

Distribution System Plan Part Two

Oregon Public Utility Commission - Special Public Meeting

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DSP Vision, Goals and Strategies

Corporate Strategy	Decarbonize	Electrify	Perform		
DSP Vision	21st century community-centered distribution system				
DSP Goals	Advance environmental justice goals	Accelerate DER adoption	Maximize grid benefits		
DSP Strategic Initiatives	Empowered communities Enabling equitable participation in the clean energy transition through human-centered planning and community engagement	Modernized grid Optimizing a grid platform that is safe, secure and reliable through current and future grid capabilities	Resilience Strengthening the grid's ability to anticipate, adapt to, withstand and quickly recover from disruptive events	Plug and play Improving access to DER investments needed to accelerate customers' clean energy transitions through such activities as hosting capacity analysis	Evolved regulatory framework Evolving the regulatory framework needed to support utility investment in customer- and community-centered solutions

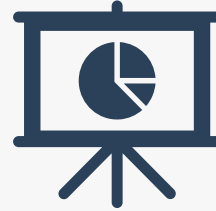
DSP... Let's Get Started

Learning Objectives for Part 2

- How and where utilities are forecasting load growth, DER, and EV adoption.
- How and where utilities identify areas of the distribution system which need investment.
- How utilities consider and evaluate various investments to address grid needs.
- How utilities have evaluated non-wires solutions pilot concept proposals.
- How utilities' community engagement plans were implemented.
- And finally, what investments utilities are planning in the next several years.

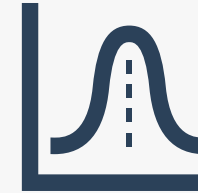
Chapter 1

**Distribution
system planning
overview**



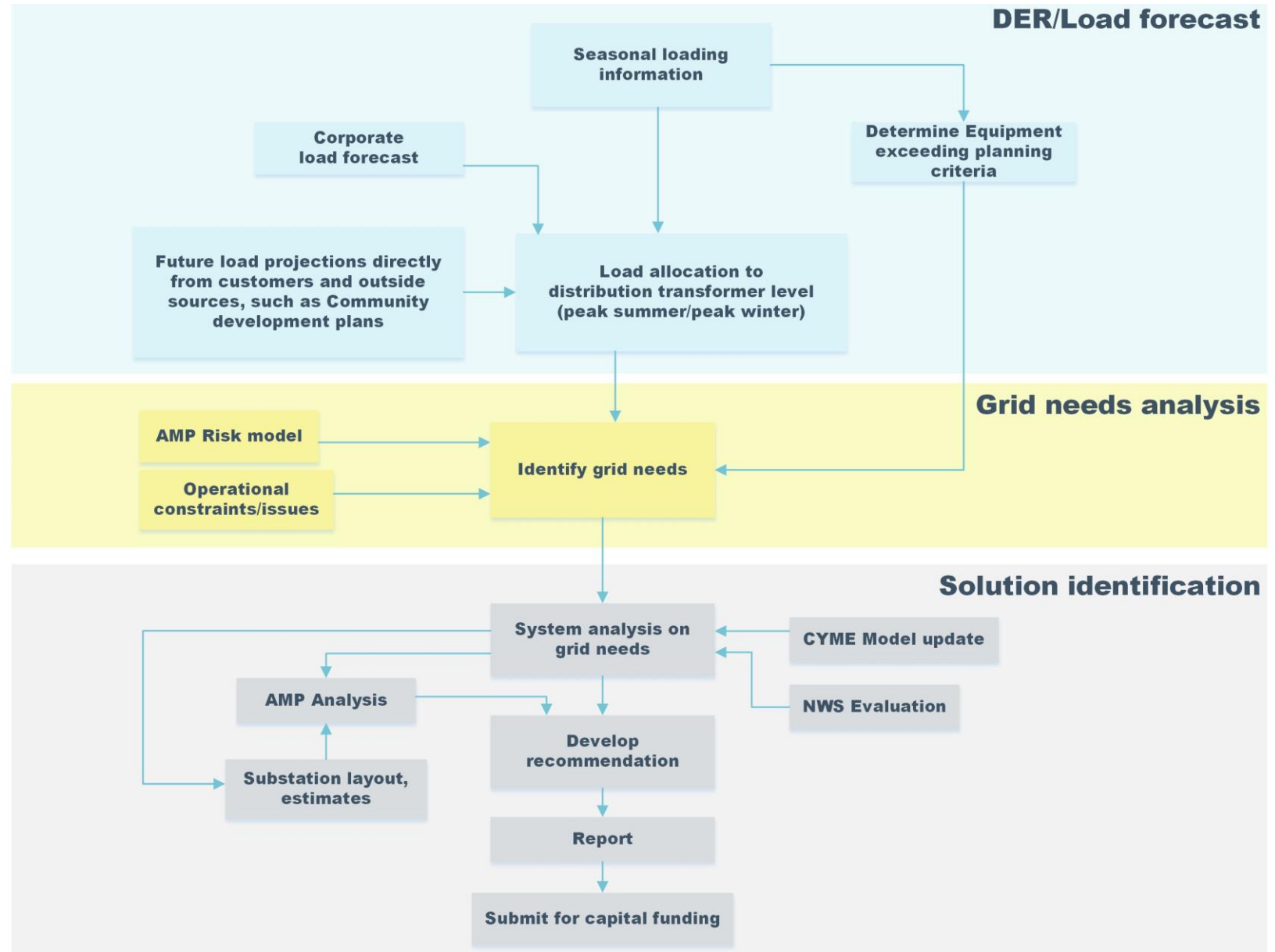
Discusses our existing and future distribution system adequacy analysis

Describes how our distribution grid analyses account for normal and abnormal conditions



Reviews the established guidelines that are used to evaluate system conditions in the near- and long-term

Current Planning Process



Chapter 2

Empowered communities: human-centered design and planning



Discusses the need for and development of a portfolio-based program approach to how we conduct community outreach and community engagement across our organization

Describes why community engagement requires a commitment to an iterative approach in how it is conducted and competency in who conducts it



Acknowledges that PGE continues to learn from community partners on how to best show up for and engage EJ communities and those that serve and advocate for them

What we did during DSP Part 2?



What we heard

Top Themes:



Trust



Community



Finance

Appreciation

- Accessible facilitation and format
- Real world examples
- Progression and level setting of topics
- NWS and DER stacking

Opportunities

- Compensation
- Duration of meetings and advance notice of meeting times
- Establish a regular schedule/meeting cadence
- Clarity on how participation affects PGE policies and goals
- Need a broader array of people in workshops

Chapter 3

Load and DER forecasting



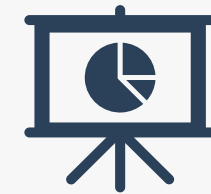
Provides corporate load forecasting process and drivers

Describes current bottom-up load forecasting methods

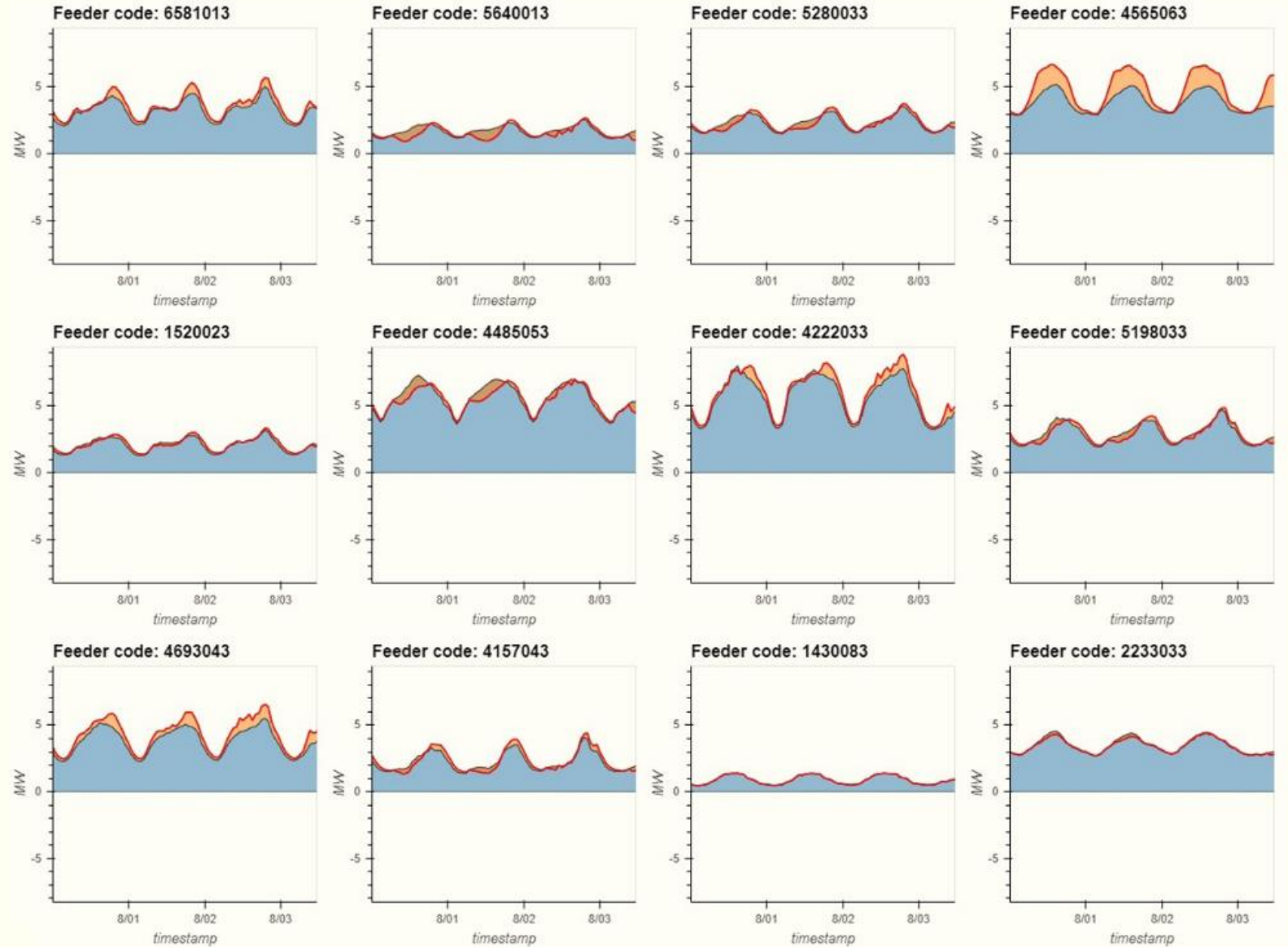


Describes DER forecasting methods


Delivers DER forecasting results at the granular substation level



Example of Feeder-level Gross & Net Load Forecasts




Solar PV Locational Adoption with DEI and Resiliency Index Overlay



DEI

- Energy burden
- Housing type
- Households without internet
- Households with disabilities



Resilience

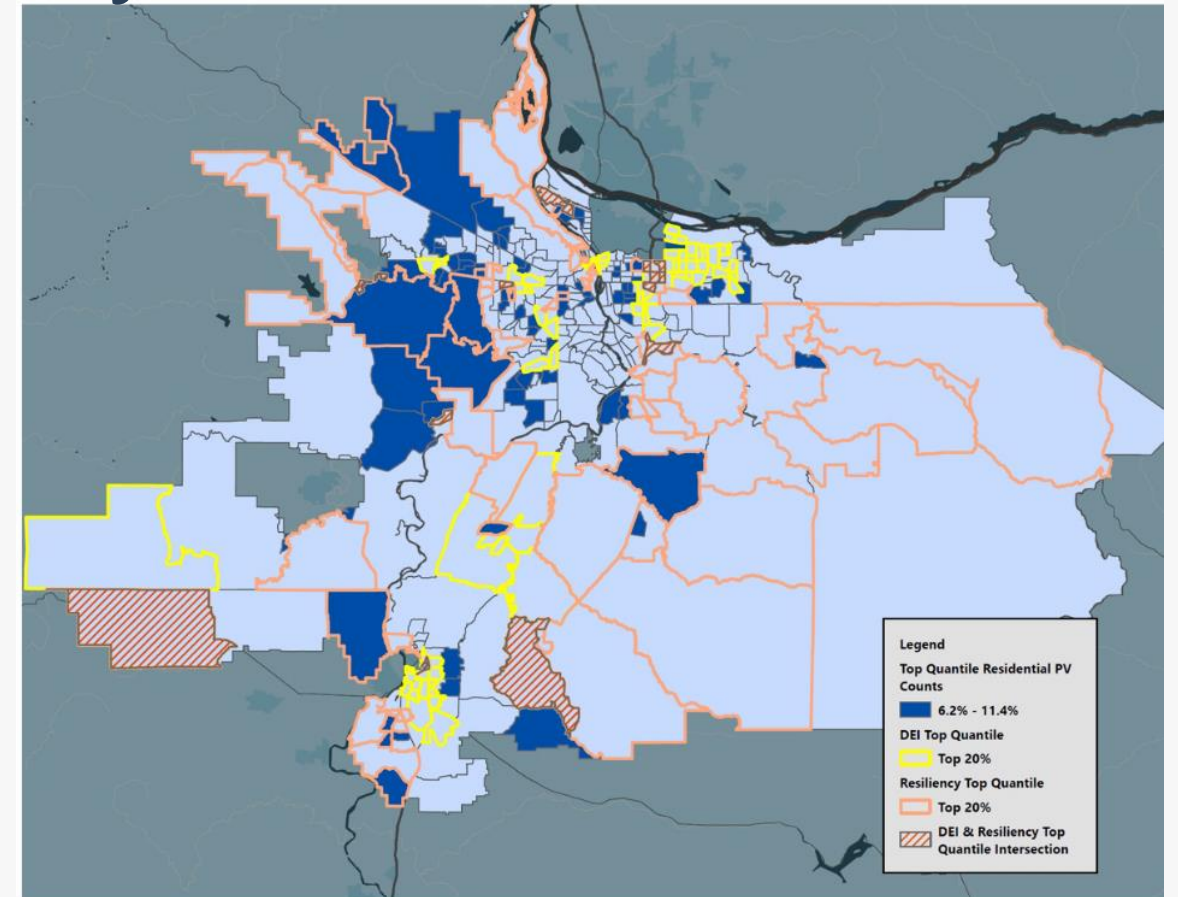
- Proximity to environmental hazard waste
- Respiratory hazard index
- Ozone



Environmental

- Outages (hours of power lost at substation)
- Outages (hours of power lost at transmission)
- Seismic risk

← Quality control of data sets & statistical analysis →



Chapter 4

Grid needs analysis



Describes the analytical framework for identification of grid needs

Discusses how we assess risk within the distribution system and develop programs to address risk



Describes how grid needs are ranked and prioritized according to the Distribution Planning Ranking Matrix

Identifies the 12 grid needs that were prioritized in this planning cycle



Distribution Planning Ranking Matrix

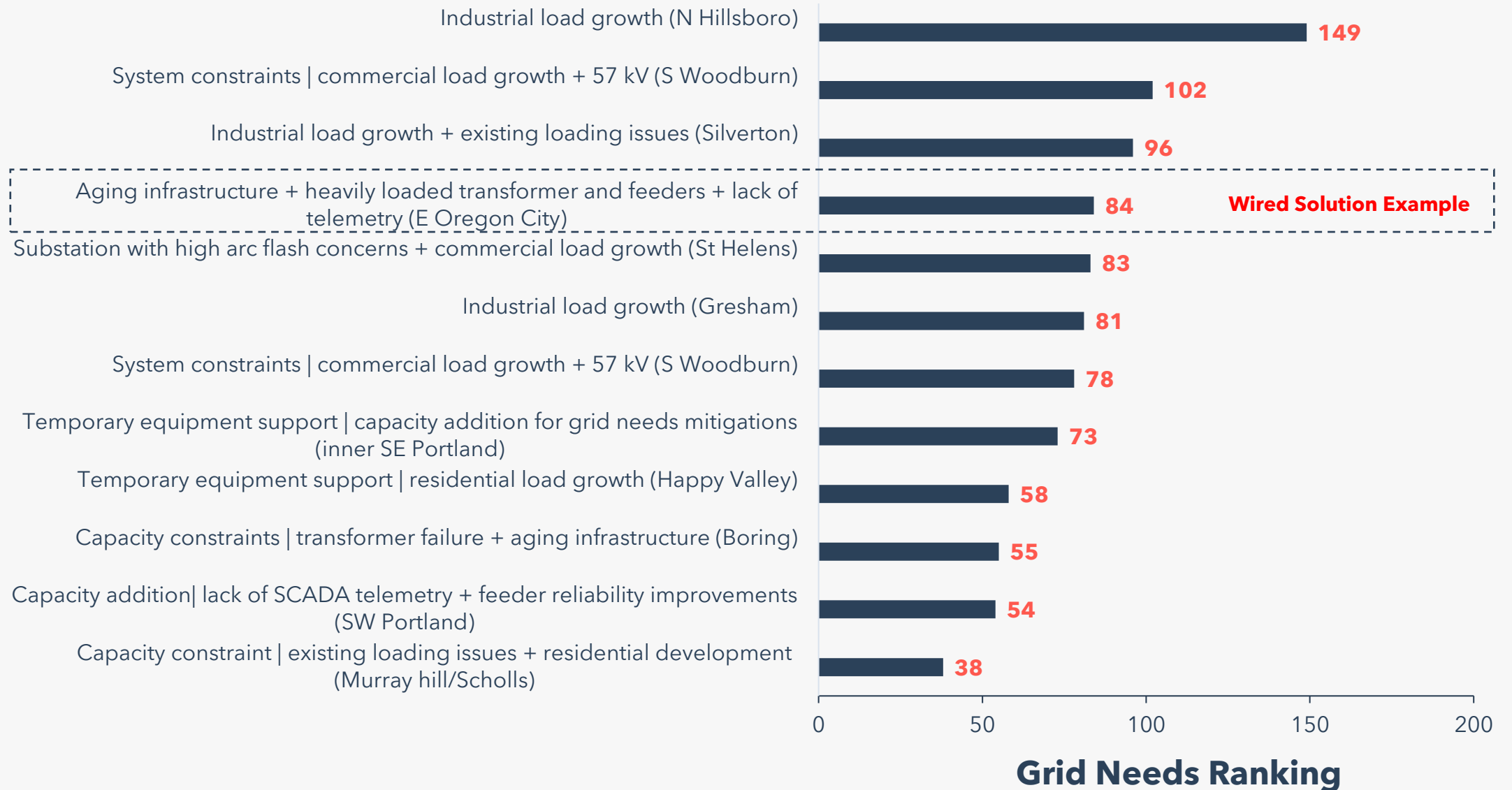
PGE's Distribution Planning Ranking Matrix is continuously evolving to account for the changing planning environment.

Based on the current ranking criteria, the grid needs listed below will be re-evaluated in future planning cycles



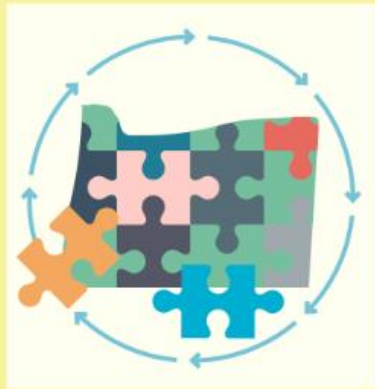
2021 Ranked Grid Needs

List of Grid Needs



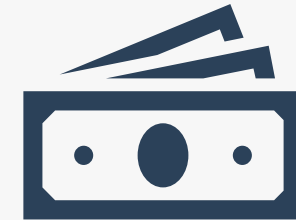
Chapter 5

Solution identification



Describes the system studies that are performed to further understand and characterize the prioritized grid needs

Describes the benefit-cost analysis framework for evaluating discretionary projects



Delivers the scoring and ranking of recommended solutions for inclusion in the 2023 capital plan

Ranking Matrix



Five levels of prioritization



Considers loading &

- Asset health
- Safety
- Customers



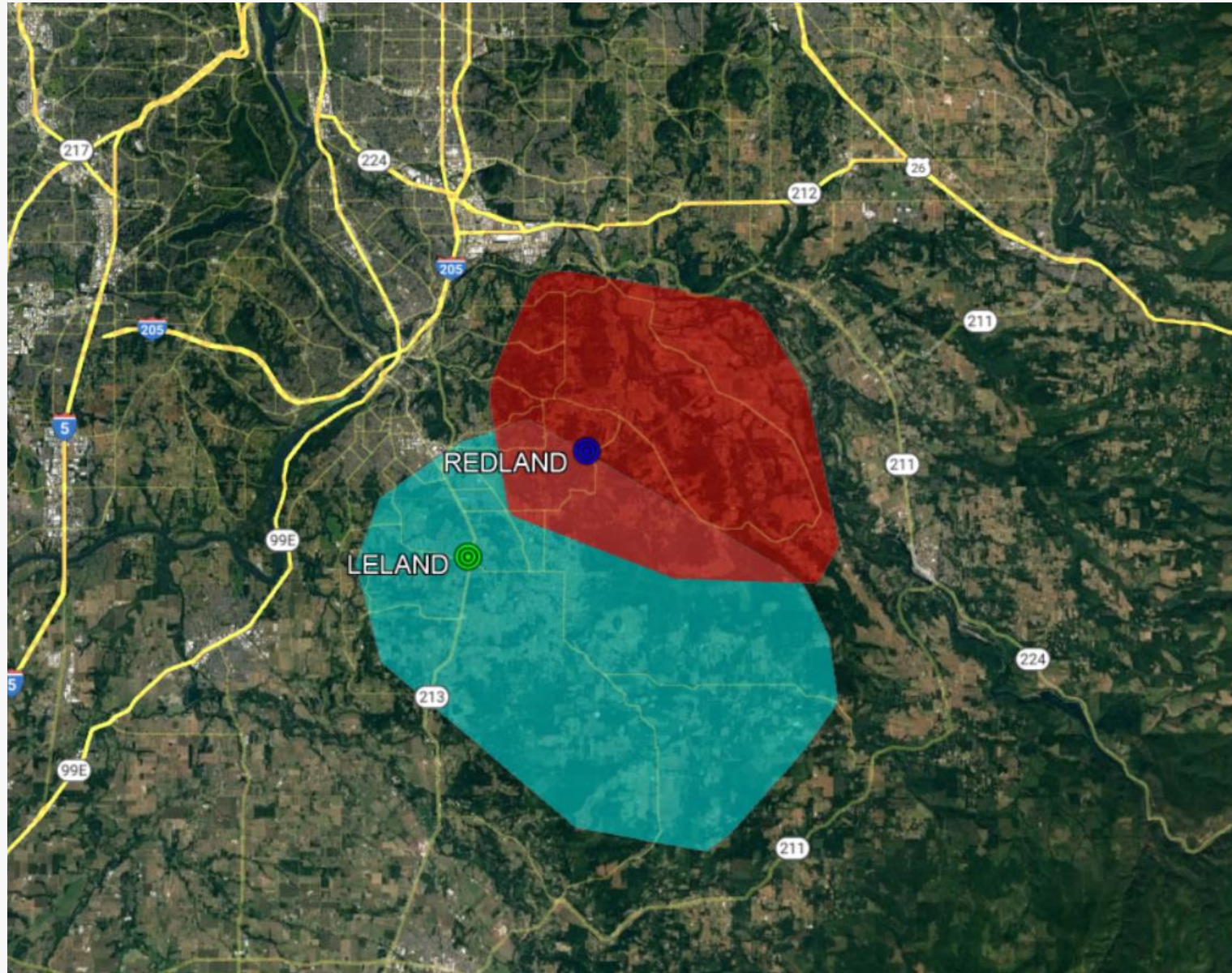
Multipliers for prioritizing
at each Level

Example Solution Identification

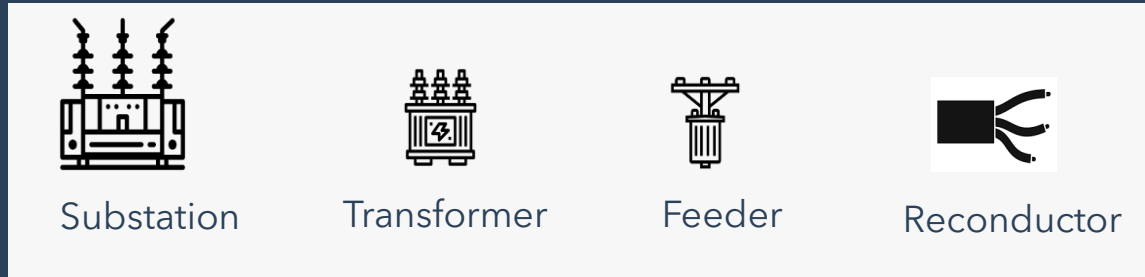
Leland-Substation & Redland-Substation grid needs:

- Heavily loaded equipment
- Aging infrastructure
- Lack of SCADA telemetry

4th-Highest ranked grid need



Solution Identification Example



- Redland substation
- Leland BR1 substation transformer
- Leland-Carus feeder
- Leland-Beavercreek feeder
- Redland-Redland-13 feeder



Aging infrastructure and lack of SCADA (telemetry)

Exceeding Planning Criteria

When multiple grid needs are adjacent to each other they are combined into ONE Grid Need to develop a SOLUTION

Chapter 6

Non-wires solutions



Demonstrates our commitment to supporting our communities through innovative offerings like non-wires solutions and finding ways to maximize community benefits

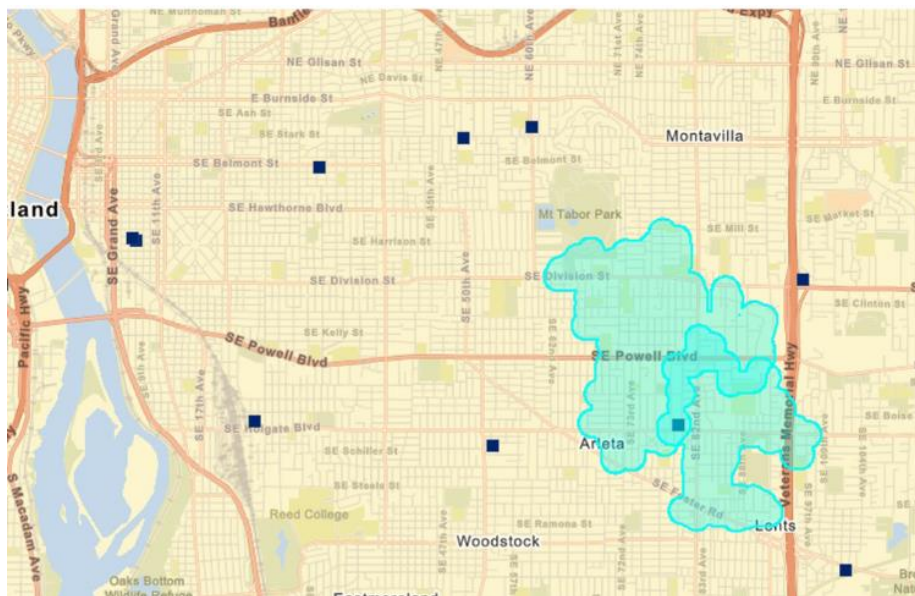
Describes the proposed process flow for our two pilot concepts that can act as a blueprint for future NWS engagements



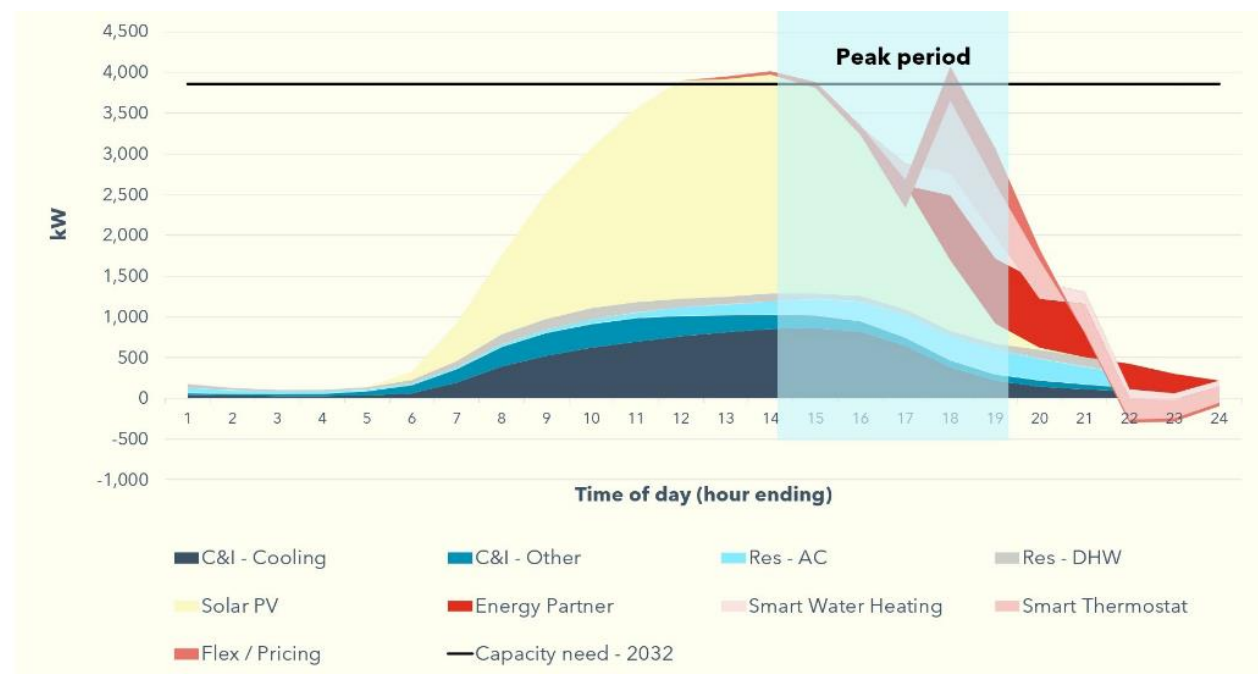
Delivers concept proposals for two NWS – identify over 7 million annual kWh of energy efficiency, 3-4 MW demand response, and over 5 MW of customer-sited Solar + Storage

NWS Example - Eastport

AREA SERVED BY THE EASTPORT-PLAZA FEEDER

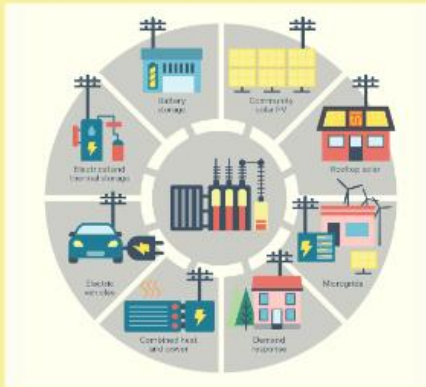


COMBINED EFFICIENCY, FLEX LOAD & SOLAR PV PEAK DAY SHAPE



Chapter 7

Near-term action plan



Summarizes the investments in the distribution system that address the 12, prioritized grid needs

Provides an overview of investments in the distribution system that are being made to address other drivers, such as grid modernization



Highlights areas where regulatory reform could influence the investment decision-making process

High Level – DSP Action Plan

Investment Summary (\$M, incurred)	2023	2024	2025	2026	Total
Traditional T&D Investments for Customers, Reliability, Safety and Compliance	\$ 285.0	\$ 285.0	\$ 285.0	\$ 285.0	\$ 1,140.0
Prioritized Grid Needs (included in Traditional T&D investments)	\$ 55.3	\$ 56.3	\$ 87.1	\$ 28.7	\$ 227.4
Grid Modernization Investments	\$ 40.0	\$ 40.0	\$ 40.0	\$ 40.0	\$ 160.0
Total T&D & Grid Mod Investments	\$ 325.0	\$ 325.0	\$ 325.0	\$ 325.0	\$ 1,300.0

Note: Investments may change considerably depending on regulatory and other priorities

Grid Modernization Investments

Grid modernization investments

Investments into customer DER portal needed to develop a customer DER device management platform, enhance customer billing and settlements, streamline interconnections and customer communications

Design of a Virtual Power Plant with expansion capabilities needed to meet HB 2021 targets

Investments for planning and engineering capabilities needed to enhance PGE's AdopDER model, development of a Next Generation Planning Tool, DER data management systems, and updates to cost-benefit model and tools for NWS

Investments into grid management systems for ADMS for critical infrastructure and distribution automation (DA)

Investments into sensing, measurement, and automation, telecommunication and cybersecurity

Long-term Actions

DG-readiness updates for system protection

EV charging readiness

Utility incentives for operator role

Comparable treatment of NWS and VPP and traditional investments

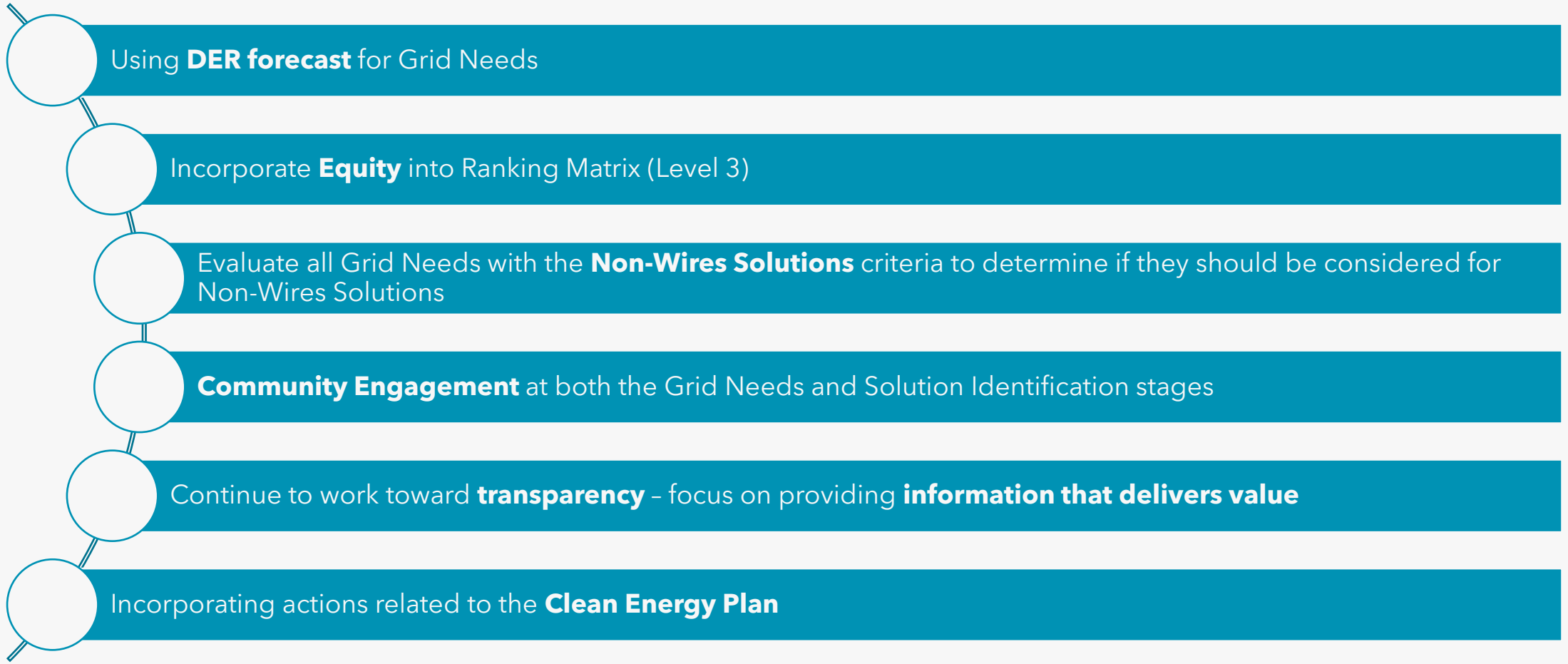
Distributed energy resource cost-effectiveness

- Consistency and alignment
- Robust decision-making framework
- Operational efficiencies
- Program development and implementation

Continued Transformation



Future State



Coordinating Plans

Engagement and outreach with regulators, stakeholders, partners, communities, and customers through community-based workshops, technical partnership meetings and the Community Benefits & Impacts Advisory Group (CBIAG)



Clean Energy Plan (CEP)

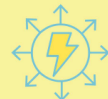
Purpose: Reports emissions reduction progress; defines regular progress and compliance actions. Emerging requirements: resilience, community energy projects and benefits.

Timeline: March 2023

Differences: Communicates PGE's vision through the lens of HB 2021 requirements.

Inputs: IRP action plan; actual and forecasted emissions.

Outputs: Forecast emissions by year; action plan.



Distribution System Plan (DSP)

Purpose: Details vision, goals, and strategic initiatives for the distribution system, develops community engagement (CE) strategies, and DER forecasting and load.

Timeline: August 2022

Differences: Accelerates DER adoption; maximizes grid benefits.

Inputs: Distribution load forecasting; DER and TE/BE scenario forecasting; cost-effectiveness assumptions; locational forecasting and action plan for T&D and DERs.

Outputs: System and feeder-level DER and load forecast; CE Plan; NWS action plan.



Integrated Resource Plan (IRP)

Purpose: Identifies long-term resource needs; select best portfolio of resources to meet needs.

Timeline: March 2023

Differences: Less flexible process and less nimble than other plans.

Inputs: Existing resource characteristics; new resource characteristics.

Outputs: Action plan of system resource needs.

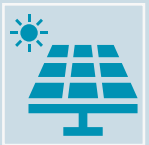
Next Steps



Meeting in early Fall to present 2024 Grid Needs



Begin Community Engagement process shortly after for 2024 Grid Needs



Evaluate 2024 Grid Needs for both Traditional (“Wired”) and Non-Wires Solutions (if applicable)

**Let's
meet the
future
together.**

You can reach us at:

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