

Distribution System Plan (DSP) Update

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July 27, 2021



Where we are today



PGE's Distributed Resource Planning (DRP) Team is established

PGE begins work on DER Potential & Flex Load Study, with Cadeo, Brattle, Lighthouse

PGE begins work on non-wire solutions (NWS), with OpusOne

15 Dec. 2020

Apr.-Dec. 2020

On December 15, 2020, the Public Utility Commission of Oregon (OPUC) approved OPUC Staff's proposed Guidelines on Distribution System Planning (DSP) under Docket U.M. 2005.

DRP Team is fully staffed
PGE hosts its first external workshop to gain feedback on how to begin the DSP process

Jan. 2021

PGE begins DSP work in earnest

Feb.-Apr. 2021

PGE presents its strategies for DSP requirements and gathers feedback.
PGE participants in OPUC's TWG

May-July 2021

PGE begins writing their first DSP in earnest

July-Sep. 2021

PGE files its initial DSP - Part 1

15 Oct. 2021

Our vision

A community inspired and customer centric energy system requires us to empower our customers with innovative products and services

To accelerate a fair and equitable clean energy transition, we will provide a modernized grid platform

Our journey

*A safe, **secure**, reliable and **resilient** system, **at fair and reasonable costs***



Our 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



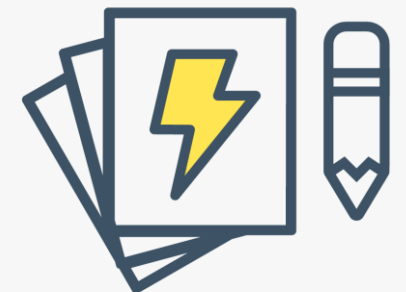
Plug and Play

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



Evolved Regulatory Framework

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



Key highlights



7 DSP Partnership Workshops

Focused on sharing information, listening and gathering feedback needed to prepare and implement our DPS



Community Engagement Plan

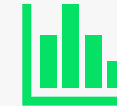
Partnered with community-based organizations (CBOs) to provide education, recruit and convene workshops, analyze and synthesize data, and provide recommendations (i.e., CCC, CEP, Unite Oregon)

In addition to the Partnership Workshops, we hosted two 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



Hosting Capacity

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

Developing a plan to conduct the Initial Hosting Capacity Analysis, which will meet and exceed the HCA Option 1 requirements



Long term Plan

Developed guiding principles, a vision and strategic focuses

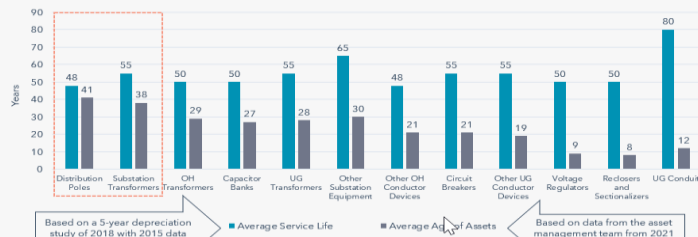
Sharing achievements



We are actively sharing information and seeking feedback on our DSP through our website at www.portlandgeneral.com/dsp

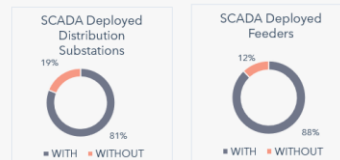
Asset Avg. Service-Life vs Avg. Age (years)

- 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.



UM 2005

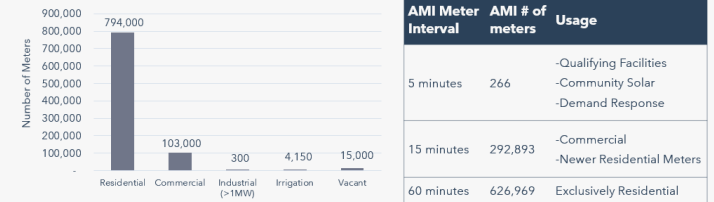
Distribution Substations and Feeders with and without SCADA (Q1 - 2021)



- PGE target is to become 100 percent SCADA deployed on its Distribution Substations and Feeders

UM 2005 - Baseline Requirement 1) Current Physical Status Distribution System

AMI - PGE Meters (Q1 - 2021)



PGE has 920,476 meters installed; all are AMI enabled except for ~140 "opt out" customers.

UM 2005 - Baseline Requirement 1) Current Physical Status Distribution System

ADMS: DERMS - DRMS

Advanced Distribution Management System (ADMS):

ADMS Capabilities	Customers Reached with each Capability
Control and Operations	100% of Feeders (~690 Feeders)
FLISR (Fault Location, Isolation and Service Restoration)	3 Feeders ~3000 customers
CVR (Conservation Voltage Regulation) Pilot	12 Feeders (2013)

DER Management System (DERMS):

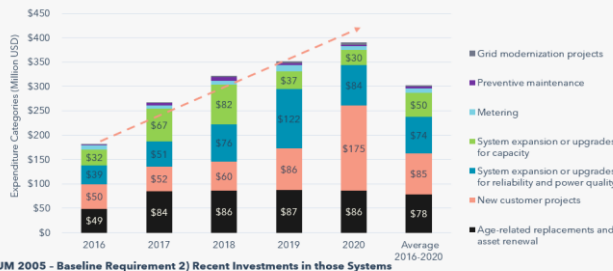
- DERMS is an ADMS Module
- Planned to be operational in 2022
- It will serve ~ 4,000 Multi-Family-Water-Heater (MFWH) customers

Demand Response Management System (DRMS): DRMS is an ADMS Module

Utility Programs	Number of Units
Residential Battery	200 of 500
Residential EV	100
Residential T-stat	500
Ductless Heat Pump	50-100
Single Family Water Heater (SFWH)	70-150
Peak Time Rebate	17,000
Residential PV	TBD
Multi Family Water Heater (MFWH)	TBD

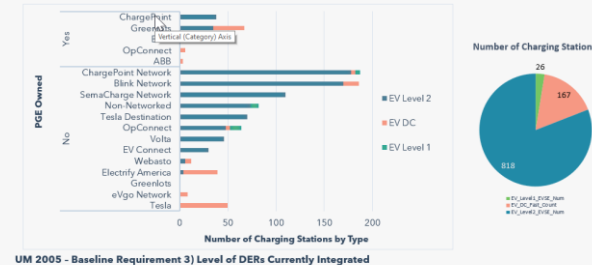
UM 2005 - Baseline Requirement 1) Current Physical Status Distribution System

Distribution of Yearly Spending by Expenditure Category



UM 2005 - Baseline Requirement 2) Recent Investments in those Systems

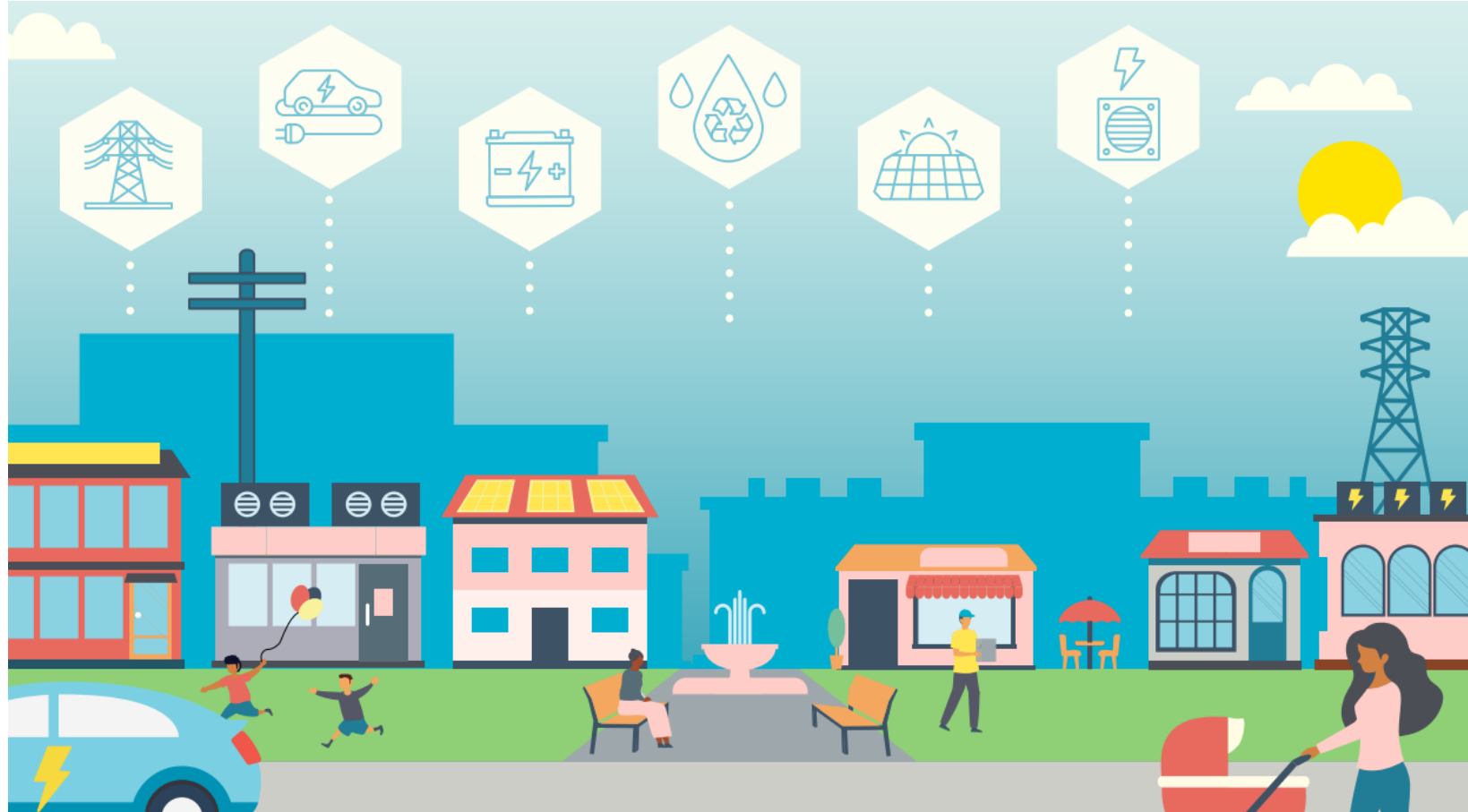
Charging Stations by Type and Ownership (Q1 2021)



UM 2005 - Baseline Requirement 3) Level of DERs Currently Integrated

Questions?

Please email us at
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**Let's
meet the
future
together.**

