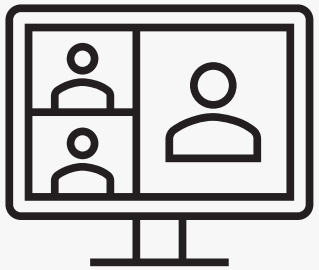
Meeting Logistics



- 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

Waiting Room

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

One moment please, while we wait for people to join

Song by artist:

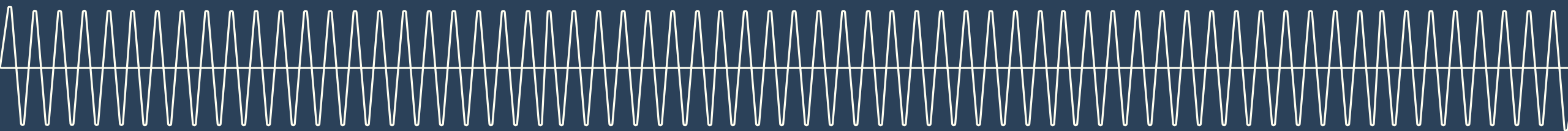
Yo-Yo Ma - Bach: Cello Suite No. 1 in G Major, Prélude

- Please visit us at:
  - www.portlandgeneral.com/dsp
- We'd like to hear from you
  - Online Feedback Form

Distribution System Planning (DSP)

Angela Long, Manager, Distributed Resource Planning (DRP)

July 14, 2021 | Workshop 7



Agenda – July 14

Opening Remarks (5 mins)

Community Engagement Update (1 hr.)

Baseline Date & System Assessment (15 mins.)

Hosting Capacity Analysis Updates (15 mins.)

Long Term Plan: (1 hrs.)

Proposed Partner Engagement Timeline

		2021									
		January	February	March	April	May	June	July	August	September	October
Distribution System Planning (DSP) plan - Part 1	Baseline data and system assessment	Data collection, organization, QA/QC, and visualization				Presented to partners and requested feedback on datasets	Data visualizations and demographics	Final draft shared with partners	**Integrate more feedback if needed**	PGE review process	Filed on Oct 15th
	Hosting capacity	System evaluation map and hosting capacity option analysis and iterate with OPUC's Technical Working Group (TWG)					Present to all partners feedback received from OPUC's TWG	Enhancements to Map as necessary	Final draft shared with partners	PGE review process	Filed on Oct 15th
	Community engagement plan	Development of the Community Engagement Plan and hosted Community Input Workshops							Present to partners for feedback	PGE review process	Filed on Oct 15th
	Long-term planning	Development of long-term plan						Present to partners for feedback	Final draft shared with partners	PGE review process	Filed on Oct 15th

Reminder about the future OPUC TWG Meetings

- Wednesday, July 28, 2021, from 9:00 am – 12:00 pm Pacific
- Wednesday, August 25, 2021, from 9:00 am – 12:00 pm Pacific

Community Engagement Plan: Education and Workshops

Coalition of Communities of Color, Unite Oregon

DSP – Part 1

Presentation Placeholder

Education:

- Assess/ Translate
- Energy 101
- DSP 101

Best Practice:

- Recruit/ Convene
- Workshops/ Surveys
- Collect Feedback

Best Practice:

- Analyze
- Synthesize
- Recommend

Distributed Systems Planning Pilot Workshops: Summary & Evaluation of Community Feedback

Roadmap

01 Pilot Workshops
- Purpose
- Topics

02 Project Partners
- Unite
- CEP
- CCC
- Our Approach

03 Current Engagement Context

04 Participant Demographics
- Race & Ethnicity
- Language
- Gender & Sexual Orientation
- Unite Chapter Affiliation

05 Data Sources & Findings
- Most Useful Topics
- Participant Defined Community Affects
- Areas for Improvement
- Team Feedback

06 Recommendations
- Participant
- Community Partner

Purpose of Pilot Workshops

Provide PGE with a community-centered engagement model that:

- Demonstrates relevancy and accessibility of energy-related topics to BIPOC, immigrant and refugee, and low income communities.
- Builds awareness about of energy systems, climate related impacts, and climate resiliency.
- Centers community feedback about pilot workshops.

Workshop Topics

Day 1

- Electricity Production
  - How?
  - Where?
- The Grid and Peak Load
- Natural Disasters

Day 2

- Distributed Energy Resources
  - Renewables & Storage
  - Energy Efficiency
  - Smart Technology

Unite Oregon

We work across Oregon to build a unified intercultural movement for justice. We work to build collective community power through **community organizing**, **leadership development**, **civic engagement** and **political advocacy**.

Community Energy Project

We believe everyone deserves a safe, healthy, and efficient home, regardless of income.

Community Engagement

- DIY Weatherization
- Lead Poisoning Prevention
- Oregon Community Solar Program

Direct Home Services

- Repairs
- Weatherization
- Energy analysis and Upgrades

Coalition for Communities of Color

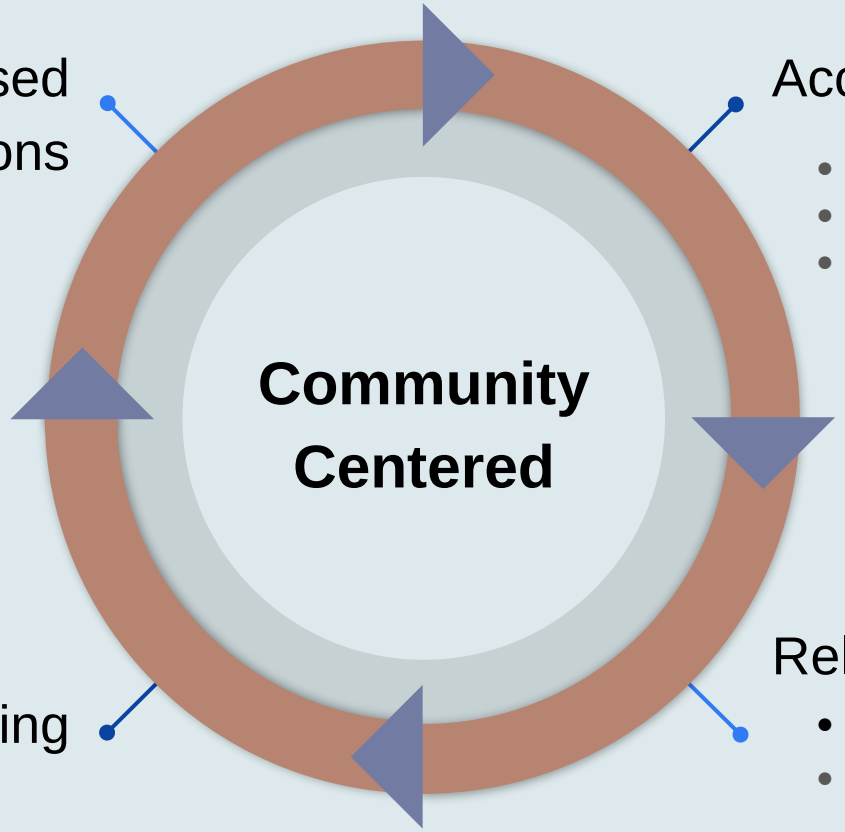
Mission

To address the socioeconomic disparities, institutional racism, and inequity of services experienced by our families, children and communities

To organize our communities for collective action resulting in social change to obtain self-determination, wellness, justice and prosperity.

Our Approach

Investing in Community-based Organizations



Trust & Relationship-building

Accessibility

- Technical (e.g., peak load)
- Language
- Digital (e.g., support)

Relevancy

- Recent occurrences (e.g., fires)
- Use examples of individual & community actions
- Discussion based
- Images > text

Welcome
Bienvenidos

Screen Name: Make sure it reflects the name you want to be called in this space and include your pronouns

Nombre en la Pantalla: **Asegure que refleje el nombre que quiere que le llamen e incluya sus pronombres. Si quiere estar en grupito con hispanohablantes, pon ESP en frente de su nombre**

Community Agreements
Acuerdos Comunitarios

Take Space
Tome espacio

Share your thoughts and experiences

Make Space
Haga espacio

Actively listen and ask questions

Confidentiality
Confidencialidad

Keep personal details confidential but share lessons learned

Be present
Este presente

Your presence is your present

Make room for JOY
Haga espacio para la alegría

Joy = connection

Accept & Expect non-closure
Aceptar y esperar una falta de conclusión

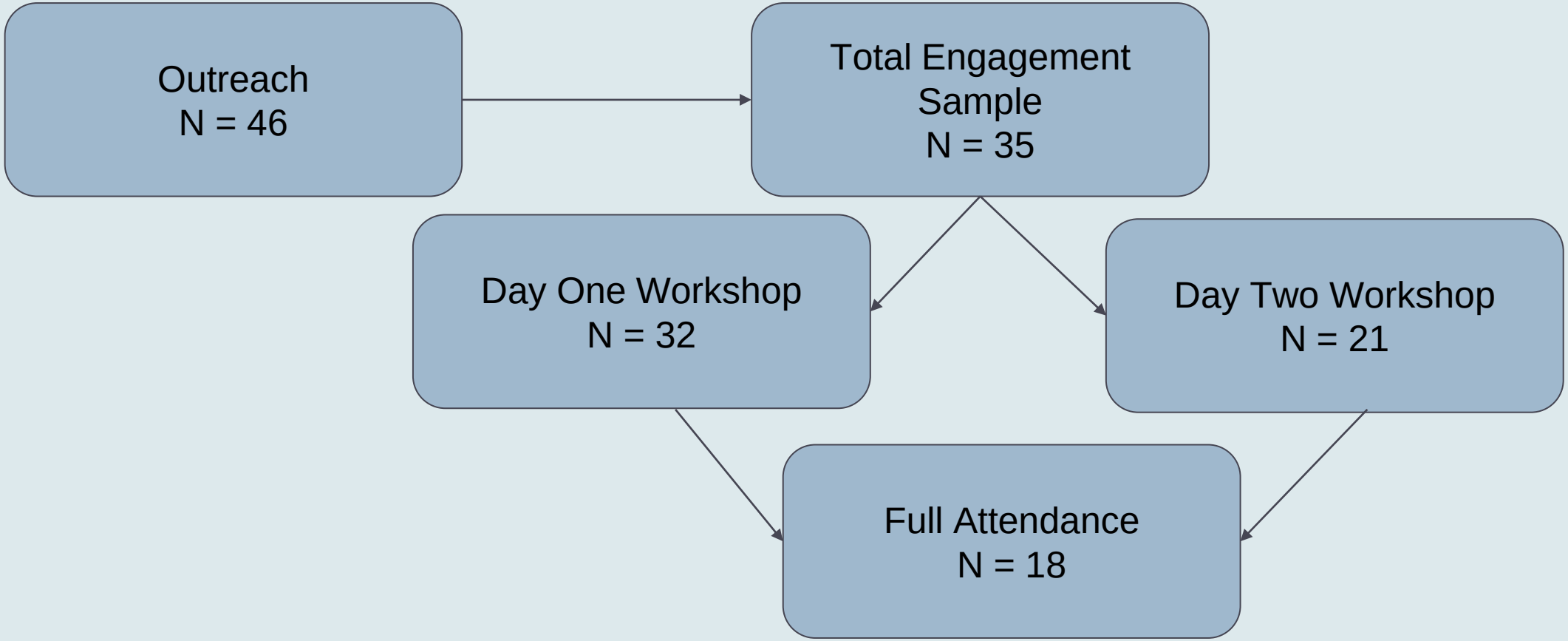
Current Engagement Context

- Online vs In-person Engagement
  - Accessibility
  - Outreach
  - Engagement
  - Digital/Physical Space
- Deep Community Investment: Time, Money, Trust, & Continuity
- Community Needs During Various Crises

Data Sources

- Notes from meetings with PGE, CEP & Unite
  (during the planning process & workshop debrief session)
- Notes from attending and observing both workshops
- Participant registration data
- Post-workshop surveys

Participant Sample Size



Note:Total outreach indicates how many people registered for both workshops. Total Engagement Sample is the number of participants for both workshops, bellow is the sample sizes for day one and day two. Full Attendance represents the number of participants that attended both workshops.

Participant Demographics

Race and Language Needs	Outreach %(Count)	Engagement %(Count)
Black Communities (e.g., African American, Afro Caribbean, and North African) or Black African*	22%(10)	18%(5)
Latinx Communities	52%(24)	54%(15)
AAPI/Asian Communities	11%(5)	18%(5)
Language Needs (Spanish)	30%(14)	34%(10)
Technical Support Needs	.08%(4)	.07%(2)

Note: Race and Language Needs represent participants who completed the registration (outreach) and the survey on workshop day one (engagement).
*= One participant Identified as Black African

Participant Demographics

Other Identities	Outreach %(Count)	Engagement %(Count)
Person of Color	65%(30)	55%(16)
Immigrant	48%(22)	55%(16)
Refugee	11%(5)	10%(3)
Low Income	70%(32)	62%(18)
Renter	59%(27)	59%(17)

Note: Other Identities represent participants who completed the registration (outreach) and the survey on workshop day one (engagement).

Participant Demographics

Gender and Sexuality	Count	Percent
Woman/Girl/Feminine	23	68%
Man/Boy/Macsuline	9	26%
Straight	20	59%
Bixsexual/Pansexual*	4	6%
Queer	2	6%
Questioning	2	6%
Did not want to share sexual identity	2	6%

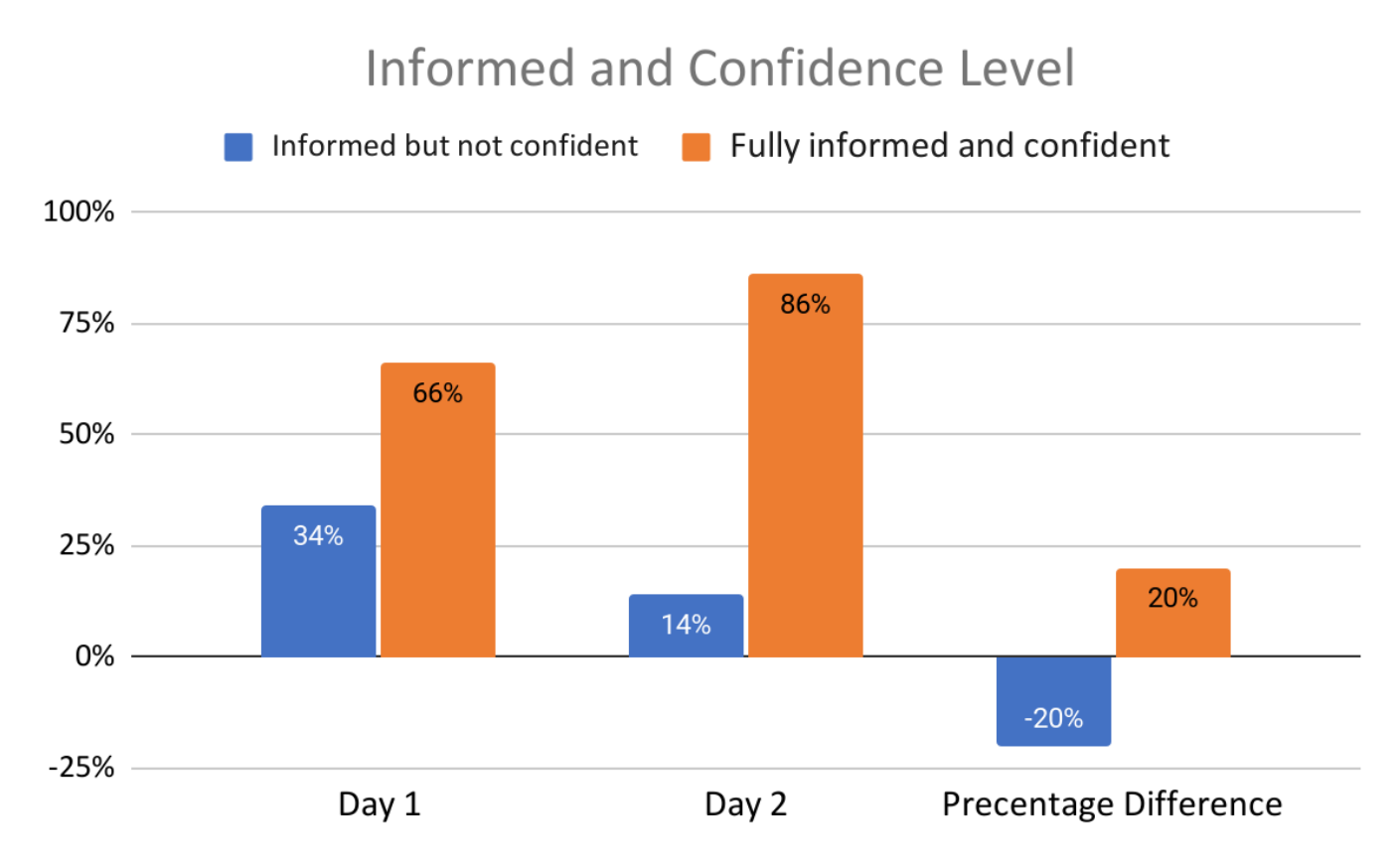
Note: This table represents all the participants that completed the survey from day one workshop. None of the participants indicated they identified as lesbian, gay, transgender, agender, non-binary, or unsure of their gender identity.
*= Among bisexual and pansexual participants 2 idenetified as bisexual, one ideneitified as pansexual, and one idenefied as either sexuality

Participant Demographics

Unite Oregon Chapter Affiliation	Outreach %(count)	Engagement %(count)
Multnomah County	16%(7)	24%(8)
Rogue Valley	16%(7)	9%(3)
Washington County	22%(10)	18%(6)
Clackamas County	47%(21)	47%(16)
PGE Affiliation	41%(19)	48%(14)

Note: Unite Oregon Chapter Affiliation represents participants who completed the registration (outreach) and/or the survey on workshop day one (engagement). PGE affiliation represents all the participants that completed the registration section.

How well informed and confident do you feel to engage with discussions and decisions about energy in Oregon?



Note: Participants indicated knowledge and confidence on a 4 point scale [1 = still unclear - 4 = fully informed and confident]. On both surveys, all participants indicated that they were either “Informed, but not confident” or “fully informed and confident.”

Most Useful Topics According to Participants

Day 1

- Reduce & save energy at household level
- Power grid & where power comes from
- Peak hours
- Renewable energy sources
- Winter storms & wildfires

Day 2

- Microgrid & example of energy resilient community and connection with institutional/structural conditions
- How to save/decrease energy use
- Strategies for countering peak demand
- Resources section

Energy Systems: Community Affects & Needs

- Our communities are… (affects)
  - ...still recovering from past fires
  - ...not informed/do not have intentional planning to prevent these impacts
  - ...surviving these crises through mutual aid and resilience -- more state support would minimize this burden
  - ...working outside; they need to be prepared
- Our communities need… (needs)
  - ... to be centered in these discussions as drastic climate changes have sudden impacts on low-income and immigrant communities
  - ...more education, less barriers to access, and lower cost to participate in these new systems (e.g., weatherization, smart technology, & alternative energies)
  - ...more climate aware spaces that are community centered
  - ...utility payment support due to COVID-19

Participant Suggestions for Future Workshops

- Many were happy with what was offered
- Popular Education approach throughout engagement (e.g., activities like kahoot)
- Different levels of experience (e.g., beginner, intermediate, etc.)
- More depth around personal, community, and institutional/government levels
- More examples of climate resilience
- Tools for community: prepare for weather situations, how to save energy, encourage children to save energy, etc.
- More resources and time to discuss them -- state-funded programs/institutions helping with climate change
- Understanding of energy decision makers and who community can hold accountable
- More of these efforts to keep learning about energy and growing in community
- Invite folks to provide testimony (affected by or work on resiliency efforts)
- Interpretation issues (e.g., more practice before hand, slowing speaking)

Team Reflections

- Stories allowed for people to connect early on.
- Pauses and prompts for people to process and relate to was helpful.
- Learning from community - “what tips and tricks do participants have?”
- More opportunities for popular education model
    - More trivia/polls/jeopardy model (answers first - participants guess the questions)
- Discussing different levels of climate resiliency and EJ: personal, community, and institutional/governmental levels.
- Include resources / action items earlier, and CBO’s with resources
- Stronger environmental justice lens (how to balance PGE’s goals with EJ goals?)
- Develop a sheet of terms/glossary
- Conduct a pre-survey to figure out expectations and gauge understanding

Participant Recommendations

- Integrate energy-related resources throughout the workshops and time to discuss/explain
- Incorporate more participant engagement and interaction opportunities
- Set aside time to discuss strategies for reducing energy-burden and consumption, and how communities can access renewable energy sources at lower costs
- Include more community-based examples/strategies of climate resiliency (e.g., CA microgrid example)
- Offer more in-depth workshops that connect energy topics/issues to: individuals, communities, and governments/institutions
- Invite and involve more CBOs in the workshops
- More clarity about “why” these conversations are needed now -- what laws, regulations, etc. are important to know about?

Community Partner Recommendations

- Budgeting for community engagement must include:
  - At least 4-6 months of planning in partnership with community-based organizations for: outreach, recruiting, event planning (if in-person), coordinating with interpreters, facilitators, and back-end support, procuring transportation, food, child care (if in-person), etc.
  - Stipends for all participants
  - Funds to shareback findings with community members
- Prepare and practice with interpreters (Unite's model)
- Building community-based feedback loops into engagement plan
- Share back community engagement findings with community
- Incorporate pre-workshop survey/evaluation to gauge expectations versus experience
- Use REALD and SOGI format on participant evaluation tools/surveys to better capture demographic diversity of participants





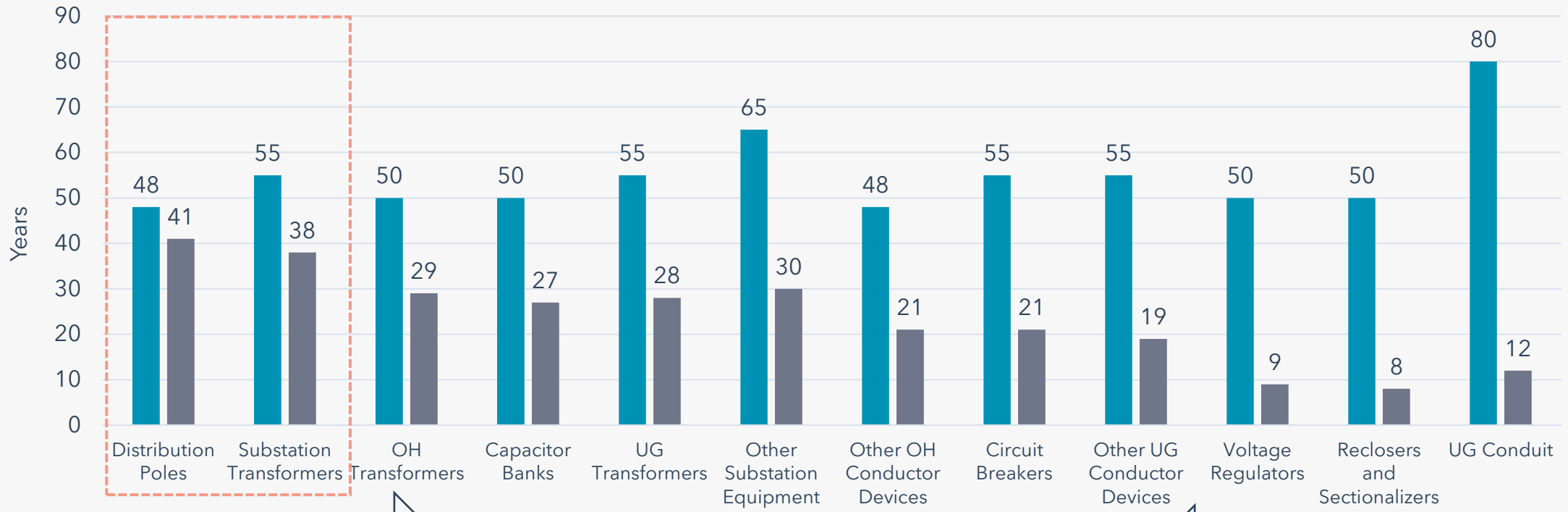
Baseline Data & System Assessment update:

Angela Long, DRP Manager

DSP Part 1

Asset Avg. Service-Life vs Avg. Age (years)

- The datasets below are not contemporaneous and have different purposes.
- PGE's depreciation study is developed by an external consultant for the purposes of cost-recovery.
- PGE's "Average Age of Assets" is the actual age of all in-service assets within that group as of 2021.



Based on a 5-year depreciation study of 2018 with 2015 data

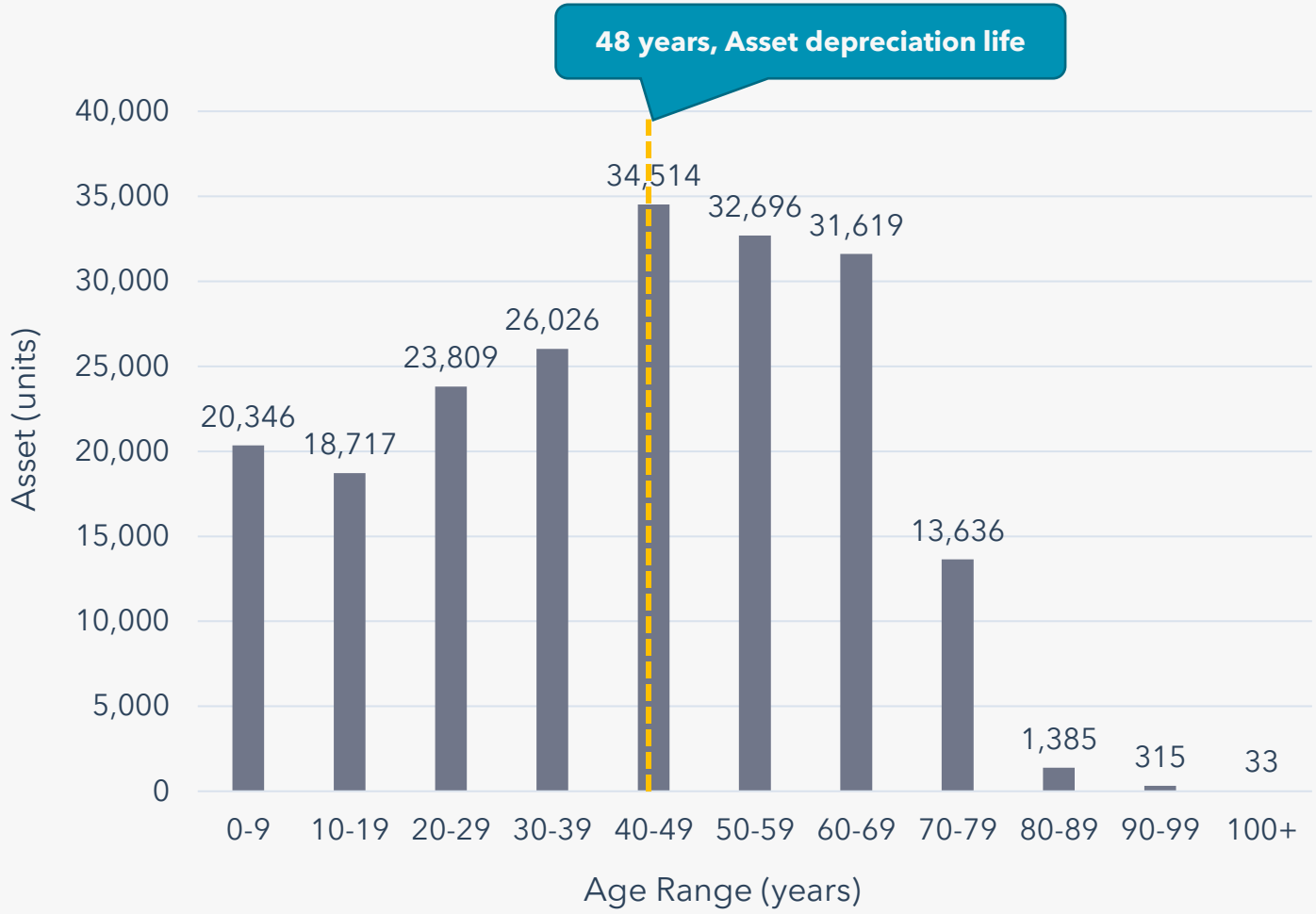
Based on data from the asset management team from 2021

Distribution Poles by Age Range (203,615 Units)

Pole are physically inspected through PGE's Facilities Inspection and Treatment to National Electrical Safety code (FITNES)

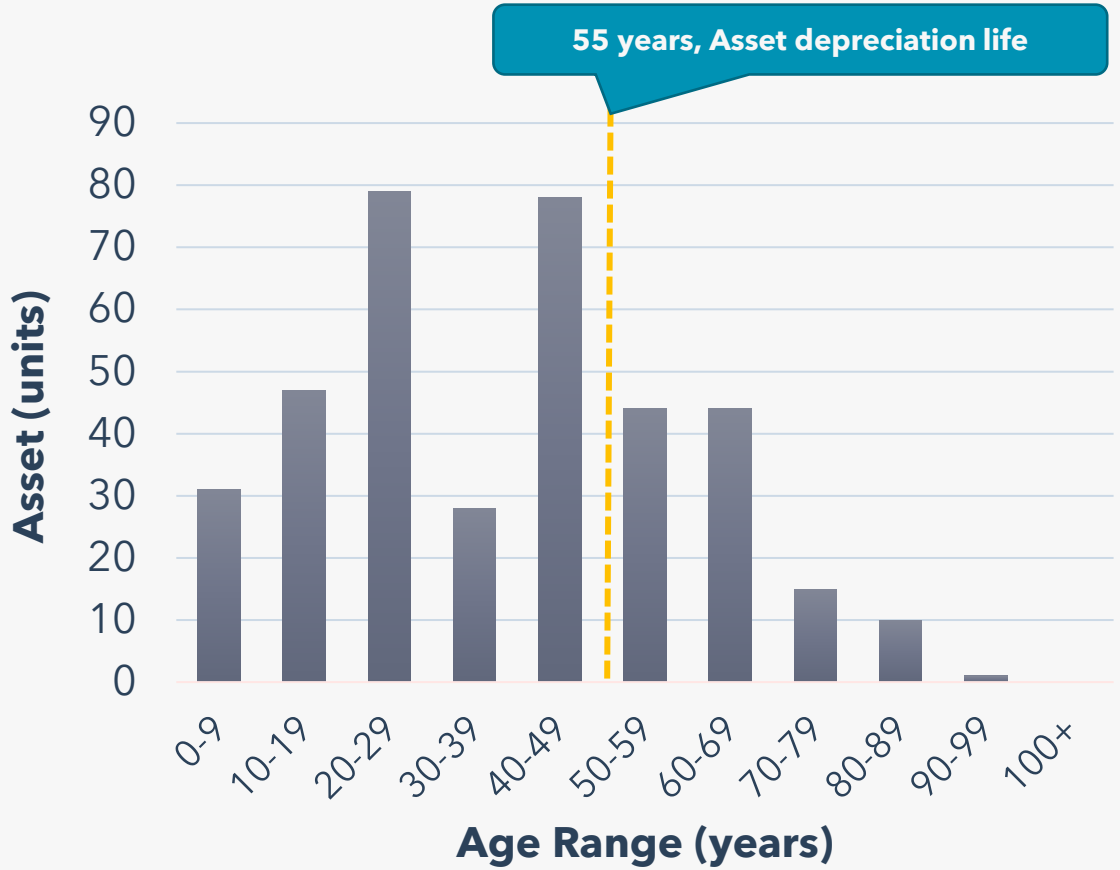
- Oregon Admin Rule 860-024-0011
- Includes a detailed visual inspection as well as wood utility pole testing and treating
- Works on a 10-year cycle and covers 10-percent of PGE's system per year
- Recommends a pole be replaced if the inspection finds that insufficient pole strength or pole height exists

NOTE: Pole age varies depending on wood product quality.



Distribution Substation Transformer by Age Range (407 Units)

- PGE conducts a risk assessment on major T&D asset categories, unit-by unit
- Units are ranked by risk, which is one of the metrics used to prioritize replacement
- Units where existing asset risk exceeds the annualized lifecycle cost of the replacement asset* are recommended for replacement
- Decision-makers/portfolio-managers determine when the units can be replaced based on their budget cycles/available funds



All-in cost to own and maintain the new asset including risk, maintenance, and capital investment.

Hosting Capacity Analysis: Update

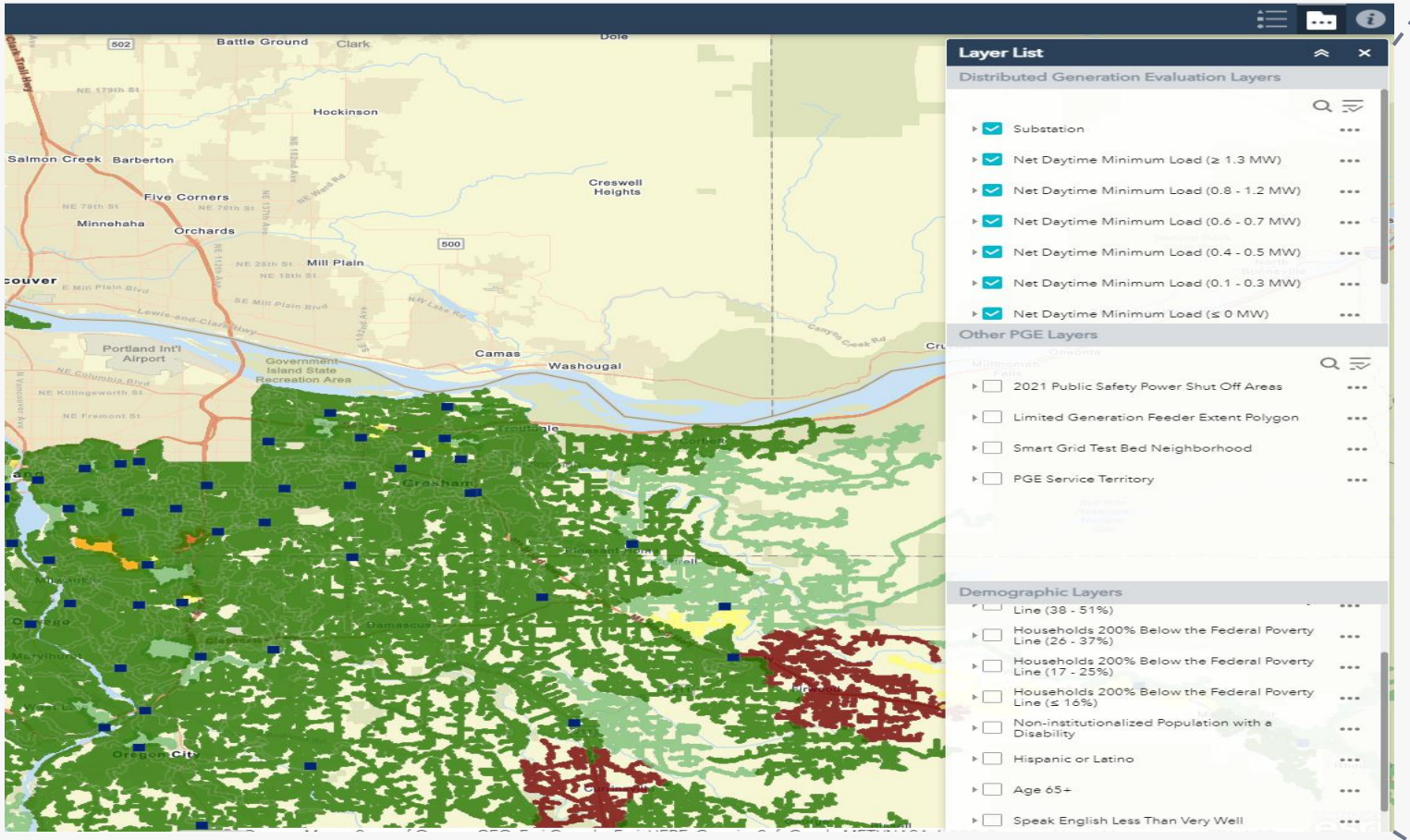
Misty Gao, DRP Analyst & Joe Boyles, DRP PM

DSP – Part 1

Updates on HCA

- During the feedback process, PGE received 124 comments from stakeholders. The complete set of feedback with PGE's responses will be accessible on PGE's DSP Website Distribution System Planning | PGE (portlandgeneral.com)
- DER Ready indicator will be added to Feeder popup on map; remaining layers will be cleaned up and logically grouped
- PGE is developing a plan to conduct the Initial Hosting Capacity Analysis
- Distributed Generation Evaluation Map (new name!) will be published on DSP website in Q3

Modified Layer List Example



Layer List
Distributed Generation Evaluation Layers
Substation
Net Daytime Minimum Load (≥ 1.3 MW)
Net Daytime Minimum Load (0.8 - 1.2 MW)
Net Daytime Minimum Load (0.6 - 0.7 MW)
Net Daytime Minimum Load (0.4 - 0.5 MW)
Other PGE Layers
2021 Public Safety Power Shut Off Areas
Limited Generation Feeder Extent Polygon
Smart Grid Test Bed Neighborhood
PGE Service Territory
Demographic Layers
Households 200% Below the Federal Poverty Line (52 - 73%)
Households 200% Below the Federal Poverty Line (38 - 51%)
Households 200% Below the Federal Poverty Line (26 - 37%)
Households 200% Below the Federal Poverty Line (17 - 25%)
Households 200% Below the Federal Poverty Line (≤ 16%)

Break
(5 minutes)

Long Term Plan:
General Framework

Angela Long, DRP Manager

DSP – Part 1

Alignment with state policy and laws

Prioritizing a modernized and clean grid

2016

- Senate Bill 1547: Removes coal from electric rates, doubles RPS, and pursues all cost-effective EE & DR

2017

- Governor's Climate Agenda Strategies: Decarbonizes the electricity system, expand Access to Clean Energy Services, expanding electric vehicles, strengthens energy efficiency investments, and invests in climate solutions that fosters resilience

2018

- Senate Bill 978: Requires the OPUC to establish public process for the purpose of investigating how industry trends, technologies and policy drivers in electricity sector might impact existing regulatory system and incentives currently employed by commission (i.e., transportation electrification, grid modernization, DER acceleration, and regulatory incentives)

2019

- UM2005: OPUC opens an investigation into distribution system planning (DSP)

2020

- Executive Order 20-04: Prioritizes OPUC proceedings and activities that advance decarbonization in the utility sector, and exercise its broad statutory authority to reduce GHG emissions, mitigate energy burden and ensure system reliability and resource adequacy
- UM2005: OPUC established initial guidelines for DSP

Distribution System Planning

Crawl

2021 through 2022

Beginning with Initial Requirements of Utility DSP Filings, providing a foundation for future stages

Walk

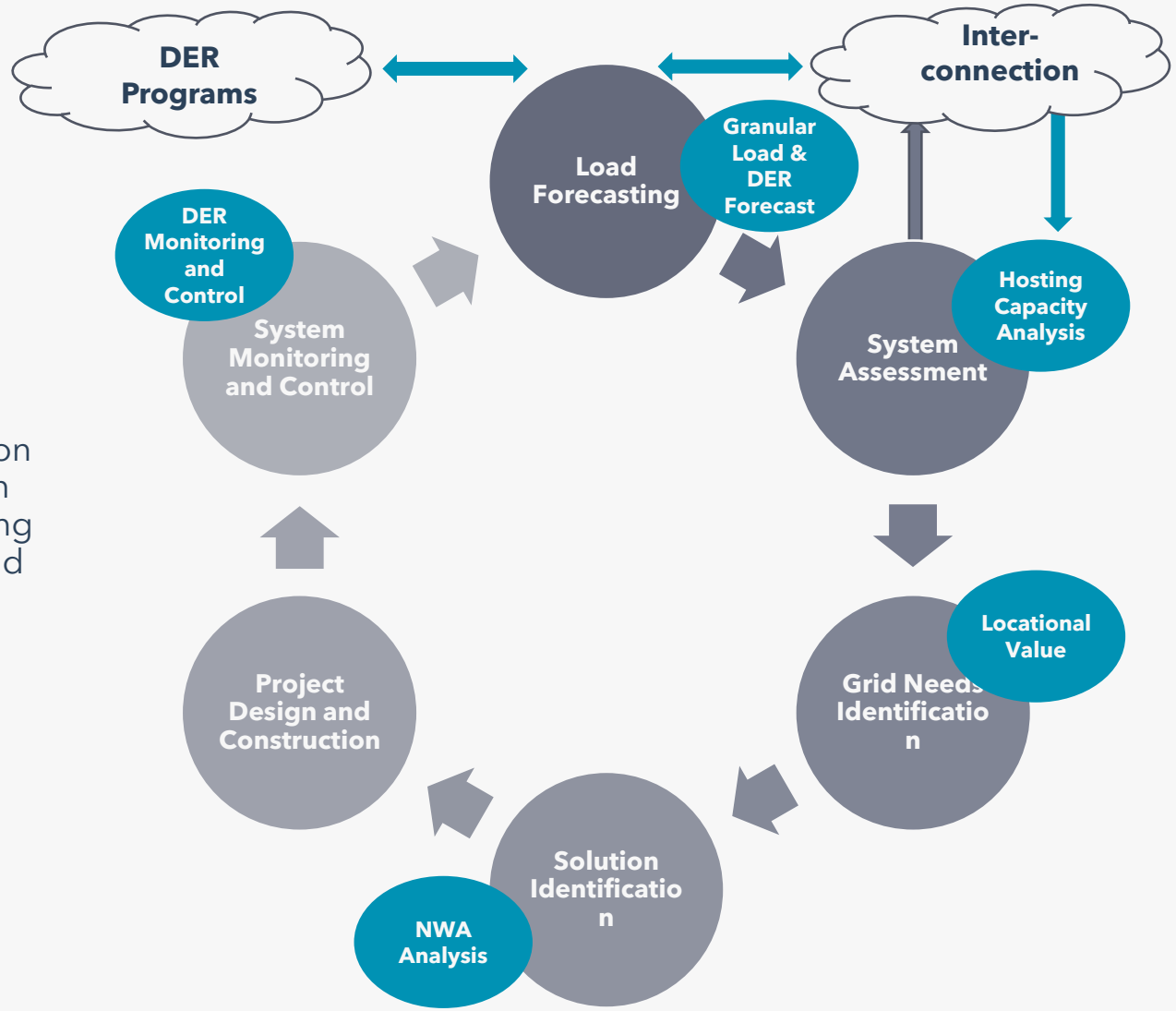
Anticipated to begin in 2023

Advancing requirements incrementally to better match growing utility capabilities and evolving grid, customer and community needs

Run

2023 and beyond

Achieving the long-term vision for distribution system planning capabilities and outcomes



Long-term Plan Initial Guidelines

a) The utility's vision for the distribution system over the next 5-10 years, including any strategies, goals or objectives, and their alignment with State law and OPUC policies. These goals may include increased reliability, effective integration of DERs, broader greenhouse gas emissions reduction, or others.

b) Roadmap of the utility's planned investments, tools and activities to advance the long-term DSP vision, using a 5-10-year planning horizon.

c) Smart Grid investment opportunities

d) Key opportunities and possible benefits for distribution system investment

e) Research and development the utility is undertaking or monitoring

f) Future policy and planning intersections

g) Plans to monitor and adapt the long-term Distribution System Plan

Opportunity at Hand

Environmental

- Climate resiliency
- Accelerating decarbonization of the distribution system
- Clean and green resource forecasting
- Increasing the deployment speed of grid modernization and resiliency initiatives

Social

- Community-centered investments
- Equity and affordability centered
- Vulnerable populations impact mitigation

Political and Regulatory

- Oregon Policies (HB2021, HB2475, SB286)
- UM 2011
- Enabling/targeting electrification activities
- Related filings Flexible load plan, transportation electrification plan, integrated resource plan

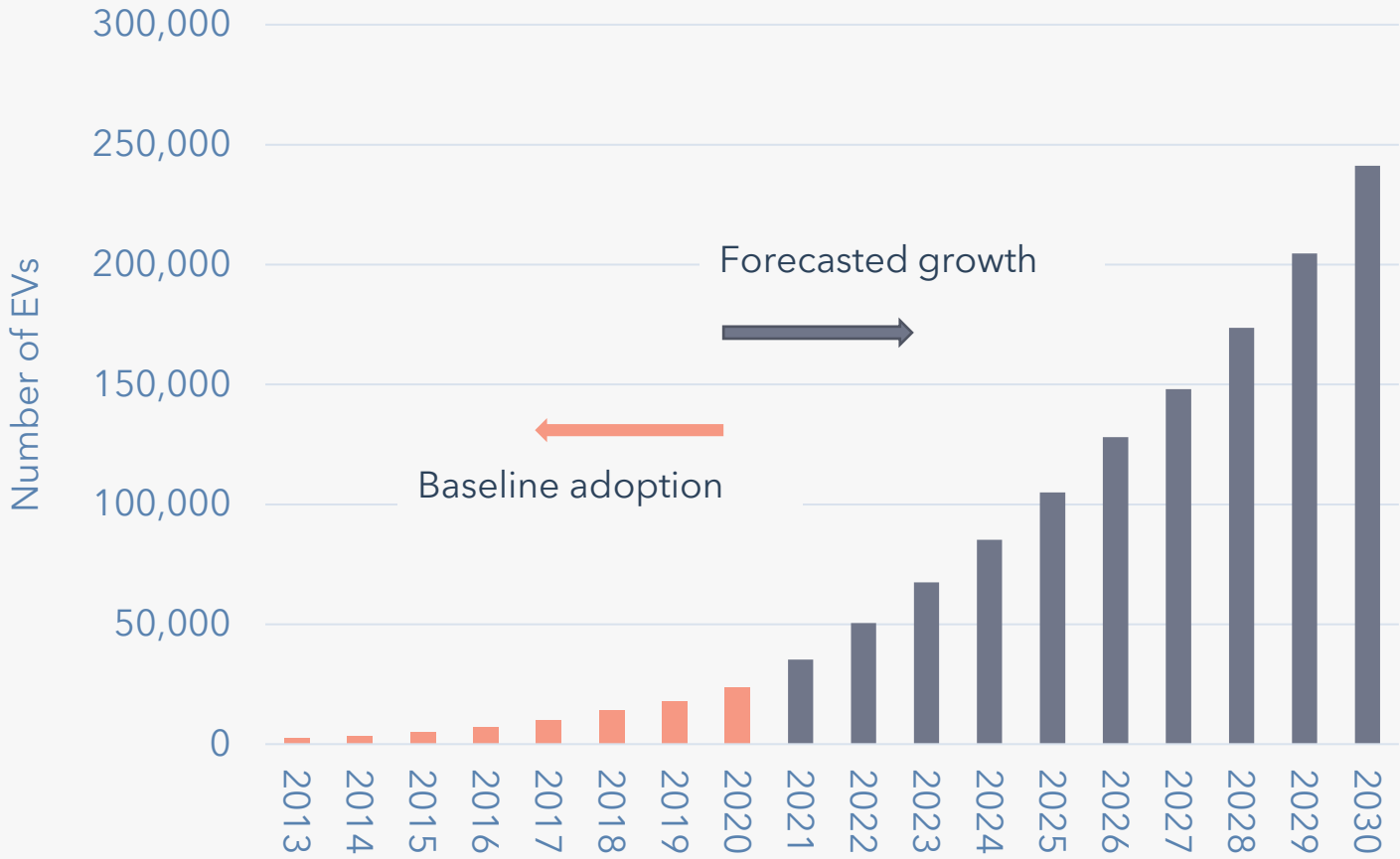
Baseline vs Future Trends

The future is now

By 2030 we expect to see:

- Roughly 250,000 registered EVs in PGE service area
- 255 summer / 171 winter MW of Flex Load
- Nearly 400 MW-ac of distributed solar PV

EV Growth Compared to Baseline Data



Distribution System Planning

The DSP is a place where distribution investments, climate goals, community, and utility evolution can coexist together in one holistic story. This is a shift to our utility planning to:

*In partnership with our customers, communities, partners, stakeholders, and the OPUC, we lead the energy transformation to a safe, **secure**, reliable and **resilient** system, **at fair and reasonable costs**.*

1

Shared understanding of the current state of **distribution systems** and any **needed improvements**.

2

Increased transparency and insight into utility planning processes and investments **needed to address resiliency and grid modernization.**

3

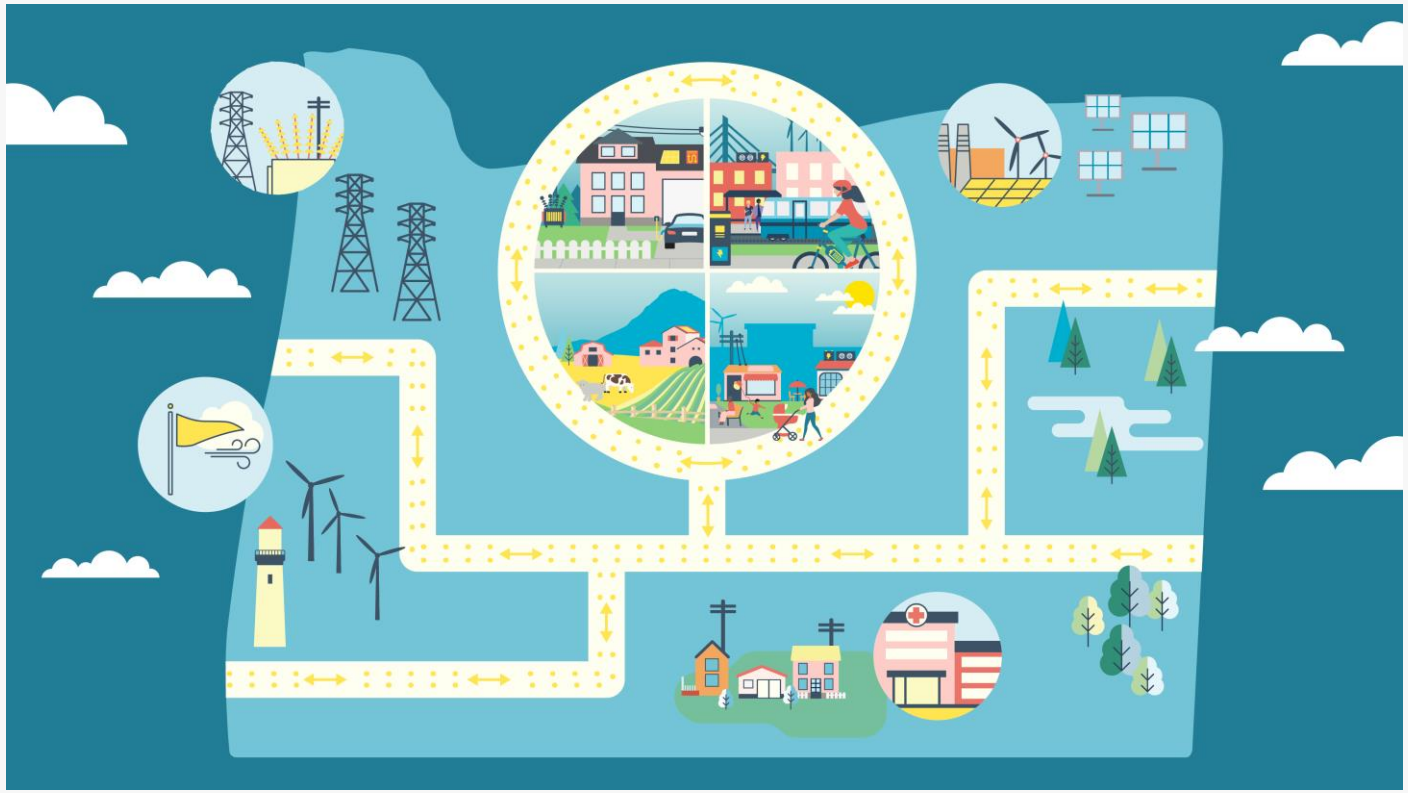
Investments are optimized for **operational efficiency** and do maximize **community/customer value.**

PGE's DSP Vision

"PGE empowers you, and your community, along your entire energy journey"

PGE will empower customers through innovative products and services that are community inspired and customer centric.

PGE will provide the grid platform to accelerate the clean energy transition in a fair and equitable manner.



DSP Strategic Focus

Empowering Communities

Enabling equitable participation in the clean energy transition

Grid Modernization

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

Resiliency

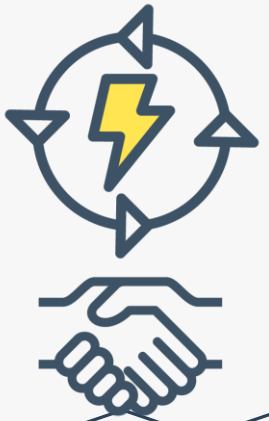
Anticipating, adapting to, withstanding, and quickly recovering from disruptive events

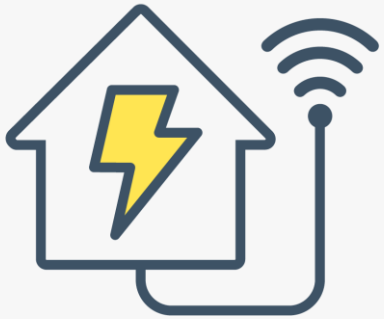
Plug and Play

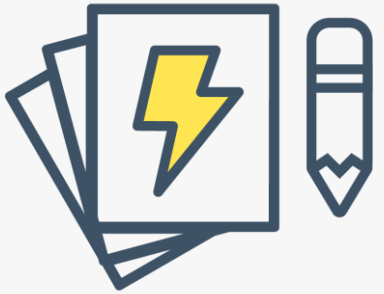
Improving access to grid edge investments to accelerate customers' clean energy transition

Evolved Regulatory Framework

Evolving the regulatory framework to keep pace with the clean energy transition at fair and reasonable costs







Empowering Communities

Value Proposition

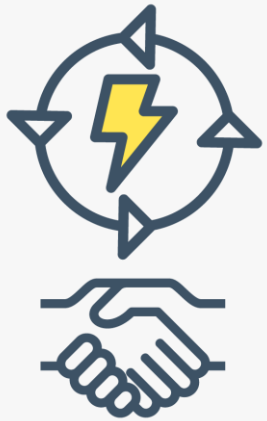
1. Core to PGE's purpose – to **power the advancement of society**
2. **Fosters procedural equity** is both an opportunity to proactively plan and co-develop solutions and a mechanism for mitigating risk of community choice aggregation (CCA)
3. **Delivers customer / community value** in the form of local enabling infrastructure upon which we may layer inclusive, human-centered product and service development

Current Activities

- Partnership with community-based organizations (CBO) to facilitate equity-focused community workshops, conduct environmental justice research, and provide engagement and planning recommendations
- Interconnection Customer Experience, Web Redesign

Future Activities

- Implementation of a Community Engagement Plan
- Support non-wires solution identification, development and delivery
- Continuation of Community Facilitators
- Data Access: demographic and socioeconomic
- Locational studies
- Energy Trust data integration



Grid Modernization

Value Proposition

1. Modernizes the grid enables PGE to provide best in class service to **meet customer needs and expectations** enabling PGE's value proposition of empowering customers
2. **Improves resiliency, flexibility, reliability, and safety** as climate change impact proliferates through the region
3. Modernized grid enables value add services and opportunities such as platform management further PGE's transition to become a **one stop shop for all energy services**

Current Activities:

- Enabling customers' distributed generation (DG) siting and sizing:
  - Providing system data that communicates DG readiness
  - Planning initial HCA effort
- Integrated Operations Center
- ADMS
- DERMS
- DRMS

Future Activities

- Next Gen Tool scoping study
- DER mapping - HCA & Baseline Data and System Assessment Map
- Non-wire Solutions
- Additional AMI data integration
- AdopDER potential model integration
- Test expanded CYME modules

Resiliency

Value Proposition

1. Develop sustainable, long-term solutions that aid in **anticipating, adapting to, withstanding, and quickly recovering** from disruptive events by:
    a. Increasing **visibility of distribution system conditions**
    b. Integrating emergency planning across customer experience, safety, operations, and infrastructure
    c. Empowering our communities with the **tools and insights to meet local planning needs**

Current Activities

- Electric School Bus V2G pilot
- Battery storage / microgrid deployment
- Applied R&D project with Affordable Housing partner to model resiliency, GHG, and indoor air quality risks

Future Activities

- Non-residential resiliency product offerings
- Evaluate grid vs. customer value streams for battery storage pilots
- Partner with local governments and communities to develop resiliency plans that leverage DERs
- Regional RA conversation

Plug and Play

Value Proposition

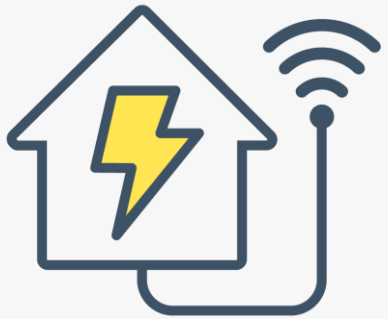
1. **Improves customer experience** in interconnecting DERs
    a) Empower customers and delight them in the engagement process
2. Advances **decarbonization and electrification** goals
3. Accelerates product adoption and penetration
4. **Lowers barriers to interconnection**
5. **Provides equitable access** to technologies and products

Current Activities

- Interconnection
    - Customer experience journey mapping and roadmap development
    - Standards & Operations Updates
    - Website redesign
    - UM 2099 (Two-Meter Solution)
    - Net Metering Survey

Future Activities

- Interconnection
    - UM2111, PowerClerk upgrades, CRM, ETO data integration
- DER Planning Tools: measure database, cost-effectiveness & valuation, DER forecasting, reporting dashboards, AdopDER integration



Evolved Regulatory Framework

Value Proposition

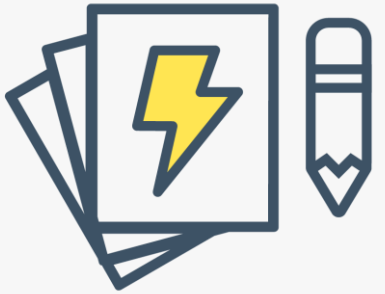
1. In partnership with our customers, communities, partners, stakeholders, and the OPUC, we lead the energy transformation to a safe, **secure**, reliable and **resilient** system, **at fair and reasonable costs**.
2. Contribute to conversations around new regulatory mechanisms to **align utility incentives** with respect to DSP-related investments in order to accelerate deployment of DERs onto the grid.
3. Innovate within existing framework to **explore new tariff mechanisms** that reflect the changing nature of how customer-sited technologies can interact with the electric system

Current Activities

- Smart Grid Testbeds
- Flexible Load Plan UM 2141 and associated Multi-Year Plan
- Transportation Electrification Investment Framework UM 2165
- UM2099

Future Activities

- Regional coordination (Energy Trust, NEEA, NW Power Council)
- UM 2111
- Non-wire solutions
- Cost-effectiveness



Questions/Next Steps

Next Steps

Feedback Survey

Propose Meeting Topics

- Email us at **DSP@pgn.com** with suggested topics

		2021									
		January	February	March	April	May	June	July	August	September	October
Distribution System Planning (DSP) plan - Part 1	Baseline data and system assessment	Data collection, organization, QA/QC, and visualization				Presented to partners and requested feedback on datasets	Data visualizations and demographics	Final draft shared with partners	Integrate more feedback if needed	PGE review process	Filed on Oct 15th
	Hosting capacity	System evaluation map and hosting capacity option analysis and iterate with OPUC's Technical Working Group (TWG)					Present to all partners feedback received from OPUC's TWG	Enhancements to Map as necessary	Final draft shared with partners	PGE review process	Filed on Oct 15th
	Community engagement plan	Development of the Community Engagement Plan and hosted Community Input Workshops							Present to partners for feedback	PGE review process	Filed on Oct 15th
	Long term planning	Development of long-term plan						Present to partners for feedback	Final draft shared with partners	PGE review process	Filed on Oct 15th

An

Oregon

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kind of energy

Appendix

DSP Acronyms

ADMS = Advanced Distribution Management System

AMI = Automated Metering infrastructure

BIPOC = Black, Indigenous, and People of Color

CAIDI = Customer Average Interruption Duration Index

C&I = Commercial and Industrial

CBO = Community-Based Organization

CE = Community Engagement

CEP = Community Engagement Plan

CTA = Consumer Technology Association

DCQC = Direct Current Quick Charge

DEI = Diversity, Equity, and Inclusion

DER = Distributed Energy Resource

DERMS = DER management system

DHP = Ductless Heat Pump

DR = Demand Response

DRMS = DR management system

DSP = Distribution System Plan

EJ = Environmental Justice

EMS = Energy Management System

ERWH = Electric Resistance Water Heater

EV = Electric Vehicle

EVSE = Electric Vehicle Supply Equipment

FAN = Field Area Network

HCA = Hosting Capacity Analysis

HPWH = Heat Pump Water Heater

HVAC = Heating, Ventilation, and Air Conditioning

IRP = Integrated Resource Plan

kW = kilowatt

L2 = Level 2 EV Charging

LDV = Light-duty Vehicle

LIDAR = Light Detection and Ranging

MAIFI = Total number of customer momentary interruptions events / Total number of PGE customers served on feeders with MV90 or SCADA

MDHDV = Medium- and Heavy-duty Vehicles

MW = Megawatt

MWh = Megawatt-hour

NAN = Neighborhood Area Network

NWA = Non-Wire Alternatives

NWS = Non-Wire Solutions

NREL = National Renewable Energy Lab

OMS = Outage management system

PTR = Peak Time Rebates

PV = Photovoltaic

RA = Resource Adequacy

SGTB = Smart Grid Test Bed

SAIDI = System Average Interruption Duration Index

SAIFI = Total number of customer sustained interruptions / Total number of PGE customers served = SAIDI / CAIDI

T&D = Transmission & Distribution

Tstat = Thermostat

TOU = Time of Use

VPP = Virtual Power Plant

WAN = Wide Area Network