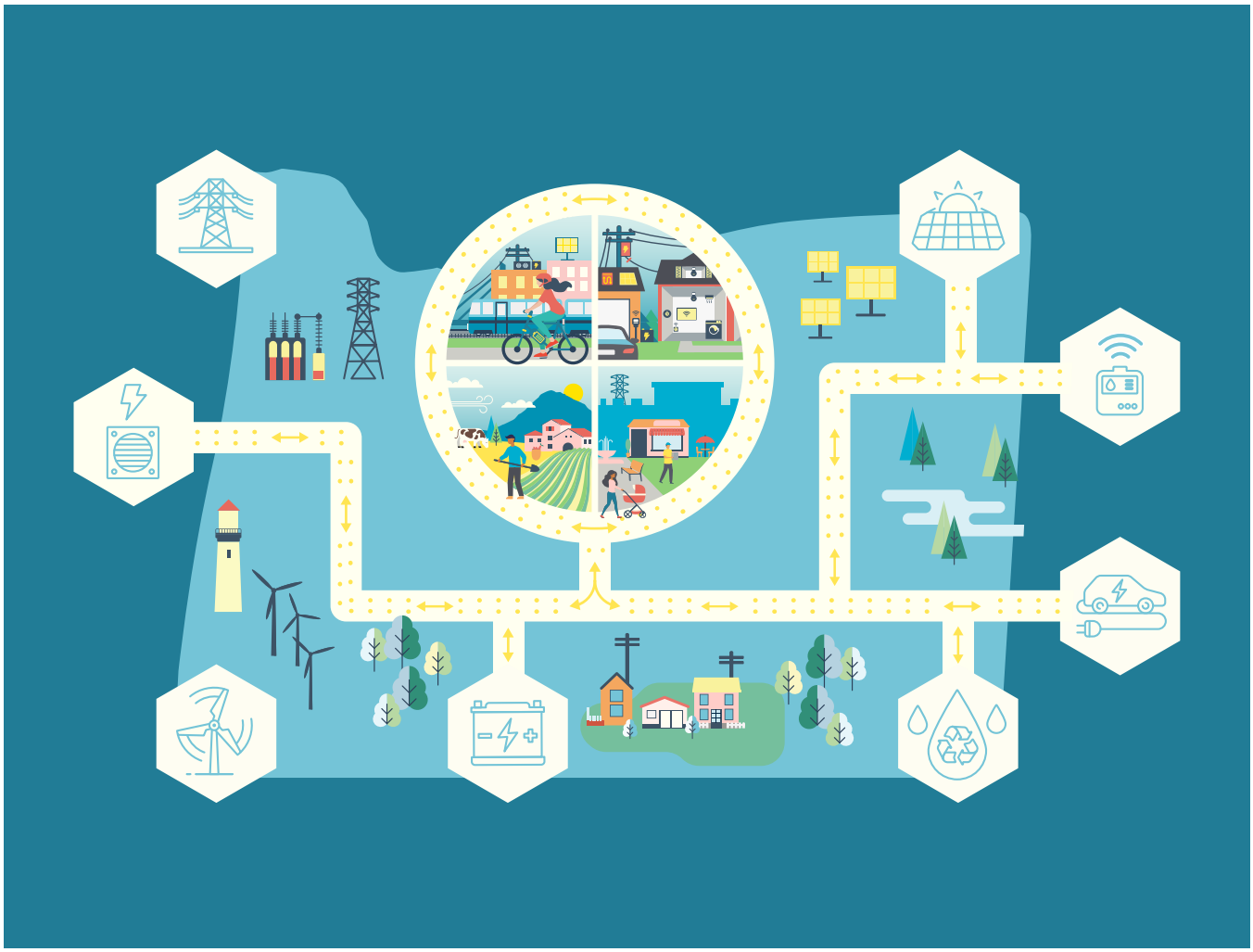
Executive Summary



The last few years, through the ongoing pandemic and increased focus on social justice, have brought to the forefront the importance of having the customer at the center of all that we do. More than ever, customers expect their power to be affordable, reliable and there when they need it. At the same time, customers want clean power options customized to their specific preferences, services delivered with speed and ease.

Background

We applaud the leadership of the Public Utility Commission of Oregon (Commission or OPUC) in creating expectations for a human-centered planning approach to distribution system planning (DSP). Through Order 20-485, the DSP guidelines intend to "foster a developing process that supports a human-centered approach" to the DSP and to utilize this human-centered approach in "identifying grid needs, implemented in partnership with communities and community-based organizations" that "create value-adding investments for communities, and align the energy system with community priorities." Portland General Electric's (PGE's) DSP aims to accelerate a fair and equitable clean energy transition to a modernized grid platform that is customer-inspired and community-centric. We embrace this energy transformation and will empower customers with innovative products and services by designing and modernizing the electric grid for our customers.

The evolution of distribution system planning is a central process within this transformation, providing a proactive pathway to address key drivers such as customer preference, decarbonization, affordability, reliability and resilience. Historically, distribution system planning processes have primarily focused on affordably serving load growth while ensuring safe and reliable operation of the distribution grid. With advances in technology, we are transitioning the distribution system from being a safe and reliable energy delivery system to becoming a safe, reliable, flexible, resilient and human-centered energy exchange platform that integrates seamlessly with the wholesale market. Customers increasingly expect choices and control in the products and services they consume. Ubiquity of low-cost communications and the proliferation of devices and control options mean that customers have unprecedented ability to manage their lives and their consumption. This extends to energy, where there is a growing, critical two-way exchange between customers and the electric grid.

Real-time information and options for flexibility in usage and pricing, combined with digital enablement (mobile, web), will enable customers to use the electric grid as a pathway for meeting their goals, whether those be cost management, sustainable lifestyle, independence, resiliency or other. These options may extend from simple time of use and behavioral demand response solutions all the way to turnkey services that bundle significant energy uses with renewables options (e.g., an electric vehicle paired with rooftop solar and a battery). In all cases, personal or corporate choices for engaging in these programs create the potential for individual customers' needs to be met while also delivering system value and reliability back to all customers.

Solutions are available to enable new capabilities, such as non-wires solutions, automated fault detection and restoration, and photovoltaic (PV) and electric vehicle integration — at scale — without sacrificing safety and reliability. In the following chapters, PGE outlines the vision of how these solutions can be leveraged to accelerate decarbonization and electrification and provide direct benefits to communities — especially environmental justice communities — while improving metrics around safety, reliability, resiliency and security, all at fair and reasonable costs.

PGE's strategy

PGE exists to power the advancement of society. We energize lives, strengthen communities and drive advancements in energy that promote social, economic and environmental progress. We aim to lead the clean energy future and together — with customers, partners and communities — we will lead the energy transformation by decarbonizing, electrifying and performing.

DECARBONIZE

We know our customers and communities want to use clean electricity, which is why we are committed to reducing greenhouse gas (GHG) emissions from the power served to customers by at least 80% by 2030 and 100% by 2040. These ambitious GHG reduction targets are in line with a new Oregon state law (House Bill [HB] 2021) establishing an electric sector decarbonization framework.[1] PGE is excited to have been part of a broad coalition supporting the passage of this important bill during the 2021 legislative session. Our customers want affordable, reliable electricity — and they want their choices to be cleaner than ever before. Right now, more than 90% of our electricity supply is generated right here in the Pacific Northwest, and we will continue to add new clean and renewable resources to the system so all customers can enjoy a clean energy future.

As we advance to a 100% clean energy supply, we are often replacing base-loaded thermal resources with variable energy resources like wind and solar. As a result, we identified that in order to achieve this decarbonized future, we would need to find new sources of flexibility for the supply portfolio. It is estimated that as much as 25% of flexibility could come from customers and distributed energy resources (DERs).[2] It is imperative we find ways to incentivize customers to bring their flexibility and clean resources to the grid to participate in the greater decarbonized energy system.

Doing so is a complex task. It requires that the products and services offered by PGE must be designed to solve real customer needs and must deliver great, end-to-end experiences. Failure to do so will lead customers to seek solutions elsewhere, and the value of a two-way integrated electric system will not be realized. That is why we are also working to help several of our municipal local governments and large customers who want to move faster to achieve their 100% clean energy goals. In addition, we are implementing ways to reduce emissions associated with our own operations, including vehicles and facilities.

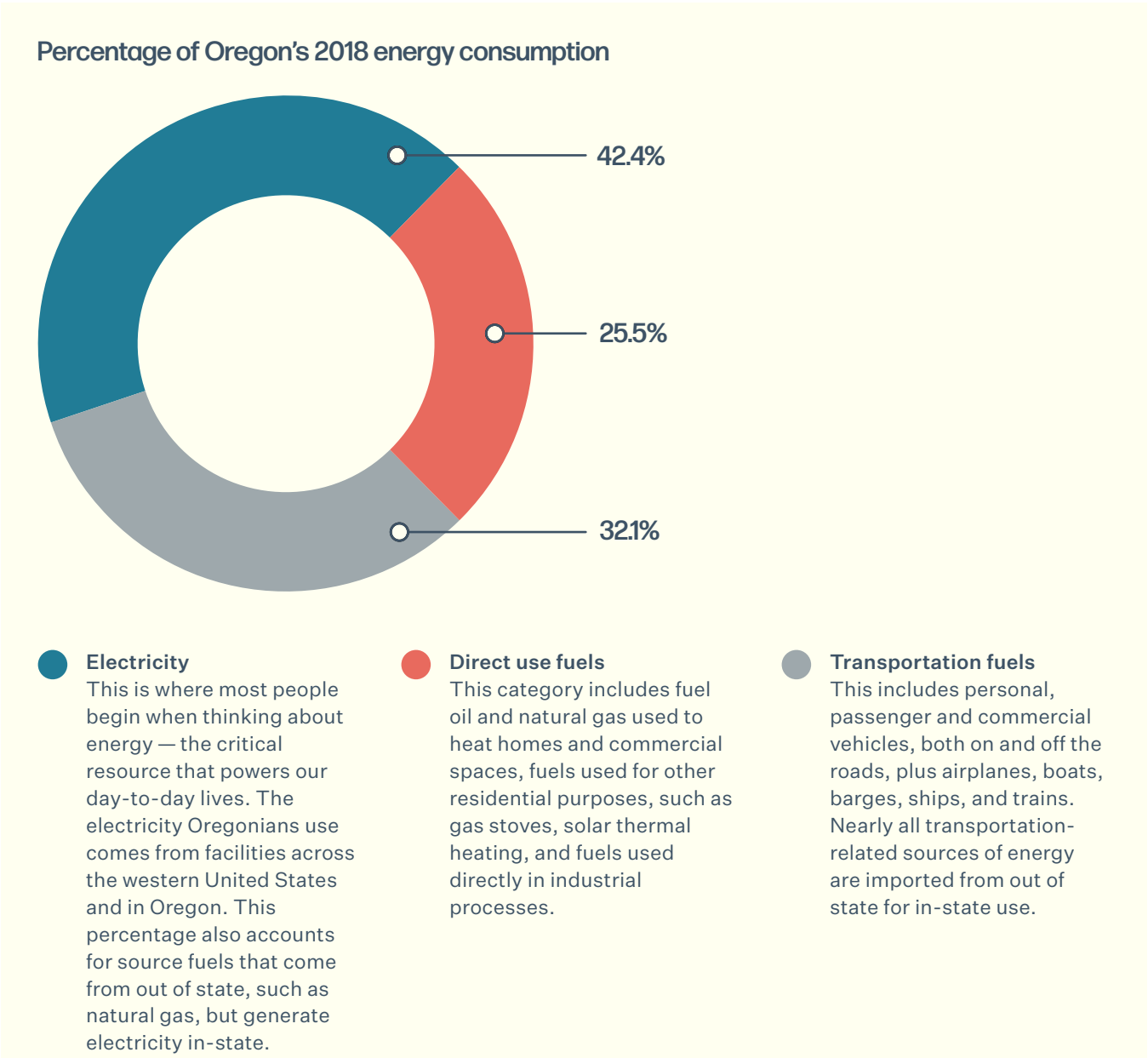
ELECTRIFY

According to the Oregon Department of Energy's 2020 Biennial Energy Report, the majority of Oregon's energy use comes from electricity and the transportation sector, 42% and 32% respectively. Oregon relies on energy from a variety of resources (**Figure 1**) and imports energy like transportation fuels, natural gas, propane and other fuels.[3] Oregon also uses electricity from both in- and out-of-state sources — including coal, natural gas, nuclear, hydropower, wind and other renewable resources.

PGE sees a future in which we double our power served by electricity. We are helping our customers meet their goals of driving decarbonization, electrifying and alleviating energy burden. Our customers and communities are electrifying their vehicles, homes and workplaces and we are powering society in their clean energy journey. In doing so, we will capture the benefits of new technologies such as DERs, leading to an increasingly flexible and reliable grid.

1. House Bill 2021, available at: oregonlegislature.gov.
2. For the purposes of PGE's DSP, we utilize the OPUC's definition of DERs under Order 20-485, which includes distributed generation resources, distributed energy storage, demand response, energy efficiency and electric vehicles that are connected to the electric distribution power grid.
3. This percentage also accounts for source fuels that come from out of state, such as natural gas, but generate electricity in-state.

Figure 1. Oregon Department of Energy: Energy use by source[4]



PERFORM

We know that the heart of our business is keeping the power on safely, reliably and affordably. We power communities, and our customers depend on us to deliver the power they need to live, work and play. Focusing on reliability allows us to bring more flexible and renewable electricity to customers. To keep things running smoothly, we continue to work on increasing efficiency and delivering exceptional customer experiences.

Over the last few years, as noted in our public commitments, such as our Integrated Resource Plan (IRP) filings and recent General Rate Case (GRC) filings, PGE has been shifting its corporate strategy to focus on leading the clean energy transformation by creating a path to zero GHG emissions associated with the power we serve customers.[5]

4. Data according to Oregon Department of Energy (ODOE) 2020 Biennial Energy Report, available at: www.oregon.gov
5. PGE About Us webpage, available at: portlandgeneral.com
PGE's 2019 Integrated Resource Plan, available at: PGE's 2019 Integrated Resource Plan
PGE's request for a General Rate Revision, 2021, available at: PGE's request for a General Rate Revision, 2021

PGE's distribution vision

While most agree that the energy transformation underway should address the threats of climate change, its alignment with social and environmental justice goals is still in its infancy. Oregon has been at the forefront of working to address historical wrongs and breaking down existing systems that discriminate or exacerbate inequities in society. In the utility sector, Oregon is leading the way with policies such as HB 2021 and HB 2475 and regulatory directives such as UM 2005.[6] We embrace the challenge of leveraging the clean energy transformation to address environmental justice.

With the first filing of our Distribution System Plan (DSP), we are excited to share our vision of how the distribution system can help to achieve the shared goals of clean energy transformation and social and environmental justice for our communities.

Our vision is a **21st century community-centered distribution system** that can meet the following goals, detailed in **Chapter 2**.

a. **Advance environmental justice.** We envision the distribution system advancing environmental justice through the strategic deployment and use of grid assets (customer- or utility-owned) to yield more equitable outcomes, especially for those who are most vulnerable.

b. **Accelerate DER adoption.** We have a goal to accelerate DER adoption, which will require a distribution system that can easily enable DERs to not only connect to the grid, but also to deliver societal value through programs.

c. **Maximize grid benefits.** We will plan and operate the distribution system to maximize customer value.

To achieve this vision, we have five strategic initiatives:

- **Empowered communities**
- **Modernized grid**
- **Resilience**
- **Plug and play**
- **Evolved regulatory framework**

As illustrated in **Figure 2**, these strategic initiatives are connected to our vision and goals for the distribution system. These strategic initiatives are discussed in detail in subsequent chapters of the DSP.

Figure 2. PGE's vision, goals and execution approach

Corporate strategy	DSP vision	DSP goals	DSP strategic initiatives
• Decarbonize • Electrify • Perform	• 21st century community-centered distribution system	• Advance environmental justice goals • Accelerate DER adoption • Maximize grid benefits	• Empowered communities • Modernized grid • Resilience • Plug and play • Evolved regulatory framework

6. House Bill 2475, available at: oregonlegislature.gov

PGE's Distribution System Plan (DSP) summary and highlights

PGE is proud to submit our inaugural DSP for consideration by our customers, partners and the Commission. This DSP reinforces our ongoing commitment to the clean energy future and takes the first step to integrate environmental justice goals. We detail in this report the vision, goals and strategic initiatives we plan for the distribution system and the role of the DSP in achieving it. We weave these goals into each section, showing a connection between our long-term vision, current actions and the evolution of the DSP. Additionally, we are committed to transitioning to a human-centered planning approach and have built the DSP on a foundation of engagement with the broader community (partners, customers and communities) and incorporation of their feedback.

Our customers are at the center of everything we do. In service to that commitment, we conducted eight partner and community workshops to share perspectives and gather input on key DSP subject areas. In addition to addressing the OPUC's UM 2005 requirements, these workshops created a community of DSP partners committed to building a better understanding of both our work and partners' needs and expectations. Our goal for the workshops was to initiate a dialogue that contributed to our DSP while also creating a platform for collaboration. **We thank the participants for joining us on this journey and are grateful for their partnership and insights**.

We believe this report is robust and meaningful and provides substantial transparency into our company and distribution system planning functions. To highlight some of the key aspects of our report, we summarize below the main points in each of the DSP's chapters.

CHAPTER 1
DISTRIBUTION SYSTEM OVERVIEW

The DSP is in its first stage and is an evolving, multi-stage process. We anticipate that the forming, filing and acceptance of the initial plans will educate all parties and identify areas for continuous improvement. This evolution will be informed by DSPs filed by all investor-owned utilities (IOUs) and help advance how the distribution system is defined, how investments can maximize customer value and even how investment costs are recovered.

In this chapter, PGE provides an overview of the distribution system in context to the overall electric grid. The grid is evolving from a paradigm of one-way power flow with centralized generation to customers, to a bi-directional grid with growing demands for DER interconnection. The distribution grid plays a critical role in enabling this future state, and it is important to understand the current state of system planning and asset replacement so that forward-looking investments can be contextualized and understood from the perspective of reliability, safety and affordability.

> The distribution system is defined as load-serving, PGE-owned equipment and lines at nominal voltage levels below 35 kV.[7] The distribution system starts at the circuit breaker and high-side disconnect of the substation distribution transformer.[8]

Our asset management practices ensure that we prioritize investments across a portfolio of distribution system assets in a manner that balances costs and maximizes improvements for reliability. Our distribution planning team maintains network models (in our power flow modeling software, CYME) of our distribution system and studies the impacts of changing loads to the projected needs of the distribution system in a near- and long-term planning horizon (five to 10 years). The key functions of PGE's distribution planning team are to:

- Perform system analysis and develop plans that ensure the distribution system will be operable and able to maintain functionality and flexibility in both the near and long term
- Provide support and guidance on distribution-related investment decisions
- Support grid modernization efforts and initiatives

The current adoption of DERs is critical to understand and informs what types of investments are needed to drive further adoption. We currently have 125 MW of net metered generation connected to our system, with another 35 MW in the queue. We continue to grow our flexible load resource, with 63 MW of enrolled summer demand response (DR) capacity as of 2020. We also have approximately 20,000 electric vehicles throughout our service area.

We invested an average of approximately $300 million per year on distribution system upgrades from 2016 to 2020, with the relative focus of investments changing each year to support new customer projects, upgrades for reliability and power quality, and capacity-related expansions. Increasing DER adoption will continue to change the nature and type of distribution-related investments required to maintain a safe, reliable system, while also ensuring the flexibility, resilience and security of the system.

MAIN POINTS

- The distribution system is a key part of the energy grid backbone.
- PGE's asset management practices maximize the impact of investments for reliability and resilience and to meet changing customer expectations.
- The changing nature of the grid, including more DER adoption, will require changes in future investments.

7. PGE functionally treats its 57 kVA lines as sub-transmission.
8. Substation circuit breakers are equipped with disconnects, which open a circuit quickly in the event of an overload. For more distribution system asset definitions, see Appendix B, section B.3.1.

CHAPTER 2
DISTRIBUTION SYSTEM VISION

PGE's corporate vision, its intersection with policy and how that informs the distribution system vision is a critical component to our vision for the distribution system. As we lead the clean energy future together — with customers, partners and communities — we will lead with action.

In this chapter we describe our vision of a **21st century community-centered distribution system**, which is needed to take advantage of DERs and accelerate decarbonization and electrification. The system must provide direct benefits to communities (especially environmental justice communities), while improving metrics around safety, reliability, resilience and security — all at fair and reasonable costs. To achieve this vision, we describe five key strategic initiatives: **Empowered communities, modernized grid, resilience, plug and play, and evolved regulatory framework**. These initiatives help realize the vision and goals by aligning critical activities and address gaps in capabilities within the company while addressing market barriers for DER adoption.

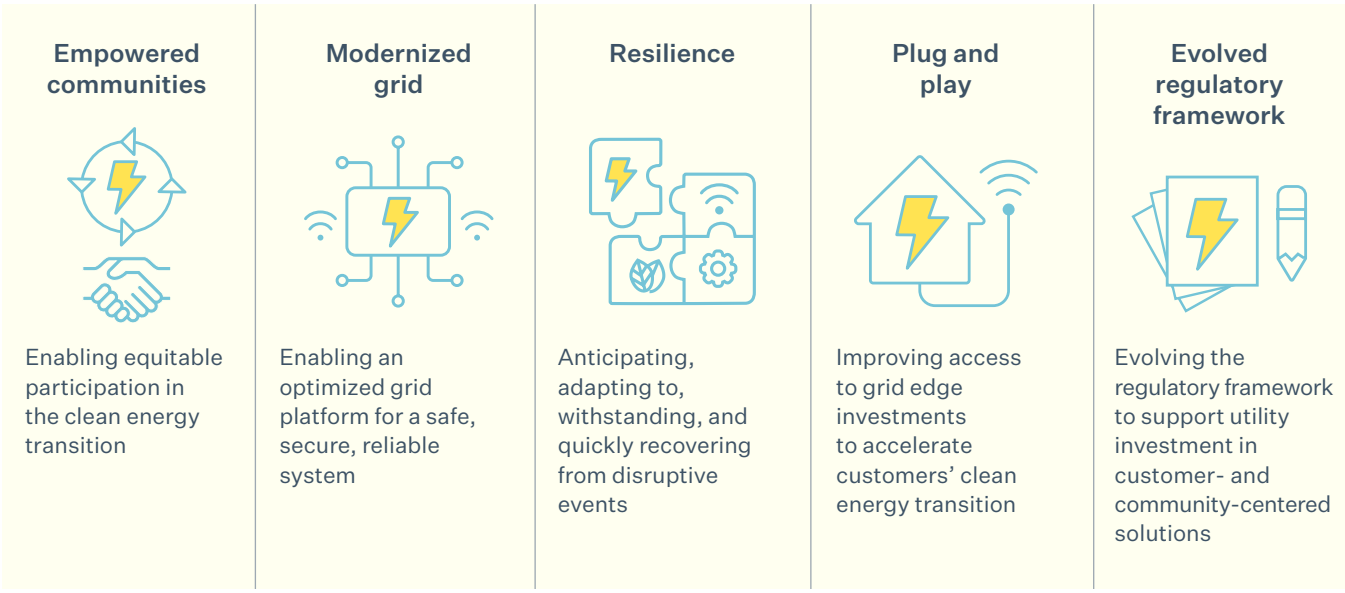
Our empowered communities initiative enables equitable participation in the clean energy transition through human-centered planning and community engagement. Our modernized grid initiative aims to enable an optimized grid platform that is safe, secure and reliable through current and future grid capabilities. The resilience initiative focuses on how we can strengthen the grid's ability to anticipate, adapt to, withstand and quickly recover from disruptive events. Our plug and play initiative discusses how we can improve access to grid edge investments needed to accelerate customers' clean energy transitions through such activities as hosting capacity analysis and developing the capability to connect dynamic devices (e.g., batteries). Lastly, our evolved regulatory framework initiative speaks to the need to support utility investment in customer- and community-centered solutions.

Figure 3 illustrates these key strategic initiatives.

MAIN POINTS

- Federal and state clean energy policies are aligning the clean energy transition with social and environmental justice.
- PGE's vision for a 21st century community-centered distribution system is one that accelerates adoption of grid-integrated DERs while balancing grid, social and environmental justice goals.
- PGE has launched five strategic initiatives: Empowered communities, modernized grid, resilience, plug and play, and evolved regulatory framework.

Figure 3. PGE's five strategic initiatives



CHAPTER 3

EMPOWERED COMMUNITIES: EQUITABLE PARTICIPATION IN DISTRIBUTION DECISIONS

As an essential service provider, PGE must both engage and understand where and how customers live, work, learn and play. The work requires us to co-develop solutions with communities and develop solutions that deliver value to both them and the grid. We see it as imperative to pursue the twin goals of social justice, including racial equity, and decarbonization. These goals are needed to ensure that we address and redress disparities and impacts within the environmental justice communities PGE serves.

In this chapter, we outline the outreach and engagement done to date, including workshops for both traditional stakeholders as well the community workshops that were developed in partnership with, but delivered by, community-based organizations (CBOs). Additionally, the core tenets of environmental justice are introduced, as well as the Government Alliance on Race and Equity's (GARE's) racial equity toolkit that PGE is applying to this human-centered work.[9]

Finally, we have included our first Community Engagement Plan that is informed by recommendations and learnings that resulted from the community workshops and includes best practices provided by our CBO partners. This plan provides a framework for community engagement as well as planning strategies to inform the work we do in the second part of our DSP, as well as be a guide for how PGE intends to do community engagement more generally going forward.

There's much work to do, especially as new technologies — rooftop solar, battery storage, smart thermostats and electric vehicles — can amplify existing disparities in how we generate, access and conserve energy if not deployed strategically. The goal is not to just eliminate the disparities, but also to increase success for all groups.

Systems that are failing communities of color are failing all of us. Solving problems for everyone while paying special attention to communities suffering disproportionate burdens will increase our collective success. Societal inequities make it harder for some people to access energy-saving and clean energy programs, technologies and jobs. For everyone to benefit from a clean energy future, PGE must break through economic, cultural and linguistic barriers to give everyone a seat at the table when making decisions that define our path forward.

As we continue our work, we will focus on the equitable implementation of our DSP Action Plan that will be filed on August 15, 2022. The DSP will serve to support and complement the empowering communities pillar as well as other pillars, namely in improving community resilience and evolving the regulatory framework to provide flexibility in solutions that meet identified community needs.

MAIN POINTS

- We have learned that creating a collaborative environment requires building trust first.
- Designing programs and solutions with affected communities (instead of for them) produces better outcomes.
- We should collaborate and defer to our communities, where and whenever possible.
- PGE's Community Engagement Plan is informed by best practices, learnings and the recommendations of **Unite Oregon, Community Energy Project** and the **Coalition of Communities of Color** based on their engagement in the first phase of the DSP.

9. GARE's racial equity toolkit is available at: racialequityalliance.org

CHAPTER 4
MODERNIZED GRID: BUILDING A PLATFORM FOR PARTICIPATION

The modernized grid represents a key element to transforming the grid and enabling large-scale integration of DERs —especially solar PV, batteries and electric vehicles — in a manner that can improve grid flexibility and reduce the need for supply-side resources to address the grid goals outlined in PGE's vision. However, modernizing the grid is a complex undertaking with large investments focused on augmenting and improving the electrical grid. PGE is aware of the impact of these investments on customer prices, especially on our must vulnerable communities, and takes a pragmatic, needs-based approach to balance the different goals and maximize customer and/or societal value of investments once in service.

In this chapter, we focus on informing PGE's modernized grid framework, the capabilities that underpin that framework, and PGE's roadmap at the capability level using the US Department of Energy's modernized distribution grid (DSPx) framework.[10] The chapter also details PGE's key planned investments and their expected evolution in the one- through five-year timeframe for each of the following capabilities.

- Virtual power plant
- Planning and engineering
- Grid management systems
- Sensing, measurement and control
- Telecommunications
- Physical grid

Grid modernization refers to the evolution of the grid through the integration of different technologies and computing solutions. This transformation has been underway for several years, with its scope evolving with time. Today, as we think about grid modernization on the operations side, we think both about operator awareness and also operator control, specifically focused on the interaction between DERs and the grid. On the planning side, planning needs have also evolved to focus on improving the ability to holistically interconnect DERs to deliver the maximum grid and community benefit. As more technologies and computation solutions mature, it is likely that the scope of grid modernization will continue to evolve as well.

We have adopted a platform-based architecture with modular elements as our approach to modernizing the grid. Certain capabilities of the platform remain relatively stable throughout the platform's evolution over time — these are known as core platform capabilities or foundational capabilities. Other capabilities and layers are complementary to these core capabilities and work in an integrated manner to deliver customer value. In other words, a modernized grid is equivalent to a platform with layers of digital capabilities upon layers of physical assets that work together in various combinations to improve and enable system capabilities. Over time, as different technologies mature, capabilities and layers can be added or replaced as needed.

MAIN POINTS

- A modernized grid is a platform that layers digital capabilities on a network of physical assets, all working together in various combinations to improve system capabilities.
- PGE has adopted the U.S. Department of Energy's modernized distribution grid (DSPx) framework.
- The evolving grid holds implications for workforce planning and cybersecurity.

10. DOE's DPSx is available at: gridarchitecture.pnnl.gov

CHAPTER 5
RESILIENCE: MANAGING DISRUPTIVE EVENTS

Resilience is top of mind for PGE as climate change and extreme weather present new challenges. In 2021, a once-in-40-years ice storm caused unprecedented power outages for approximately 740,000 customers, and the Bootleg wildfire interrupted Oregon's transmission of power to and from California. Our customers are feeling urgency to take action to prepare for the unexpected, as does PGE.

This chapter details the work of our Resilience Accelerated Response Coordination (Resilience ARC) initiative that focuses on improving our ability to meet customer and community expectations for resilient power delivery. Below are the three areas of focus for this initiative.

- **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 and energy supply hardening, that mitigates the occurrence of outages during an event such as a wildfire or wind or ice storm.
- **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.

Due to increasing levels of variable energy resources (e.g., solar and wind), we also are looking to develop solutions that offset those sources of energy.

Safety, reliability and resilience always have been core to our mission. Shifts in the climate as well as a shift toward electrification put a spotlight on the importance of resilience and resilience measures that are closer to the customer. We are using new technology and building new relationships with customers and municipalities. These investments not only enable a stronger, more resilient infrastructure, but also ties to our communities by enabling an accelerated, robust response to the challenges we face together.

MAIN POINTS

- Increasing fire and storm risk, coupled with increasing electrification, requires enhanced resilience measures.
- Our Resilience Accelerated Response Coordination (Resilience ARC) initiative will bring focus to resilience efforts.
- Investing in resilience measures that are closer to communities and customers is essential.

CHAPTER 6
PLUG AND PLAY: ENABLING DER ADOPTION

Growth in the adoption of DERs implies ease of access to and integration of those DERs into the distribution system. Our plug and play initiative focuses on enabling that access and integration — removing barriers and streamlining the interconnection process. Hosting capacity analysis (HCA) is a fundamental capability in a high-DER adoption, plug and play future.

PGE uses Electric Power Research Institute's (EPRI's) definition of hosting capacity.[11] According to EPRI:

Hosting capacity in a distribution system is the amount of DERs that can be accommodated without significant upgrades or adversely impacting power quality or reliability under existing feeder design and control configurations.

In this iteration of the DSP, our plan is focused on HCA as it relates to distributed generation (DG) and does not include consideration of DERs such as electric vehicles, as described in EPRI's definition. Flexible loads such as electric vehicles, hot-water heaters and behind-the-meter storage will be considered in future DSP submittals.

PGE's approach to HCA has been shaped by conversations with partners and communities and best practices gleaned from other utilities that have implemented HCA tools and methodologies. We conducted a series of feedback sessions with partners and communities and interviews with peer utilities to gain insight into lessons learned and the most effective approach to delivering value to partners.

In this chapter, we will discuss the common use cases for HCA, which include:

- Preliminary screening for DG proposals
- Guidance in the early phases of the interconnection process
- Enhancing distribution system visibility when determining locations for future DG

HCA may be utilized to identify the potential need for preliminary system upgrades in the early stages (e.g., scoping call, feasibility study) of the interconnection process. Although valuable in informing customer decisions, we do not support using HCA to replace any part of the interconnection process. Additional local studies will need to be performed to determine the viability of adding DG.

While our system modeling and remote sensing capabilities are maturing, we will use distribution system indicators to provide information to identify areas where DG can be accommodated. Moving beyond this level of HCA requires advancements in forecasting, system monitoring and system modeling. We will begin to see these advancements with the implementation of our advanced distribution management system (ADMS) in 2022.

Beginning in 2022, we plan to conduct HCA twice annually at the distribution feeder level. We anticipate that an ideal future state for HCA is:

- Accurate at the time and place of use
- Cost-effective
- User-friendly for both external and internal audiences

We anticipate that, as HCA matures and more datasets become available (e.g., energy burden, socioeconomic indicators, DER adoption), combining these data will enable us and our customers to identify and unlock the value of DERs. As we move toward a 21st century community-centered distribution system through our modernized grid framework and implement our Community Engagement Plan, integration of DERs should be seamless. The ability to seamlessly interconnect to the modernized grid is a key enabler to improved access to DERs, achieving a plug and play future.

MAIN POINTS

- PGE has enhanced its Net Metering map to include Distributed Generation Readiness information and demographic data from the US Census.
- Starting in late 2022, PGE will begin performing HCA twice annually.
- HCA updates should be performed at the line segment level on an as-needed basis rather than monthly or hourly.

11. Defining a Roadmap for Successful Implementation of a Hosting Capacity Method for New York State," EPRI, June 2016, is available at: epri.com

CHAPTER 7

EVOLVED REGULATORY FRAMEWORK: INCENTIVES THAT MOTIVATE EQUITABLE DER ENABLEMENT AND ADOPTION

With communities, partners, Staff and other utilities, we plan to identify regulatory and rulemaking opportunities needed for the safety and reliability of the system, as well as equitably supporting utility investment in customer- and community-centered solutions while keeping pace with the clean energy transition. This evolution aims to ensure the sustained success of this transition while minimizing the impact to those who are marginalized.

The Pacific Northwest's conception of the "smart grid" dates back to the 1990s when the Bonneville Power Administration issued a paper about the "energy web." In 2005, the OPUC began contemplating the benefits of a smart grid.[12] In response to the Energy Policy Act of 2005, PGE proposed in its 2006 Rate Case (UE 189) to make AMI investments. Several years later, that Commission, in Docket UM 1460, issued smart grid guidelines to inform subsequent Commission guidance on smart grid investment. The pace of investment is now accelerating, as is policy. We must match the pace of policy and technical evolution with targeted reform, guidance and new policy. The DSP identifies items to be raised for discussion and possible reform to advance the vision outlined by PGE, the policies and direction of the Commission, the governor and the legislature.

Throughout the UM 2005 proceeding, we noted intersections between the goals of the DSP and current policies, rules, standards and other regulations. In this chapter, we provide a detailed summary touching on policies at the federal level through FERC and the federal government to state policies through the legislature and the Commission. These policies provide a view of the regulatory drivers for change. We then complement this information by identifying downstream regulation that can align with these policies to enable the vision of the DSP. Below are the categories of regulation we focused on in this DSP.

- New regulation that can accelerate DER adoption and our ability to leverage their value
- Current regulation that is inconsistent with policy drivers and thus can act as barriers for us to leverage DERs and their value
- Ongoing updates to policies, rules, standards and other regulations and their relationship with the DSP.

While these regulations impact the DSP, we do not believe the DSP is the appropriate avenue to discuss all of them. While some can be discussed in the DSP, other regulatory recommendations are more suited to their respective dockets, General Rate Cases or other plans.

MAIN POINTS

- 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 regulation
  - Current regulations
  - Ongoing updates to regulation

12. OPUC Docket UM 1020, Order 05-878 where the Commission considered the advantages of dynamic rates made possible through smart grid technologies such as Advanced Metering Infrastructure

CHAPTER 8
PLAN FOR PART 2 DEVELOPMENT

In the DSP guidelines, the Commission requires PGE to provide a high-level summary of our preparation for Part 2 of the DSP, focusing on planning evolution and interaction with our Integrated Resource Plan (IRP).

In this chapter, we focus on planning practice updates related to DER forecasting and potential non-wires solutions (NWS) and efforts to synchronize IRP activities with requirements of Part 2 of the DSP. Continuously working on advancing DER modeling tools, we recently built a DER forecasting and potential assessment modeling tool, AdopDER. This will increase transparency of the modeling approach (inputs, outputs, algorithms), capture broad resource parameters and key assumptions, advance understanding of flexible load potential needed to achieve a range of grid services, and integrate DERs into the IRP.

As we explore how NWS can replace, defer or be combined with traditional transmission and distribution solutions, this will present an opportunity for us to test new processes, analysis and tools from a planning perspective. Improving our planning capabilities is a critical step in enabling and leveraging DERs for different use cases such as NWS, improved asset utilization and providing community benefits.

MAIN POINTS

- PGE is planning the next steps for DER forecasting and non-wires solutions.
- PGE presents considerations for alignment of the DSP with the IRP.