Waiting Room

One moment please, while we wait for people to join

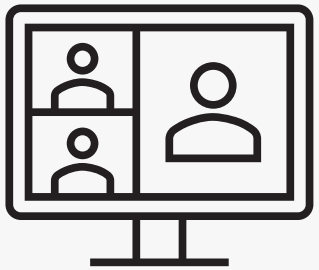
Song by artist:

Khruangbin

Khruangbin – People Everywhere (Still Alive)

Please use the QR code to check-in:
Name and Organization

Meeting Logistics

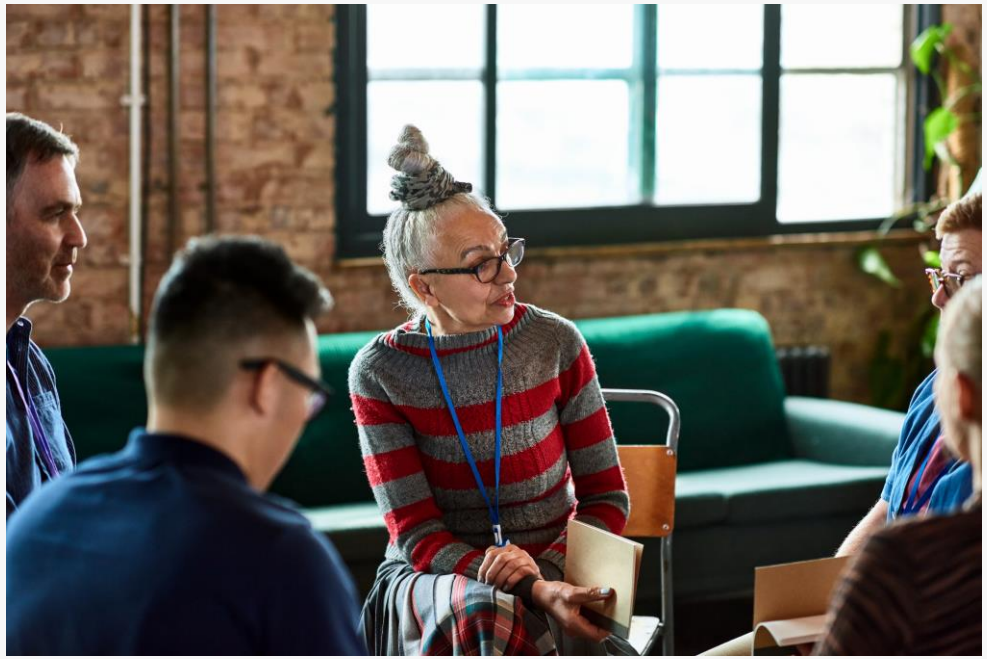


- We are available at: DSP@pgn.com
- Teams Meeting
  - Please click the meeting link sent to your email or Click here to join the meeting
    - +1 971-277-2317 (dial this number into your phone for best results)
    - PW: 885 018 032#
  - Please use Microsoft Edge or Google Chrome with Teams as it will give you the best experience
  - During the presentation, all attendees will be muted; to unmute yourself via computer, click on the microphone that appears on the screen when you move your mouse
  - To unmute yourself over the phone, press *6
  - If you call in using your phone in addition to joining via the online link, please make sure to mute your computer audio
  - There is now a meeting chat feature rather than a Q&A feature. Pull this up on the menu bar when you move your mouse and look for the little message icon

Operating Agreements

Establishing norms with our communities is foundational to building trust. To create a safe space, we establish common agreements such as respect, inclusivity and confidentiality.

- **Stay Engaged**
- **Speak your Truth (knowing it's only part of the truth)**
- **Share the Airtime. Step up, Step back.**
- **Experience Discomfort**
- **Expect and Accept Non-closure**
- **Confidentiality**



Agenda

8:00 – 8:05 am - Opening Remarks
(5 minutes)

8:05 – 8:15 am - DSP Document overview & Executive Summary
(10 min presentation)

8:15 – 8:40 am - Chapter 1: Distribution system overview
(20 min presentation 5 min Q&A)

8:40 – 9:00 am - Chapter 2: Distribution system vision
(15 min presentation 5 min Q&A)

9:00 – 9:10 am - First Break
(10 minutes)

9:10 – 9:40 am - Chapter 3. Empowered communities: Equitable participation in distribution decisions
(25 min presentation 5 min Q&A)

Agenda – Continued

9:40 – 10:15 am - Chapter 4. Modernized grid: Building a platform for participation
(30 min presentation 5 min Q&A)

10:15 – 10:25 am - Second Break
(10 minutes)

10:25 – 10:45 am - Chapter 5. Resilience: Managing disruptive events
(15 min presentation 5 min Q&A)

10:45 – 11:10 am - Chapter 6. Plug and play: Enabling DER adoption
(20 min presentation 5 min Q&A)

11:10 – 11:30 am - Chapter 7. Evolved regulatory framework: Incentives that motivate equitable DER enablement and adoption
(15 min presentation 5 min Q&A)

11:30 – 11:45 am - Chapter 8. Plan for Part 2 development
(10 min presentation 5 min Q&A)

11:45 am – 12:00 pm: Next Steps
(15 min)

12:00 pm - Adjourn

Quick Updates!

- Please visit us at www.portlandgeneral.com/dsp
- We'd like to hear from you
  - Online Feedback Form
- Important dates:
  - Friday, Oct 15, 2021 - DSP Part 1 filing date
  - Anticipated OPUC procedural dates
    - Tuesday, Oct 19, 2021 – UM 2005 docket update
    - Thursday, Dec 2, 2021 – Staff workshop to receive public comment
    - Thursday, Feb 24, 2022 – Special Public Meeting: IOUs present to the Commission, Commission considers acceptance of Part 1 filings
  - Monday, Aug 15, 2022 – DSP Part 2 filing date

Distribution System Plan (DSP) – Part 1

Angela Long, Manager, Distributed Resource Planning (DRP)

October 13, 2021

Initial DSP Rulemaking – Part 1

Filed on October 15, 2021

- **Baseline Data and System Assessment** provides a fundamental understanding of the current physical system, recent investments into the system, and the level of DERs on the system
- **Hosting Capacity Analysis** provides a map of the current distribution feeders and substations constraints where it is difficult to interconnect, and requires us provide options to enhance our interconnection planning processes needed to estimate of the amount of DERs that can be accommodated without significant upgrades
- **Community Engagement Plan provides a plan** describing how we will engage communities to develop Non-wire Solutions (NWS), as well as our engagement on DSP
- **Long-term Plan** presents our 5–10 year distribution system investment plans, and addresses broader goals related to maximizing reliability, customer benefits, and efficient operations of the grid

Our DSP Approach

7 DSP Partnership Workshops

Shared information, listened and gathered feedback needed to prepare, inform and implement our DPS

Community Engagement Plan

Partnered with community-based organizations (CBOs) to provide education, recruit and convene workshops, analyze and synthesize data, and provide recommendations (i.e., CCC, CEP, Unite Oregon)

In addition to the 7 DSP Partnership Workshops, we hosted 2 external community-based workshops: ~40 participants

Baseline Data

Established a definition for the distribution system, developed a data framework and template, completion of the baseline feeder map which integrates U.S. Census data

Hosting Capacity

Evolved our Net-metering map to the *Distributed Generation Evaluation Map*, which integrates U.S. Census & DER readiness data

Currently working to conduct the Hosting Capacity Analysis (HCA), which will exceed HCA Option 1 requirements

Long term Plan

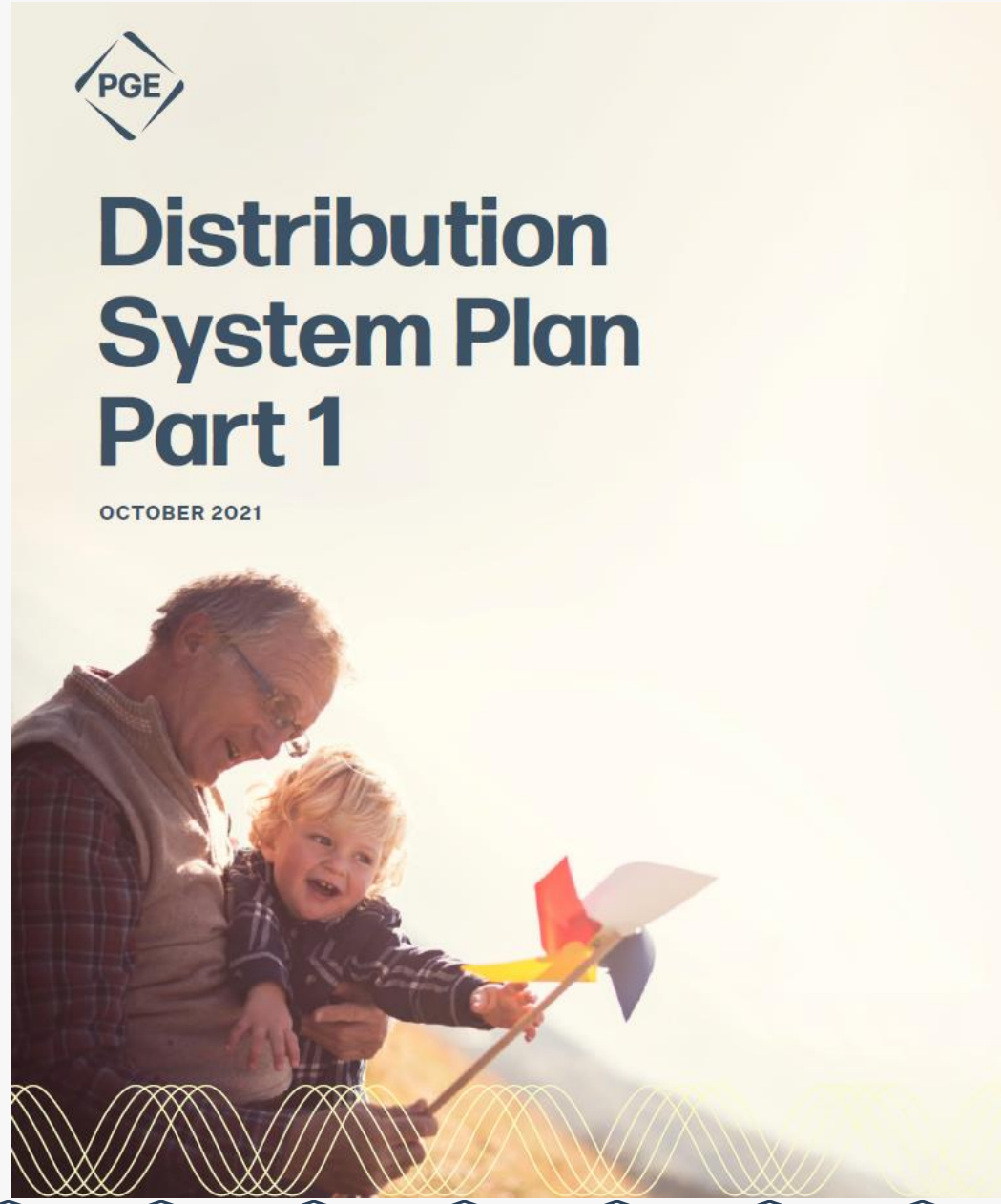
Established guiding principles, a vision and strategic focuses: Empowered Communities, Modernized Grid, Resilience, Plug and Play, and Evolved Regulatory Framework

Our DSP at a Glance

Shares our long-term vision, and key strategy and initiatives

Describes how we will do human-centered planning

Develops a community engagement plan







Chapter 1
Distribution System Overview

Andy Eiden
Senior Strategy & Planning Analyst

- A description of existing practices
- A summary of the utility's distribution system assets
- A discussion of distribution system monitoring and control capabilities
- A discussion of advanced controls and communication systems
- Historical distribution system spend for the past 5 years
- DER Data
  - Net-metering and small generation
  - EVs, charging stations, and TE infrastructure
  - DR
- Reliability Report

Baseline Data & System Assessment Requirements & Staged Evolution

To foster transparency and enable effective decision-making.

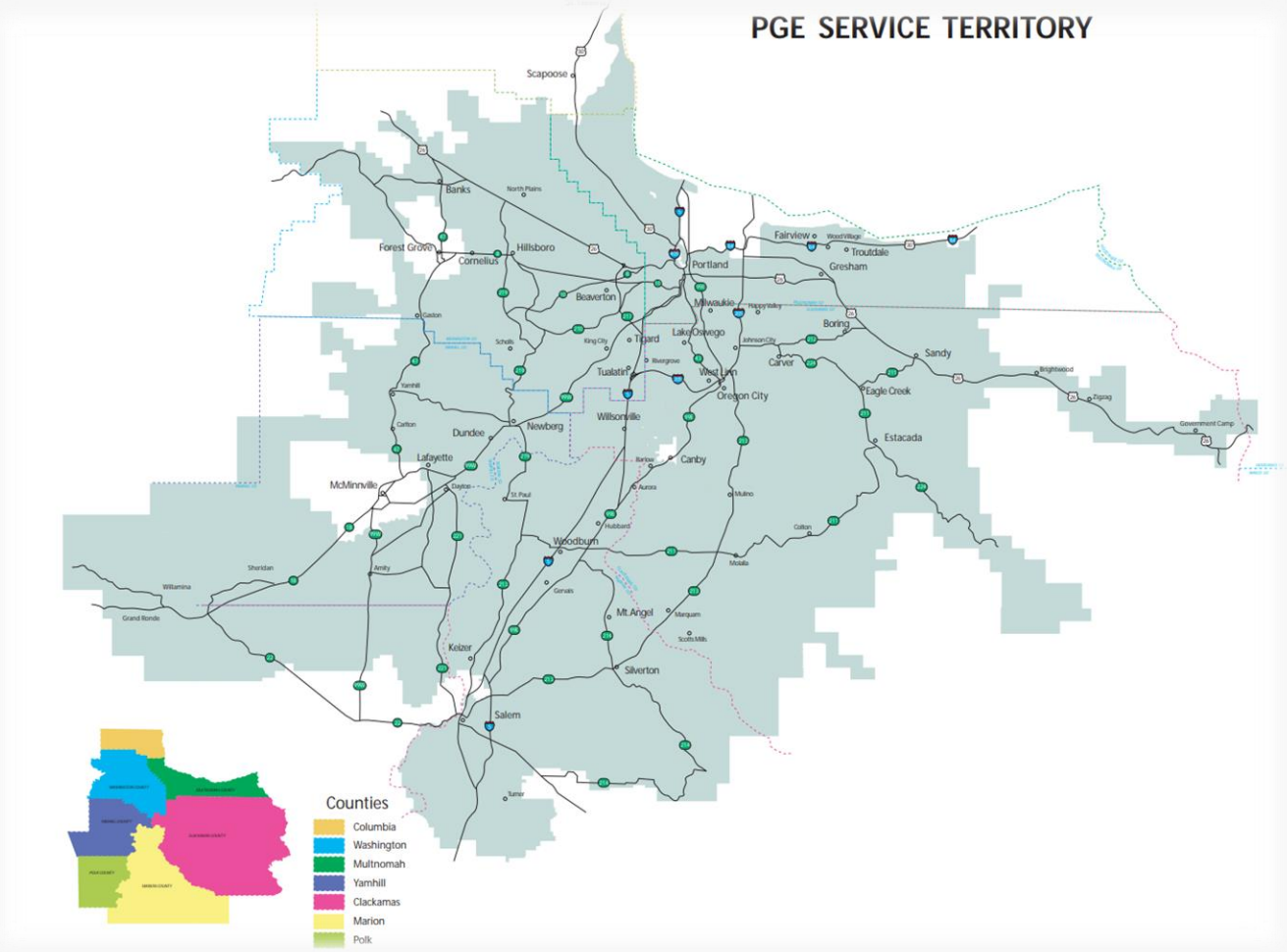
Baseline Data and System Assessment		
Stage 3		Refine asset financial planning processes and strengthen relationships with DER planning and integration processes.
		Use software systems to proactively monitor and support operation of the distribution system and DERs.
Stage 2		Share asset financial planning processes and show relationships with DER forecasting and planning processes.
		Leverage remote sensing technologies to provide detailed insight on physical infrastructure to support efficient operation of the distribution system.
Stage 1	Identify existing grid equipment inventory and financial data, as well as DER-related data with locational granularity.	
	2021-2022	**2023 and beyond**

Service Area at a Glance

PGE serves approximately 900,000 customers over 4,000 square miles

Our distribution system in composed of:

- 1,256 circuit miles transmission lines
- 27,627 circuit miles distribution lines
- 695 feeders
- 270 distribution power transformers
- 153 substations



Distribution System Overview

- Defining the distribution system
- System baseline and assessment practices
- Distribution system historical capital investments
- Currently integrated DERs

The distribution system is defined as load-serving, PGE-owned equipment and lines at nominal voltage levels below 35 kV. The distribution system starts at the circuit breaker and high-side disconnect of the substation distribution transformer.

- System baseline and assessment practices
  - **Asset health monitoring** ensures that we prioritize investments across a portfolio of distribution system assets in a manner that balances costs and maximizes improvements for reliability
  - **Load forecasting** pairs the top-down corporate load forecast with bottom-up customer load additions
  - **Powerflow studies** are conducted in CYME by our distribution planning team in order to study the impacts of changing loads on our system

Distribution system overview

- Defining the distribution system
- System baseline and assessment practices
- Distribution system historical capital investments
- Currently integrated DERs

The distribution system is defined as load-serving, PGE-owned equipment and lines at nominal voltage levels below 35 kV. The distribution system starts at the circuit breaker and high-side disconnect of the substation distribution transformer.

- We invested an average of about $300 million per year on the distribution system from 2016 to 2020
- Baseline adoption of DERs across our service area:
  - 125 MW net metered generation, with 35 MW in queue
  - 63 MW of enrolled summer DR capacity
  - Approximately 23,000 electric vehicles throughout our service area

Distribution System Planning Drivers

PGE's distribution planning team has three key functions:

1. Perform system analysis and develop plans that ensure the distribution system maintains reliability
2. Provide support and guidance on distribution-related investments
3. Support grid modernization efforts

Distribution planning responds to a variety of changing needs, ranging from economic to regulatory to specific company initiatives.

Some of the key drivers impacting the scope and content of distribution planning studies are:

- Load growth forecast
- Economic development
- New large single loads
- Grid modernization
- Regulatory requirements
- Safety
- Reliability performance of the system
- Urban growth boundary
- Zoning changes
- DERs (EV charging, PV providing distributed generation, flexible loads)

DERs are Changing the Nature of the Grid

Historically

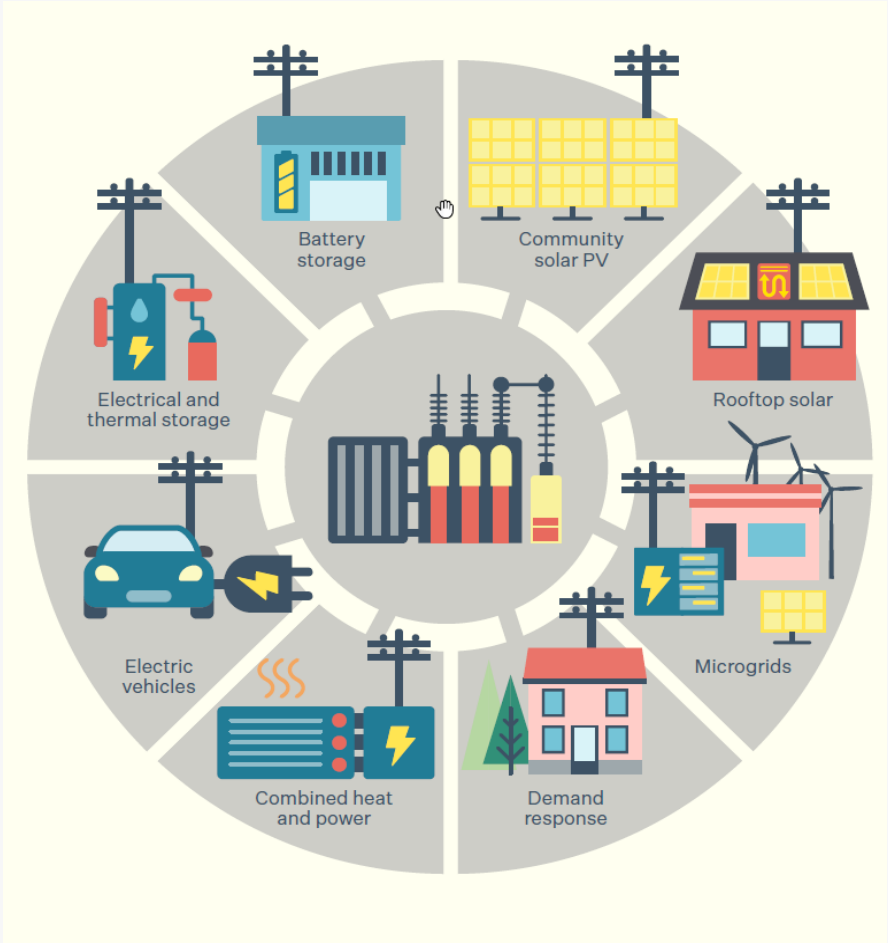
- **The distribution system has been optimized for one-way flow** with a relatively low granularity and visibility of the system's real-time state

Over the Last 15 Years

- **More advanced and lower-cost sensor and control technologies have increased** the level of detail received about the distribution system.
- **Technology improvements and lower-cost DERs have expanded** the amount of clean energy resources on the grid.

Recently

- New digital capabilities that can optimize DERs, **we are entering a new age** in which planning can help the distribution system accelerate **decarbonization,** provide **community benefits and more.**



Distribution of Yearly Spending by Expenditure Category

Examples of investments by category include:

New customer projects

- Minimum load agreements (MLA)
- Road widening
- Customer-driven distribution projects

System expansion or upgrades for capacity

- Cyclical in nature and driven by customer demand

Spending category	Yearly spending (million USD)					Budget average
	2016	2017	2018	2019	2020	2016-2020
New customer projects	$49	$84	$86	$87	$86	$78
Age-related replacements and asset renewal	$50	$52	$60	$86	$175	$85
System expansion or upgrades for reliability and power quality	$39	$51	$76	$122	$84	$74
System expansion or upgrades for capacity	$32	$67	$82	$37	$30	$50
Metering	$9	$7	$7	$12	$9	$9
Preventive maintenance	$0.4	$4	$8	$5	$2	$4
Grid modernization projects	$0.01	$2	$3	$4	$5	$3
Total	$180	$268	$322	$352	$390	$302

Net metering (NM) & Qualifying Facilities (QF) as of Sept. 2021

Solar continues to be the dominate DER for NM and QF

In-Service - Producing Power

NM < 2,000 kW

Generator Type	Generator		Capacity	
	Number	% of Total	kW	% of Total
Solar	13,454	99.59%	121,170	96.28%
Methane Gas	4	0.03%	3,801	3.02%
Wind	40	0.30%	650	0.52%
Hydro	6	0.04%	185	0.15%
Solar+Wind	2	0.01%	22	0.02%
Fuel Cell	3	0.02%	21	0.02%
Total	**13,509**	**100%**	**125,848**	**100%**

QF > 2,000 kW < 10,000 kW

Generator Type	Generator		Capacity	
	Number	% of Total	kW	% of Total
Solar	1,698	99.71%	33,911	94.82%
Methane gas	2	0.12%	1,833	5.13%
Storage	3	0.18%	21	0.06%
Total	**1,703**	**100%**	**35,765**	**100%**

In-Queue - Not Producing Power Yet

NM < 2,000 kW

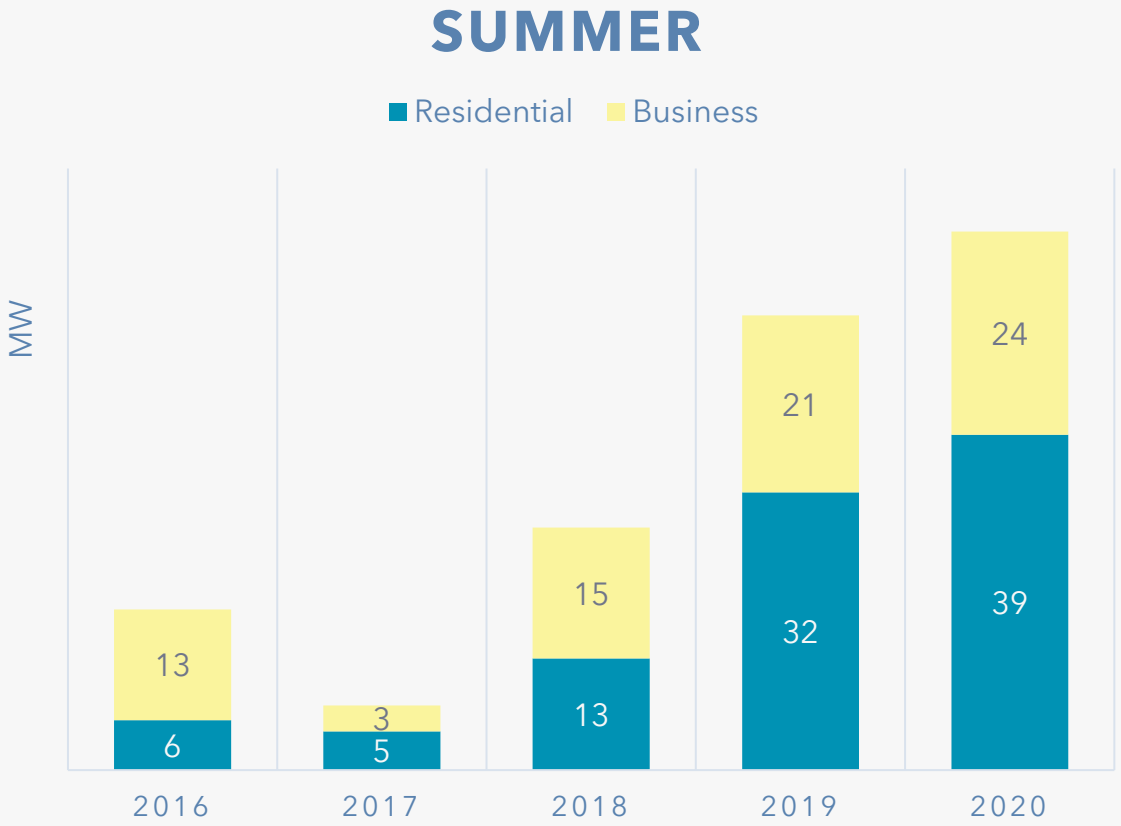
Generator Type	Generator		Capacity	
	Number	% of Total	kW	% of Total
Solar	51	94%	117,921	99.85%
Diesel	2	4%	175	0.15%
Storage Only	1	2%	1.20	0.001%
Total	**54**	**100%**	**118,097**	**100%**

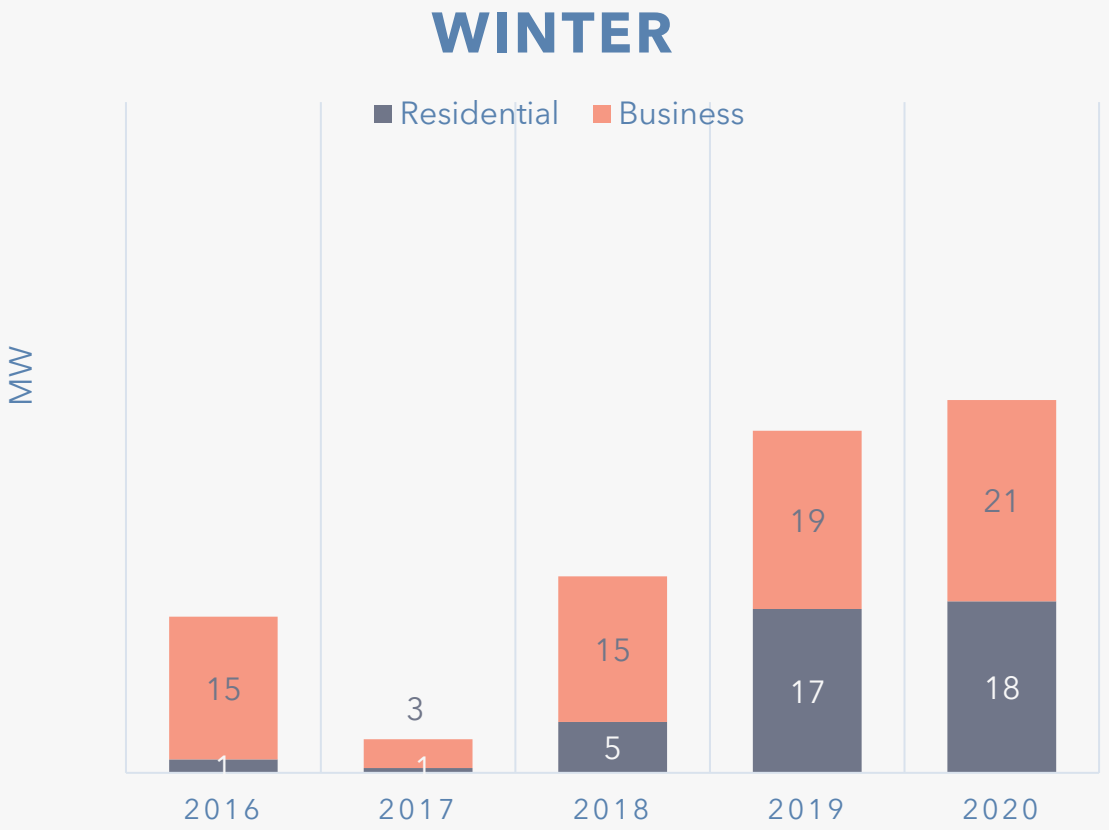
QF > 2,000 kW < 10,000 kW

Generator Type	Generator		Capacity	
	Number	% of Total	kW	% of Total
Solar	37	97%	82,965	98%
Storage Only	1	3%	1,830	2%
Solar	**38**	**100%**	**84,795**	**100%**

Demand Response (DR) Capacity

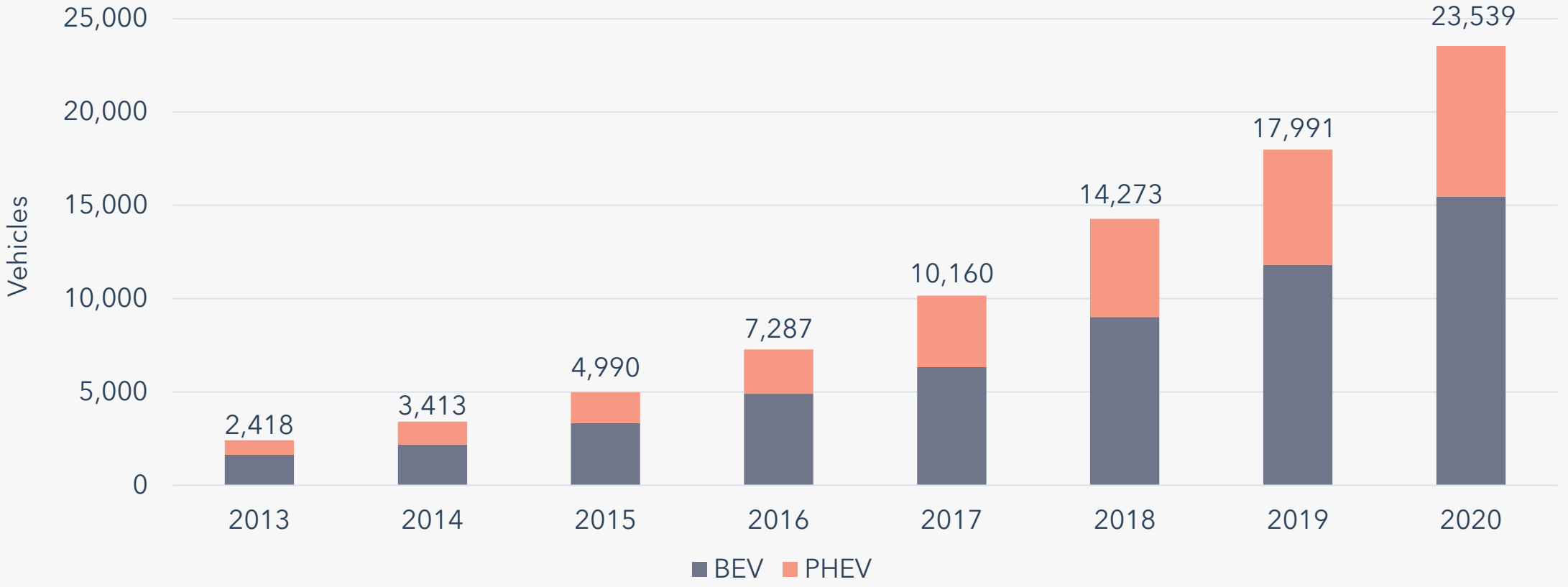
- PGE' Flexible Load Plan was accepted by the Commission in June 2021 under Order 21-158
- At calendar year-end 2020, PGE had enrolled 63 MW of summer DR and 39 MW of winter DR



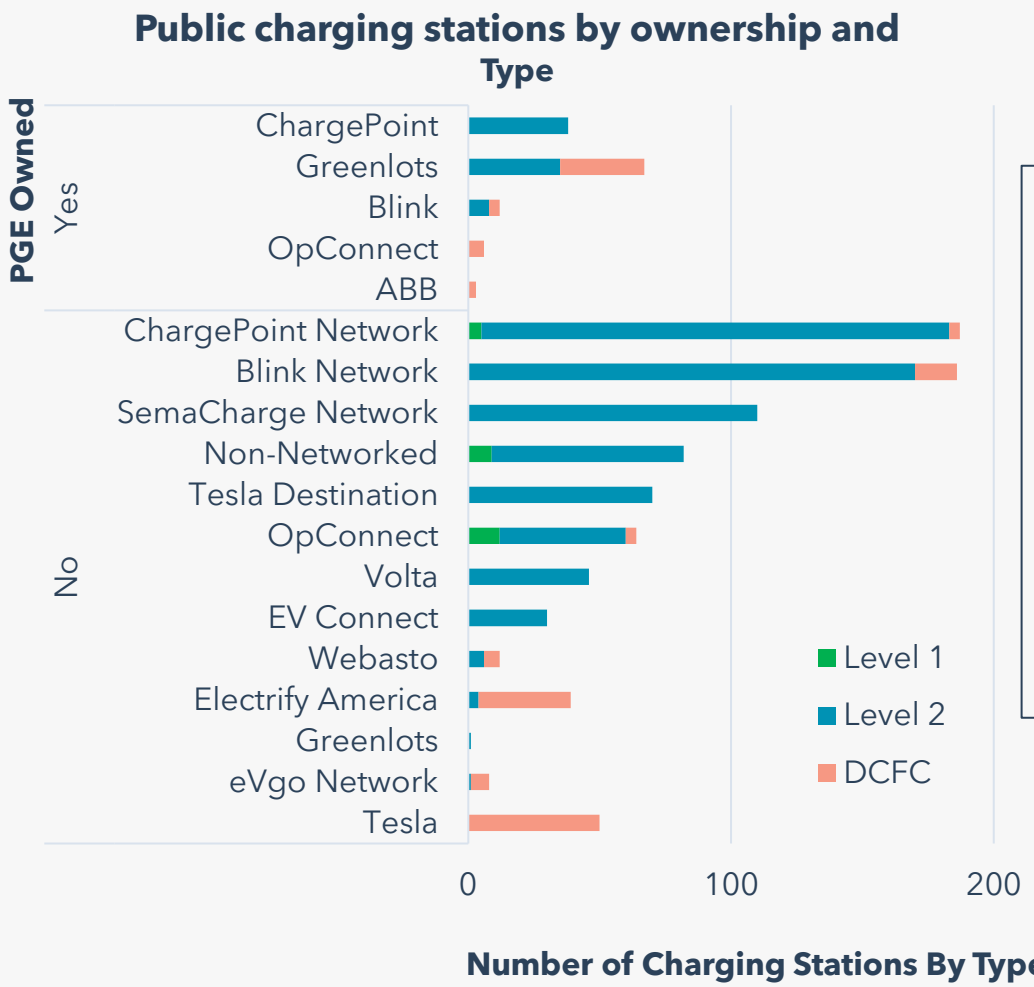


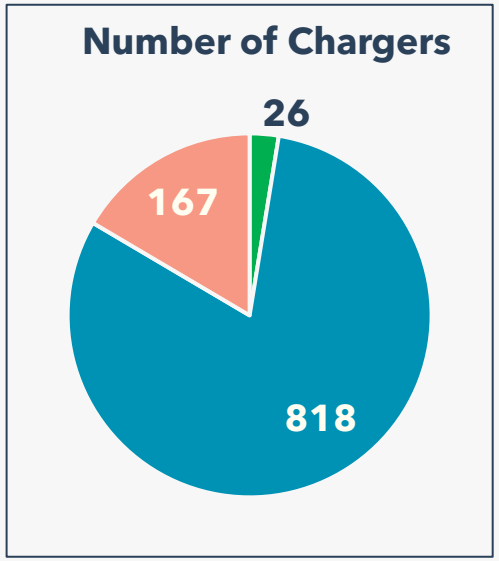
Registered EVs in PGE service area

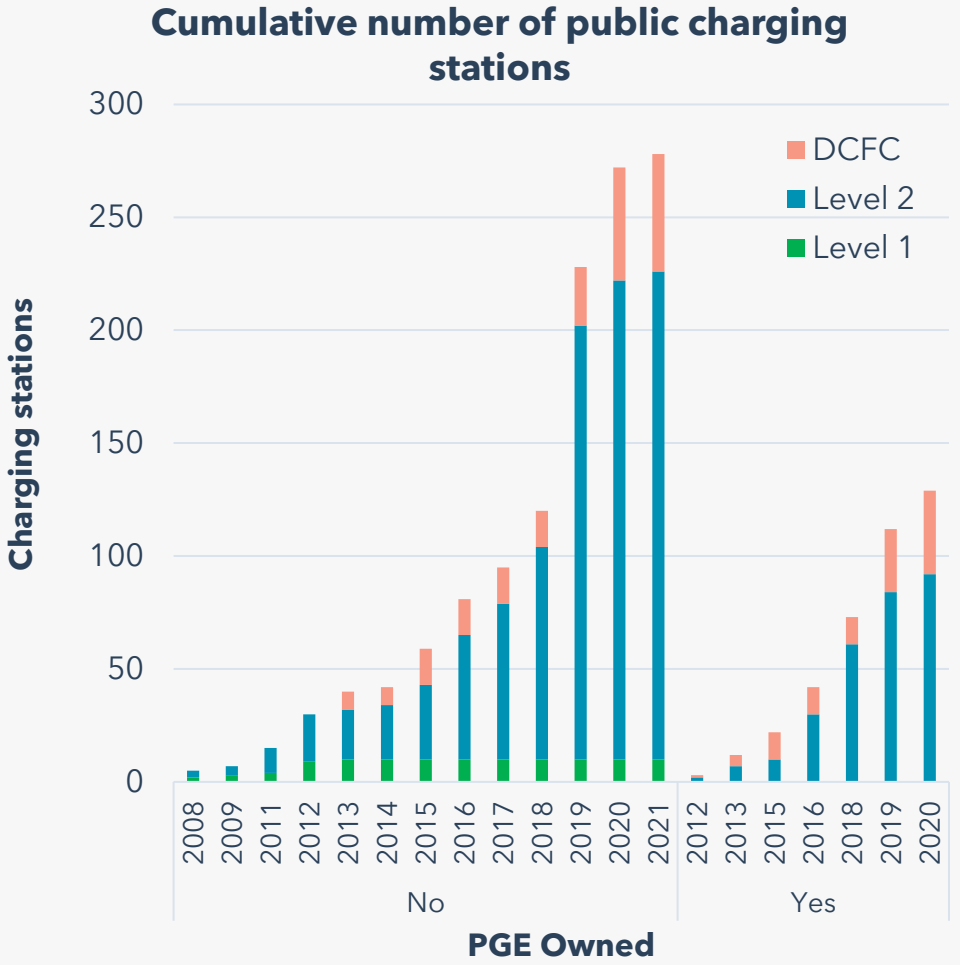
- Battery-electric vehicles (BEV) projected to increase market share as vehicle ranges improve
- Continued growth in EVs even with the economic impacts of COVID for much of 2020



Public Charging Stations as of Q1 2021

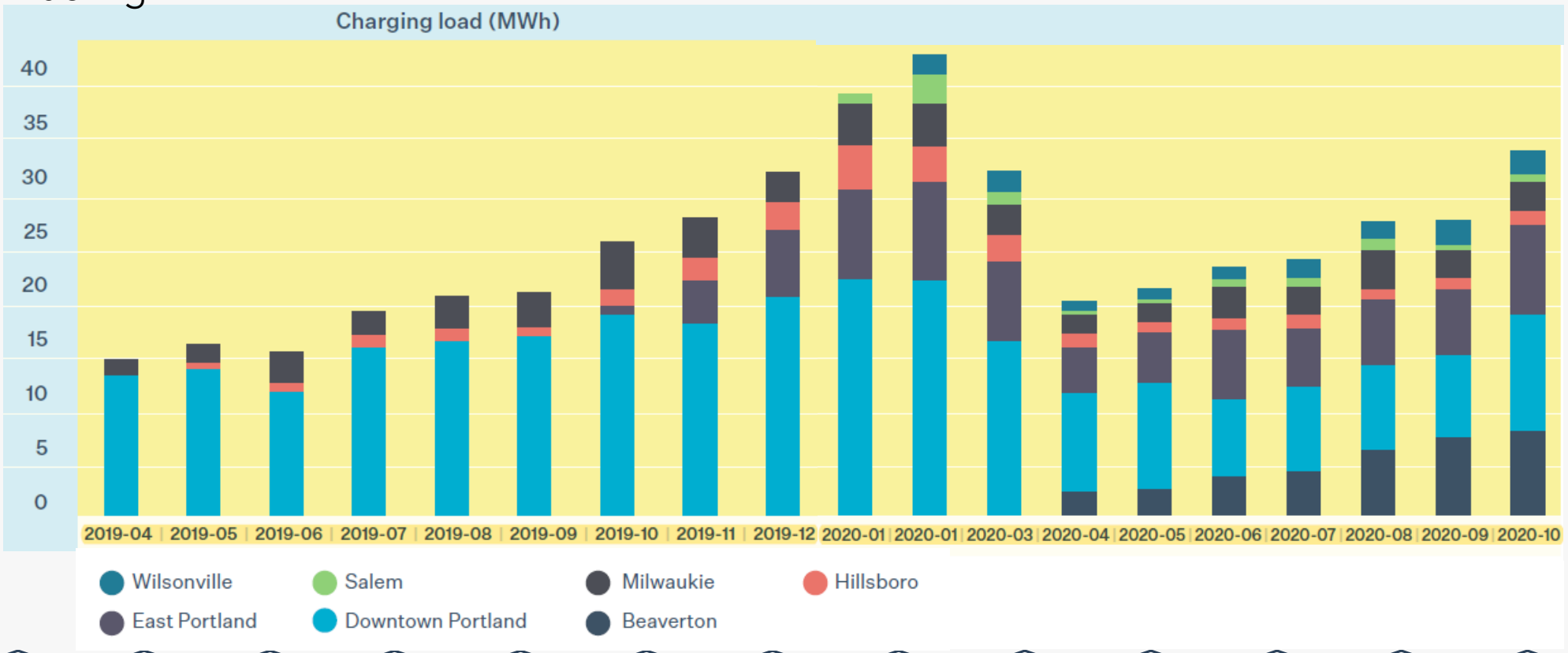




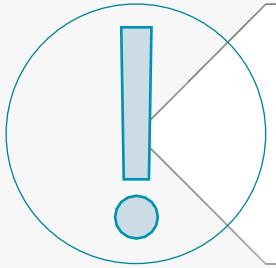


Monthly Charging Load by Electric Avenues (EA) sites

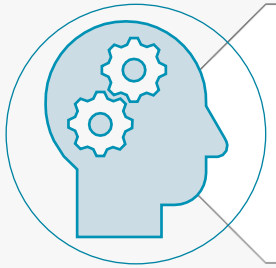
- PGE owns and operates seven public fast charging locations, each with four Direct Current Fast Chargers (DCFC) charging ports (50 kW each) and two level 2 ports (7 kW each) for quick re-fueling



Chapter Take-Aways



The distribution system is a key part of the energy grid backbone



PGE's strategic asset management helps maximize the impact of investments to realize customer value

The changing nature of the grid, including more DER adoption, will require changes to past investments

Questions?

Please email us at
dsp@pgn.com

Chapter 2
Distribution System Vision

Nihit Shah

Senior Strategy & Planning Analyst

Chapter Regulatory Response

DSP Section	Summary Description	Action
2.2	PGE's vision for the distribution system over the next 5-10 years	Developing a strategy that is aligned with state policy, PGE corporate strategy, and stakeholder feedback
2.3	PGE's goals for the distribution system vision	Representing the vision in the form of tangible goals
2.4	Strategic initiatives	Creating a line of sight from vision to execution
2.5	Policy and planning intersections	Intersection of the DSP with IRP, T&D planning, and utility budget
2.6	Monitoring and adapting PGE's vision	Key metrics to evaluate PGE's vision over time

PGE envisions a 21st century community centered distribution system that Accelerates decarbonization through DER programs, non-wires solutions, virtual power plants and other mechanisms to strategically provide community benefits, especially to environmental justice communities, while improving metrics around safety, reliability, resiliency, and security.

Distribution System Vision Overview

Goals

Our vision aims to achieve the three goals:

- Advance environmental justice
- Accelerate DER adoption
- Maximize grid benefits

Execution Strategy

To execute on our vision and realize our goals for the distribution system, PGE has developed and is working on five strategic initiatives:

- Empowered Communities
- Modernized Grid
- Resilience
- Plug and Play
- Evolved Regulatory Framework

Vision to Execution – Line of Sight

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

Advance Environmental Justice

Provide direct benefits to communities

Applying equity lens to **maximize benefits to environmental justice communities**

PGE envisions new opportunities to strategically deploy assets and tariffs to yield more equitable outcomes, especially for those who are most vulnerable.

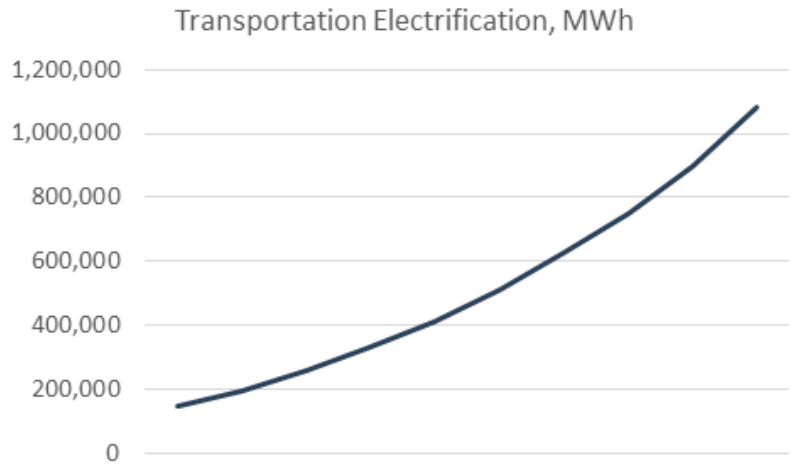
Solutions such as community microgrids, non-wires solutions and continued flexible load development can deliver these values.

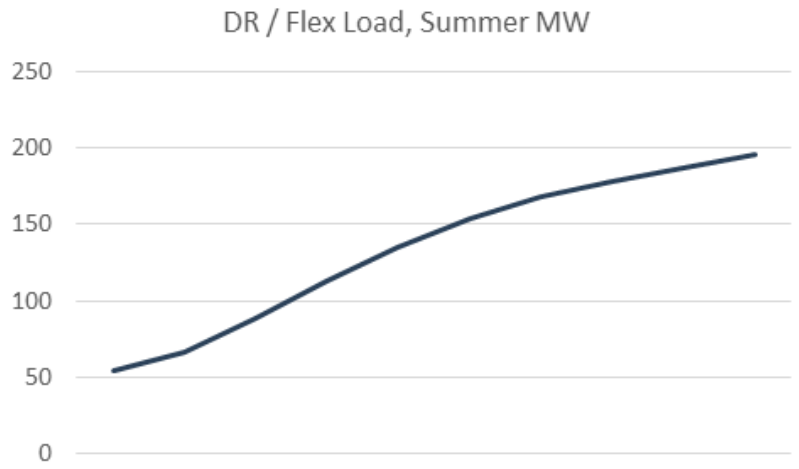
These new investments are a key feature of the 21st century community-centered distribution system and can be strategically used to **reduce energy burden** and **improve local economic impacts**.

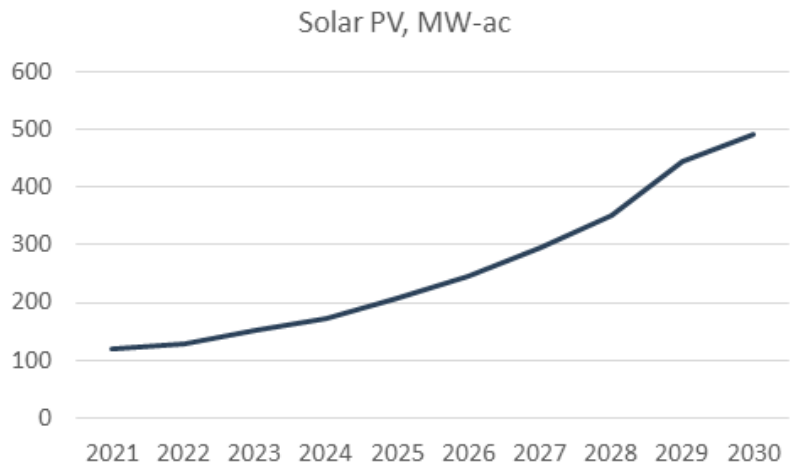
Accelerate DER Adoption

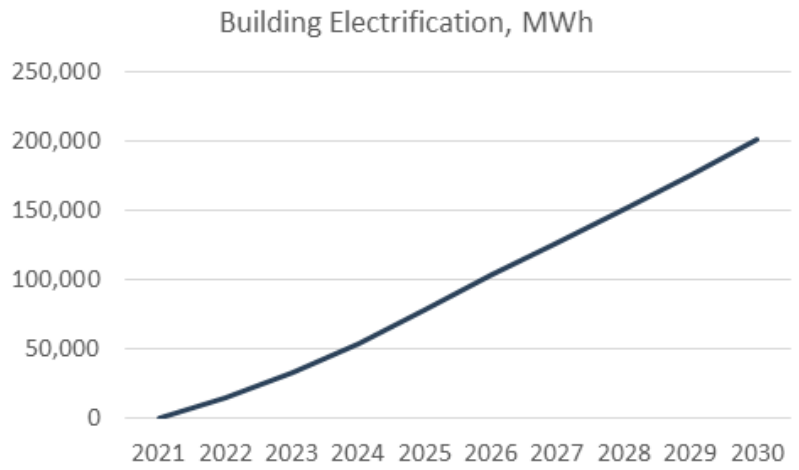
Building the distribution system to meet evolving customer needs and address barriers to increase adoption with aspirational targets for 2030:

- Flexible loads upwards of 250 to 500 MW (~2x of the current forecast)
- Electrify 1,100,000 vehicles (~3 to 4x of the current forecast)









Maximize Grid Benefits

Building on traditional utility values with new values:

- **Decarbonization**
- **Safety**
- **Reliability**
- **Resilience**
- **Security**
- **Fair and reasonable costs**

Strategic Initiatives for Execution

Empowered Communities

Enabling equitable participation in the clean energy transition

Grid Modernization

Enabling an optimized grid platform for a safe, secure, reliable system

Resilience

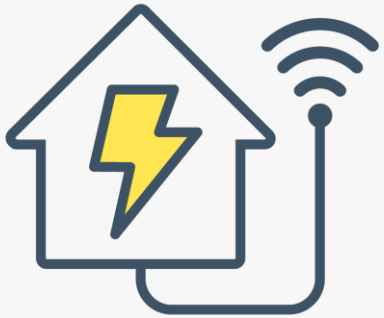
Anticipating, adapting to, withstanding, and quickly recovering from disruptive events

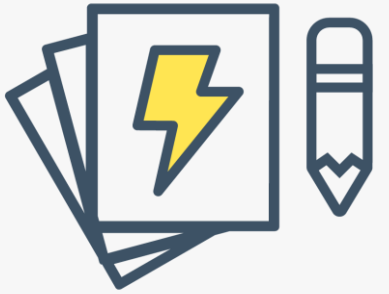
Plug and Play

Improving access to grid edge investments to accelerate customers' clean energy transition

Evolved Regulatory Framework

Evolving the regulatory framework to support utility investment in customer and community centered solutions





Interaction with Planning and Budgets

DSP-IRP

- Forecasting adoption of DERs such as EVs and solar PV
- Economic potential of current and expected future DER products and programs
- Integration of non-cost-effective DER supply curves

DSP-T&D planning

- Feeder level load and DER adoption to improve distribution planning process
- Non-wires solutions will expand planning capabilities
- DER impacts can be determined individually and with weather normalization

DSP-Utility budget

- Driving investments to modernize the grid
- Locational improvements driven by DER adoption
- Non-wires solutions drive different budget and equity implications

Chapter Take-Aways

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

Questions?

Please email us at
dsp@pgn.com

Break

9:00 – 9:10 am - First Break
(10 minutes)

Chapter 3
Empowered Communities
Equitable Participation in Distribution Decisions

Jenn Latu

Senior Community Outreach Consultant, DEI Office

PGE

Empowered Communities at a Glance

Enabling equitable participation in the clean energy transition

Community Engagement		
Stage 3		Utilities collaborate with CBOs and environmental justice communities so that community needs inform DSP project identification and implementation. "Community needs" could address energy burden, customer choice and resiliency.
Stage 2		Reflecting UM 2005 outreach requirements, utility holds ongoing community stakeholder meetings during grid needs assessment, solution identification, and action planning.
		Utilities and OPUC agree on community goals, project tracking and coordination activities.
		Conduct baseline study to increase detailed knowledge of service territory communities. Engage CBO experts to inform co-created community pilot(s).
		Consult with communities to understand identified needs and opportunities, then seek to co-develop solution options, documenting longer-term needs.
Stage 1	Hold four public pre-filing workshops with stakeholders on Plan development.	
	Utilities create a collaborative environment among all interested partners and stakeholders. Utilities document community feedback and utility's responses.	
	OPUC prepares accessible educational materials on DSP with consultation from CBOs and utilities.	
	Prepare a draft community engagement plan as part of Plan.	
	Utilities conduct focused community engagement for planned distribution projects.	
	OPUC to host quarterly public workshop and technical forums after Plan filings.	
	2021 - 2022	**2023 and beyond**

Empowered Communities represents the company's efforts as an essential service provider to both engage and understand where our customers live, work, learn and play, as well as co-develop solutions with them that provide direct community benefits and access to clean energy.

PGE sees it as incumbent upon itself to pursue the twin goals of racial equity and decarbonization and ensure that the company addresses and acknowledges disparities and impacts within all the communities PGE serves.

Overview

HUMAN-CENTERED DESIGN AND PLANNING:

PGE acknowledges the harm the resulting from historic inequity and seeks to engage environmental justice communities to better understand how best to address and overcome disparities in our electricity system.

COMMUNITY ENGAGEMENT PLAN:

PGE seeks to advance beyond its current stage of DEI maturity to advocate and implement best practices that will aid in accomplishing community-defined goals, objectives and desired outcomes.

LEARNINGS TO APPLY TO PART 2:

Through application of an equity lens PGE has identified gaps and impacts that it may now address along the spectrum of engagement to build trust and co-develop solutions that meet community needs

Spectrum of Community Engagement to Ownership

- A human-centered approach requires a long-term orientation
- PGE aims to engage our communities and build relationships that move to the right on the spectrum

	0	1	2	3	4	5
Stance toward community	**Ignore**	**Inform**	**Consult**	**Involve**	**Collaborate**	**Defer to**
Impact	**Marginalization**	**Placation**	**Tokenization**	**Voice**	**Delegated power**	**Community ownership**
Community engagement goals	Deny access to decision-making processes	Provide the community with relevant information	Gather input from the community	Ensure community needs and assets are integrated into process and inform planning	Ensure community capacity to play a leadership role in implementation of decisions	Foster democratic participation and equity through community-driven decision-making; bridge divide between community and governance
Message to community	Your voice, needs and interests do not matter	We will keep you informed	We care what you think	You are making us think (and therefore act) differently about the issue	Your leadership and expertise are critical to how we address the issue	It's time to unlock collective power and capacity for transformative solutions

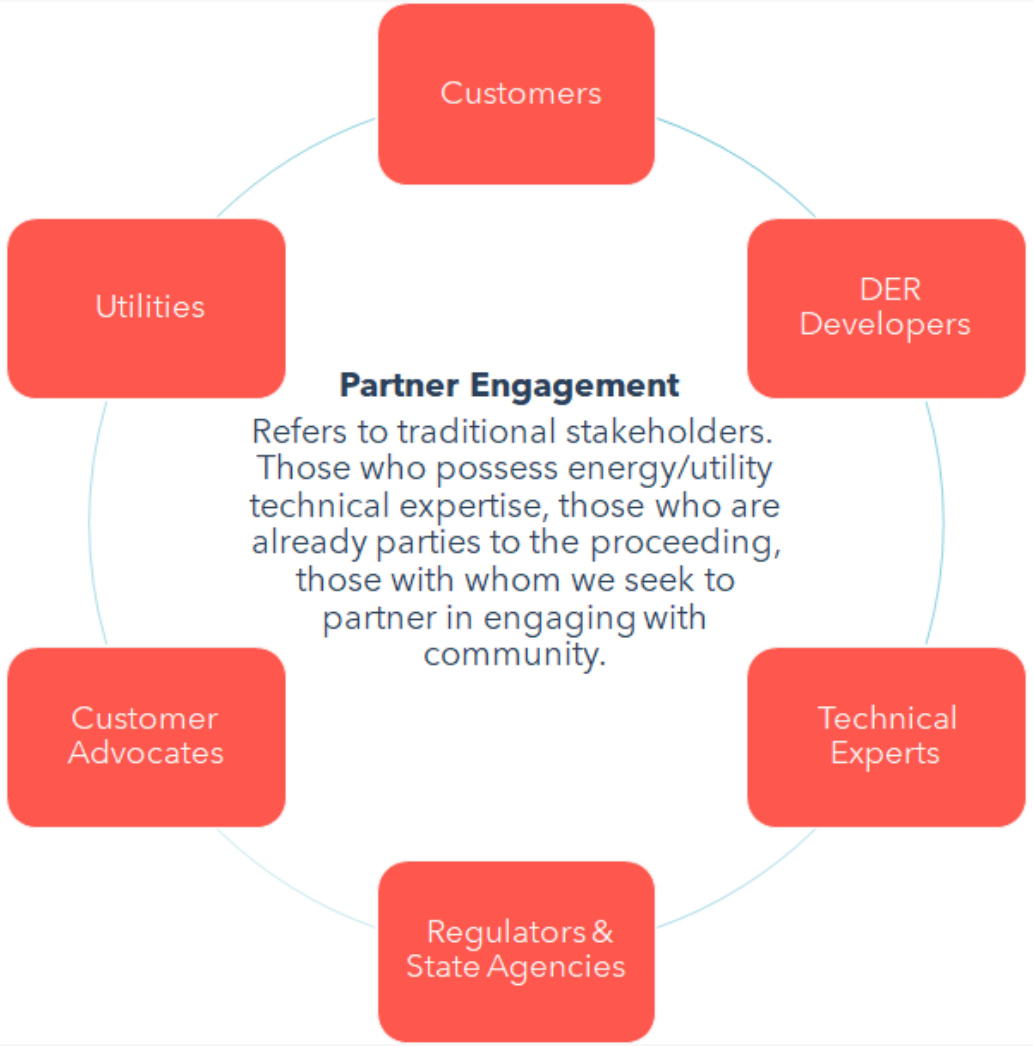
Chapter Regulatory Response

DSP Section	Summary Description	Action
4.3.a.i	A utility should host at least two stakeholder workshops prior to filing each Part of the utility's Plan, at a stage in which stakeholder engagement can influence the filed Plan.	May 22-23; 3hr sessions, 40+ participants; Energy/DSP 101 (Sat); DER 101 (Sun); Participants were provided with a $250 stipend for attending both workshops.
4.3.a.ii (1-4)	A utility should develop a Community Engagement Plan that describes actions the utility will implement in order to engage community members and CBOs during development of the pilot concept proposals required in Solutions Identification requirements (Part 2, Section 5.3. (d)).	Scope of Work (SOW) with CBO partners included technical and language translation, recruitment and faciliation, and best practice recommendations
4.3.a.iii	Utilities should aim to create a collaborative environment among all interested CBO partners and stakeholders.	ETO, NWEC and PGE served as technical advisors to CBO partners
4.3.a.iv	With consultation from utilities and stakeholders, OPUC will prepare accessible, nontechnical educational materials on DSP to support public engagement	Contextual materials were provided to workshop participants and made publicly accessible
4.5 (a-c)	As Part of its Part 1 filing each utility should prepare for the upcoming transition period and include a high-level summary to discuss how legacy distribution planning practices will be transitioned and by when, as well as efforts to synchronize IRP activities with requirements of Part 2	PGE expects to coordinate CBO engagement activities for IRP and DSP in support of HB2021 mandates

Workshop Approach

Community Engagement Definition

In the context of the DSP, community engagement refers to the education and outreach to non-traditional stakeholders; those who have not historically had a seat at the table, those who have not historically been provided access or granted procedural equity, those who represent the Environmental Justice community.



How Did We Get Where We are Today

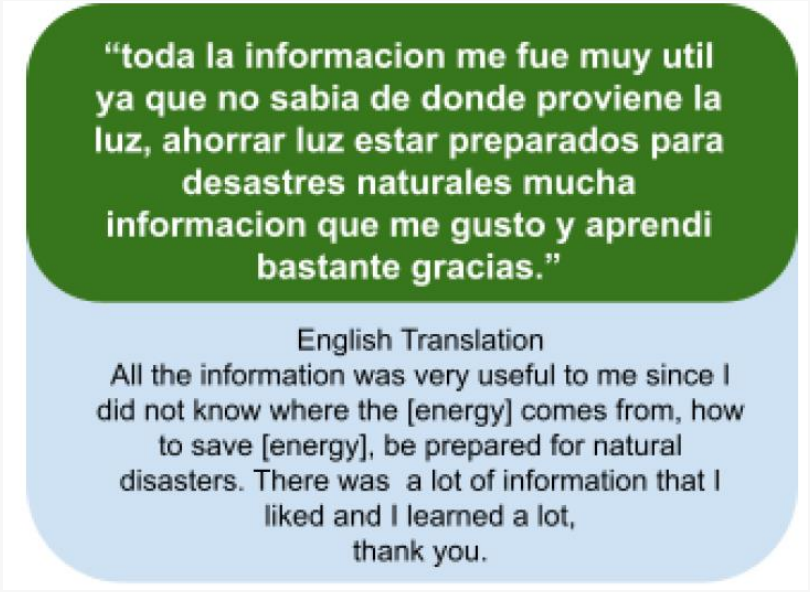
- Empowering Communities supports environmental justice and community benefit goals (HB2021)
- Partnered, compensated and deferred to community-based organizations (CBO) to recruit, convene, translate and elicit feedback in workshops with environmental justice communities across the service territory
- Workshop insights, best practice and recommendations will be integrated into the Community Engagement Plan, a subsection of the larger DSP Action Plan, and is expected to inform engagement in Part 2 and beyond

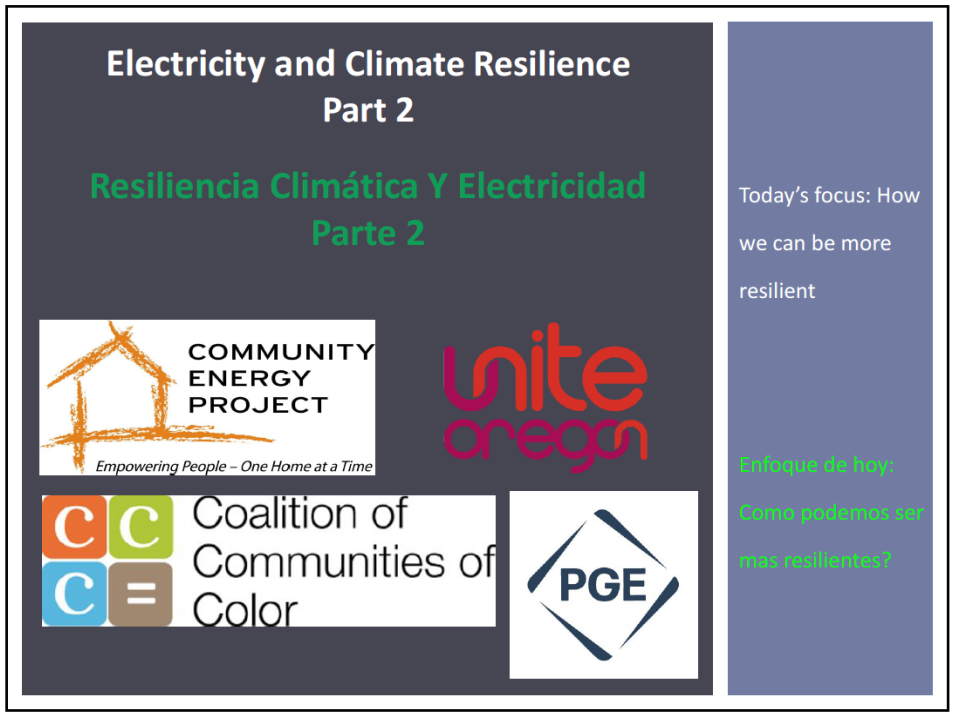
Chapter Take-Aways

Focus Area	Goals	Objectives	Outcomes
Develop Competency	Build skills and resources that help PGE address our gap in competency in community engagement and operationalizing equity	In NWA, Part 2, ensure frequent communication, feedback loops, follow-thru, early and often engagement and transparent report outs.	Build durable, long-lasting, and mutually beneficial relationships with community partners and after relationship is cultivated, work towards partnership with community-based organizations (CBOs) representing environmental justice communities.
Activate CBO Participation	Center meaningful participation of environmental justice communities	In NWA, Part 2, advocate for representation on House Bill 2021 Community Benefit and Impact Advisory Group (CBIAG), build CBO capacity/resources via financial assistance, and pursue direct community engagement as a complement to CBO partnership	Members of environmental justice communities are able to contribute and be involved in a meaningful way
Unlock Demographic Data	Rely upon a diversity of data (GARE Racial Equity Tool, Step #2) and diversity of research (including both quantitative and qualitative)	Ensure engagement is informed by data and tailored to the needs and interests of affected communities.	Understand community energy needs, desires, barriers and interest in clean energy planning and projects and where opportunities exist.

Learnings and Feedback

Requirement area	Learnings
Baseline data	• To better understand the needs and wants of the communities PGE serves, it must first understand where environmental justice communities live, work and play. • PGE may begin to identify these communities by examining demographics or attributes that include income, race/ethnicity, age, disability, language spoken and heat type. • A map and its dimensions enable PGE and stakeholders to apply a human-centered approach to grid topology and planning.
Hosting capacity analysis (HCA)	• The HCA is a tool upon which a community needs analysis may be based in a subsequent phase, so it is important to carefully consider the screens applied to this data. • Staff guidance states that pilot concept proposals should be reasonable and meet the guidelines, even if the individual proposal may not be cost-effective, likely because screens like cost-effectiveness may have the unintended consequence of disqualifying certain locations and perpetuating structural inequities.





Questions?

Please email us at
dsp@pgn.com

Chapter 4
Modernized Grid: Building a Platform for Participation

Nihit Shah

Senior Strategy & Planning Analyst

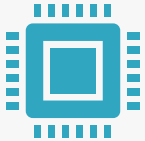
Chapter Regulatory Response

DSP Section	Summary Description	Action
4.5, 4.6	Smart grid investment opportunities Key opportunities for distribution system investments	Worked with SMEs across the company and using national best practices developed a modernized grid framework and investments within
4.7	Roadmap of planned investments, activities, and tools to achieve the vision	Leveraged Power Plan and SMEs to report on current and planned activities
4.8	R&D the utility is undertaking	Leveraging R&D filing in accordance with UE 294, Order 15-356

Desired Outcomes

Decarbonization

By managing DERs connected to the grid, grid operators can co-optimize across available resources to ensure least cost and carbon intensity in resource dispatch.



Reliability

Investments in sensors and communication devices to improve resolution of the distribution grid can help operators better predict distribution system needs and take necessary steps to prevent system reliability issues.

Resiliency

Through investments in smart algorithms and sensing devices feeder sections can be isolated to create microgrids that provide resilience during severe weather.

Security

While grid modernization investments increase the number of access points for cyber security risks, PGE is taking proactive steps through investments in cyber security solutions and integration of cyber-physical security in planned investments.

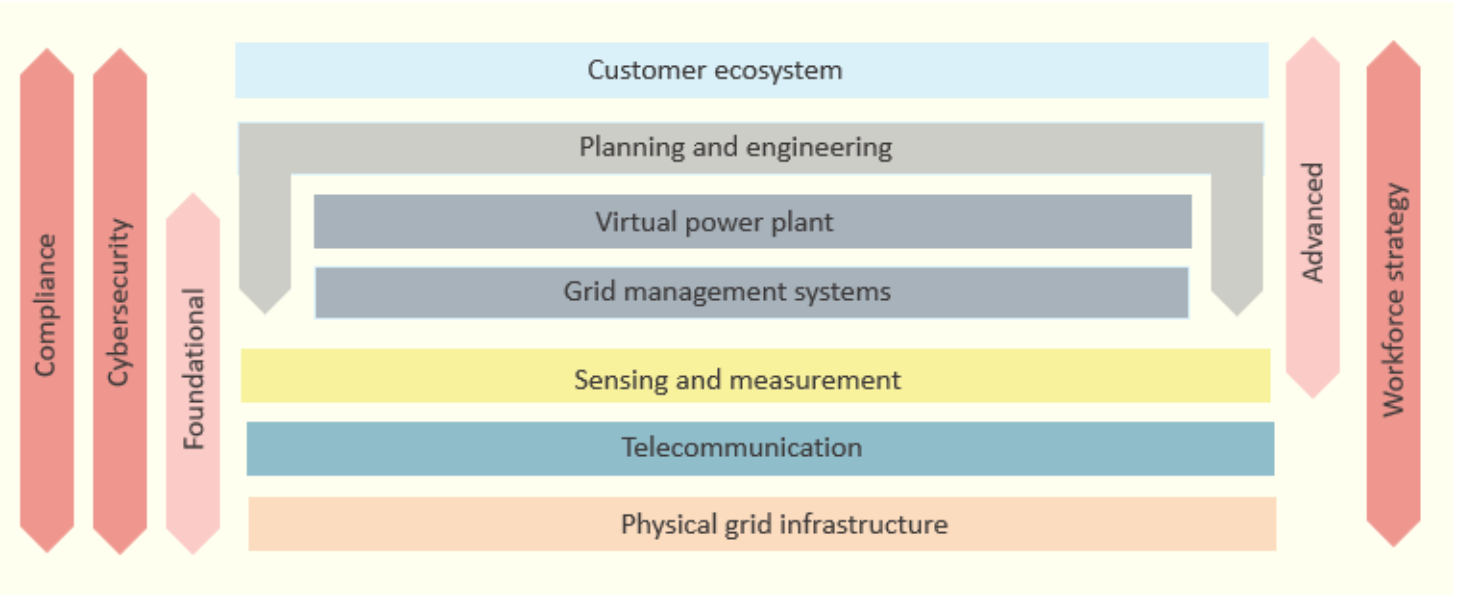
Assist Environmental Justice Communities

Through investments in analytics platforms that use smart meters, PGE can develop improved rate designs and DER programs to assist with energy burden relief in environmental justice communities. PGE has already started developing this load shaping solutions through its Time of Use programs.

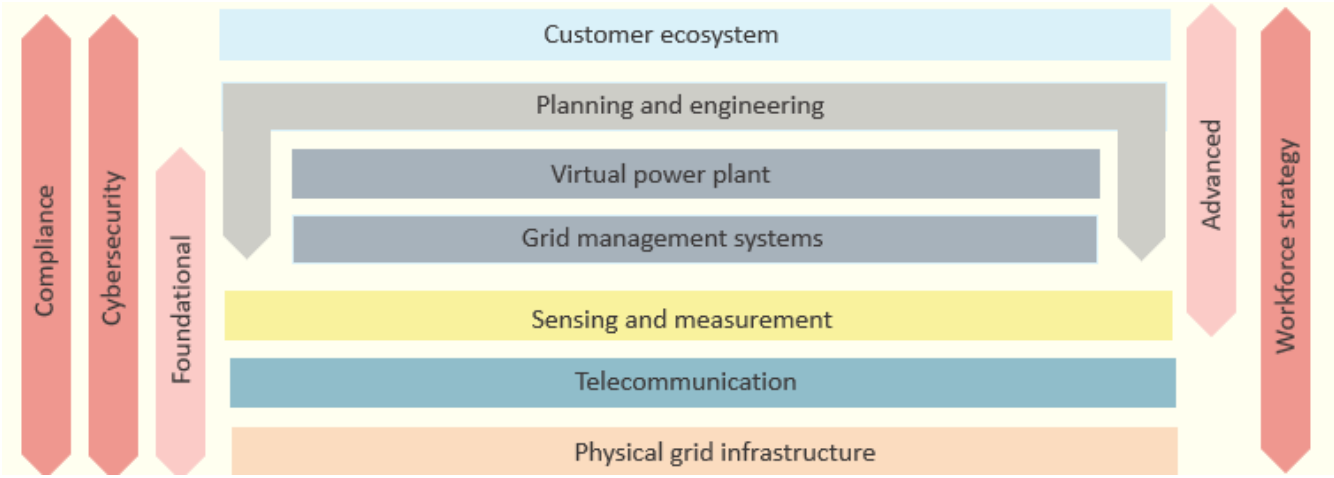
Modernized Grid

PGE has established a modernized grid framework. The different capabilities within this framework form layers that interact with each other to deliver customer value

PGE's modernized grid framework



PGE's Modernized Grid Framework



Foundational capabilities

- The set of core platform investments needed to improve resolution and basic control of the distribution system.
- These investments follow a least-cost, best-fit approach, usually through a request for proposal (RFP) or similar process.

Advanced capabilities

- Investments that build on or, in some cases, supplement foundational investments to develop advanced controls of the grid.
- Depending on their function, either go through a benefit-cost analysis or use a least-cost, best-fit approach.

Overarching capabilities

- Impact both foundational and advanced capabilities investment.
- Are key considerations when making the investments after the primary need is addressed.
- Include cybersecurity, workforce implications and other compliance needs.

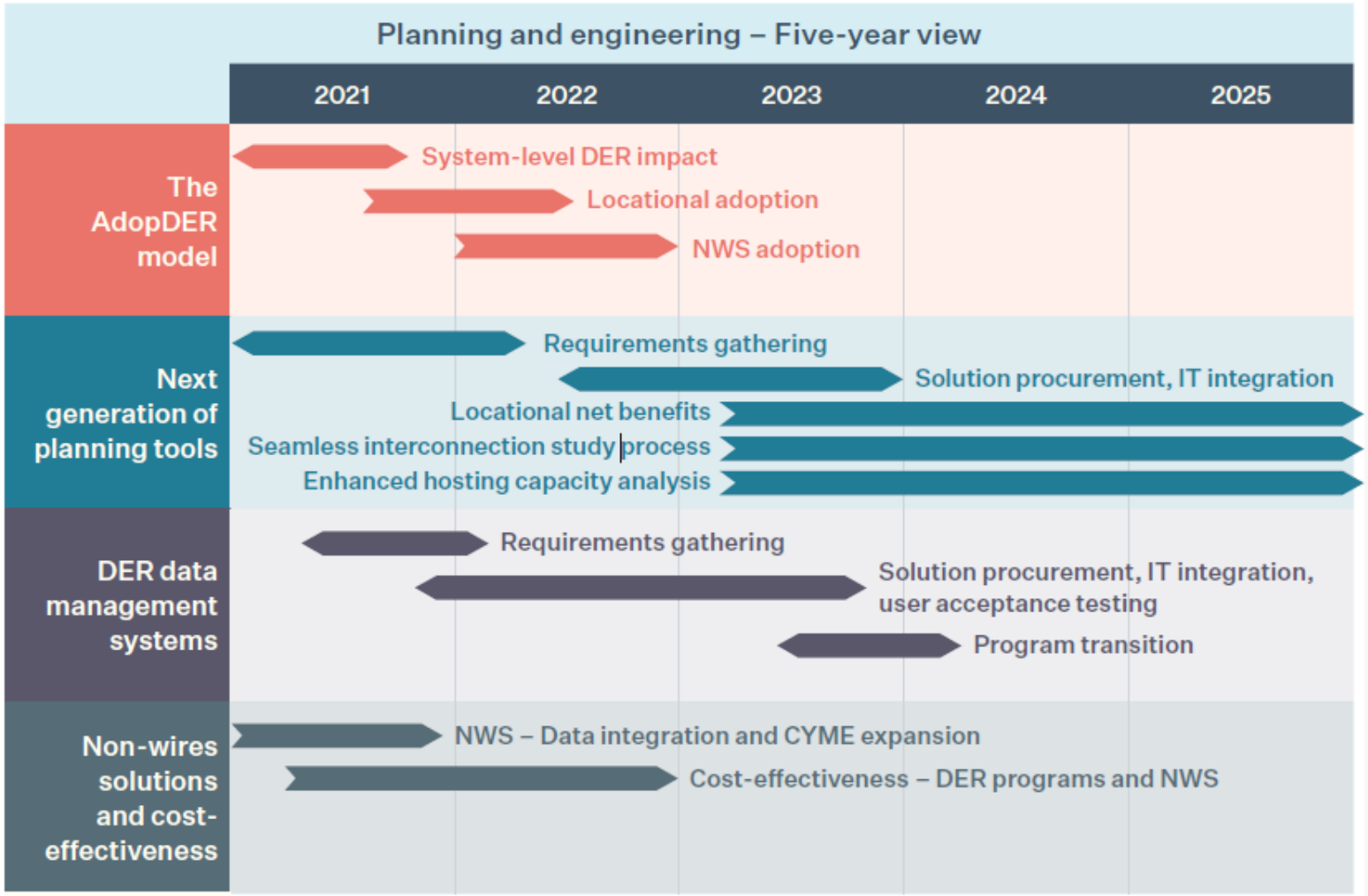
Planning and Engineering

Description	A suite of integrated tools to perform distribution system planning and engineering functions
Need Statement	Improved planning enables optimal grid investments including DER integration through information exchange and non-wires solutions
Example Technologies	CYME/Synergi (powerflow analysis), Envelio, cost-effectiveness tools, AdopDER (DER forecasting), OpusOne
Example Functions	Grid needs analysis, locational net benefit analysis, non-wire analysis, hosting capacity analysis, DER forecasting

Planning and Engineering – Continued

Cost	Robust distribution planning tools, Experienced planning engineers, IT integrations
Benefits	Distribution planning and engineering is how PGE accomplishes its goals and objectives for the distribution grid and its customers, such as, safety, reliability, resiliency, customer choice, decarbonization and electrification
Current Maturity	Enabling
Barriers	Advanced planning capabilities not supported by current market tools
Planned Investments	Bottom-up DER forecasting and potential – The AdopDER model, Next Generation Planning Tools Project, Non-wires solutions (NWS) – data integration and CYME expansion, DER Cost-Effectiveness Update Project, DER database management system (DERDMS)

Planning and Engineering – Planned Investments



Note: Includes future initiatives

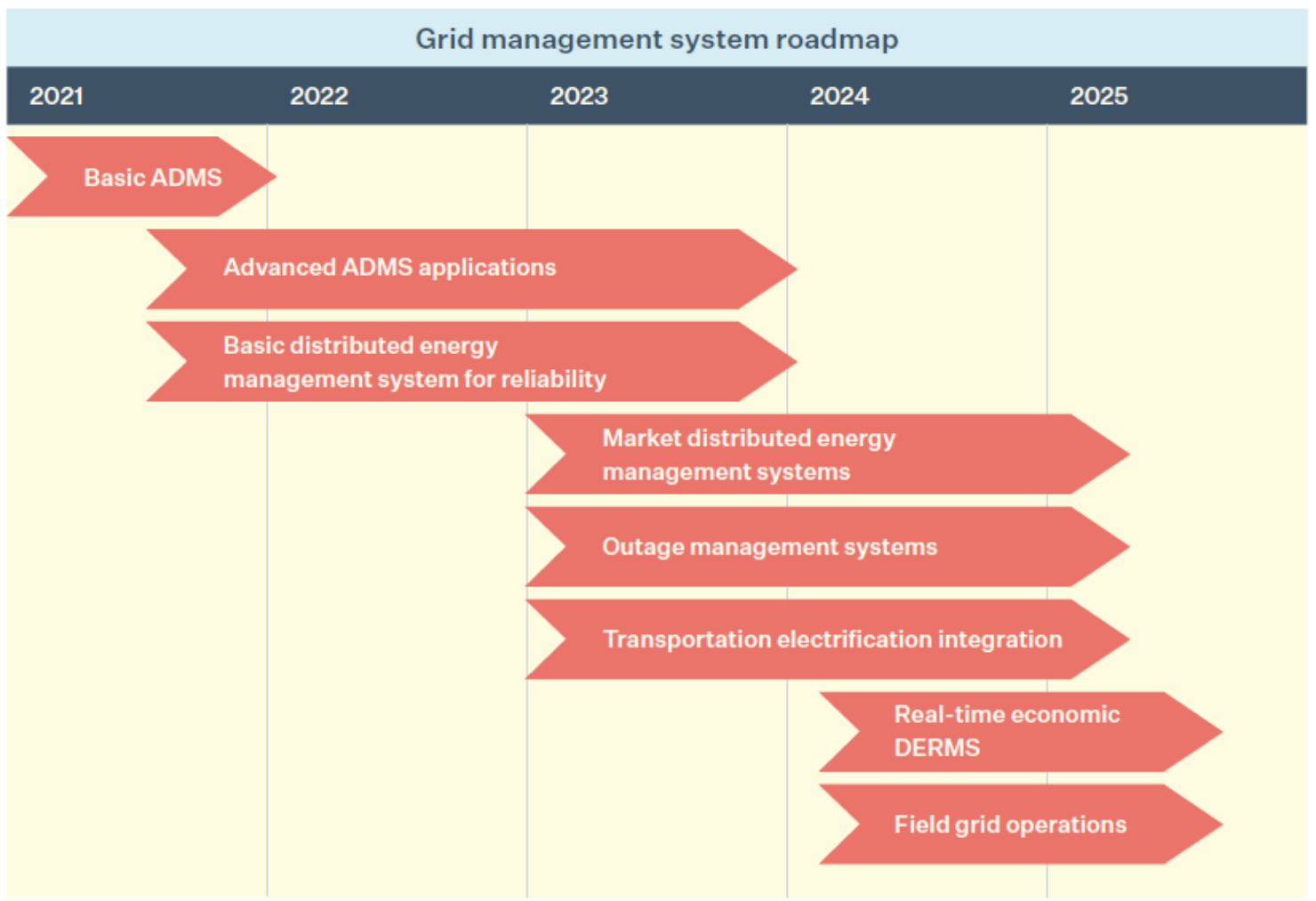
Grid Management Systems

Description	A set of computer-aided tools used by operators of electric utility grids to monitor, control, and optimize the performance of the distribution system
Need Statement	Shifting from central management of one-way power flows supplied by relatively few bulk generators to coordinating large numbers of DERs creating two-way power flows may cause grid stability issues. As DER adoption grows, the number of possible control actions will increase and the time to execute those control actions will decrease beyond the capability of human grid operators to react to events on the electric grid. Safety and reliability issues will increase in both frequency and magnitude unless advanced technologies are used to stabilize our electric grid.
Example Technologies	ADMS, DERMS, OMS, DRMS
Example Functions	Monitor grid operations, analyze the data collected, predict events and grid behavior through algorithms and issue commands to grid devices based on the analyzed information - FLISR scheme and CVR control

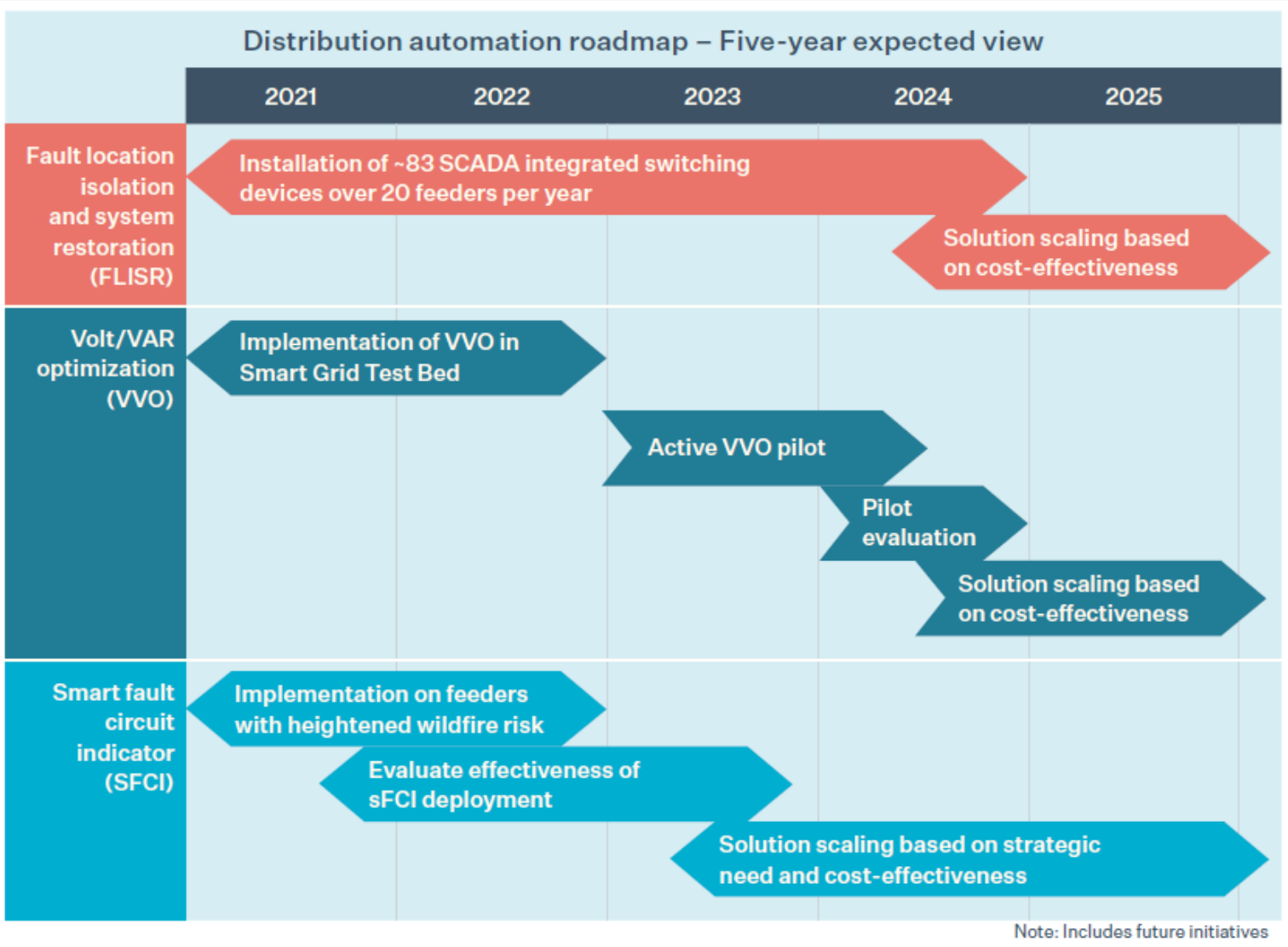
Grid Management Systems – Continued

Cost	Grid management system hardware, software and infrastructure, Cybersecurity infrastructure and protocols
Benefits	Empower customers and decarbonize through DER enablement, Improve workforce safety and productivity, Improve grid efficiency and reliability, Improve grid resiliency
Current Maturity	Integrating
Barriers	Balancing spending with rate impacts, Complex IT/OT integration
Planned Investments	ADMS, OMS, Distribution Automation (FLISR, VVO, sFCI), Substation Protection and Automation, FAN, Automated Metering Infrastructure Improvements

Grid Management Systems – Planned Investments

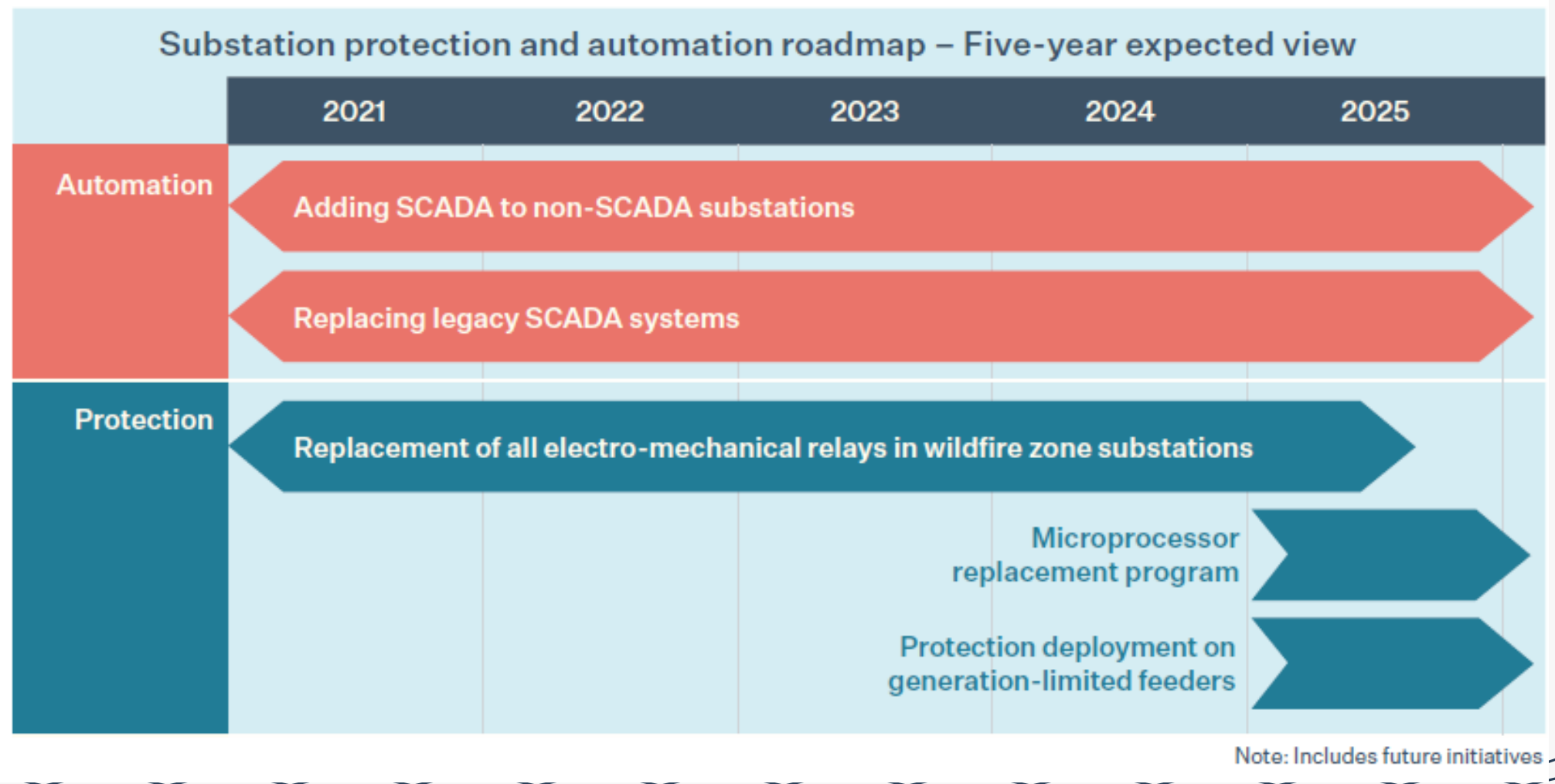


Distribution Automation – Planned Investments



Note: Includes future initiatives

Substation Protection and Automation – Planned Investments



Modernized Grid Investment Framework

DOE's Recommended Framework to Justify Grid Modernization Investments

Expenditure need	Methodology	Examples
Grid expenditures to replace aging infrastructure, new customer service connections, relocation of infrastructures for roadwork or the like and storm damage repairs.	Least-cost, best-fit or other traditional method recognizing the opportunity to avoid replacing like-for-like and instead incorporate new technology.	Planning tools and models, physical infrastructure, sensing devices, telecommunication devices
Grid expenditures required to maintain reliable operations in a grid with much higher levels of distributed resources connected behind and in front of the customer meter that may be socialized across all customers.	Least-cost, best-fit for core platform, or Traditional utility cost-customer benefit based on improvement derived from technology	Smart meters, volt-VAR management, optimization analytics
Grid expenditures proposed to enable public policy and/or incremental system and societal benefits to be paid by all customers.	Integrated power system and societal benefit-cost (e.g., EPRI and NY REV BCA)	Non-wires solution analysis
Grid expenditures that will be paid for directly by customers participating in DER programs via a self-supporting, margin-neutral opt-in DER tariff, or as part of project-specific incremental interconnection costs.	These are "opt-in" or self-supporting costs, or costs that only benefit a customer's project and do not require regulatory benefit-cost justification.	Customer portion of DER costs

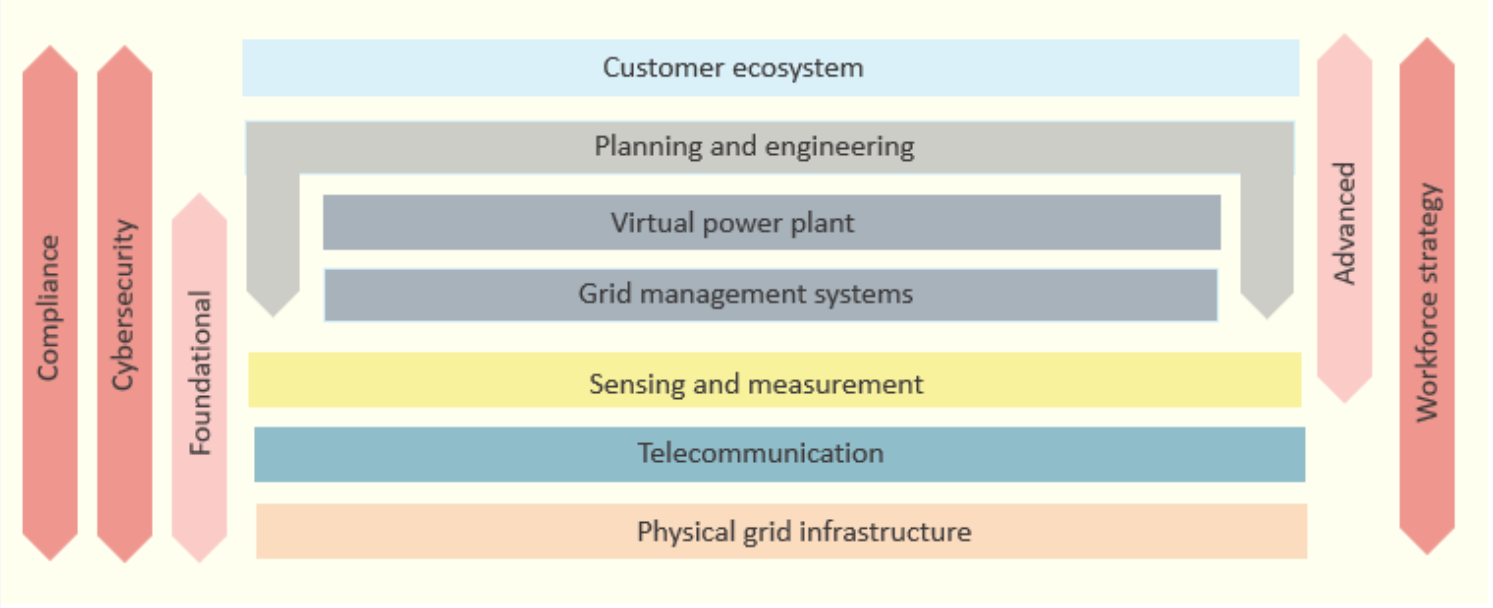
*Grid modernization cost-effectiveness framework from DOE's DSPx Volume III

Chapter Take-Aways

Modernizing the grid is an ever-evolving scope and creating a platform approach can help build these modernization layers

PGE has leveraged best practices to develop and follow a framework to modernize the grid to balance value and rate impact

PGE has provided both long-term high level investment opportunities and short-term detailed planned investments



Questions?

Please email us at
dsp@pgn.com

Break

10:15 – 10:25 am - Second Break
(10 minutes)

Chapter 5
Resilience:
Managing Disruptive Events

Joe Boyles

Distributed Resource Project Manager

Resilience Definitions

Resilience
The ability to anticipate, adapt to, withstand, and quickly recover from disruptive events

Reliability
The availability of service

Hardening
A tool to create stronger infrastructure to protect customers from weather or other environmental impacts

Disruptive Events
High Impact, Low Frequency (HILF) environmental conditions that threaten to interrupt service to customers.

Examples include high winds, ice & snow, wildfires, floods, landslides, earthquakes, and geomagnetic storms.

Physical and Cyber Security is addressed by the Integrated Security Steering Committee (ISSC)

Infrastructure Resilience, aimed at limiting the magnitude and/or duration of disruptive event impacts, requires four outcome-based abilities*:

Robustness
The ability to absorb shocks and continue operating

Infrastructure Resilience

Resourcefulness
The ability to skillfully manage a crisis as it unfolds

Operational Resilience

Rapid Recovery
The ability to get services back as quickly as possible

Operational & Infrastructure Resilience

Adaptability
The ability to incorporate lessons learned from past events

Infrastructure & Operational Resilience

PGE

**National Infrastructure Advisory Council*

Chapter Regulatory Response

Section	Summary Description	Action
4.4.b.ii	Roadmap of the utility's planned investments, tools and activities to advance the long-term DSP vision, using a 5-10-year planning horizon: Explanation of how the investments reduce customer costs, improve customer service, improve reliability, facilitate adoption of demand-side and renewable resources, and convey other system benefits	Resilience investments will improve customer service through better outage response and restoration, improve reliability through infrastructure investments and promote adoption of DERs to mitigate outage impacts.
4.4.b.v	Roadmap of the utility's planned investments, tools and activities to advance the long-term DSP vision, using a 5-10-year planning horizon: Plans to further build community needs assessment and co-created community solutions into DSP roadmap	PGE is working with communities to establish communication plans, coordinated responses, aid stations and resilience centers in the case of Public Safety Power Shutoffs.
5.2	At its core, a grid needs identification answers the question of what technical requirements must be addressed to ensure a safe, reliable and resilient system that provides adequate power quality to the customers it serves. Adding to this core, a holistic approach to grid needs identification anticipates DER adoption by customers, as well as the social and economic needs of the communities that depend on distribution systems, and the contributions they can make to strengthen it.	Assessments of critical customers and infrastructure and identification of investments that will make them more resilient will enable those facilities to continue serving customers during disruptive events.
5.3	Solution identification proposes the equipment, technology or program(s) the utility will advance to meet identified grid needs. Previously, a distribution System Plan would rely on traditional hardware solutions (such as substation upgrades, reconductoring, and additional transformer deployment). These Guidelines advance more holistic distribution system planning, calling for consideration of a wider range of potential solutions (for example increased system monitoring automation, expanded switching capability, distributed energy resources).	Resilience-based solutions will be proposed based on the grid and community needs identified.

PGE established a Resilience team that focuses on improving our ability to meet customer and community expectations for resilient power delivery. There are three areas of focus.

Resilience Overview

Customer Infrastructure Resilience – investigation into customer-sited solutions, such as microgrids, batteries, and other DERs, that enable customers to ride through events and, during normal conditions, provide services to the grid.

PGE Infrastructure Resilience – investment in infrastructure, such as grid hardening, integrated grid, energy supply hardening, that mitigates the occurrence of outages during an event such as wildfire, wind and ice.

Operational Resilience – improvements in PGE's ability to meet customers' needs during events and accelerate the restoration of service through emergency preparedness, outage response and customer support.

Customer Infrastructure Resilience

Community Resource Centers

Partner with municipalities to:

- Ensure the availability of clean water
- Enable emergency services to continue functioning
- Provide a place of respite for citizens to cool off, warm up, get connected and power equipment

Residential Battery Pilot

- Help customers afford whole-home backup power
- Lay the groundwork for expanding microgrid capabilities

Microgrids

- Provide customers with solutions to prevent loss of inventory, keep patients safe, and allow them to remain open when customers need them most

Infrastructure Workstreams & Initiatives

Wildfire Mitigation

- Wildfire Risk Assessment & Modeling
- Situational Awareness
- Design & Construction Standards
- Inspection & Maintenance Plans

Event Learnings

- Feb Ice Storm Event Learnings
- Texas Energy Crisis Event Learnings
- June Heatwave Event Learnings
- Environmental Withstand Criteria Updates

Customer Resiliency Planning

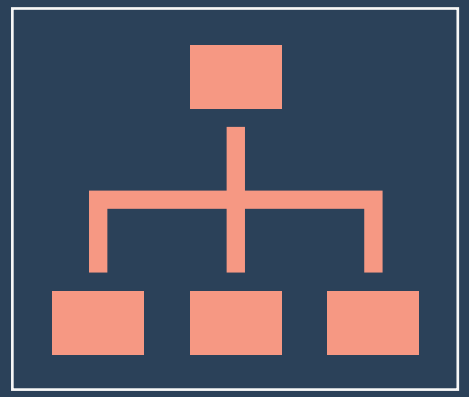
- Mt Hood Improvements
- Willamette Valley Improvements
- Planning & Design Criteria Updates
- Critical Customer (public safety related) Reliability Assessments

Data Resiliency Planning

- Telecom Single Points of Failure Analysis
- Telecom Risk Modeling
- AMI Resilience Improvements

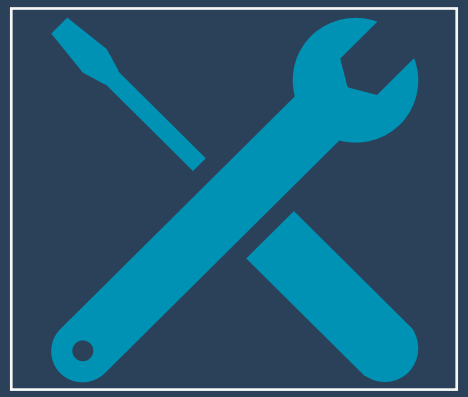
Operational Workstreams & Initiatives

Incident Command Structure



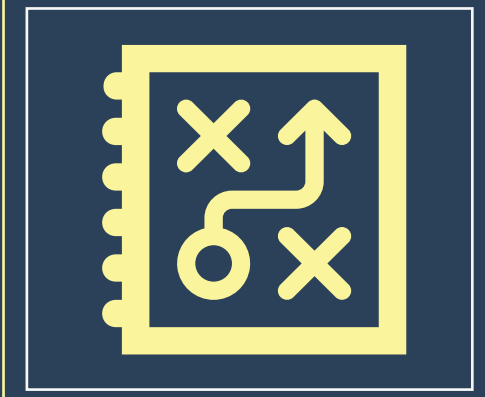
- Outage Management Planning and Preparation
- Community Engagement and Public Information Tools

Tools & Equipment



- Portable Generators
- Device Batteries
- Tablets
- Contract Crew Work Tracking Tool

Playbooks



- Staging Site Operational Plan
- End-to-End Assessment Process
- Wire-down, Wire-watcher and Damage Assessment program

Supply Chain

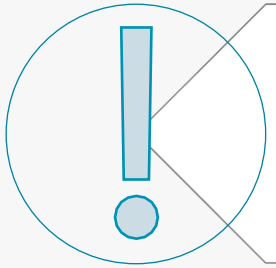
- Storeroom readiness
- Partnerships
- Critical Materials & Service Provider Requirements
- Inventory Management

CUSTOMER EXPERIENCE VISION
RESILIENCE

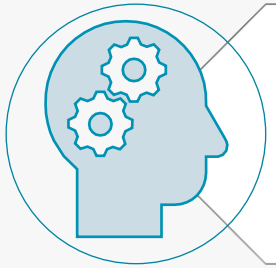
PGE provides my community with service that I can rely on. PGE understands our needs and is planning for the future, adapting and leading the way. I trust that my electric service will be safe, reliable and resilient.

I believe in PGE.

Chapter Take-Aways



Shifts in the climate as well as a shift toward electrification put a spotlight on the importance of resilience and resilience measures that focus on the customer



The OPUC and DSP Stakeholders want to know what PGE is doing to enable customer resilience

The Resilience team is developing resilience metrics that will influence PGE's actions and investment decisions

Questions?

Please email us at
dsp@pgn.com

Chapter 6
Plug and Play: Hosting Capacity Analysis

Misty Gao | Strategy & Planning Analyst
Joe Boyles | Distributed Resource Project Manager

Hosting Capacity Analysis Requirements & Staged Evolution

- Update PGE's Net-metering Map with PSPS
- Options Analysis needed to inform Grid Needs Identification
  - Option 1 – Annual and at circuit
  - Option 2 – Monthly and at feeder
  - Option 3 – Iterative modeling, hourly and at line segment

Hosting Capacity Analysis		
Stage 3		Comprehensive hosting capacity considering both distribution and transmission.
		Increased level of detail regarding distribution constraints, asset performance, and DER performance metrics. Address emerging technology development.
		Maps indicate node/section-level hosting capacity.
		Update and publish hosting capacity maps and datasets sufficiently accurate and frequent to streamline interconnection.
		Conduct system-wide hosting capacity evaluations to inform Grid Needs Identification.
Stage 2		If determined through Docket UM 2111, conduct hosting capacity analysis inform stakeholders of potential interconnection challenges, or replace portions of interconnection studies; publish hosting capacity maps with greater detail over time. Update areas with greater/faster DER adoption more frequently.
		Include distribution-level impacts to the substation and transmission system.
		Conduct hosting capacity evaluations to inform Grid Needs Identification.
Stage 1	Conduct a system evaluation to identify areas of limited DER growth.	
	Provide a plan to conduct hosting capacity evaluations in the near-term which may inform Grid Needs Identification, inform stakeholders of potential interconnection challenges, or replace portions of interconnection studies. Plan may address options that may provide more approachable and instructive data for communities.	
	2021 - 2022	2023 and beyond

A mature hosting capacity analysis is essential to PGE's vision of a plug and play DER future. The ability to seamlessly interconnect a modernized grid with a multi-directional flow is a key enabler to improved access to DERs. HCA provides the necessary visibility into system conditions to support seamless, on-demand integration of DERs.

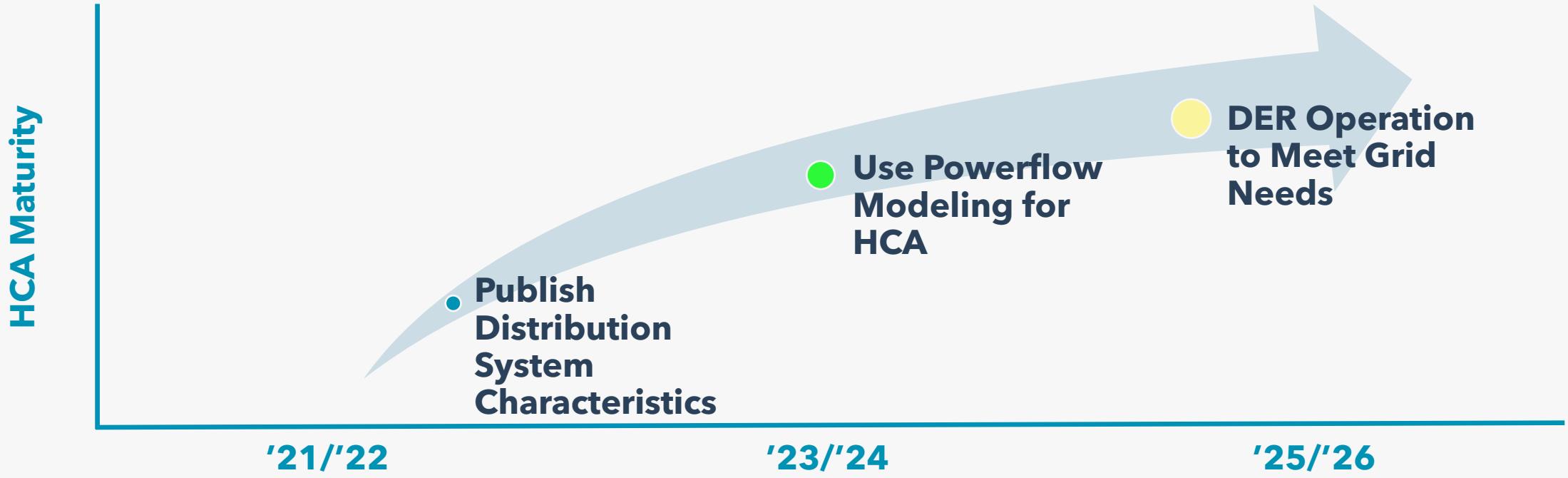
Plug and Play Overview

PGE's long-term plan for HCA includes establishing criteria aimed at targeting feeders in need of updated HCA and ensuring that analysis takes place on a regular basis, with the results uploaded to a publicly accessible location directly following the updated analysis.

The objectives of HCA are to provide increased transparency as to where each utility has hosting capacity, provide developers/customers visibility into better or worse locations for DERs and to understand where and how DERs impact the entire distribution system. Over time, combining this analysis with existing DER penetration and long-term DER forecasts can help inform where infrastructure upgrades may be considered.

PGE anticipates that, as HCA matures and more datasets become available (such as energy burden), combining these data will enable PGE and customers to identify and unlock the value of DERs. As PGE moves toward a 21st century community-centered distribution system, the ability to seamlessly interconnect with a modernized grid is a key enabler to improved access to DERs, achieving a plug and play future.

Hosting Capacity Roadmap

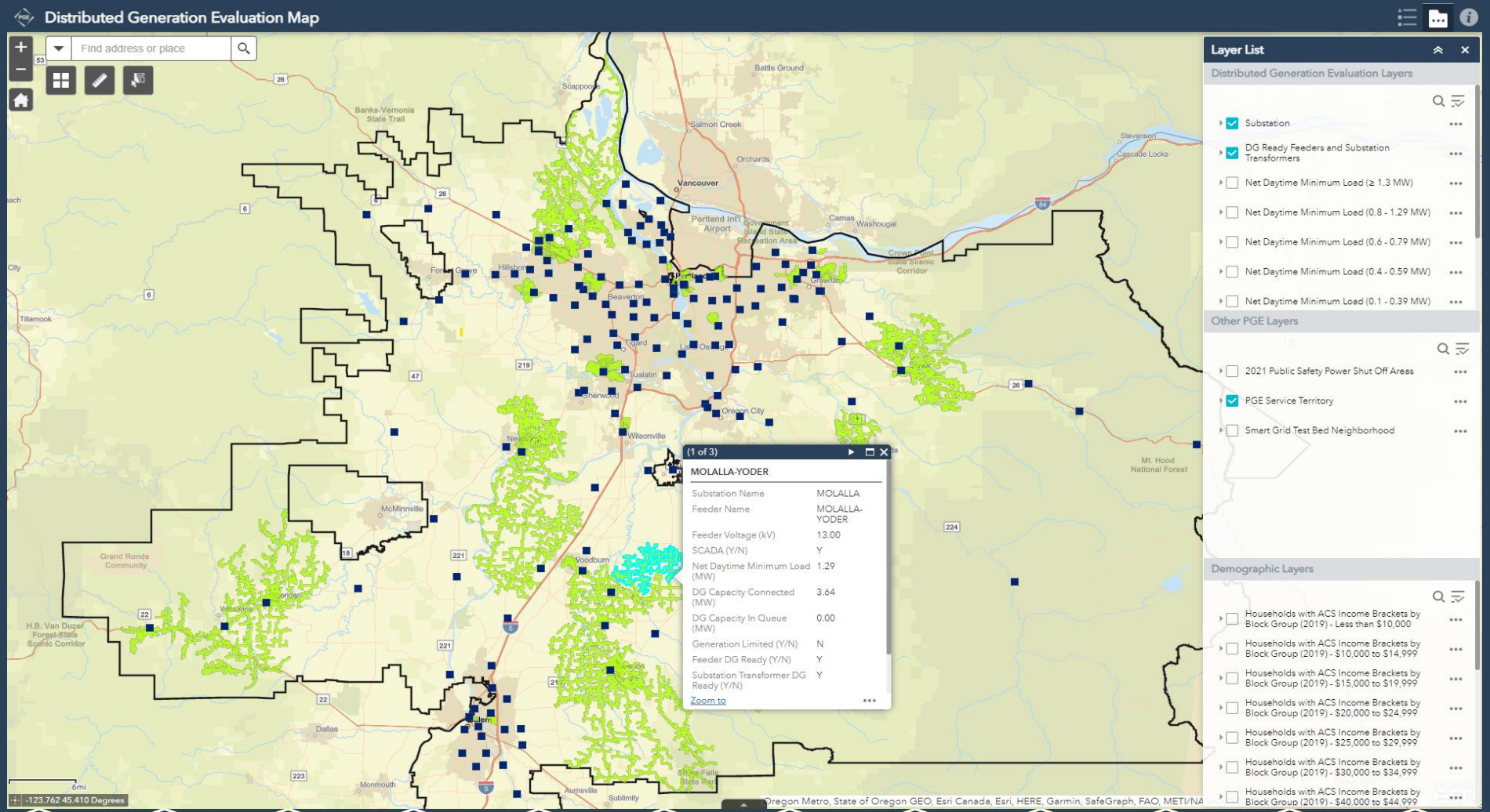


Hosting Capacity Analysis (HCA)	• Publish info about equipment, performance and queue to inform siting, reduce failed applications • Expand data displayed on Net Metering map • Identify how ADMS can support HCA	• Use ADMS to support powerflow modeling and • Use HCA in distribution studies and investment planning, e.g., add capacity for DER penetration	• Increase granularity, data sharing, frequency • Leverage ADMS/DERMS to match DERs with load
Interconnection	• HCA as screening tool for developers/customers • Technical outreach & education regarding data	• More granular visualization of hosting capacity in GIS	• Recruit DERs to meet grid needs • Evolve distribution market functions

Target Use Cases			
	Identify favorable DER locations Communicate DER Readiness Accelerate screening process	Support investment decision-making to increase DER Readiness	Promote DER investment to address Grid Needs, facilitate distribution market operations

Distributed Generation Evaluation Map

[ArcGIS Web Application]



HCA Options Analysis
UM2005 Requirements

HCA Characteristic	Option 1	Option 2	Option 3
Methodology	Stochastic modeling/ EPRI DRIVE modeling	Same as option 1	Iterative modeling
Geographic granularity	Circuit	Feeder	Line segment
Temporal granularity	Annual minimum daily load	Monthly minimum daily load	Hourly assessment
Data presentation	Web-based map for the public and available tabular	Same as option 1	Same as option 1
Data update frequency	Annual refresh	Monthly refresh	Monthly refresh
Other info	Queued generation	Same as option 1	Same as option 1

PGE's HCA Options Analysis Evaluation

Evaluation parameter	Option 1	Option 2	Option 3
Timeline	12 months	24 months	24-36 months
Cost	$141k	$2.61M	$58.38M
Data security risk	Low	Low	Medium
Result validation	Low	High	High
Implementation concerns	Low	Medium	High
Interconnection use case implications	Medium	High	High
Planning use case implications	Low	Medium	Medium
Locational value and benefits	Medium	Medium-high	Medium-high
Interaction with grid needs identification	Medium	Medium-high	Medium-high

PGE's HCA Options Analysis Evaluation

Evaluation parameter	Option 1	Option 2	Option 3
Timeline	12 months	24 months	24-36 months
Cost	$141k	$2.61M	$58.38M
Data security risk	Low	Low	Medium
Result validation	Low	High	High
Implementation concerns	Low	Medium	High
Interconnection use case implications	Medium	High	High
Planning use case implications	Low	Medium	Medium
Locational value and benefits	Medium	Medium-high	Medium-high
Interaction with grid needs identification	Medium	Medium-high	Medium-high

PGE's HCA Execution Plan

Current Practice

vs

Proposed Approach

Current practice (twice annually)			DRIVE model incorporation (twice annually)		
Activity	**Hours**	**Cost**	**Activity**	**Hours**	**Cost**
Setup	1120	$ 67,200	Setup	2,240	$ 134,400
GIS	80	$ 4,800	GIS	240	$ 14,400
Reporting	120	$ 7,200	Reporting	240	$ 14,400
			Modeling	1400	$ 84,000
			Analysis	325	$ 19,500
			DRIVE license renewals		$ 7,200
Total	**1,320**	**$ 79,200**	**Total**	**4,445**	**$ 273,900**

In order to transition from publishing DML twice annually to producing an HCA twice annually, we will need to invest an additional $195K.

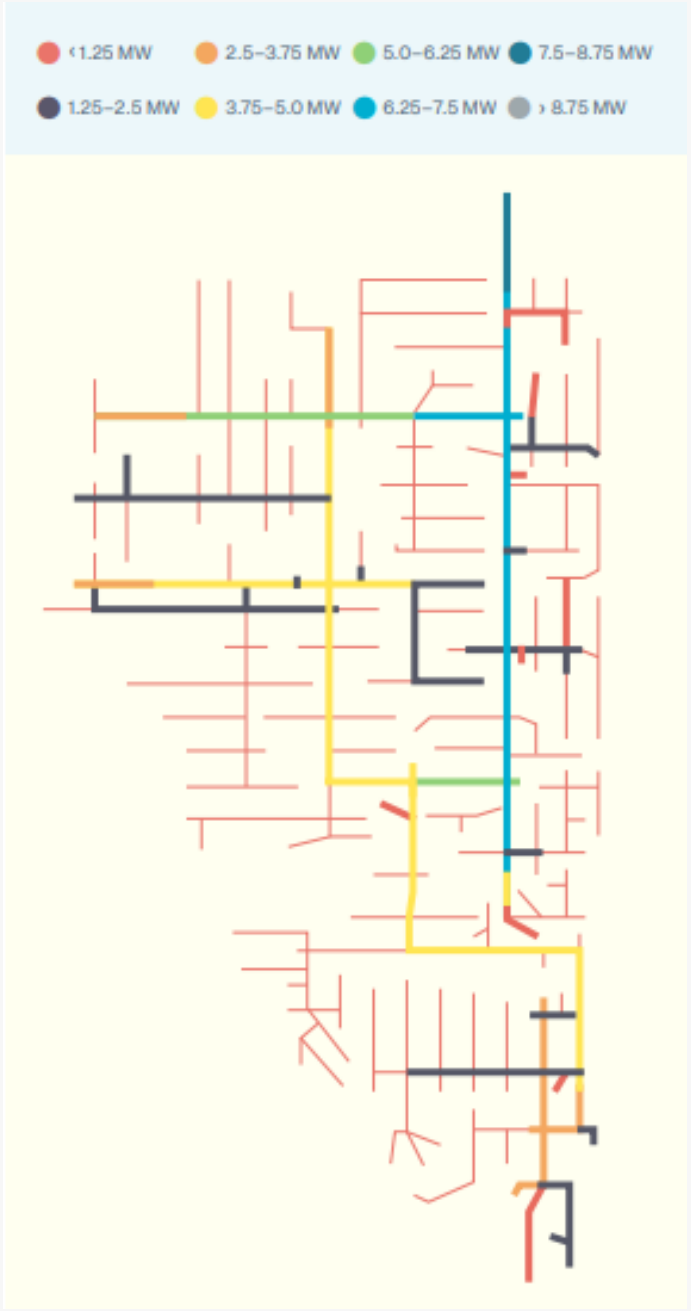
PGE's HCA Execution Plan

HCA Tasks, Resources and Effort

HCA activity	Resources	Level of effort (hours)	Notes
Create base case models, Distribution (CYME) Model Validation; Functionality Testing	Planning engineers CYME software	1,400	Approximately 1 hour per feeder
Calculate peak and DML	Planning engineers SCADA data	2,240	Includes peak winter, peak summer, minimum and daytime minimum load
Load data into DRIVE and execute HCA	Scripts EPRI DRIVE	325	Approximately 15 minutes per feeder
Result validation		40	Estimated effort to identify, analyze and correct issues for 653 feeders
Reporting	Planning engineers Interconnections team Excel	200	Includes publishing system data content that resides in OASIS
Result publication	EPRI DRIVE ARC GIS	240	Transfer of data from DRIVE to ARC GIS and Excel; visualization and testing of data

PGE's HCA Execution Plan

A sample screen shot of hosting capacity heat map



Base case models will be created through CYME, then data will be input to DRIVE. Hosting capacity analysis is performed in DRIVE, one feeder at a time, the output will be in the form of heat maps (example left) and excel files, which will be transitioned to a public-facing GIS platform.

Chapter Take-Aways

Review the Distributed Generation Evaluation map and provide feedback

PGE currently is required to update its DML analysis and limited generation feeder list twice annually. DML is the primary input into conducting HCA and represents a significant amount of the time and effort required to perform HCA

Beginning in late 2022, we plan to begin performing HCA twice annually

PGE's recommendation for the long-term evolution of HCA is that updates should be performed at the line segment level on an as-needed basis

Questions?

Please email us at
dsp@pgn.com

Chapter 7
Evolved Regulatory Framework

Incenting Equitable DER Enablement and Adoption

Nihit Shah

Senior Strategy & Planning Analyst

Chapter Regulatory Response

DSP Section	Summary Description	Action
7.3	Policy landscape	List of policy drivers at the federal and state level for the DSP and DSP related activity
7.4	• Key opportunities for distribution system investments • Key barriers or constraints the utility faces to advancing investment (whether financial, technical, organizational) and mitigation plans	Worked with SMEs across the company to develop list of regulatory opportunities and barriers

Evolved regulatory framework overview

PGE has identified an initial set of regulations that can help accelerate DER adoption and PGE's ability to leverage DER value

PGE has categorized regulation that can accelerate DER into:

New regulations that can accelerate DER adoption and PGE's ability to leverage their value

Current regulations that are not aligned with overarching policies, which are barriers in PGE's ability to leverage DER value

Ongoing regulation discussion and its relationship with the DSP

Regulatory elements highlighted in the DSP

DER resource cost-effectiveness

- Aligning with the National Standard Practice Manual

Aligning utility incentives to scale DER programs

- Understanding regulatory mechanisms that better align utility efforts with DSP investments

Regulation impacting interconnection of DERs

- UM 2111
- Smart inverter standards
- FERC 2222 readiness regulation
- Cost allocation and sharing principles

Regulatory elements highlighted in the DSP – continued

Aligning EV regulation across light-, medium-, and heavy-duty vehicles

- Developing regulation to enable higher LDV adoption akin to MDHDVs

Comparable treatment of NWS to traditional T&D solutions

- Aligning NWS approval process with traditional T&D solutions

Regulatory guidance on enabling inverter-based DER generation

- Proactively investing in protection equipment to enable smart inverter based DER adoption

Streamlining regulatory dockets

- Streamlining reporting needs across reports and plans to drive operational efficiencies at PGE

Chapter Take-Aways

Raising awareness

- DER resource cost-effectiveness
- Aligning utility incentives to scale DER offerings
- Aligning NWS and traditional T&D solutions
- Interconnection of DERs

Call for action

- Aligning EV regulation around light-, medium-, and heavy-duty vehicles
- Proactively enabling inverter-based systems
- Integration of different dockets to drive operational efficiency

Questions?

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dsp@pgn.com

Chapter 8
Plan for Development of Part 2

Bachir Salpagarov

Strategy and Planning Analyst

Plan for part 2 development requirements

As Part of its Part 1 filing each utility should prepare for the upcoming transition period and include a high-level summary to discuss:

a) How legacy distribution planning practices will be transitioned to the requirements of Part 2

b) Whether all legacy distribution planning practices will be transitioned in time for filing Part 2, and if not, the expected timeframe for that eventual transition

c) Efforts to synchronize IRP activities with requirements of Part 2

Chapter Regulatory Response

- Improved forecasting solutions
- Exploring NWS as an alternative to traditional options
- Align work with IRP as part of DSP efforts

DER Load Forecasting

- AdopDER model improves prior forecasting techniques with Increased transparency and broad resource parameters
- Leverages open-source tools and best practices
- Locational results of DER adoption

Non-Wire Solutions

- The company is exploring how NWS can replace, defer or be combined with traditional solutions
- Previous work with two vendors on NWS analysis was not successful
- Looking to acquire a new tool(s) for more comprehensive NWS analysis for planned minimum of two NWS pilots

Synchronize IRP Activities

- Improved DER forecasting capabilities with new model
- Ability to run economic potential analysis for flexible load portfolio
- Levelized cost curves on non-cost effective DERs to better understand portfolio selection mechanism
- More interaction with IRP and DSP incorporating locational impacts, improved portfolio optimization and aligned cost benefit approaches

Chapter Take-Aways

In compliance with these requirements, PGE provides details focusing on planning practice updates around distributed energy resource (DER) forecasting/potential and non-wire solutions. Details on the IRP interaction with the DSP, focusing on the upcoming IRP.

DERs, due to their operational versatility, create a dynamic operational environment in which greater levels of data, analysis and optimization are needed for the company to continue to maximize value for customers.

Improving PGE's planning capabilities is a critical step in enabling and leveraging DERs for different use cases, such as non-wire solutions, improved asset utilization and other projects that provide community benefits.

Questions?

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dsp@pgn.com

Next Steps

DSP Evolution

Distribution System Planning Evolution Framework		
Stage 3		Achieving the long-term vision for distribution system planning capabilities and outcomes.
Stage 2		Advancing requirements incrementally to better match growing utility capabilities and evolving grid, customer and community needs.
Stage 1	Beginning with Initial Requirements of Utility DSP Filings, providing a foundation for future stages.	
	2021-2022	**2023 and beyond**

Initial DSP Rulemaking – Part 2

Part 2 – Due August 15, 2022

- **Forecasting of Load Growth, DER Adoption, and EV Adoption** forecasts DER and EV growth at the substation-level
- **Grid Needs Identification** compares our current capabilities of the distribution system to the forecasted demands on that system to meet future needs
- **Solutions Identification** proposes equipment, technology or programs needed to meet identified grid needs; including NWS
- **Action Plan** presents our solutions to address grid needs, and other investments into the distribution system over the next 2-4 years

Next Steps for Part 2

	2020	2021						
	November - December	January	February	March	April	May	June	July	August
Forecasting of Load Growth, DER Adoption, and EV Adoption	Forecasting of DER/EV Adoption by substation	Overview of AdopDER tool	Results of geographical forecasting, publication of DER Potential and Flex Load Study on PGE's website			Iterate as needed	**PGE writes DSP**	**Final draft shared with partners and communities**	**PGE files on August 15, 2022**
Grid Needs Identification	Discussion of existing process and identification of gaps, risks and opportunities	Recommended criteria for prioritizing projects	Identification of existing projects, accessed for reliability, risk, and grid adequacy	Prioritization of existing projects, and identified needs	Time of grid needs must be resolved to avoided potential adverse impacts				
Solution Identification		Recommended criteria for screening NWS	Identification of existing projects with analyses identifying opportunities for NWS	Identification of existing projects with analyses identifying opportunities for NWS	Recommended two pilots concepts				
Near-term Action Plan	Development of 2-4 year plan								

Important Dates

- Friday, Oct 15, 2021 - DSP Part 1 filing date
- Anticipated procedural dates
  - Tuesday, Oct 19, 2021 – UM 2005 docket update
  - Thursday, Dec 2, 2021 – Staff workshop to receive public comment
  - Thursday, Feb 24, 2022 – Special Public Meeting: IOUs present to the Commission, Commission considers acceptance of Part 1 filings
- Monday, Aug 15, 2022 – DSP Part 2 filing date

Let's meet the future together.