PACIFIC POWER
A DIVISION OF PACIFICORP

825 NE Multnomah Street, Suite 2000
Portland, Oregon 97232

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 22-206[2] 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
irp@pacificorp.com
stephanie.meeks@pacificorp.com
zachary.rogala@pacificorp.com

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.

Informal inquiries may be directed to Cathie Allen, Regulatory Affairs Manager, at (503) 813-5934.

Sincerely,

Matthew McVee
Vice President, Regulatory Policy and Operations

Enclosure

# OREGON 2023
# Clean Energy Plan

May 31, 2023

PACIFIC POWER®

# CONTENTS

I. INTRODUCTION ..... 1

II. COMMUNITY ENGAGEMENT ..... 6

Developing Community Engagement Strategy ..... 6
Vision for Community Engagement ..... 7
Leveraging Previous Learnings ..... 7
DSP Community Engagement Activities ..... 7
Washington's Equity Advisory Group ..... 8
The Role of Advisory Groups ..... 8
Integrated Resource Planning Public Input Meetings ..... 9
Distribution System Planning Local Stakeholder Workshops ..... 9
Clean Energy Plan Engagement Series ..... 10
Transportation Electrification (TE) Workshops ..... 10
Establishing the CBIAG ..... 10
Other Engagement Strategies ..... 12
Consolidated Information Hub ..... 12
2023 Clean Energy Benefits Survey ..... 12
Tribal Nations Engagement ..... 12

III. COMMUNITY BENEFIT INDICATORS ..... 14

Coordination with Stakeholders and OPUC Staff ..... 15
Interim Community Benefit Indicators ..... 18
Resilience (System and Community) ..... 19
Health and Community Well-being ..... 23
Environmental Impacts ..... 24
Energy Equity ..... 25
Economic Impacts ..... 27
Community Benefit Indicator Categories ..... 28
Informational Community Benefit Indicators ..... 28
Community Based Renewable Energy Focused Community Benefit Indicators ..... 28
Portfolio Community Benefit Indicators ..... 28

IV. RESILIENCY ..... 29

Resiliency Analysis Framework ..... 30
Defining resiliency and resiliency goals ..... 30
Developing community-utility resilience metrics ..... 31
Identifying threats including probabilities and consequences ..... 31
Evaluating effectiveness and cost of resilience measures ..... 31
Proposed Timeline and Milestones ..... 31

V. COMMUNITY-BASED RENEWABLE ENERGY ..... 33

CBRE Inventory ..... 36
Oregon Community Solar Program ..... 39
Blue Sky Usage and Blue Sky Block Renewable Energy Programs ..... 39
Community Resilience Battery Storage Grant Pilot ..... 41
ODOE Community Renewable Energy Grant Program Grants ..... 42
Projects Identified by Energy Trust of Oregon ..... 43
Additional Opportunities Identified by the Company ..... 43
Initial CBRE Potential Study ..... 44
Results ..... 44
Anticipated Benefits ..... 46
Anticipated Costs ..... 47
CBRE Potential Study Conclusions ..... 48
CBRE Modeling ..... 50
Methodology and Results ..... 50
Relationship between Modeling and Customer Benefit Indicators ..... 50
Initial CBRE Action Plan ..... 51
Continued Assessment of Needs and Opportunities ..... 51
Direct CBRE Implementation Actions ..... 52

VI. RESOURCE PLANNING ..... 55

2023 IRP Preferred Portfolio ..... 56
Methodology ..... 57
Results ..... 60
Small-Scale Renewable Portfolio Development ..... 63
Oregon-Allocated CEP Analysis ..... 65

Sensitivity Studies ..... 66
CEP Portfolio ..... 67
Community Based Renewable Energy ..... 69
SSR 15% (small-scale renewables increased to 15% by 2030) ..... 69
SSR 2028 (small-scale renewables to meet 10% by 2028) ..... 69
No Purchases 2040 ..... 69
Conclusion ..... 70

VII. GREENHOUSE GAS EMISSIONS ..... 71

Methodology and Assumptions ..... 74
Emissions Trajectories ..... 76
Phase 1 - 2023 IRP Preferred Portfolio Emissions ..... 77
Phase 2 – CEP Emissions Assuming 2020 Protocol Extension ..... 77
Phase 3 – CEP Paths to Emissions Targets ..... 78
Achieving 100 Percent Carbon-Free Retail Sales ..... 81
Pace of Emission Reductions ..... 82
Renewable Energy Credit Accounting ..... 82

VIII. ACTION PLAN ..... 85

Community Engagement ..... 87
Community Benefit Indicators ..... 87
Resilience ..... 87
Community Based Renewable Energy ..... 88
Compliance Pathways ..... 88
Resource Procurement Planning ..... 88
2023-2024 All Source Request for Proposals ..... 89
Small-Scale Renewables Procurement Strategies ..... 89
RFP and Contracted Resources: Equity and Customer Impacts ..... 90

IX. CONCLUSION ..... 92

## APPENDICES


| | |
|---|---|
| Appendix A | Detailed List of 2022 SAIDI, SAIFI and CAIDI Scores by Census Tract |
| Appendix B | Complete List of all Disconnections by Census Tract |
| Appendix C | Complete List of Energy Burden Estimates for all Census Tracts |

## List of Figures

Figure 1 – Oregon Stakeholder Engagement Venues ..... 9

Figure 2 – SAIDI for PacifiCorp's Oregon Service Regions Census Tracts ..... 21

Figure 3 – SAIFI for PacifiCorp's Oregon Service Regions Census Tracts ..... 21

Figure 4 – CAIDI for PacifiCorp's Oregon Service Regions Census Tracts ..... 22

Figure 5 – IRP Evaluation Steps ..... 58

Figure 6 – Portfolio Production Process ..... 60

Figure 7 – 2023 IRP Preferred Portfolio (All Resources) ..... 61

Figure 8 – HB 2021 Emissions Targets for PacifiCorp ..... 72

Figure 9 – Phases of CEP Development ..... 72

Figure 10 – Compliance Pathways ..... 73

Figure 11 – 2023 IRP Preferred Portfolio Allocated to Oregon by Extending 2020 Protocol (No Additional Assumptions for Small-Scale Capacity or Resource Allocation) ..... 77

Figure 12 – CEP Portfolio Allocated to Oregon by extending 2020 Protocol (Includes Additional Small-Scale Capacity; No Additional Assumptions for Resource Allocation) ..... 78

Figure 13 – CEP Portfolio Allocated to Oregon Using Allocations under Pathway 1 ..... 79

Figure 14 – CEP Portfolio Oregon allocated Resource Mix under Pathway 1 ..... 79

Figure 15 – CEP Portfolio Allocated to Oregon Using Allocations under Pathway 2 ..... 80

Figure 16 – CEP Portfolio Oregon allocated Resource Mix under Pathway 2 ..... 81

Figure 17 – Oregon allocated CEP Portfolio RECs Pathway 1 ..... 83

Figure 18 – CEP Portfolio Oregon allocated RECs Pathway 2 ..... 83

## List of Tables

Table 1 – Joint Advocate Recommended and PacifiCorp's adopted Interim CBIs..... 15

Table 2 – Joint Advocate Recommended and PacifiCorp's adopted CBI Metric ..... 16

Table 3 – PacifiCorp's Interim CBIs and Metrics ..... 18

Table 4 – Ten Census Tracts with Highest Residential Customer Disconnections (2019) ..... 24

Table 5 – PacifiCorp's Baseline, Current, and Percent of Reported Emissions from Baseline ... 24

Table 6 – Oregon Allocated Renewable/Non-emitting Resources (%)..... 25

Table 7 – Energy Burden for those Census Tracts with High Energy Burden within Oregon Service Area..... 26

Table 8 – Energy Burden for Oregon Low Income and Billing Assistance Participants ..... 26

Table 9 – Proposed Resiliency Timeline and Milestones..... 32

Table 10 – Inventory of Existing and Potential CBRE Opportunities..... 37

Table 11 – 2023 IRP Preferred Portfolio Existing Small-Scale Renewables for Oregon ..... 63

Table 12 – Annual Small-Scale Target Shortfall (MW)..... 64

Table 13 – System-wide PVRR(d) of 2023 IRP Relative to Small-Scale Renewables Portfolio. 65

Table 14 – Oregon-Allocated 2023 IRP PVRR(d) Relative to Small-Scale Renewables Portfolio ..... 66

Table 15 – CEP Sensitivity Study Comparison ..... 67

Table 16 – Average Annual Cost Compared to the 2023 IRP Preferred Portfolio ($millions).... 68

Table 17 – ODEQ Assumptions ..... 74

## 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-envisions 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_I.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, un-forecasted 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.

# II. 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**

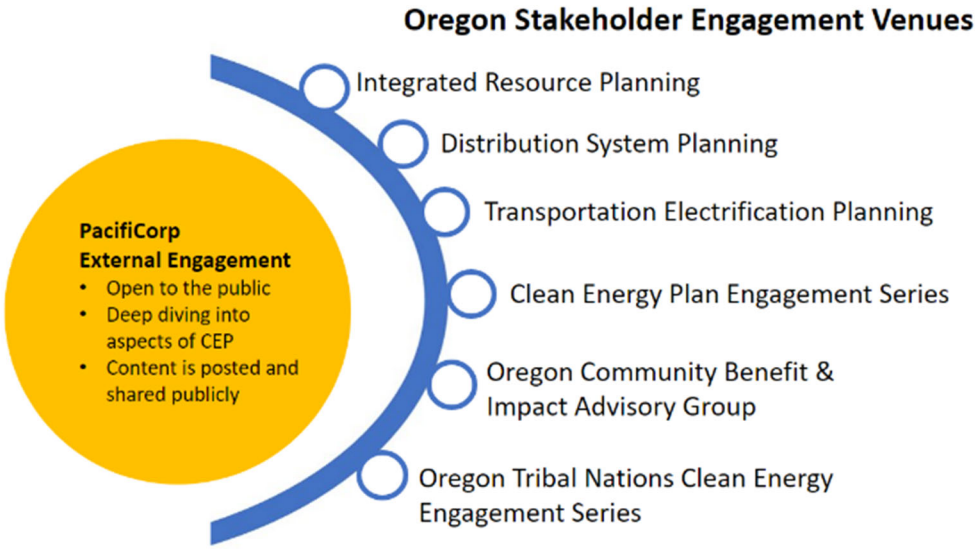
In May 2019, Governor Jay Inslee signed Washington's Clean Energy Transformation Act into law. The legislation combined directives for utilities to pursue a clean energy future with assurances that benefits from a transformation to clean power are equitably distributed among all Washingtonians at a reasonable 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://pacificorp.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<br>-Reduce frequency and duration of energy outages | -SAIDI, SAIFI and CAIDI at area level including major events<br>-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<br>-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<br>-Public charging stations<br>-Pre-apprenticeship / educational program participation<br>-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.

<u>Establish Framework</u>
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 tracts[12]

[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**

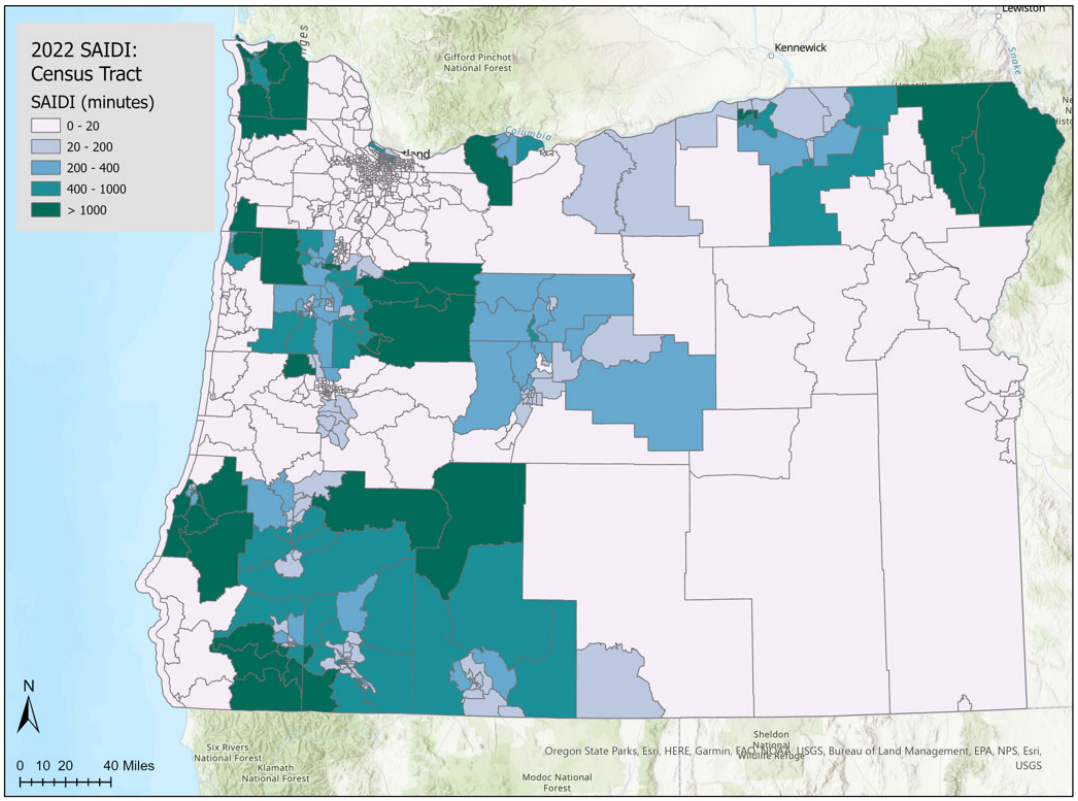



**Figure 3 – SAIFI for PacifiCorp's Oregon Service Regions Census Tracts**

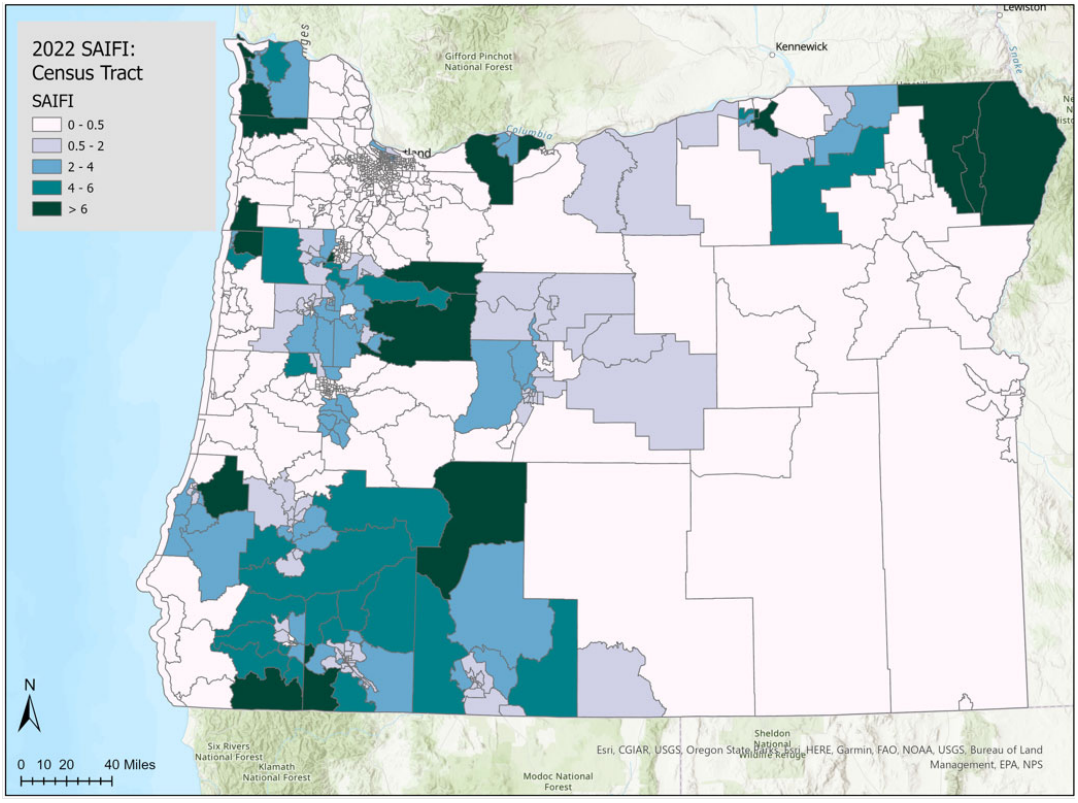
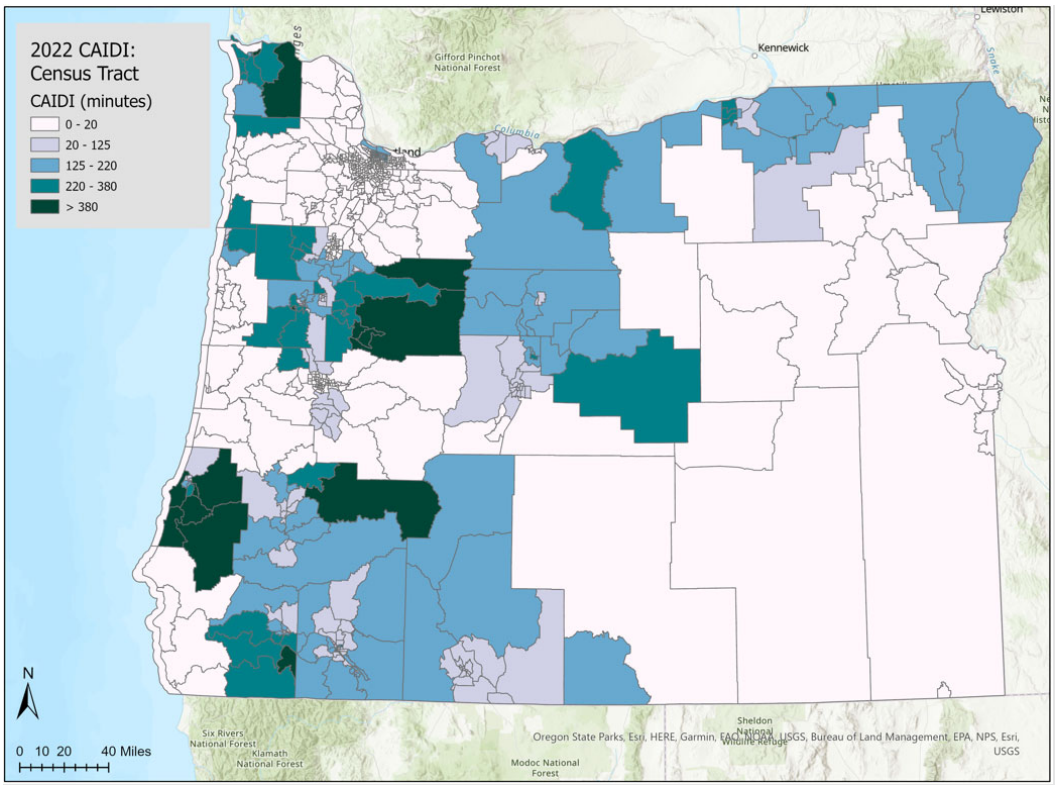


**Figure 4 – CAIDI for PacifiCorp's Oregon Service Regions Census Tracts**




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 $CO_2$ 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 $CO_2$ emissions, relevant HB 2021 $CO_2$ 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 $CO_2$ 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 $CO_2$ 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 $CO_2$ emissions relative to the 2023 IRP Preferred Portfolio. On an Oregon allocated basis, $CO_2$ emissions for each of these portfolios ranges between 2.1 percent and 16.2 percent lower than $CO_2$ 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] Drenhobl, 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 Participants[17]**

| 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 $CO_2$ 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 $CO_2$ emissions relative to the preferred portfolio.

# IV. RESILIENCY

Key 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/um2225hah113046.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.<br>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<br>(Average capacity additions of ~714 kilowatts/yr. over 6 yrs.);<br>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;<br>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<br><br>Small community focused solar: ~ 50 identified opportunities – 5.6 MW Total;<br>Included in "Group 1" Existing Program Potential |
| ODOE CREP Grants (New) | <u>Round 1 (July 2022):</u><br>4 projects approved for funding (2 planning grants and 2 construction grants) | <u>Round 1:</u> 13 additional projects submitted applications<br><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; educed 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 ($CO_2$) 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, $CO_2$ emissions are the metrics for which to measure progress toward the Interim CBI of Increase Energy from Non-emitting Resources and Reduce $CO_2$ 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 PLANNING

Key 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.

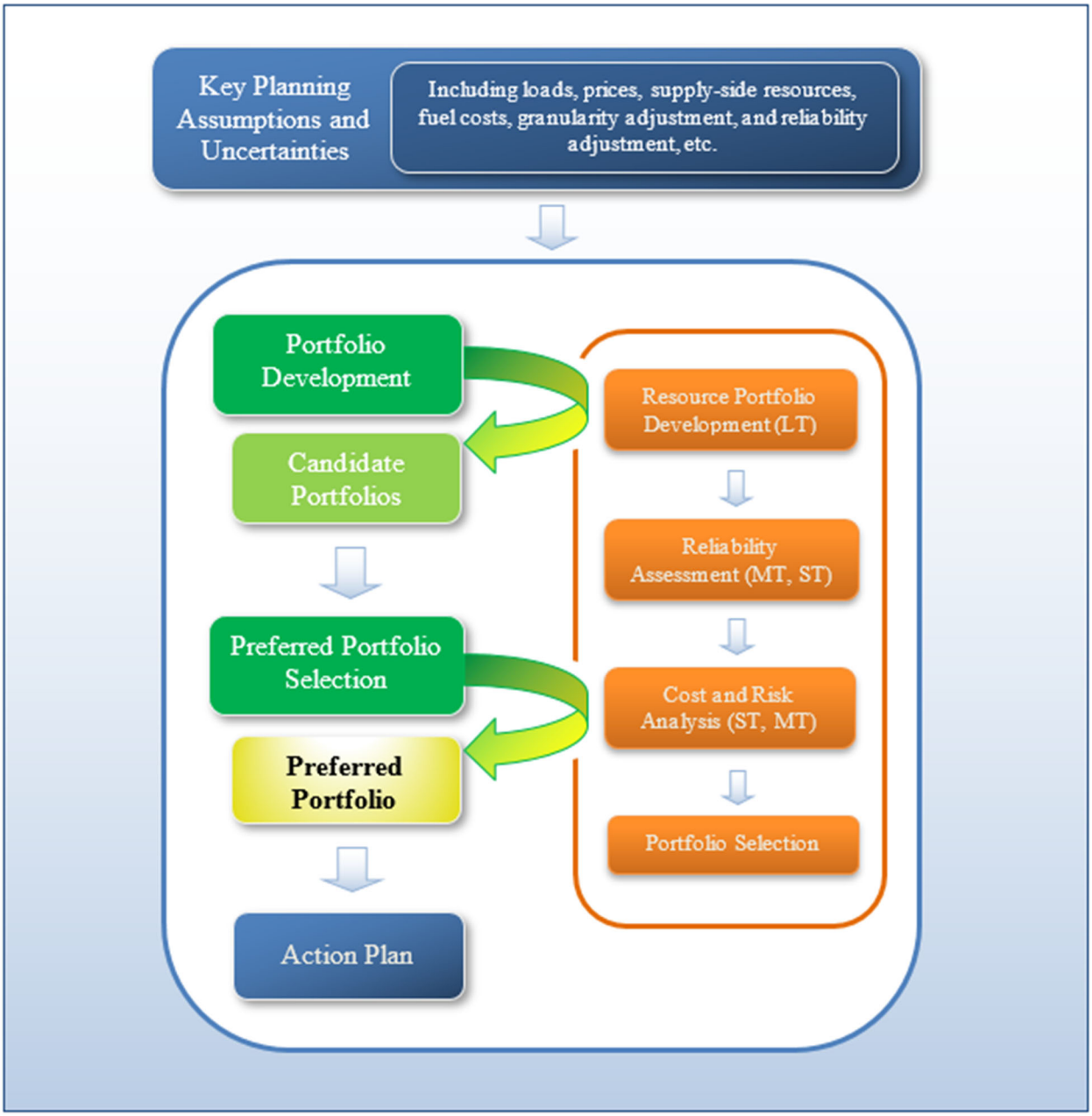
**Methodology**

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 ($CO_2$) 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.

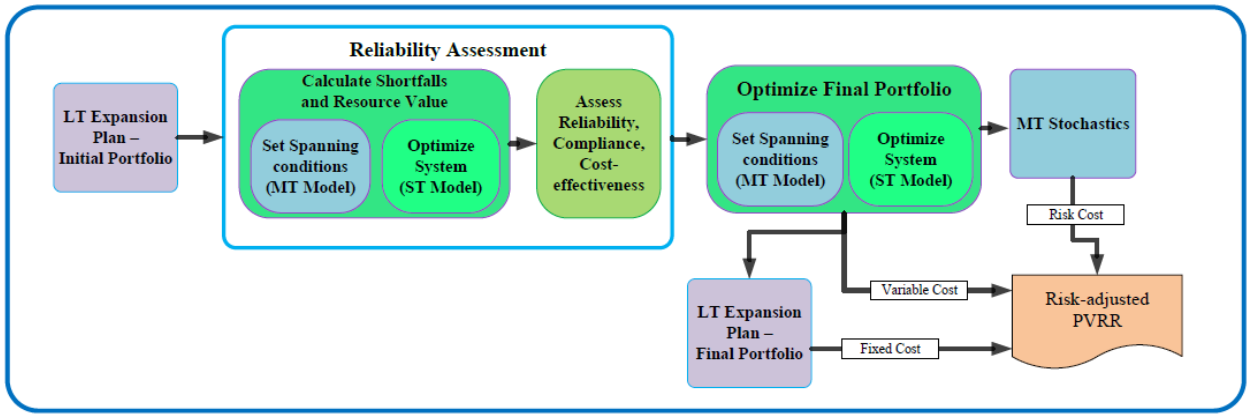
In the next step of the modeling process, the ST model conducts a reliability assessment. The ST model begins with a portfolio from the LT model that has not yet benefited from a reliability assessment conducted at an hourly level. The ST model is first run at an hourly level for 20 years in order to 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 $CO_2$ 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.

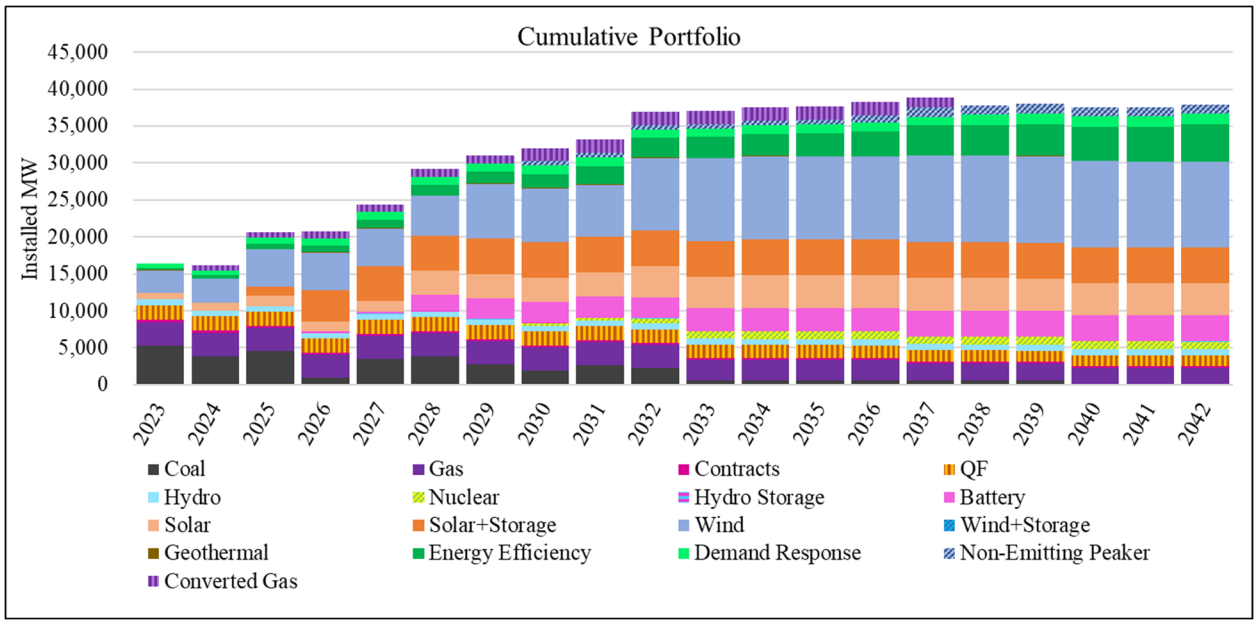
The preferred portfolio continues to include substantial new renewables, facilitated by incremental transmission investments, DSM resources, significant storage resources, advanced

[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 $CO_2$ 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 ($m) | ST PVRR + 5% of 95th Percentile Stochastic ($m) | ENS[62] (% of system load) | $CO_2e$ 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) | $CO_2e$ 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) | $CO_2e$ 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<br>Path 2: 54,516<br>2020 Protocol: 62,937 |
| CBRE | 702 MW SSR solar +<br>100 MW Oregon CBRE | 11,941 | 131 | 0.00447 | Path 1:56,815<br>Path 2: 54,516<br>2020 Protocol: 62,937 |
| SSR 15% | 1,203 MW SSR solar | 11,934 | 123 | 0.00447 | Path 1: 56,692<br>Path 2: 54,516<br>2020 Protocol: 62,633 |
| SSR 2028 | 802 MW SSR solar | 12,075 | 265 | 0.00447 | Path 1: 56,495<br>Path 2: 54,214<br>2020 Protocol:62,560 |
| No purchases 2040 | 802 MW SSR solar +<br>1,035 MW of non-emitting peaking | 11,855 | 45 | 0.00448 | Path 1: 57,157<br>Path 2: 54,824<br>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 $CO_2$ 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.

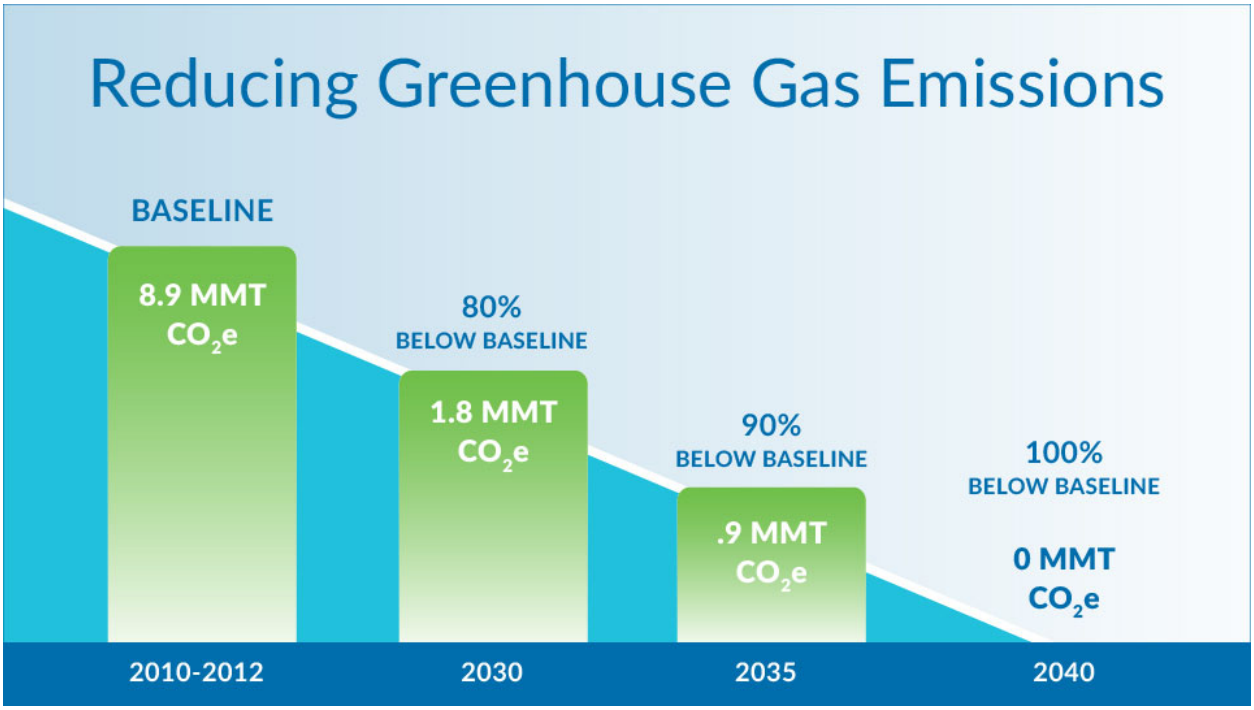
Due to these complexities of significant additional load, increased natural gas generation, and the dynamic nature of the multi-state process, PacifiCorp's CEP proposes two compliance pathways to meet the emissions targets set forth in HB 2021.

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

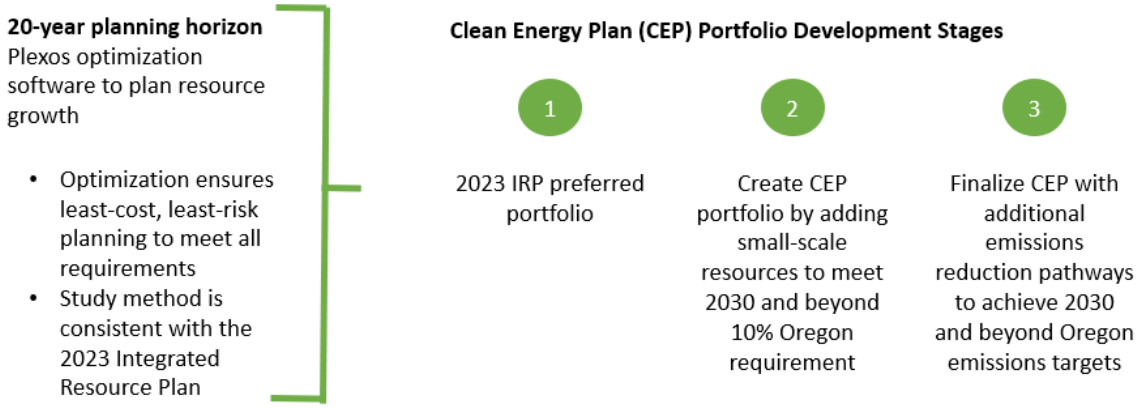
reductions plans for the company's customers in Oregon.

**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.

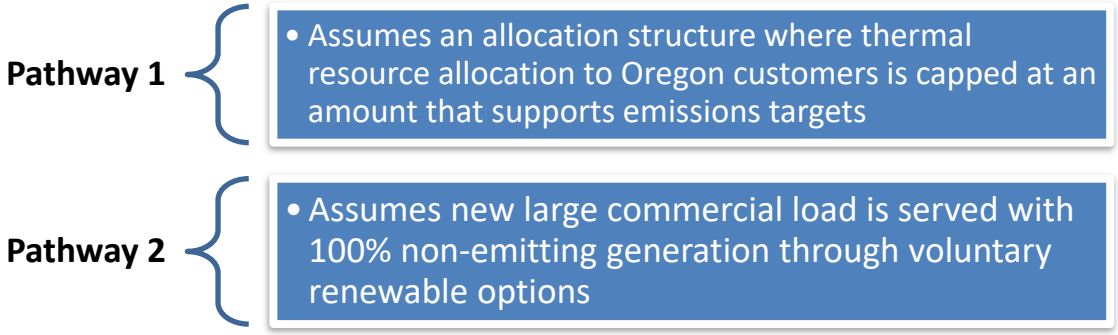
First, PacifiCorp expects substantial load growth for Oregon over the planning horizon. We project load that is 60 percent higher by 2030, and nearly 80 percent higher by 2040, than load in 2010 when the emissions baseline was set. While emissions per megawatt-hour are expected to decrease over time, 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**

| Category | Assumption |
|---|---|
| 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. |

[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/aq/Documents/GHGRP-MutlijurisdictionalProtocol.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 | Allowed utilities to propose alternative emissions factors where appropriate for ODEQ consideration and approval.<br><br>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. |
| Emission factors for unspecified resources | OAR 340-215-120(2)(a) requires the use of the default emission factor of 0.428 $MTCO_2e$/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 | 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:<br><br>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.<br><br>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.<br><br>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. |

| | |
|---|---|
| Multi-state jurisdictional accounting | 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.<br><br>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.<br><br>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:<br><br>**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.<br><br>**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.<br><br>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. |

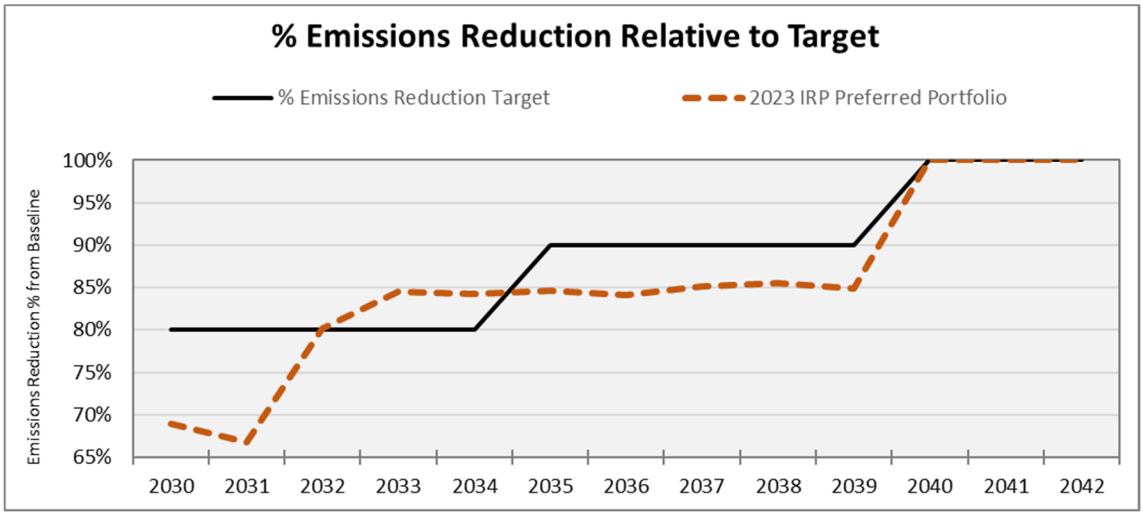
## Emissions Trajectories

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)**



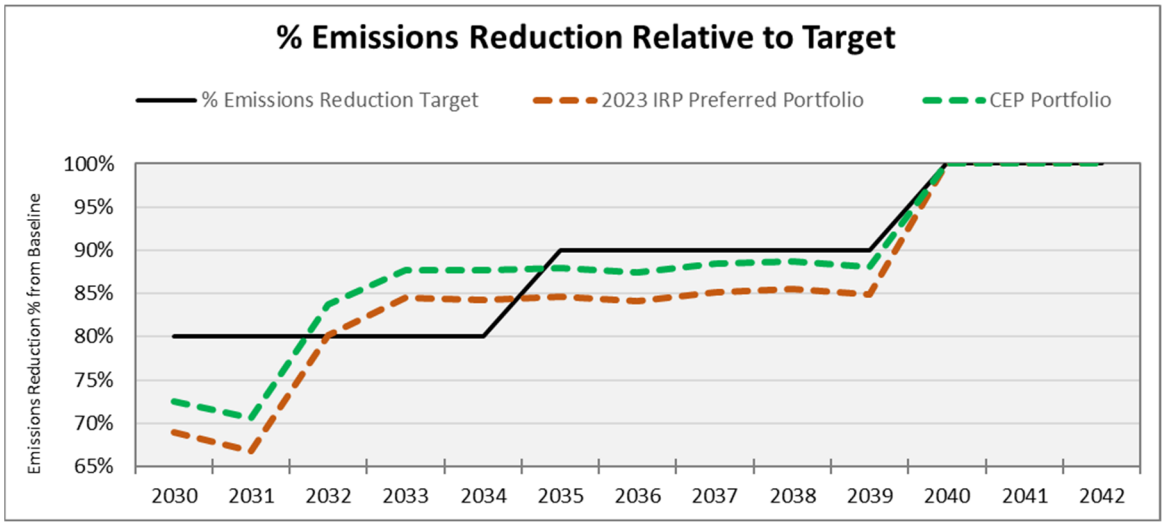

**RESULTS**

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.

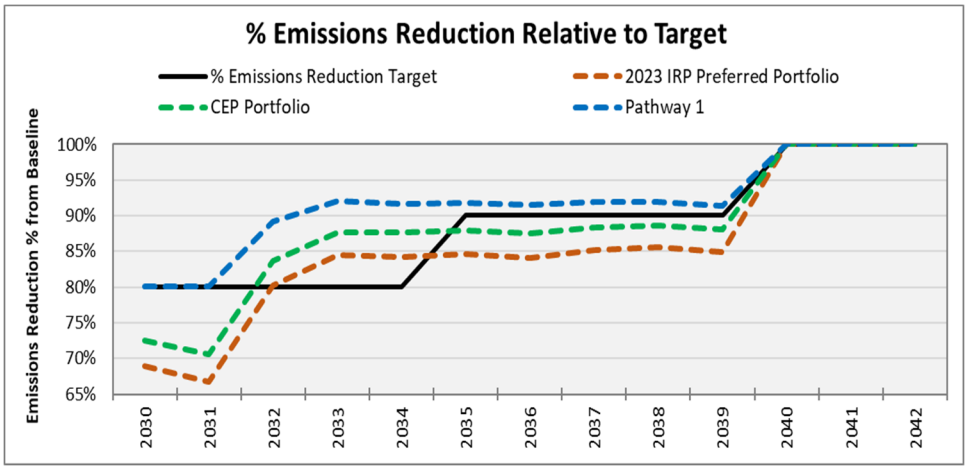
***Pathway 1***

**Pathway 1**

- Assumes an allocation structure where thermal resource allocation to Oregon customers is capped at an 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**

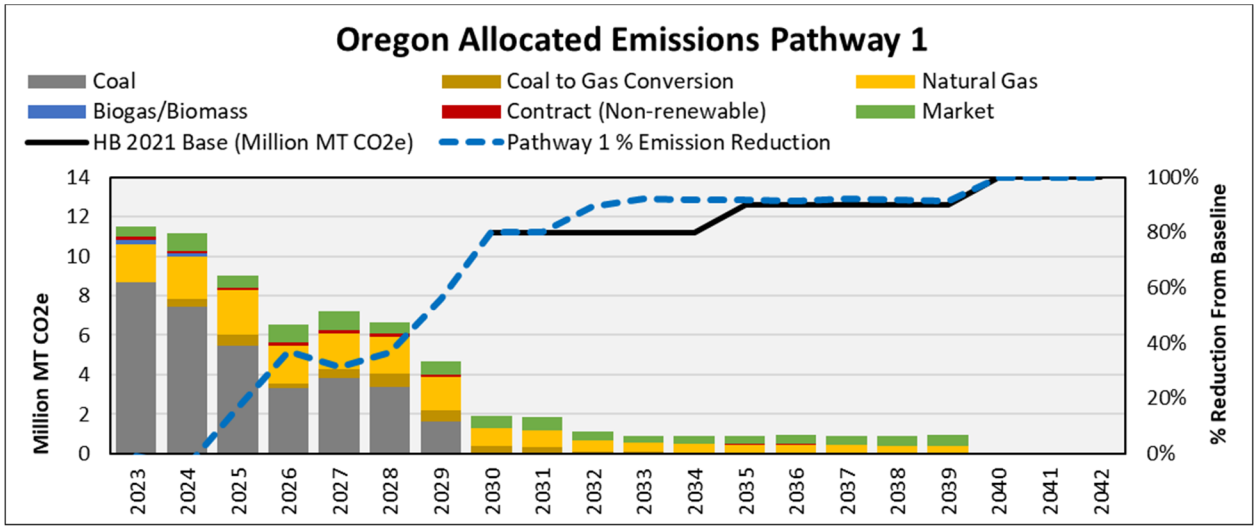



**RESULTS**

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**



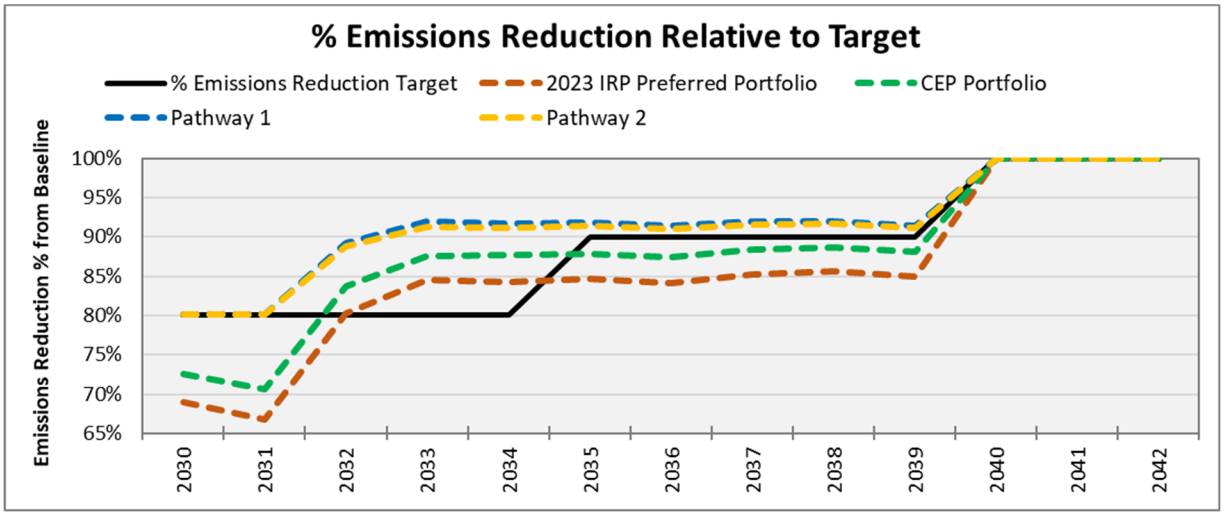
***Pathway 2***

**Pathway 2**

- Assumes new large commercial load is served with 100% non-emitting generation through voluntary renewable options

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**

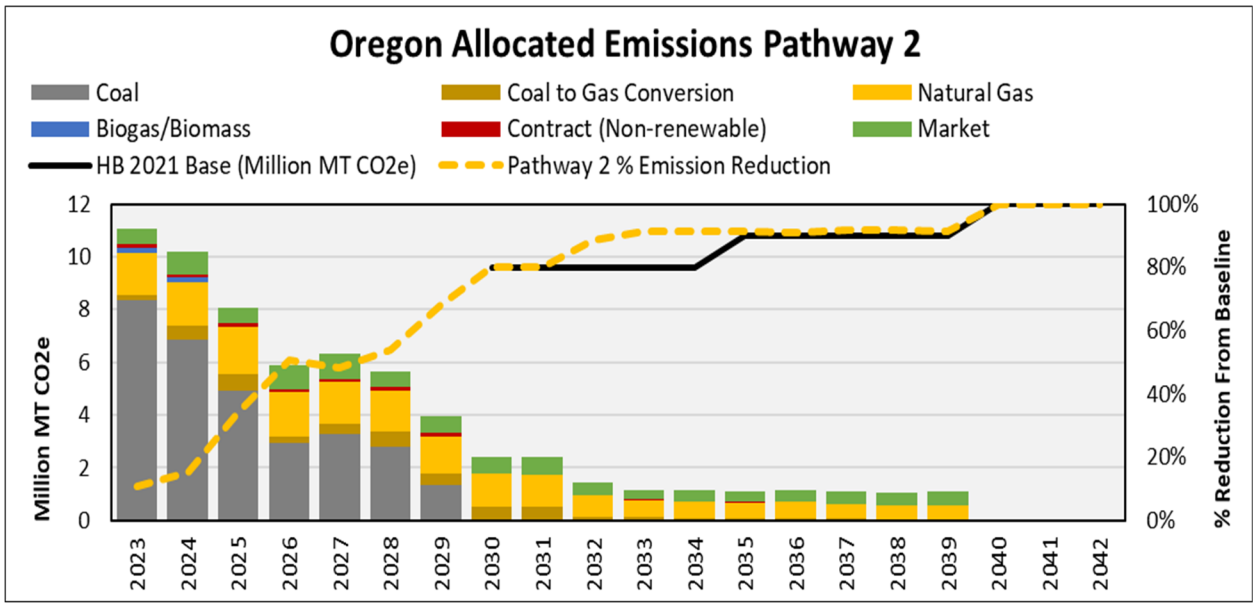



**RESULTS**

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 quicky 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**

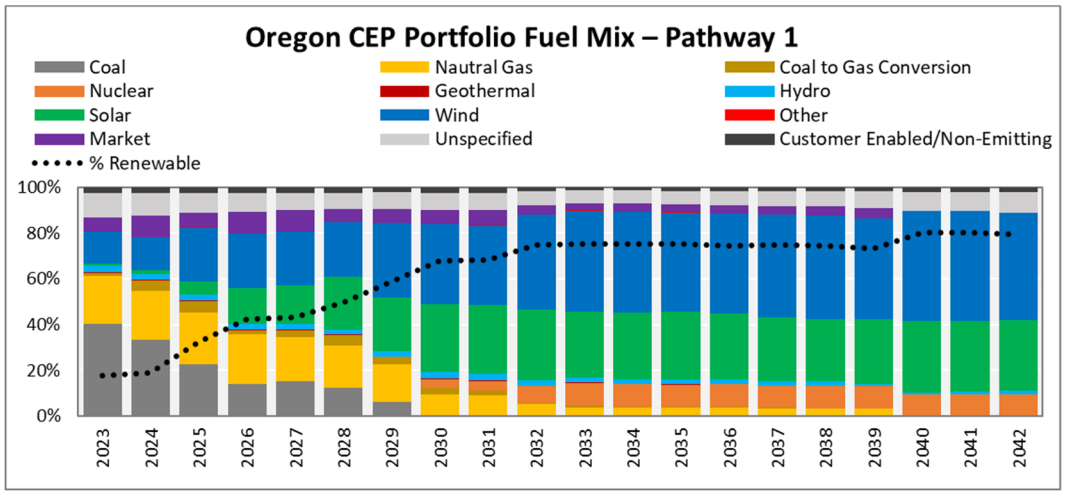
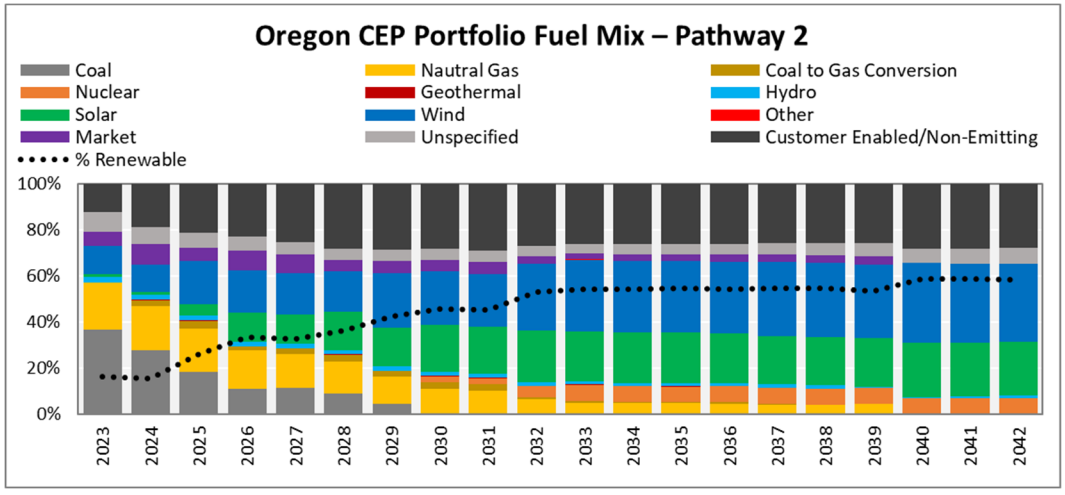



**Figure 18 – CEP Portfolio Oregon allocated RECs Pathway 2**




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)
[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 15$^{th,}$ 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 2021[73] requires any large-scale project[74] 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/Enrolled
HB4059 (oregonlegislature.gov)
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 | Relatively 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% |

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 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% |

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 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% |

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 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% |

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 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 | Relatively 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 | Relatively Moderate | 13% | 43% | 84% | 1% | 1% | 4% | 0% | 3% | 7% | 9% |
| CT 3601, Josephine County, Oregon | 857.3 | 5.2 | 166.3 | 32.7 | Relatively 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 | Relatively 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 | Relatively 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 | Relatively Moderate | 7% | 41% | 95% | 0% | 2% | 0% | 0% | 1% | 2% | 4% |
| CT 9706, Wasco County, Oregon | 851.4 | 7.7 | 110.5 | 34.5 | Relatively Moderate | 8% | 32% | 95% | 0% | 0% | 1% | 0% | 2% | 2% | 26% |
| CT 26, Jackson County, Oregon | 669.9 | 4.3 | 157.5 | 33.5 | Relatively Moderate | 12% | 55% | 95% | 0% | 2% | 0% | 0% | 0% | 3% | 4% |
| CT 9601, Jefferson County, Oregon | 204.9 | 1.1 | 179.0 | 31.9 | Relatively 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 | Relatively Moderate | 4% | 54% | 89% | 0% | 0% | 3% | 0% | 2% | 7% | 7% |
| CT 9703, Klamath County, Oregon | 637.7 | 5.0 | 126.6 | 33.9 | Relatively Moderate | 4% | 53% | 95% | 0% | 0% | 0% | 1% | 0% | 4% | 1% |
| CT 9503, Umatilla County, Oregon | 131.9 | 0.6 | 217.2 | 32.6 | Relatively 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 | Relatively Moderate | 9% | 39% | 92% | 0% | 1% | 0% | 1% | 1% | 5% | 5% |
| CT 3, Lane County, Oregon | 255.7 | 2.1 | 123.1 | 31.6 | Relatively Moderate | 9% | 42% | 95% | 0% | 0% | 0% | 2% | 1% | 1% | 5% |

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 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 | Relatively 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 | Relatively Moderate | 11% | 41% | 81% | 1% | 3% | 1% | 0% | 11% | 4% | 19% |
| CT 104, Benton County, Oregon | 882.8 | 3.8 | 233.8 | 34.2 | Relatively 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 | Relatively Moderate | 1% | 33% | 84% | 0% | 1% | 1% | 0% | 8% | 6% | 58% |
| CT 103, Benton County, Oregon | 682.4 | 1.9 | 358.6 | 33.0 | Relatively 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 | Relatively Moderate | 1% | 33% | 87% | 1% | 1% | 3% | 0% | 6% | 3% | 19% |
| CT 7, Coos County, Oregon | 399.0 | 1.3 | 315.8 | 33.3 | Relatively Moderate | 15% | 27% | 80% | 1% | 2% | 1% | 0% | 5% | 11% | 8% |
| CT 108, Benton County, Oregon | 458.8 | 1.2 | 392.7 | 31.3 | Relatively 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 | Relatively Moderate | 5% | 57% | 95% | 0% | 0% | 0% | 1% | 3% | 1% | 7% |
| CT 8, Coos County, Oregon | 1227.0 | 2.7 | 458.8 | 31.5 | Relatively Moderate | 4% | 44% | 83% | 0% | 0% | 2% | 1% | 3% | 11% | 11% |
| CT 9503, Crook County, Oregon | 79.8 | 0.5 | 159.8 | 34.9 | Relatively Moderate | 13% | 45% | 92% | 2% | 1% | 0% | 1% | 3% | 1% | 8% |
| CT 5, Deschutes County, Oregon | 206.0 | 2.0 | 102.5 | 31.5 | Relatively Moderate | 4% | 42% | 91% | 0% | 0% | 1% | 0% | 3% | 5% | 8% |
| CT 9503, Clatsop County, Oregon | 1136.5 | 2.9 | 387.4 | 32.2 | Relatively Moderate | 10% | 39% | 90% | 2% | 1% | 0% | 1% | 3% | 4% | 12% |
| CT 9502, Crook County, Oregon | 218.6 | 1.3 | 171.0 | 33.9 | Relatively 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 | Relatively Moderate | 4% | 36% | 92% | 0% | 1% | 2% | 0% | 2% | 2% | 27% |
| CT 5, Benton County, Oregon | 106.1 | 0.5 | 197.2 | 32.0 | Relatively Moderate | 5% | 46% | 88% | 2% | 0% | 6% | 0% | 2% | 2% | 6% |
| CT 17, Deschutes County, Oregon | 193.1 | 2.5 | 78.4 | 32.2 | Relatively 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 | Relatively Moderate | 7% | 33% | 92% | 0% | 0% | 2% | 0% | 2% | 4% | 9% |
| CT 9505, Clatsop County, Oregon | 1952.7 | 6.5 | 302.7 | 33.2 | Relatively Moderate | 2% | 33% | 87% | 0% | 0% | 1% | 1% | 2% | 9% | 10% |

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 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% |

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 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% |

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 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% |

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 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% |

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 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% |

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 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% |

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 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% |

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.

# 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% |

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

| 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% |

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

| 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.

*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

| 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% |

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

| 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% |

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

| 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% |

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

| 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% |

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

| 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% |

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

| 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.

*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

| 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% |

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

| 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, Marion 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% |

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

| 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