deliver the associated generation to load. Modeling for the 2023 IRP Update also assumed that 2037 is the final year of tax credit eligibility under the Inflation Reduction Act; thus resources acquired in that year are more economic than in later years. These credits apply to both small-scale and utility-scale resources, but to take advantage of the substantial cost savings, utility-scale resources have to be paired with a quantity of small-scale resources in a 9:1 ratio as described above.

To provide an example of how these resource and cost constraints are related, the 2023 IRP Update preferred portfolio includes 108 megawatts of small-scale Utah solar PV in 2037. Using the 9:1 ratio, this can facilitate an additional 972 megawatts of utility-scale resources beginning in that year (or subsequent years). The simplest mechanism to comply with Oregon’s small-scale requirement is to identify the best location for resources and then add utility-scale and small-scale in the appropriate proportions. The resulting effective cost for that resource would represent a composite of utility-scale and small-scale resources. These sample costs compared to resource values (in terms of \$/kW), as shown in Table 2 below.

Table 2— Small-Scale Resource Cost Premium for Same Resource

2030 Build Cost (\$/kW) Resource	Scale		1:1 Ratio	9:1	9:1 Ratio
	Utility	Small	Premium	Composite	Premium
ID Solar	1,398	1,729	24%	1,431	2.4%
OR Solar	1,497	1,851	24%	1,533	2.4%
WA Solar	1,469	1,816	24%	1,504	2.4%
UT Solar	1,384	1,712	24%	1,416	2.4%
WY Solar	1,440	1,781	24%	1,474	2.4%
ID Wind	1,748	2,363	35%	1,810	3.5%
OR Wind	1,716	2,351	37%	1,779	3.7%
WA Wind	1,818	2,486	37%	1,884	3.7%
UT Wind	1,780	2,390	34%	1,841	3.4%
WY Wind	1,717	2,329	36%	1,778	3.6%

Note that the 2023 IRP Update preferred portfolio includes a variety of utility-scale resource locations and technology types, whereas it includes only two types of small-scale resources: Utah solar and Wyoming wind. This means that the premiums identified above are not specifically applicable, though they provide illustrative examples.

The small-scale selections in the 2023 IRP Update preferred portfolio reflect several factors. First, utility-scale resources are constrained by the cost and capacity of transmission upgrades, which vary by time and volume and are not included in Table 2. Second, small-scale resources are not assumed to require transmission upgrades, so they can be selected in areas where transmission is unavailable or has a high cost. Both of these assumptions provide flexibility that would generally reduce the cost of compliance with the small-scale requirement, and the actual transmission requirements associated with small-scale resources may be larger, particularly at the volumes identified in the 2023 IRP Update preferred portfolio. Third, to the extent the model seeks to add peaking resources and is forced to add small-scale wind or solar to compensate for the incremental utility-scale capacity, the incremental cost would be higher than what is shown. Finally, it is possible that renewable peaking resources, small-scale hydro, or other technologies could be configured as small-scale with a lower premium. In addition, while compliance with the small-scale requirement is independent of dispatch or generation from small-scale resources, the value of the energy and capacity provided by small-scale options will vary by technology type and location, and could defray much of the project costs.

Next, because the small-scale capacity requirement is based on capacity, and not generation amounts, the benefits of small-scale capacity are disconnected from energy output or the small-scale resources expected capacity factor. This has material price implications. For example, on a levelized annual basis, the 2030 small-scale Utah solar resource included in the 2023 IRP Update preferred portfolio to meet Oregon’s small-scale requirement costs an extra \$29,000 per megawatt of installed capacity per year relative to a comparable utility-scale resource. This equates to about \$10.30 per megawatt-hour based on the capacity factor of the Utah small-scale solar resource. In contrast, spreading that \$29,000 across one megawatt of a baseload resource with a 100% capacity

factor would result in an incremental cost of about \$3.30 per megawatt-hour, while spreading that \$29,000 across one megawatt of a peaking resource with a 10% capacity factor would result in an incremental cost of \$33 per megawatt-hour. In each case, the cost is \$29,000 and the benefit is an additional megawatt of capacity from small-scale resources for compliance, enabling nine megawatts of utility-scale capacity.

Incremental Greenhouse Gas Emissions Reduction Levers

This section discusses several modeling and regulatory levers that PacifiCorp could pursue to achieve Oregon's greenhouse gas emissions requirements. The incremental emissions reductions from each of these strategies are reflected in Figure 2 above, and the strategies are detailed below.

First, some background on HB 2021. Oregon's greenhouse gas emissions calculation is adapted from longstanding emissions reporting standards to ODEQ, and is intended to ensure that all of the resources used to serve forecasted Oregon customer load are identified and attributed appropriate emissions. This requirement is expressed as an absolute volume reduction, relative to a 2010 to 2012 baseline. As shown earlier in Figure 2, the 2023 IRP Update preferred portfolio achieves a roughly 60% reduction in emissions by 2030, based on the approved emissions reporting methodology. This combination of resources in the 2023 IRP Update is based on least-cost system dispatch under the MM price-policy scenario, so it does not include any attempt to re-dispatch resources and manage market transactions to achieve compliance. Additionally, the Company performed analyses that included least-cost system dispatch according to Oregon's policies as part of portfolio development, and continues to refine the modeling of emissions and resource allocations among its different states so that comprehensive results can be presented in the future (including Oregon's policy requirements).

Next, while HB 2021 specifies emissions reductions relative to a baseline emission volume measured in metric tons (MT), this differs from the emissions that the company has historically modeled and reported in the IRP. The IRP uses the emission rates of fuels, measured in pounds per MMBTU (million British Thermal Units), which range from 118.9 lb/MMBTU for natural gas up to around 209.8 lb/MMBTU for coal. These values reflect the carbon content of the fuel and correspond to the modeled fuel usage and heat rate. For example, thermal generators have the lowest heat rate (i.e. are most efficient) when they operate near their maximum output. To the extent that thermal generators are moving up and down in response to the availability of variable energy resources and daily variation in load, they will spend more time at less efficient operating levels, and their average heat rate and fuel consumption will be higher. Because the modeled emissions are based on fuel, these impacts are captured in the results. This emissions modeling does not include upstream emissions or the impacts of other greenhouse gases, though these could likely be separately identified and included.

The Oregon compliance calculation differs from this value in several ways. First, it is based on CO₂ equivalent (CO_{2e}), which translates the impacts of other greenhouse gases into the amount of CO₂ that would have the same impact. Second, the CO_{2e} emissions rates for each resource are established by ODEQ in metric tons of CO_{2e} per megawatt-hour. Third, the Oregon methodology

applies an emissions rate for unspecified market purchases, i.e. with no identified source, which is not part of the standard IRP modeling of emissions from fuels. For the 2023 IRP Update, PacifiCorp modeled the ODEQ emissions rate for Oregon's share of emitting resources, in addition to the standard IRP modeling. The endogenous Oregon policy portfolio developed in the 2023 IRP Update uses the ODEQ emissions rates in concert with annual emissions volumetric limits associated with the greenhouse gas compliance requirement. Elements of this compliance calculation are dependent on the average emissions rate, rather than volumes, so the 2023 IRP Update modeling does not yield a complete view of compliance requirements. While PacifiCorp has not been able to endogenously model Oregon's allocated emissions rate, it is continuing to refine these modeling techniques and expects to discuss modeling developments during the 2025 IRP public input process.

In addition to the difference between CO₂ per MMBTU and CO_{2e} per megawatt-hour, other elements of the compliance calculation make it more helpful to consider the requirement in terms of the reduction in the average emissions rate, rather than the reduction in the volume of the emissions themselves. This is because the average emissions rate of the resources used to serve Oregon load is multiplied by Oregon load (plus losses) to calculate the total emissions quantity,

rather than using the calculated emissions volume outputs from the IRP directly. The key inputs to the company’s compliance calculation methodology are shown in Table 3 below.

Table 3— Oregon Greenhouse Gas Compliance Calculation, 2030

Category	Emissions	Energy	Rate	Reduction
	(a) MT CO ₂ e (000s)	(b) GWh	(c) = (a) / (b) MT CO ₂ e / MWh	(d) = 1 - (c) / 0.444 %
Coal	0	0	0.000	
Coal to Gas Conversion	384	661	0.581	
Natural Gas	1,518	3,861	0.393	
Other	0	4,556	0.000	
Proxy	0	5,519	0.000	
QF	[12]	[1,159]	[0.010]	
Sub-total	1,901	14,596	0.130	
Market (System)	925	2,161	0.428	
Market (OR Energy Shortfall)	1,508	3,522	0.428	
Total	4,334	20,280	0.214	
Retail Sales		19,882	↓	
Retail Sales w/ 2% Losses	4,334 ←	20,280 ←	0.214	51.8%
2030 Target 80% Reduction	1,799		0.089	80.0%
2030 No Reduction	8,994		0.444	0.0%
Baseline (2010-2012 avg.)	8,994			

Table 3 illustrates a number of considerations within the compliance calculation. First, while a line item for QFs is shown, the values are included in brackets because their energy and emissions are not considered in the compliance calculation: the sub-total only includes the other categories.

Second, there are two market purchase line items. The Market (System) line item reflects Oregon’s SG allocated share of all market purchases in the least-cost system dispatch results. The Market (OR Energy Shortfall) line item reflects any remainder necessary to ensure that the total annual allocation of energy to Oregon is at least equal to Oregon’s retail sales plus 2% line losses. Both types of market purchases are assumed to be from “unspecified sources,” and are deemed to have an emissions rate of 0.428 MT CO₂e per megawatt-hour. The average emissions rate of 0.214 MT CO₂e per megawatt-hour is multiplied by the volume of retail sales with losses to yield the total emissions volume of 4,334 MT CO₂e. This happens to be the same as the total emissions associated with the energy supply, but this is only the case if Oregon’s allocation of energy is less than or equal to its load plus losses.

Based on this compliance calculation, the company has developed several compliance levers that could help further reduce PacifiCorp’s emissions to comply with HB 2021. These levers include

procuring new resources (Supply-Side and Energy Efficiency), decreased dispatch or re-allocation of existing emitting resources (including Coal-to-Gas and Natural Gas), or amendments to the emissions treatments of Qualifying Facilities or Market Purchases. Each of these six strategies are discussed below.

New Resource Additions

The 2023 IRP Update only allocates new resources to Oregon if they have zero emissions. These additional zero-emissions resources directly benefit the company's average emissions rate, though the magnitude of this benefit depends on Oregon's energy position. To the extent that Oregon would otherwise have an energy shortfall (and disregarding any other changes in system dispatch), increased zero-emission energy would reduce the volume of unspecified market purchases. This substitutes a zero-emitting resource for a 0.428 MT CO_{2e} per megawatt-hour unspecified market purchase, and has a relatively large benefit on the average emissions rate. Once Oregon is allocated resources sufficient to meet its retail sales plus losses, incremental zero-emission energy continues to bring down the average emissions rate, but no longer displaces unspecified purchases. Instead, incremental zero-emissions energy displaces a pro-rata quantity of the rest of the resource mix, including both emitting and non-emitting resources.

As discussed in the 2023 IRP Update, the preferred portfolio includes 25% of the near-term renewable resources and storage in 2027-2028, and Oregon's allocated share of these resources is around 30% in 2030. If Oregon were instead allocated 100% of these resources, it would increase Oregon's energy position by about 1.5 million megawatt-hours in 2030. This would eliminate much of Oregon's energy shortfall, and associated unspecified purchases, dropping the average emissions rate from 0.214 MT CO_{2e} per megawatt-hour to 0.182 MT CO_{2e} per megawatt-hour, and increasing the emissions reductions relative to the baseline from 51.8% to 58.9%. This lever would represent approximately 25% of the original shortfall relative to the 2030 80% greenhouse gas reduction requirement.

Through 2030, the 2023 IRP Update preferred portfolio also includes a nuclear resource as well as peaking resources that could be configured to use zero-emissions fuel and comply with HB 2021. If these resources were 100% allocated to Oregon, the incremental energy represents approximately 3.5 million megawatt-hours of energy in 2030. Adding this volume to that associated with the early renewables in the example above results in a total of 5.0 million megawatt-hours of additional energy, which drops the average emissions rate from 0.214 MT CO_{2e} per megawatt-hour to 0.130 MT CO_{2e} per megawatt-hours. This increases the emissions reduction relative to the baseline from 51.8% to 70.7%, and represents approximately 67% of the original shortfall relative to the 80% greenhouse gas reduction requirement. Note that, even though the additional energy volume is more than double that from the early renewables, the incremental benefit is reduced once the Oregon energy shortfall is eliminated. Approximately 3.5 million

megawatt-hours of additional zero-emission energy is required in 2030 to balance out the energy shortfall in the current analysis.

The examples above would also involve reallocation of resources identified as part of the 2023 IRP preferred portfolio. If, in addition to these allocations, the portfolio was modified to assign 100% of the early renewable resource options to Oregon instead of the current 25%, the incremental energy represents approximately 6.3 million megawatt-hours of energy in 2030. This drops the average emissions rate from 0.214 MT CO_{2e} per megawatt-hour to 0.096 MT CO_{2e} per megawatt-hour, and increases the emissions reduction relative to the baseline from 51.8% to 78.4%. This represents approximately 94% of the original shortfall relative to the 80% greenhouse gas reduction requirement. Note that because this lever would introduce additional resources, rather than just changing allocations, it would necessarily result in indirect impacts as the resource additions offset the need for emitting resources and market purchases. This would further improve PacifiCorp's Oregon compliance position. The resource additions contemplated in this example are substantial, and the total energy allocated to Oregon is nearly 50% higher than its adjusted retail sales plus losses. Reductions in emitting resource generation and market purchases would reduce this somewhat, but it is likely that the energy allocated to Oregon would remain well above its retail sales plus losses within the compliance calculation.

Energy Efficiency Additions

While energy efficiency is treated as a resource in the IRP portfolio development process, within the Oregon compliance calculation it reduces load. This provides two direct benefits, depending on Oregon's energy position. First, to the extent that Oregon would otherwise have an energy shortfall (and disregarding any other changes in system dispatch), increased energy efficiency reduces the volume of unspecified market purchases. Second, increased energy efficiency results in lower retail sales, such that the average emissions rate is applied to a lower volume of energy, resulting in lower total emissions. Both would improve the company's compliance position.

In addition to these direct benefits, additional energy efficiency would indirectly impact system dispatch, and would reduce dispatch of emitting resources or market purchases in some hours. The 2023 IRP Update preferred portfolio includes approximately 83% of the potential Oregon energy efficiency measures. If the remaining measures were also included, it would reduce retail sales by approximately 17 average megawatts. Modifying the original 2030 greenhouse gas compliance calculation to include this additional energy efficiency reduces the Oregon energy shortfall and would reduce the average emissions rate from 0.214 MT CO_{2e} per megawatt-hour to 0.212 MT CO_{2e} per megawatt-hour. This increases the emissions reduction relative to the baseline from 51.8% to 52.5%, and would represent approximately 3% of the original shortfall relative to the 80% greenhouse gas reduction requirement.

Dispatch/Allocation of Coal-to-Gas Conversion Resources

While coal resources are eliminated from Oregon's allocation of electricity in current modeling, the heat rates of coal resources that are converted to natural gas are higher than the heat rate of efficient combined cycle combustion turbines that make up much of PacifiCorp's natural gas fleet.

As a result, PacifiCorp's gas-converted coal resources have the highest emissions rate, and significantly impact the company's average emissions rate. Removing these resources from Oregon's allocation of electricity could occur happen in several ways. The most straightforward would be to reduce Oregon's allocation of these resources relative to the current SG share. However because Oregon is no longer allocated coal-fired resources in 2030, the allocations contemplated in the 2023 IRP Update may not provide sufficient capacity to meet Oregon's load and resource adequacy requirements. Capacity and resource adequacy requirements were not assessed with respect to state-level allocation in the 2023 IRP Update, but will be developed further in the 2025 IRP.

Another possibility is for resources allocated to Oregon to only be dispatched in emergency situations, which would ensure reliable operation without as much reliance on emitting resources. It may also be possible to develop market-based solutions to maximize the value of these resources while minimizing their emissions, which could likely require changes to market structures or other greenhouse gas authorities.

In practice, this lever could have significant impacts. Starting from a balanced portfolio where new resources are allocated to Oregon to cover all energy shortfalls, i.e. including a portion of the additional new resources contemplated above, eliminating coal-to-gas conversion volumes from Oregon's compliance position drops the average emissions rate from 0.139 MT CO₂e per megawatt-hour to 0.120 MT CO₂e per megawatt-hour, and increases the emissions reduction relative to the baseline from 68.6% in the balanced portfolio to 72.8% in the portfolio without coal to gas conversion resource dispatch. This would represent approximately 15% of the original shortfall relative to the 80% greenhouse gas reduction requirement. Note that this reduction assumes that these converted resources would be replaced with zero-emitting resources. If gas conversion volumes were instead replaced with unspecified market purchases, the emissions reductions would be lower.

Dispatch/Allocation of Existing Natural Gas Resources

While the emissions rates for many of PacifiCorp's existing natural gas resources is slightly lower than the emissions rate for unspecified market purchases, their energy volume makes that category the largest contributor to the company's average emissions rate. As with coal-to-gas conversions, excluding these resources in favor of other options in Oregon's allocation of electricity could happen through dispatch and/or allocation, or through market-based solutions.

Starting from a balanced portfolio in which coal-to-gas conversion volumes have already been eliminated, reducing dispatch of the remainder of the existing natural gas fleet by 42% and replacing it with zero-emitting resources would provide enough incremental emissions reductions to meet HB 2021's 2030 compliance target. This drops the average emissions rate from 0.120 MT CO₂e per megawatt-hour to 0.089 MT CO₂e per megawatt-hour, and increases the emissions reduction relative to the baseline from 72.8% in the portfolio without coal-to-gas conversion volumes to 80.0% in the portfolio that includes reduced existing natural gas resource dispatch. This eliminates the shortfall relative to the 80% greenhouse gas reduction requirement. Note that this reduction is predicated on replacing existing gas volumes with zero-emitting resources. If

existing gas volumes were instead replaced with unspecified market purchases, emissions would actually increase, because of the higher emissions rate for unspecified market purchases.

Treatment of Qualifying Facility Generation

While QF generation is not currently included in the greenhouse gas compliance calculation, HB 2021 directed the Commission to update QF avoided cost calculations to ensure they reflect the characteristics of generators that contribute to compliance.¹⁴ To the extent that QFs receive avoided cost pricing that reflects greenhouse gas compliance costs and/or benefits, it should be appropriate to include the associated emissions reductions benefits in the compliance calculation. If this were possible, modifying the 2030 greenhouse gas compliance calculation to include the energy and emissions associated with QFs would result in a reduction in the Oregon energy shortfall, dropping the average emissions rate from 0.214 MT CO_{2e} per megawatt-hour to 0.190 MT CO_{2e} per megawatt-hour. This would increase the emissions reduction relative to the baseline from 51.8% to 57.2%, and represents approximately 19% of the original shortfall relative to the 80% greenhouse gas reduction requirement.

Emissions Attributed to Market Purchases

As the share of non-emitting resources grow within the western interconnect, the emissions rate associated with unspecified market purchases will fall. To the extent that market purchases displace energy from emitting resources that enables a non-emitting resource to generate (instead of being curtailed), this market purchase would not result in increased emissions. While the availability of such opportunities are likely to vary considerably from hour to hour and across seasons, and tracking hourly or sub-hourly emissions content in market transactions would require additional processes (and there are ongoing discussions around this issue in development of certain organized markets), this lowered emissions rate would improve the company's emissions rate.

That said, it is currently possible to procure non-emitting resources from other market participants. These "specified" purchases would eliminate the need for unspecified market purchases and the associated higher emissions rate. These specified-source products currently include slices of hydro power projects and bundled renewable energy transactions, but with rising interest additional products are likely to be increasingly available in the future. Additionally, with the expansion of organized markets, there may be interest in accounting for energy purchases from these markets to more accurately reflect the region's mix at a factor that is lower than the current unspecified rate.

Assuming it were possible to modify the 2030 greenhouse gas calculation to include a 25% reduction in the emission rate of market transactions to 0.321 MT CO_{2e} per megawatt-hour drops the average emissions rate from 0.214 MT CO_{2e} per megawatt-hour to 0.184 MT CO_{2e} per megawatt-hour. This increases emissions reduction relative to the baseline from 51.8% to 58.6%,

¹⁴ HB 2021: Section 8 (4)(a).

and would represent approximately 24% of the original shortfall relative to the 80% greenhouse gas reduction requirement.

Combined Results

Consistent with least-cost, least-risk planning principles, PacifiCorp will continue to examine a range of strategies that are likely to produce the most cost-effective outcomes for its customers. Therefore it is likely that the Company will consider a combination of these various levers (in addition to others discovered in future planning cycles), to achieve the necessary greenhouse gas emissions reduction requirements relative to the 2023 IRP Update preferred portfolio. Table 4 below identifies the potential range of benefits that could result from these levers, in order of the resulting incremental emissions reductions compared to what would otherwise result from the 2023 IRP preferred portfolio. These emissions reductions could include:

- New resources through 2030: 100% allocation of all early renewable resource options, plus peaking and nuclear in the 2023 IRP preferred portfolio. This provides an additional 2,254 MT CO₂e of emissions reductions, or an approximate 52% increase relative to the original 2030 greenhouse gas calculation from the 2023 IPR Update preferred portfolio.
- Market emissions: average emissions rate reduced by 100%. 925 MT CO₂e of emissions reductions, around a 21% increase.
- Existing gas: replace 100% of dispatch with new resources. 759 MT CO₂e of emissions reductions, around an 18% increase.
- QF generation counts toward compliance: 204 MT CO₂e of emissions reductions, around a 5% increase.
- Gas conversion: replace 100% of dispatch with new resources. 192 MT CO₂e of emissions reductions, around a 4% increase.

Modifying the original 2030 greenhouse gas calculation to include these levers lowers PacifiCorp's average emissions rate from 0.214 MT CO₂e per megawatt-hour to 0 MT CO₂e per megawatt-hour. This would increase emissions reductions relative to the baseline from 51.8% to 100%, well above HB 2021's 80% requirement for 2030.

Table 4— Oregon Greenhouse Gas Emissions Reduction Levers, 2030

Levers	Category	Emissions (a) MT CO ₂ e (000s)	Energy (b) GWh	Rate (c) = (a) / (b) MT CO ₂ e / MWh	Reduction (d) = 1 - (c) / 0.444 %
	Coal	0	0	0.000	
Replace 100% of gas conversion dispatch	Coal to Gas Conversion	0	0	0.000	
Replace 100% of existing gas dispatch	Natural Gas	0	0	0.000	
	Other	0	4,556	0.000	
Additional clean resources through 2030	Proxy	0	18,317	0.000	
QF generation for compliance	QF	[12]	1,159	0.000	
	Sub-total	0	24,033	0.000	
Reduce market emissions rate by 100%	Market (System)	0	2,161	0.000	
Offset by clean resources	Market (OR Energy Shortfall)	0	0	0.000	
	Total	0	26,194	0.000	
	Retail Sales		19,882	↓	
	Retail Sales w/ 2% Losses	0 ←	20,280 ←	0.000	100.0%
	2030 Target 80% Reduction	1,799		0.089	80.0%
	2030 No Reduction	8,994		0.444	0.0%
	Baseline (2010-2012 avg.)	8,994			

Similar to the company’s 2023 CEP, PacifiCorp anticipates pursuing multiple compliance strategies to meet these additional emissions reductions requirements. These include: (a) procurement of resources that would be fully allocated to Oregon to achieve the necessary emissions reduction; (b) continued jurisdictional cost allocation negotiations in the Multi-State Process on new and existing resources to support Oregon compliance; (c) new tariff provisions that would result in certain customers (for example, those with large loads), being served entirely with HB 2021 compliant resources; and (d) deployment of the additional levers discussed above.

PacifiCorp looks forward to discussing these compliance strategies with the Commission and stakeholders in the upcoming 2025 CEP and future planning processes.

Incorporation of Commission Recommendations

The Commission directed PacifiCorp to consider several improvements for the 2025 IRP and CEP planning processes.¹⁵ PacifiCorp has strived, in exceedingly expedited circumstances, to try to incorporate two of these improvements in its 2023 IRP Update, which also inform this Supplement. These improvements include:

- Recommendation 15 asked the Company: “In the 2025 IRP/CEP model, PacifiCorp must: (1) demonstrate that simultaneous compliance with all state-level policies is feasible with the least-cost, least-risk Preferred Portfolio and with the Preferred Portfolio variants tested in the IRP under multiple allocation paradigms; (2) include expected CBREs in the Preferred Portfolio and ensure that the Preferred Portfolio meets Oregon’s Small Scale Renewable Requirement; (3) adopt best practices in resource adequacy modeling, including consideration of load and resource performance under multiple weather years

¹⁵ Order No. 24-073, at Appendix B, 3-7.

and calculation of loss of load expectation and capacity contributions using probabilistic analysis.”¹⁶

PacifiCorp has taken the substantial step to meet this request by moving towards an integrated systemwide preferred portfolio. This planning methodology creates an endogenous and iterative study process that informs the selection of an optimized all-state preferred portfolio. The details on these actions are found in Chapter 6 of PacifiCorp’s 2023 IRP Update.¹⁷

This new systemwide planning approach results in three types of resources: shared resources between all six PacifiCorp states; shared only between certain states; and situs-assigned resources only for specific states. Details on the specific allocation of resources allocated between states can be found in Chapter 6 of PacifiCorp’s 2023 IRP Update.

This approach attempts to ensure that PacifiCorp can achieve compliance with state-specific policies (like Oregon’s small scale renewable requirement), and capture any system benefits from these specific policies, while at the same time avoiding unreasonable cost allocation or sharing of resources that are not preferred for other states, or creating a layered approach to state-specific compliance. The Company will continue to work with stakeholders to implement Recommendation 15 in future planning processes.

- Recommendation 20 asked PacifiCorp to “report on steps that the Company took to reduce the magnitude of reliability and granularity adjustments, how the Company engaged with stakeholders on adjustments, and describe the methodology and report the resulting reliability and granularity adjustments by resource. Include any supporting work papers demonstrating the granularity/reliability adjustments in the Data Disc.”¹⁸

PacifiCorp has taken steps to reduce the magnitude of its reliability and granularity adjustments, and details on these actions are found in Chapter 6 of the company’s 2023 IRP Update.¹⁹ While the company has not had adequate time to provide adjustments by resource, or provide supporting workpapers on these adjustments, PacifiCorp will continue working with stakeholders over the next planning cycle to inform additional developments for the 2025 IRP and CEP.



This Supplement demonstrates PacifiCorp’s continual progress towards complying with HB 2021’s greenhouse gas emissions reductions requirements, projected system and Oregon-specific resource needs, and expedited incorporation of Commission recommendations from Order No. 24-073.

¹⁶ Order No. 24-073, at Appendix B, 6.

¹⁷ 2023 IRP Update, Ch. 6, §§ “Portfolio Development Process Overview,” “Preferred Portfolio Development”.

¹⁸ Order No. 24-073, at Appendix B, 7.

¹⁹ 2023 IRP Update, Ch. 6, §§ “Granularity Adjustment Detail,” “Reliability Adjustment Detail”.

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PacifiCorp requests the Commission conclude that the company has demonstrated adequate continual progress towards complying with HB 2021's greenhouse gas emissions reductions requirements, and that no additional actions or proceedings are necessary at this time.