Distribution System Plan (DSP)

Report Template
Version: June 2021

Background

PGE supports Oregon's vision of a clean energy future that is safe, resilient, and human-centered. We have demonstrated our support with a public commitment to reduce emissions associated with the power we serve customers by 80% by 2030, and our aspiration to have zero emissions associated with the power we serve customers by 2040. We recognize the transformation of the distribution system as a critical component in meeting these emissions reductions and paving the way to the clean energy future.

In 2019, the Public Utility Commission of Oregon (OPUC), opened Docket U.M. 2005 to conduct an investigation of investor-owned utility's (IOU) distribution system planning (DSP) practices.[1] This investigation developed initial guidelines that accelerate Oregon's clean energy investments and transform how IOUs plan for the distribution system. These guidelines were approved through Order 20-485 and set forth a "transparent, robust and holistic" distribution system planning process.[2]

This document lays out how PGE will transform the distribution system to enable this clean energy future for all customers.

PGE Vision

PGE envisions a clean energy future where our distribution grid delivers value through the dynamic exchange of energy with and for customers. The paradigm of one-way generation and delivery of energy is evolving into a vibrant ecosystem of power flows where renewables and connected devices at the grid edge are giving rise to new customer needs. These evolving needs require a rethinking of how the distribution grid provides energy and value to our customers.

For more than 130 years, PGE has powered our customers' lives, delivering energy that is safe, reliable, and affordable. Today, customers want more – they want clean resilient energy, and they increasingly want a voice and choice in how that energy is generated and distributed.

PGE envisions tomorrow's grid as a secure platform where customers derive value by transacting according to their unique energy desires. PGE will deliver this vision by investing in clean and reliable energy and developing a smart, modernized, and more resilient grid.

[1] OPUC Distribution System Planning Initiative, https://www.oregon.gov/puc/utilities/Pages/Distribution-System-Planning.aspx
[2] OPUC Approval of Guidelines for Distribution System Planning (Order 20-485), https://apps.puc.state.or.us/orders/2020ords/20-485.pdf

Strategy

PGE will partner with communities to modernize the grid. We will empower our customers through community-inspired and customer-centric products and services, enabling the clean energy transition in a fair and equitable manner.

PGE has decades of experience developing innovative products and services, including Green Future Choice Renewable Power,[3] the number one program of its kind in the nation-as well as other programs such as Energy Partner,[4] and Peak Time Rebate.[5] We will leverage our expertise to bring to market other clean energy products, services, and solutions such as non-wire solutions (NWS) and electric vehicle (EV) charging programs.

PGE has identified four 'pillars' that will enable customers to realize the full value of clean energy future products, services, and solutions:

- **Empowered Communities** to ensure equitable access to clean, affordable, reliable, and resilient energy
- **Modernized Grid** to optimize system planning and enhance operations of multi-directional power flows needed to leverage clean energy technologies
- **Plug and Play** for seamless interconnection and improved access to clean energy technologies
- **Evolution** with communities, partners, commission staff and other utilities to identify regulatory and rulemaking opportunities for equitable, resilient energy delivery that keeps pace with the clean energy transition

Report Outline

- **Letter from the Leadership – PGE vision, PGE's commitment**
- **Regulatory crosswalk**
    - Outlines where in the report the Public Utility Commission of Oregon's (OPUC's) Docket U.M. 2005 Distribution System Planning (DSP) requirements are met
    - See ***Regulatory Cross-walk*** example below.
- **Executive summary**
    - Describes our vision of the future electric grid and how it supports customer needs and policy goals
        - Supported with a roadmap graphic that is centered on community
    - Provides high-level strategies and tactics needed to achieve the vision
- **Chapter 1 – Future state**
    - Envisions a future state for the grid, including details on potential options, benefits and impacts for the grid, customers, and society
    - Highlights the key obstacles in realizing the vision
        - Supported with a roadmaps to overcome the key obstacles
    - Describes relevant DSP requirements primarily focused on the long-term plan

[3] Green Future Choice Renewable Power | PGE (portlandgeneral.com)
[4] Energy Partner Program (portlandgeneral.com)
[5] Peak Time Rebates (portlandgeneral.com)

- **Chapter 2 – Current state**
  - Describes the current state of the electric distribution grid
  - Explains the current state/practices and use the data needed to plan and operate the system
  - Lists of current product offerings to meet customer needs
  - Describes relevant DSP requirements primarily focused on baseline data and maps
- **Chapter 3 – Empowered communities**
  - Speaks to where we are today
  - Describes how we aim to ensure equitable access to clean, affordable, reliable, and resilient energy
  - Includes key milestones and activities such as how we:
    - Aim to address barriers to adoption and energy burden, and assist vulnerable and underserved communities
    - Improve local infrastructure and make community investments while ensuring safe, reliable, and affordable power
    - Current and future community engagement activities needed to achieve human-centered planning
  - Integrates equity data into planning processes and maps such as our DER Readiness Viewer (arcgis.com), and DSP Baseline Feeder Viewer - Overview (arcgis.com)
  - Describes priority resiliency initiatives and efforts
  - Includes other relevant details and partner feedback
  - Describes relevant DSP requirements primarily focused on our Community Engagement Plan
- **Chapter 4 – Modernized grid**
  - Speaks to where we are today
  - Describes how we aim to optimize system planning and enhance operations of multi-directional power flows needed to leverage clean energy technologies, including
    - PGE's Integrated Operations Center (IOC), Automated Distribution Management System (ADMS), and other grid modernization initiatives
    - Future state of an optimized multi-directional grid
      - Supported with a 10 year roadmap of grid modernization focus areas graphic that is centered on community
    - Key milestones and activities such as:
      - Description of how the grid of the future will deliver resilient, reliable, flexible, secure, sustainable, and affordable electricity, including workforce developments and research and development (R&D)
      - Details of the concepts, tools, and technologies needed to measure, analyze, predict, protect, and control the grid of the future
    - Describes priority resiliency initiatives and efforts
    - Includes other relevant details and partner feedback

- Describes relevant DSP requirements primarily focused on the long-term plan

- **Chapter 5 – Plug and play**
  - Speaks to where we are today
  - Describes how we aim for a seamless interconnection and improved access to clean energy technologies, including
    - Future state of interconnecting with the grid and improving access to grid edge technologies and information
      - Supported with a roadmap graphic that is centered on community
    - Key milestones and activities such as:
      - PGE's investments, programs, and actions that are expected to accelerate distributed energy resources (DERs) and DER interconnection
      - DER Readiness Viewer (arcgis.com),
      - DSP Baseline Feeder Viewer - Overview (arcgis.com)
    - Describes priority resiliency initiatives and efforts
    - Includes other relevant details and partner feedback
  - Relevant DSP requirements primarily focused on hosting capacity
- **Chapter 6 – Evolution**
  - Speaks to where we are today
  - Describes how we aim to work with communities, partners, commission staff and other utilities to identify regulatory and rulemaking opportunities for equitable, resilient energy delivery that keeps pace with the clean energy transition, including
    - Future state of policy that enables and accelerates the clean energy transition
  - Describes of how our DSP will support Oregon's current and future policy and regulatory goals such as:
    - Governor' s Climate Agenda to:
      - Decarbonizing the electric sector by "encouraging grid modernization while maintaining affordable and competitive electricity rates"
      - Expanding opportunities for customers to, "access clean energy services from their utilities while ensuring utility regulation supports the utility system and does not preference new customers over existing ones
    - Discusses the changing utility business model and identifying a sustainable role for the electric company
      - Interconnection policy evolution
      - Cost-effectiveness evolution
    - Describes priority resiliency initiatives and efforts
    - Includes other relevant details and partner feedback
  - Describes relevant DSP requirements including PGE's long-term plan and near-term action plan
- **Conclusion**

- Summaries of the document
- Relevant DSP requirements including how PGE will approach Part 2 of the DSP

Regulatory Cross-walk Example

4.4	Long-term Distribution System Plan (LTDSP)	Page Number
4.4.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.	7
4.4.b	Roadmap of the utility's planned investments, tools and activities to advance the longterm DSP vision, using a 5-10-year planning horizon.	
4.4.b.i	Assessment of investment options to enhance the grid across the following range of areas, including relative costs and benefits:	
4.4.b.i.1	Substation and distribution network and operations enhancements	
4.4.b.i.1.a	Plans for conservation voltage reduction	
4.4.b.i.2	Distributed resource and renewable resource enhancements	
4.4.b.i.2.a	Penetration and activation/utilization of smart inverters	
4.4.b.i.3	Transportation Electrification enhancements	
4.4.b.i.4	Customer information and demand-side management enhancements	
4.4.b.i.4.a	Plans to continue to expand customer benefits resulting from investments in advanced metering infrastructure	
4.4.b.i.5	General business enhancements	
4.4.b.i.5.a	Communications and supporting systems	
4.4.b.i.5.b	Interoperability of systems and equipment	
4.4.b.i.5.c	Work-management systems	
4.4.b.i.5.d	Other enhancements	
4.4.b.i.6	As applicable, any transmission network and operations enhancements	
4.4.b.ii	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	
4.4.b.iii	Long-term assumptions, and impacts of Action Plan investments, etc.	
4.4.b.iv	Forecasting future technical and market potential of DERs	
4.4.b.v	Plans to further build community needs assessment and co-created community solutions into DSP roadmap	
4.4.b.vi	Transitional planning and operational activities underway in the organization to build capabilities in DSP-related functions	

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4.4	Long-term Distribution System Plan (LTDSP)	Page Number
4.4.b.vii	Key barriers or constraints the utility faces to advancing investment (whether financial, technical, organizational) and mitigation plans	
4.4.c	Smart Grid investment opportunities (See footnote 25)	
4.4.c.i	List and describe smart-grid opportunities that the utility is considering for investment over the next 5-10 years and any constraints that affect the utility's investment considerations	
4.4.c.ii	Describe evaluations and assessments of any smart-grid technologies, applications, pilots, or programs that the company is monitoring or plans to undertake	
4.4.d	Key opportunities and possible benefits for distribution system investment	
4.4.e	Research and development the utility is undertaking or monitoring	
4.4.f	Future policy and planning intersections:	
4.4.f.i	Discussion of how planned investments fit with the utility's IRP	
4.4.f.ii	Discussion of how planned investments fit with the utility's annual construction budget for major distribution and transmission investments	
4.4.f.iii	Discussion of how distribution system planning may be coordinated in the future with other major policy and planning efforts discussed in these Guidelines. At a minimum, address the IRP and transmission planning, including: how the Distribution System Plan filing is coordinated with each policy or planning effort, related inputs and outputs such as data sets or prices, and assumptions such as macro-economic policies or growth rates	
4.4.g	Plans to monitor and adapt the long-term Distribution System Plan	
4.5	As Part of its Part 1 filing each utility should prepare for the upcoming transition period and include a high-level summary to discuss:	
4.5.a	How legacy distribution planning practices will be transitioned to the requirements of Part 2	
4.5.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	
4.5.c	Efforts to synchronize IRP activities with requirements of Part 2	