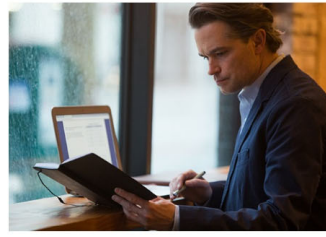


Clean Energy Plan Engagement Series

3rd Meeting

June 23, 2023



Clean Energy Plan Engagement Series

June 23, 2023, 1-4 p.m. PT

This meeting will be recorded

For a Better Meeting Experience



Spanish or ASL?

- Navigate to "Interpretation" at the bottom of Zoom
- Select "ASL" under Watch or "Spanish" under Audio
- If the interpretation icon is missing, try the "More" icon



Use Gallery View (icon at top right) when in group discussion



For technical support, chat "Tag G-D / E Source" as recipient, and send your message



- Questions are welcome at any time
- Please mute until speaking
- Speak by clicking the "Raise Hand" in the tool bar

Agenda

TIMING	TOPIC
1:00 p.m.	Purpose & Objectives
1:15 p.m.	Clean Energy Plan
1:30 p.m.	Resilience
2:30 p.m.	BREAK
2:40 p.m.	Community-Based Renewable Energy (CBRE)
3:20 p.m.	Resources Procurement
3:40 p.m.	Public Comment
3:45 p.m.	Wrap Up & Next Steps

Clean Energy Plan Engagement Series Purpose

Provide an integrated lens on clean energy planning with expanded learning opportunities to foster a deeper understanding of programs and outreach while gathering public input.

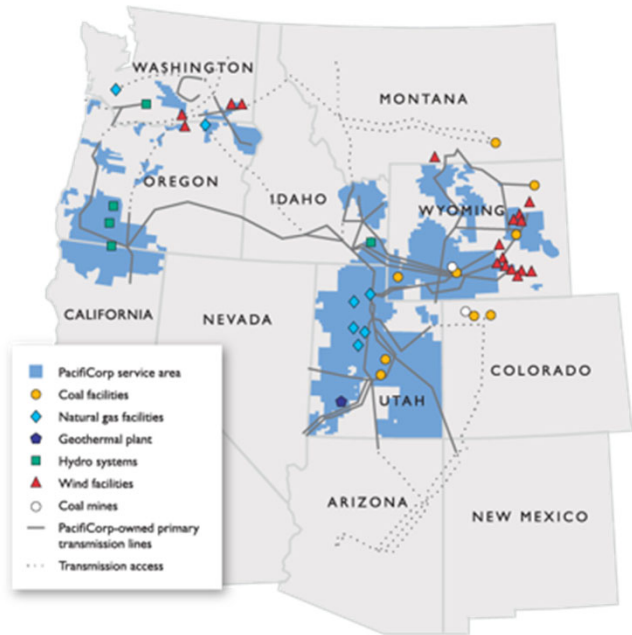
1. Brief on Clean Energy Plan (CEP)
2. Socialize clean energy pathways
3. Deepen understanding of:
 - Community Benefit Indicators (CBIs)
 - Community Benefits & Impact Advisory Group (CBIAG)
 - Resilience
 - Community-Based Renewable Energy (CBRE)

Clean Energy Plan



PacifiCorp - Meeting the Energy Needs of All Our Customers

Our planning is designed to meet customers' energy needs across six states



- PacifiCorp serves approximately 2 million customers across six states
 - Serves customers in Utah, Idaho and Wyoming as Rocky Mountain Power
 - Serves customers in Washington, Oregon and California as Pacific Power
- Extensive generation, transmission and distribution infrastructure across the west
- PacifiCorp continues to decarbonize its entire system and expects to be emissions free by 2050
- Full decarbonization will require the development of new technologies to ensure reliability, and PacifiCorp has been actively exploring viable options

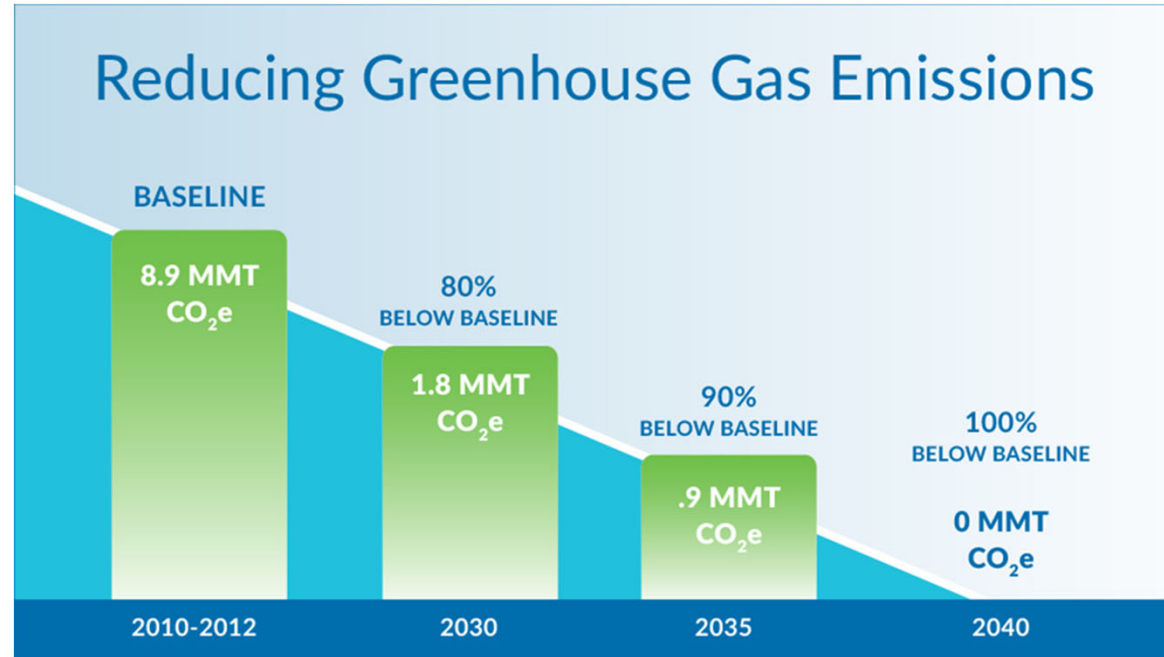
Meeting Oregon's Clean Energy Requirements

PacifiCorp's baseline emissions are 8.9 MMT CO₂e, which will be reduced to:

- 1.8 MMT CO₂e by 2030;
- 0.9 MMT CO₂e by 2035; and
- 0 MMT CO₂e by 2040

PacifiCorp's analysis shows that an 80 percent reduction in emissions by 2030 is possible under PacifiCorp's 2023 Integrated Resource Plan.

- PacifiCorp identified two pathways to meet this interim energy goal
- The eventual goal of zero emissions will require new technology by 2040



Long-term Resource Study Plan



20-year planning horizon
Plexos optimization
software to plan resource
growth

- Optimization ensures least-cost, least-risk planning to meet all requirements
- Study method is consistent with the 2023 Integrated Resource Plan

Clean Energy Plan (CEP) Portfolio Development Stages

1

2023 IRP preferred
portfolio

2

Create CEP portfolio
by adding small-
scale resources to
meet 2030 and
beyond 10% Oregon
requirement

3

Finalize CEP with
additional emissions
reduction pathways
to achieve 2030 and
beyond Oregon
emissions targets

Seven Components to PacifiCorp's Oregon Clean Energy Plan (CEP)

- Community Engagement
- Community Benefit Indicators
- Resiliency
- Community-Based Renewable Energy
- Resource Planning
- Greenhouse Gas Emissions Analysis
- Action Plan



Action Plan

- Continued **community engagement** on key Clean Energy Plan topics and other program and planning processes
- Monitor and evaluate **Community Benefit Indicators**, with continued refinement
- Develop a working definition of resiliency, resiliency goals, and metrics for **system and community resilience**
- Update the **Community Based Renewable Energy Potential Study and Community-Based Renewable Energy Action Plan** following stakeholder engagement
- 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
- Look for ways to leverage other **public funding sources**



Action Plan

- 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
- Evaluate appropriate criteria for assessing bids in **specific small-scale renewable resource request for proposals**
- **Expand transmission capacity** to interconnect renewable resources from across the West
- 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**



A person with their back to the camera, wearing a grey long-sleeved shirt over a light blue t-shirt and dark shorts, stands in a field of tall grass. Their arms are outstretched horizontally. In the background, a line of wind turbines is visible against a bright, cloudy sky. The overall scene conveys a sense of openness and resilience.

Resilience

What are Resilience & Reliability?

They mean keeping the power on day-to-day and during extreme events

Resilience

the capacity to withstand or to recover quickly from difficulties; toughness.

Resilience in energy:
preparedness of the system
and its ability to cope with
various hazards that can
disrupt electricity.

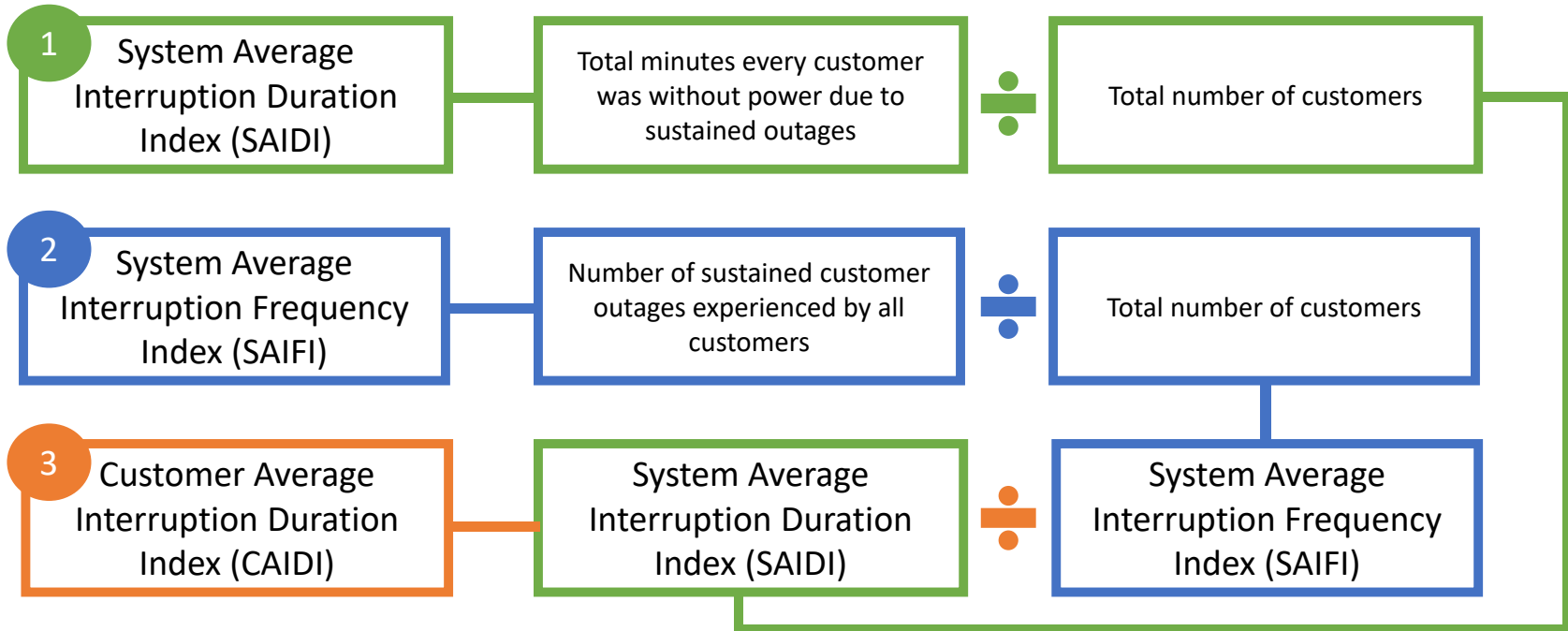
Reliability

*the quality of
being trustworthy or of
performing consistently well*

Reliability in energy:
availability of the electric
system when it is needed.

Measuring Reliability

Three traditional metrics used for reliability

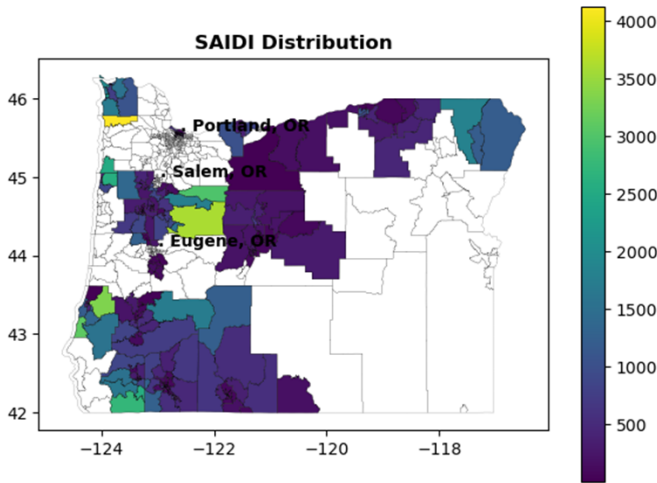


** Note: These metrics can be calculated at many spatial scales! **

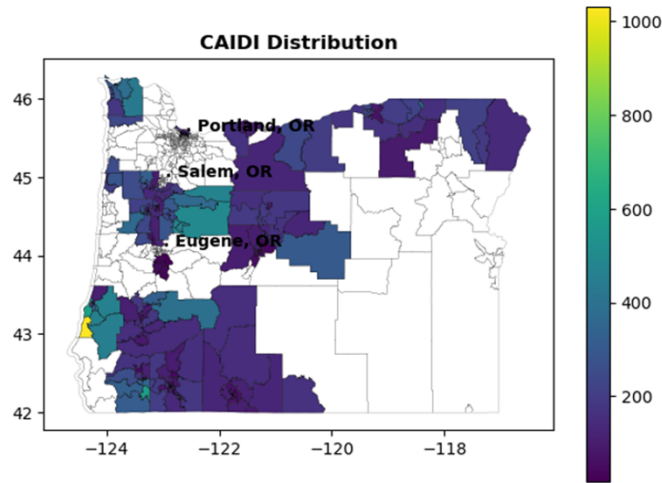
Reliability Metrics per Census Tract

Reliability metrics per census tract in 2022

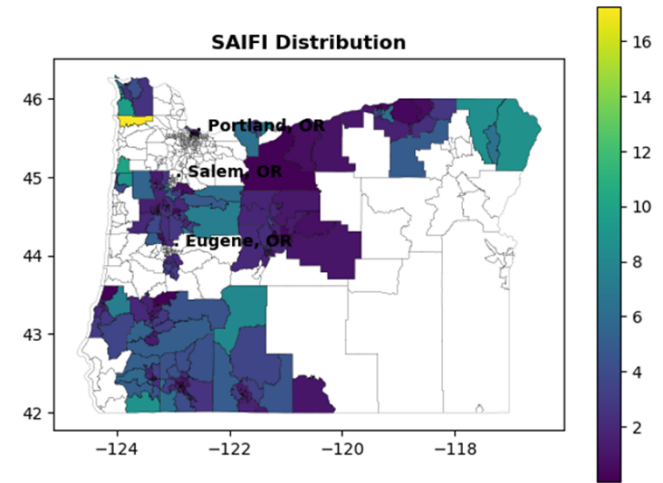
SAIDI per Census Tract (2022)



CAIDI per Census Tract (2022)

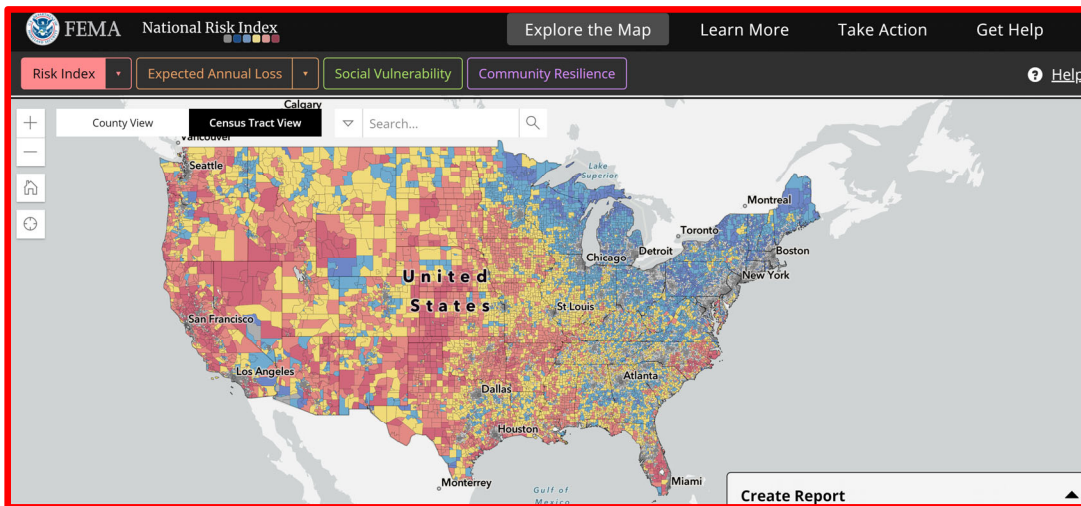


SAIFI per Census Tract (2022)

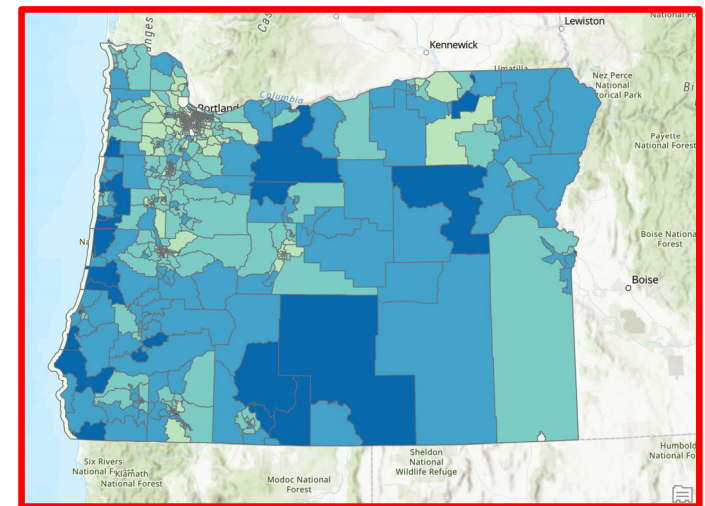


CAIDI = Customer Average Interruption Duration Index
SAIDI = System Average Interruption Duration Index
SAIFI = System Average Interruption Frequency Index

The National Risk Index (NRI) is a dataset produced by the Federal Emergency Management Agency (FEMA) at the census tract level. It includes information on social vulnerability, resilience, susceptibility to natural disasters and other pertinent information.



Social Vulnerability Score (Oregon)



Source: [National Risk Index for Natural Hazards | FEMA.gov](https://www.fema.gov/national-risk-index)

Calculating Community Resilience


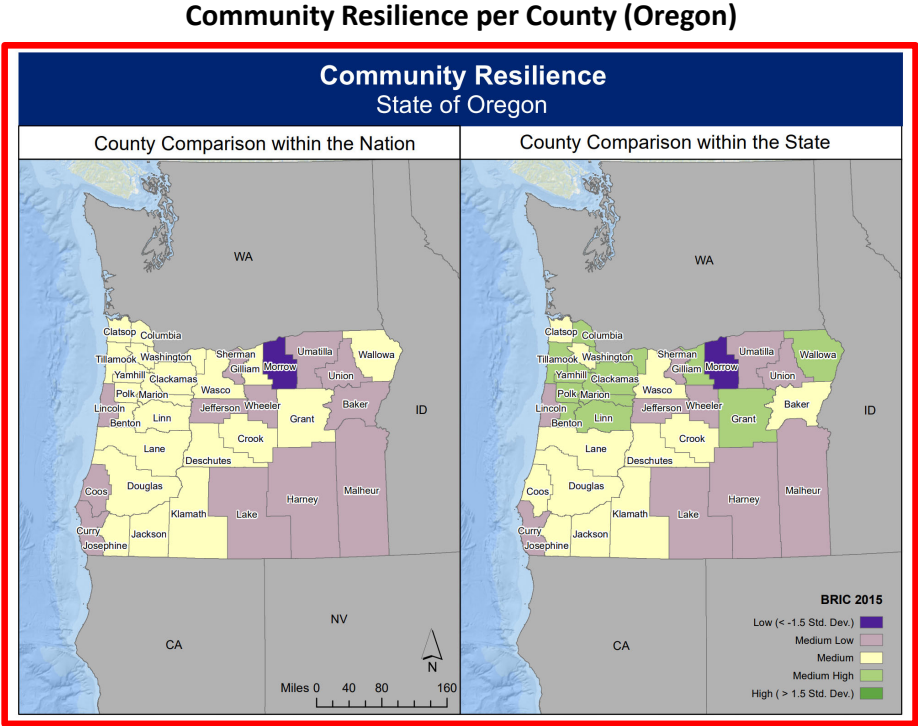
BRIC

Baseline Resilience Indicators for Communities

Community resilience (BRIC) is calculated using 49 variables in these grouping categories:

Variable Grouping Categories
Human Well-Being/Cultural/Social
Economic/Financial
Infrastructure/Built Environment/Housing
Institutional/Governance
Community Capacity
Environment/Natural

Mapping of Composite

SOURCE: Table 4: Variable categories used for community resilience.

Social Vulnerability – what variables are used?

SoVI® — Social Vulnerability Index

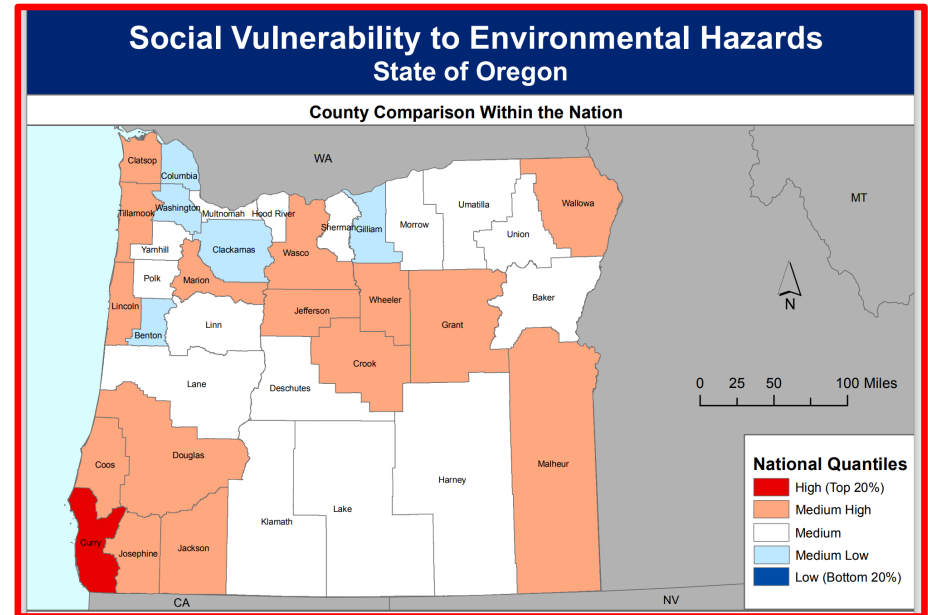
Social Vulnerability (SOVI) is calculated using 29 total variables in these grouping categories:

Socioeconomic Variable Groupings
Wealth
Race
Age
Ethnicity
Special Needs
Gender
Service Sector Employment

Mapping of Composite



Social Vulnerability per County (Oregon)



SOURCE: Table 2: Variable categories used for SOVI.

Reliability and NRI Results (Top 5 Census Tracts)

We associated the resilience, social vulnerability, and reliability data to each census tract to assess the link between these metrics.

Table 1: Reliability and NRI Data for Top 5 Census Tracts (lowest reliability).

Census Tract I.D.:	County:	SAIDI:	CAIDI:	SOVI Rating:	SOVI Score:	RESL Rating:
41057960100	Tillamook	4,126	239	Relatively Moderate	34.86	Relatively Moderate
41043030300	Linn	3,595	494	Relatively Moderate	33.08	Relatively Moderate
41011000200	Coos	3,334	459	Relatively High	35.16	Relatively Low
41011001000	Coos	3,095	1,031	Relatively High	37.39	Relatively Low
41047010600	Marion	2,967	473	Relatively High	35.64	Relatively Moderate

CAIDI = Customer Average Interruption Duration Index
SAIDI = System Average Interruption Duration Index
RES = Resilience
SOVI = Social Vulnerability

Resilience Summary



Findings

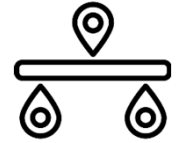
- We did not identify a strong correlation between social vulnerability and resilience and the reliability metrics.
- These findings indicate that there is “something” there that we need to continue to flesh out.
- Findings show we need to continue with newer datasets and get SME input on potentially important variables.



Expected Next Steps

- Additional analysis with new demographic data from the U.S. Census Bureau (education, poverty rate, health)
- Develop composite resilience scores for each circuit and census tract
- Evaluate more granular composite resilience scores (smaller than census tract)
- Finalize strategy to incorporate resilience analysis into project planning and prioritization

Resilience – Timeline



Overview: Below is a timeline for resilience related milestones and the current status of the work. Milestones correspond to the current & next steps work on the previous slide.

Milestone:	Target Completion:	Notes:
➤ Complete utility resilience analysis	3/1/23	✓ Complete
➤ Complete community resilience analysis	7/1/23	✓ Complete
➤ Develop composite community-utility resilience scores	8/1/23	▪ In progress
➤ Complete major event root cause analysis for high-risk areas	12/1/23	▪ In progress
➤ Incorporate community-utility resilience scores and risk drivers into CEP program planning	3/1/24	▪ In progress

BREAK

A young boy with a backpack and arms raised in front of wind turbines. The boy is wearing a plaid shirt and light-colored pants. He has a purple backpack. The background shows several wind turbines against a clear blue sky. A red triangle is in the top right corner.

Community Based Renewable Energy

Community Based Renewable Energy

What We Will Cover Today

1. CBREs in the CEP
 - a) Brief Overview
 - b) Potential Study Results
 - c) Commitments and Actions
2. Focus on CBRE Resilience Pilot and “Group 2” potential
3. “Survey” to explore community interest in CBREs
4. What Comes Next

Community Based Renewable Energy

Community-Based Renewable Energy (CBRE) projects are defined as one or more energy systems, and may be combined with microgrids, storage systems, demand response measures, or energy-related infrastructure that promotes climate resiliency

CBRE projects must:

1. Directly benefit 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

The Company has developed an Initial CBRE Potential Study and Initial CBRE Action Plan

- 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 identified ~95 MW of future potential CBRE capacity over the period from 2024–2030



Inventory-Informed “Potential Study”

PacifiCorp reviewed existing programs and projects and new channels to identify 95MW of future potential CBRE opportunities. The potential has been organized into Two Groups:

1) Group 1- Potential from Existing Programs: Total ~ 92 MWs

- a. Community Solar: Customers participate in offsite solar for a monthly bill reduction. Total 65 MWs
- b. Blue Sky Program: Long-running voluntary renewables add-on. Total 4.3 MWs
- c. Energy Trust-Identified Opportunities: Small hydro + Community-focused solar. Total ~ 23 MWs

2) Group 2 - Small Scale, Community-Based Solar + Storage projects: Total ~ 3.5 MWs

- a. Based on experience from the PacifiCorp’s Community Battery Storage Pilot program and OR Dept. of Energy Community Renewable Energy Project grant funding requests
- b. This portion of the potential reflects the possibility for small-scale, community-based solar + storage opportunities
- c. These may include opportunities like “resilience hubs”, small solar connected micro-grids or other community-focused renewable opportunities

Community-Based Renewable Energy

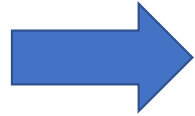
Action	Description
Resilience Partnership with the Energy Trust of Oregon	PacifiCorp also hopes to complement and support both existing program offers and the energy resilience program offerings under development by ETO
Federal Grant Opportunities	Continue to look for opportunities to leverage external funding for CBRE projects to decreased energy burden, access to low-cost capital, among other benefits
Future Request for Proposals	The company intends to issue a request for proposals for small-scale renewable projects, to which CBRE projects may qualify
CBRE Grant Pilot Straw Proposal	PacifiCorp plans to develop a straw proposal for potential expansion of the existing Community Resilience Battery Storage Grant Pilot
Updated CBRE Potential Study and Action Plan	PacifiCorp's actions above will inform an updated CBRE Potential Study

Straw Proposal for Grant Pilot Expansion

Current Battery Storage Grant Pilot for Critical Facilities in OR

Offering #1: feasibility studies to assess and recommend possible battery systems (and pricing)

Offering #2: Grant awards to fund purchase and installation of a battery system



Proposed CBRE Grant Pilot for Critical Facilities in OR (must include renewable energy)

Offering #1: feasibility studies to assess and recommend possible **solar + storage** systems (and pricing)

Offering #2: Grant awards to fund purchase and installation of a **solar + storage** system

Considerations/Topics for Input

- How should we focus initial efforts
- Focus on “depth or breadth”
- Utilization of resilience metrics
- Consideration of external funding opportunities
- Best way to gauge community interest in CBRE opportunities (CBRE “survey”)

Discussion about “Survey” of CBRE Interest

- 1. Continued Assessment of Needs and Opportunities (Expand the CBRE Potential Study)**
 - Continue to advance CBRE initiatives through community input and engagement groups
 - Develop and conduct a **survey** to further assess **community interest** in CBRE projects and initiatives
 - Update CBRE Action Plan based on continued learnings on CBRE project development
- 2. Develop straw proposal for expansion of the Community Resilience Battery Storage Pilot** focused on community resilience hubs and opportunities for better CBRE understanding
- 3. Explore opportunities to leverage public funding** to advance CBRE opportunities
- 4. Build tools and awareness to assist communities and stakeholders** in connecting to CBRE processes, initiatives, and programs as they develop

Areas for Oregon Community feedback/input

We are expanding feedback channels for CBRE input, including launching this survey that has the following questions:



1. Can you recommend ways that PacifiCorp can more effectively assess community interest in CBRE projects over time?
2. Do you have suggestions on how PacifiCorp can increase input from all communities?
3. How would you like to engage and provide feedback in this process moving forward? Do you have any examples of successful engagement approaches?
4. Are there specific tools you recommend to use to solicit input (e.g., email, web surveys, direct engagement, etc.)?
5. Should anything else be included in this survey?

<https://forms.office.com/r/sVcHxXKVLLe>

Please provide input by July 10, 2023

Next Steps – CBRE Action Plan Commitments

- 1. Continued Assessment of Needs and Opportunities (Expand the CBRE Potential Study)**
 - Continue to advance CBRE initiatives through community input and engagement groups
 - Develop and conduct a survey to further assess community interest in CBRE projects and initiatives
 - Update CBRE Action Plan based on continued learnings on CBRE project development
- 2. Develop straw proposal for expansion of the Community Resilience Battery Storage Pilot** focused on community resilience hubs and opportunities for better CBRE understanding
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Resource Procurement

Resource Planning

As a natural outgrowth of PacifiCorp's decarbonization trajectory over the past several IRP cycles, PacifiCorp's 2023 IRP positions the company to comply with HB 2021's decadal requirements

Over the 20-year planning horizon, PacifiCorp expects to add:

- 9,114 MW of new wind generation
- 7,855 MW of new solar generation
- Over 1,000 miles of new transmission assets to access renewable generation
- 500 MW of advanced nuclear generation from the Natrium™ demonstration project,
 - Plus, an additional 1,000 MW of advanced nuclear generation
- 1,240 MW of non-emitting peaking resources

Developing the last two technologies will be critical to manage the transition from our coal/gas resources and minimize impacts to our employees and communities

Small-Scale Renewable (20 MW or less) requirement is 10 percent of the company's generation portfolio for Oregon

- Approximately 4.6 percent of this requirement may be met with existing small-scale renewable resources
- PacifiCorp will need to procure an additional ~5.4 percent, or 490 MW
 - This gap is anticipated to grow to 802 MW



PacifiCorp's 2023 Integrated Resource Plan (IRP) provides the basis for analyzing 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

Utility Scale

- 2023-2024 All-Source Request for Proposals
 - Aligns with needs identified in 2023 IRP
 - Designed to acquire and evaluate specific energy supply resources through the end of 2028

Small-Scale Renewables

- 490 MW need by 2030
- Anticipate issuing a Small-Scale Request for Proposals with bids due late 2024 or early 2025

NOTE: Resources that participate in the next generation interconnection cluster study could be contracted in the year 2025 with a COD by December 31, 2028. The participation window will be open from April 1 to May 15, 2024. PacifiCorp recommends that developers determine interconnection requirements as soon as possible so that projects can interconnect and reach commercial operation by 2030



All new resources are required to have an interconnection study that outlines an interconnection schedule consistent with the proposed commercial operation date of the resource. PacifiCorp's small generator (20 MW or less) interconnection process is identified in its OATT. <https://www.oasis.oati.com/ppw/index.html>

Request for Proposals (RFP) Process Steps	Standard all-source (AS) RFP schedule (hypothetical)	Small-scale renewable (SSR) proposed – starting 9/30/23	Comment
Open Oregon docket and notify market	06/30/2023	09/30/2023	Start later, shorter duration
Hire Independent Evaluator (IE)	09/02/2023	10/14/2023	Leverage prior RFPs
Final RFP with Oregon commission	12/09/2023	11/25/2023	Informational; public comment completed in CEP engagement
Issue RFP to market and publicize	03/24/2023	11/26/2023	More time for bid prep
Cluster study window closes	05/16/2024	05/16/2024	Same
Cluster study results	11/12/2024	11/12/2024	Same
Benchmark and market bids received	11/21/2024 01/12/2025	11/27/2024 11/27/2024	Combined, single deadline
Bid evaluation complete	04/07/2025	02/05/2025	Avoids benchmark process and PLEXOS durations
File IE report and FSL with Oregon commission	06/23/2025	03/17/2025	No sensitivities; no public comment
Complete contract negotiations	11/15/2025	04/07/2025	Standard contract
Guaranteed commercial operations date	12/30/2028	12/30/2028	

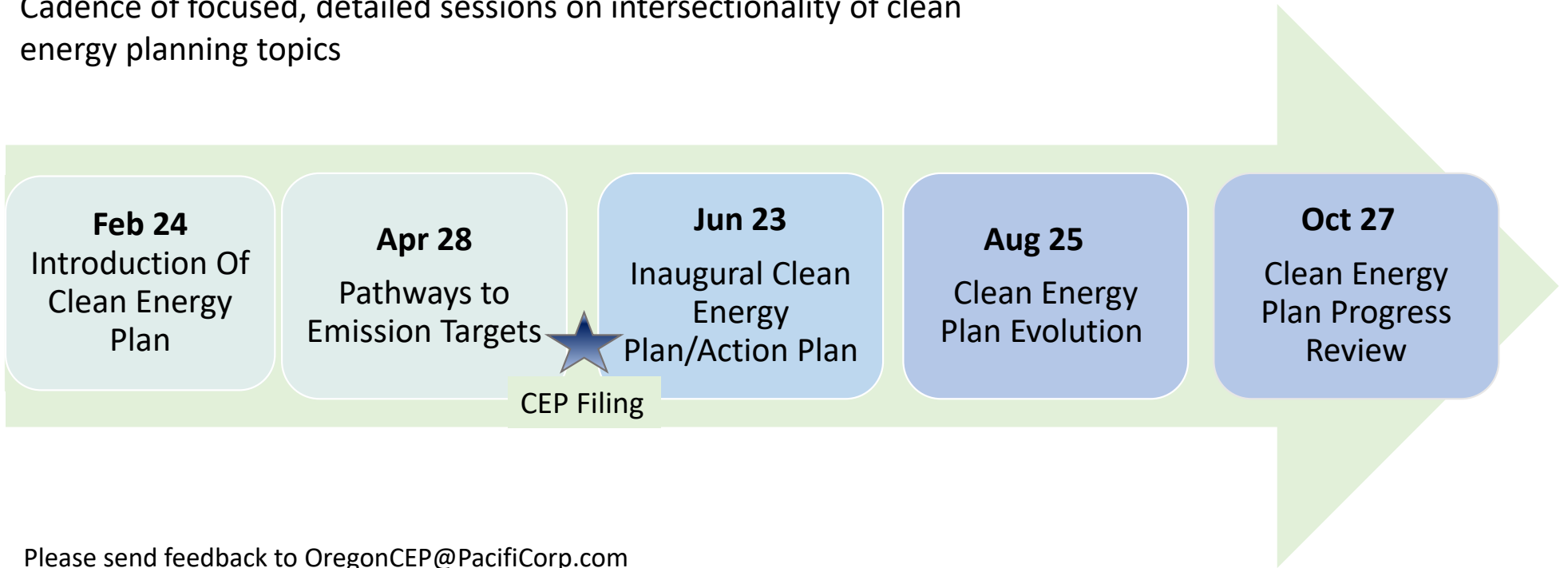
Process Step	AS RFP Duration starting Hypothetical	SSR Duration – proposed starting 9/30/23	Comment
IE hiring process	64 days	14 days	No RFP to select IE
Regulatory approval process	217 days	42 days	Includes IE selection process
RFP issuance to bid receipt:	294 days (market bids) →market bids received 52 days after benchmarks	367 days	More notice time for bidders to participate in the cluster study.
Bid evaluation	162 days (all bids) →after separate 51 day benchmark evaluation process	70 days	Benchmark and market bids evaluated together.
Regulatory approval for FSL	82 days	40 days	Simple filing with IE Closing Report
Contract negotiation	77 days	63 days	Relies upon standard contract
Development/ construction period	1,184 days (~3.25 years)	1,322 days (3.6 years)	More time for development and construction

Process Step	2022AS RFP	SSR - proposed
Bid Fees	Bids up to 5 MW: \$1,000 per MW base bid Bids > 5MW: \$15,000 per base bid fee Free and reduced-price bid alternatives available	To be determined after incorporating feedback. All PPA bids must be fixed price, 25-year term
IE	PA Consulting contract > \$1m	No change
Security	Project Development Security: \$200.00/KW Performance Security: \$100.00/KW LC, cash or parent guarantee	To be determined after incorporating feedback.
Price Scoring	Provided by PLEXOS	Provided by excel cost model.
Non-price Scoring	7% of non-price score (1.7 out of 25 points) attributable to equity criteria (local labor, MBE/WBE contractors and suppliers) 20% attributable to contracting viability 40% attributable to project deliverability	To be determined after incorporating feedback.
Contracting	Negotiated based on proforma redlines	Standard form

Public Comment

Clean Energy Plan Engagement Series

Cadence of focused, detailed sessions on intersectionality of clean energy planning topics



Please send feedback to OregonCEP@PacifiCorp.com

Appendix