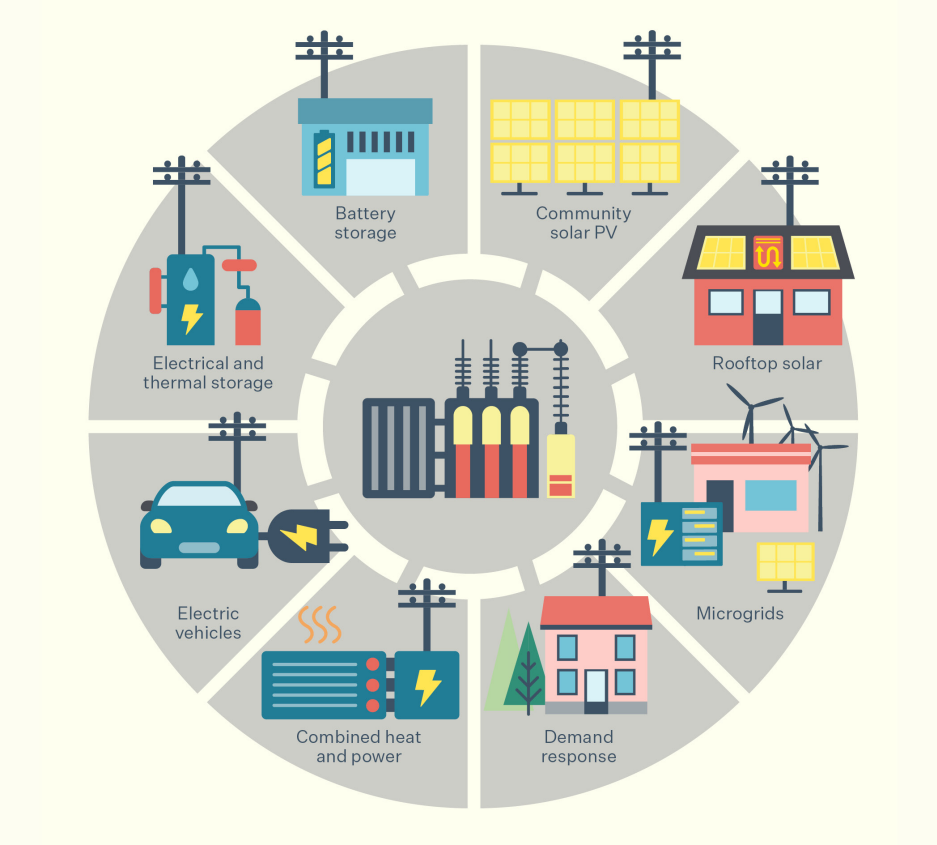
Chapter 7

Near-term action plan



Chapter 7. Near-term action plan

"The actions we are taking to enhance reliability and resiliency within a community-centered distribution system support two, equally important, goals of decarbonization and environmental justice."

– Maria Pope, President and CEO, PGE

7.1 Reader's guide

PGE's Distribution System Plan (DSP) takes the first step toward outlining and developing a 21st century community-centered distribution system. This system primarily uses distributed energy resources (DERs) to accelerate decarbonization and electrification and provide direct benefits to communities, especially environmental justice communities.[72] It's designed to improve safety, reliability, resilience and security, and apply an equity lens when considering fair and reasonable costs.

This chapter provides an overview of PGE's planned investments over the next two to four years. We describe two main categories of investments: traditional transmission and distribution solutions needed to meet UM 2005 requirements and grid modernization solutions that advance our long-term vision of the DSP. We also discuss additional actions needed to achieve a 21st century community-centered distribution system.

WHAT WE WILL COVER IN THIS CHAPTER

Specific investments in the distribution system that address the grid needs discussed in **Chapter 4**.

Investments in the distribution system that are being made to address other drivers, such as transportation electrification, resilience and DER adoption.

Existing investments and proposed investments to advance the 21st century distribution system, such as grid modernization.

Table 45 illustrates how PGE has met OPUC's DSP guidelines under Docket UM 2005, Order 20-485. [73]

Table 45. Distribution system overview: Guideline mapping

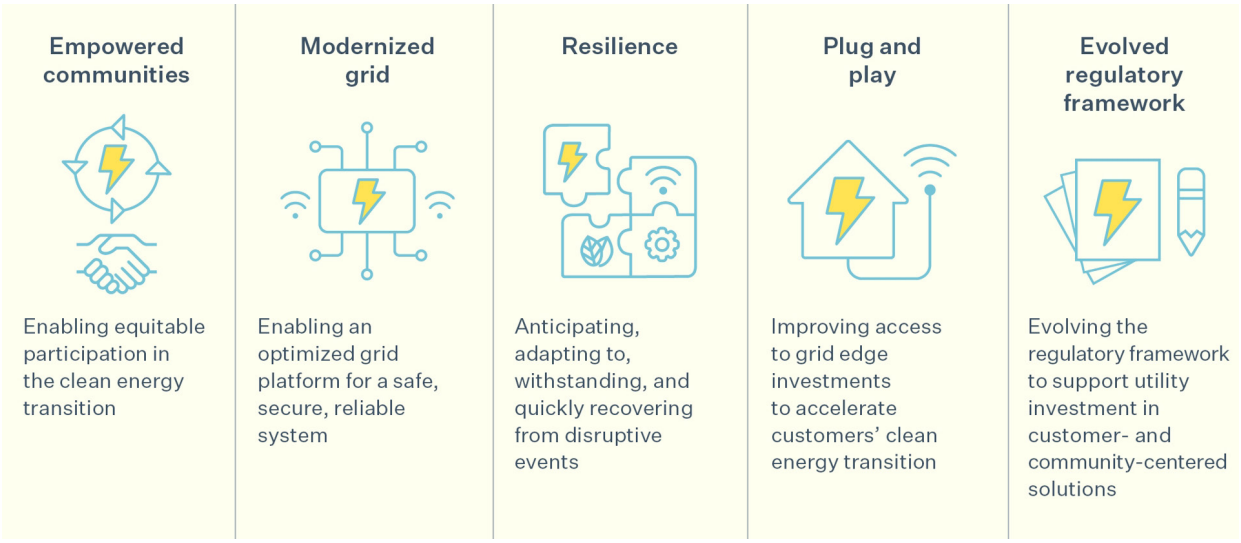
DSP guidelines	Chapter section
5.4.a	**Section 7.3**
5.4.b	**Section 7.3**
5.4.c, 5.4.d	**Section 7.3, Appendix K**

72. PGE uses the definition of environmental communities under Oregon HB 2021, available at: https://olis.oregonlegislature.gov/liz/2021R1/Measures/Overview/HB2021.
73. OPUC UM 2005, Order 20-485 was issued on December 23, 2020, available at: https://apps.puc.state.or.us/orders/2020ords/20-485.pdf.

7.2 Introduction

PGE's vision for the distribution system builds on traditional utility values of reliability, safety and affordability by incorporating values such as decarbonization, community impact, resiliency and security. In building our vision of a 21st century community-centered distribution system, we developed goals that focus on advancing environmental justice, accelerating DER adoption, and maximizing grid benefits through our DSP. **Figure 54** highlights our focus on these goals through our strategic initiatives.[74]

Figure 54. DSP strategic initiatives



As part of PGE's DSP action plan process, we conducted analysis and shared with various stakeholders, partners and community-based organization through our DSP Partnership Workshops and Community-focused Workshops. In total, we held 23 engagement meetings from January 2021 to August 2022: 17 DSP Partner Meetings and 6 Community Workshops. The workshop participants assisted us in identifying strengths and weaknesses, as well as opportunities within our DSP approach and plan.

Many factors influence the way the plan is executed, such as disruptive weather events, supply chain disruptions that lead to price swings and delays, jurisdictional permitting requirements, and significant economic development, such as data centers. Over time, we will continue to refine our strategies so that the way we plan aligns with the reality that we operate in a dynamic environment.

74. Community engagement was a driving theme in developing DSP Part 2 and was discussed in **Chapter 2**. The remaining sections within this Chapter discuss the specific planned and proposed actions for modernized grid, resilience, and plug and play.

7.3 High-level action plan

PGE's DSP action plan presents our proposed solutions to address grid needs, as well as other investments in the distribution system as required by UM 2005. The elements of our DSP describe how the planning process meets the DSP Guidelines under UM 2005. These DSP Guidelines specify the initial requirements for the DSP and identify baseline expectations for how these requirements may evolve over time.

PGE's near-term action plan aligns our vision for the DSP and outlines a plan that we believe advances environmental justice, accelerates DER adoption, and maximizes grid benefits. It represents our initial steps toward modernization of the distribution system to achieve the necessary levels of decarbonization and greenhouse gas emission reductions that can slow the advance of climate change.

We anticipate investments, outside this DSP, will be included in our CEP and IRP as a result of our DER forecast and adoption results. The CEP and IRP are expected to be filed in 2023. For example, we are currently conducting analysis through our Integrated Resource Plan (IRP) to understand how the contributions of DERs can assist in meeting system need.

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 determined that in order to achieve this decarbonized future, we would need to find new sources of flexibility for the supply portfolio. Our grid modernization investments represent 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. **Table 46** describes our high-level approach to modernizing our grid. These investments support our modernized grid architecture, systems and capabilities. Details on PGE's roadmap and planned investments for modernizing the grid, increasing resilience and promoting DER adoption can be found in **Appendix K**.

Table 46. High-level grid modernization investments summary

Grid modernization investments
Investments into customer DER portal needed to develop a customer DER device management platform, enhance customer billing and settlements, streamline interconnections and customer communications
Design of a Virtual Power Plant with expansion capabilities needed to meet HB 2021
Investments for planning and engineering capabilities needed to enhance PGE's AdopDER model, development of a Next Generation Planning Tool, DER data management systems and updates to cost-benefit model and tools for NWS
Investments into grid management systems for ADMS for critical infrastructure and distribution automation (DA)
Investments into sensing, measurement, and automation, telecommunications and cybersecurity

Our traditional T&D planning include investments needed to enable security, resiliency, and DER adoption. For these investments, we have identified a suite of projects to be prioritized in this planning cycle. These investments are needed to address the prioritized grid needs identified in **Section 4.5** that improve reliability, safety, resiliency and compliance with state and federal requirements and advance toward the 21st century human-centered distribution system. **Table 47** provides a summary of the number of projects in each category of T&D investment described in **Section Table 50**.

Table 47. Count of T&D investments by category

Investment types (# of projects)	2023	2024	2025	2026	Total
Capacity/Flexibility	9	10	13	7	39
Customer/Partner	24	19	17	13	73
Compliance	22	18	14	9	63
Reliability	21	21	24	19	85
Operations	4	4	4	4	16
Total	**80**	**72**	**72**	**52**	**276**

Table 48 shows the estimated costs for proposed investments, solutions and actions within our DSP, which reflect commitments to our DSP goals and vision. These estimated costs were developed utilizing current known opportunities and challenges within our 2022 planning environment.

At the time of this DSP filing, there are still many outstanding questions on how CEP requirements will impact existing DSP guidelines and which types of investments should be made to the distribution system to accelerate the equitable implementation of a decarbonized future. **Table 48** represents investments into our distribution system utilizing current state analysis; thus, these costs do not include investments, solutions and/or actions related to our Clean Energy Plan (CEP). Our intent is to evaluate impacts on the distribution system related to meeting the CEP targets and identify actions and investments not envisioned in our DSP or the OPUC's DSP initial guidelines in our CEP filing, which is expected to be filed in March of 2023.

PGE's budgets are fixed each year, and many factors could cause a reprioritization of the work that is identified in the plan, often on a year-by-year basis. The projects and investments that are shown here represent the body of work that PGE has identified for the coming years. Changes in our local environment will dictate the timing and duration over which work is completed and whether or not the identified projects are displaced by other projects of competing priority.

Table 48. High-level action plan estimate

Investment Summary (estimated $M, incurred)	2023	2024	2025	2026	Total
Traditional T&D Investments for Customers, Reliability, Safety and Compliance	**$285.0**	**$285.0**	**$285.0**	**$285.0**	**$1,140.0**
Prioritized Grid Needs (included in Traditional T&D Investments)	$55.3	$56.3	$87.1	$28.7	$227.4
Grid Modernization Investments	**$40.0**	**$40.0**	**$40.0**	**$40.0**	**$160.0**
Total T&D and Grid Mod Investment	**$325.0**	**$325.0**	**$325.0**	**$325.0**	**$1,300.0**

7.4 Long-term actions

Traditional regulatory rules require capital investments to be used to provide service to customers before they are eligible for inclusion in customer rates. The regulatory framework also includes interconnection rules that establish system upgrade cost responsibility for interconnecting customers and resource developers. However, this regulatory framework complicates PGE's ability to proactively build out new infrastructure to support DERs and electrification using the existing capital planning and regulated rate case process. In coordination with CEP and IRP processes, changes to the regulatory framework could accelerate projects that ready the grid for decarbonization.

7.4.1 DER-READINESS UPDATES FOR SYSTEM PROTECTION

PGE has performed and regularly refreshed analysis of distribution upgrades required to make the system DER ready. The Plug and Play section of **Appendix K** outlines investments that have been identified to upgrade breakers, switchgear, and transformers to address constraints to connect more distributed generation (DG). Projects needed to address safety issues are prioritized through the needs analysis and solution identification process and are included in our 2023 capital plan. However, updated cost recovery guidance would be needed to support proactive investment in the remaining projects via the capital planning process.

In coordination with ongoing investigations in UM 2099 and UM 2111, we are considering the following initiatives to evolve the regulatory framework to overcome these challenges:

- Operational solutions to expand hosting capacity: we support the concept of a "Net Metering Fast Track" pathway.[75] Under this approach, new projects with smart inverter (IEEE 1547-2018) capabilities enabled that fall under a predetermined screening threshold may avoid the need for system upgrades and the corresponding upgrade costs, therefore expediting the interconnection. Additionally, we are continuing to develop flex load resources and interconnection standards that can be used to support additional DG integration.

- Regulatory framework for incremental investments. As described above, our internal grid solution prioritization and design criteria rigorously focuses on the least cost least risk solutions to serve load. Accordingly, these criteria do not lead to prioritization of other project types or design solutions, such as a substation upgrade that would increase hosting capacity, or an oversized transfer switch that would increase project cost but minimize risk of replacement in the event of near-term local DER growth. These planning standards are not set in stone; they are based on the system of statutory and regulatory standards and precedent. With development of a supportive regulatory prudency standard and cost recovery pathway, we can integrate hosting capacity projects within our grid planning process.

- Consideration of full or partial cost recovery within interconnections. In accordance with the principle that interconnecting resource developers bear the cost of upgrades, we encourage further DSP and UM 2111 attention to evolutionary cost sharing options. Updated cost sharing methods could allow incremental costs of capacity investments to be tied to all interconnecting DERs benefiting from the upgrade.

7.4.2 ELECTRICVEHICLECHARGINGREADINESS

As noted in OPUC's Order 22-083 accepting PGE's DSP Part 1, DSP alignment with Transportation Electrification (TE) initiatives is a continuing area of focus. We aim to file the TE Plan (TEP) in fourth quarter of 2022. It will include proposals for TE programs and TE infrastructure that will support the vehicles projected in the DSP TE forecast and the overall state decarbonization trajectory.

The TEP will include budgets for programmatic and TE infrastructure activities directly related to TE projects; grid infrastructure projects will continue to be identified and prioritized through the grid planning process described in this document.

As described in the Plug and Play section in **Appendix K**, these investments could be significant but are largely excluded from the current need-based action plan. This is in large part due to the regulatory framework's expectation of usage as a condition for cost recovery. Unlike customer-driven load growth, which is frequently influenced years in advance by municipal and regional planning processes, TE charging growth within our territory may be very lumpy and unpredictable – large loads and peak demands have the potential to materialize at specific grid locations with very little advance notice. Large infrastructure projects that are essentially at risk of non-recovery do not align with the traditional regulated investment model. DSP data and processes should also inform early-stage conversations between PGE and TE-interested customers to encourage alignment of TE charging load with locations where existing distribution investments and capacity can support additional load.

75. See "PGE's status update on the Company's efforts to identify an alternative method or technology for cost-effectively interconnecting net metering customers on constrained feeders," filed to UM 2099 on June 24, 2022, available at: https://edocs.puc.state.or.us/efdocs/HAD/um2099had143957.pdf

PGE anticipates actively working with the OPUC, stakeholders, and partners in the DSP review and guidance update and the TEP review so that the distribution planning process balances investment prudency standards, supports our customers and system, and supports Oregon's TE objectives.

7.4.3 UTILITY INCENTIVES FOR OPERATOR ROLE

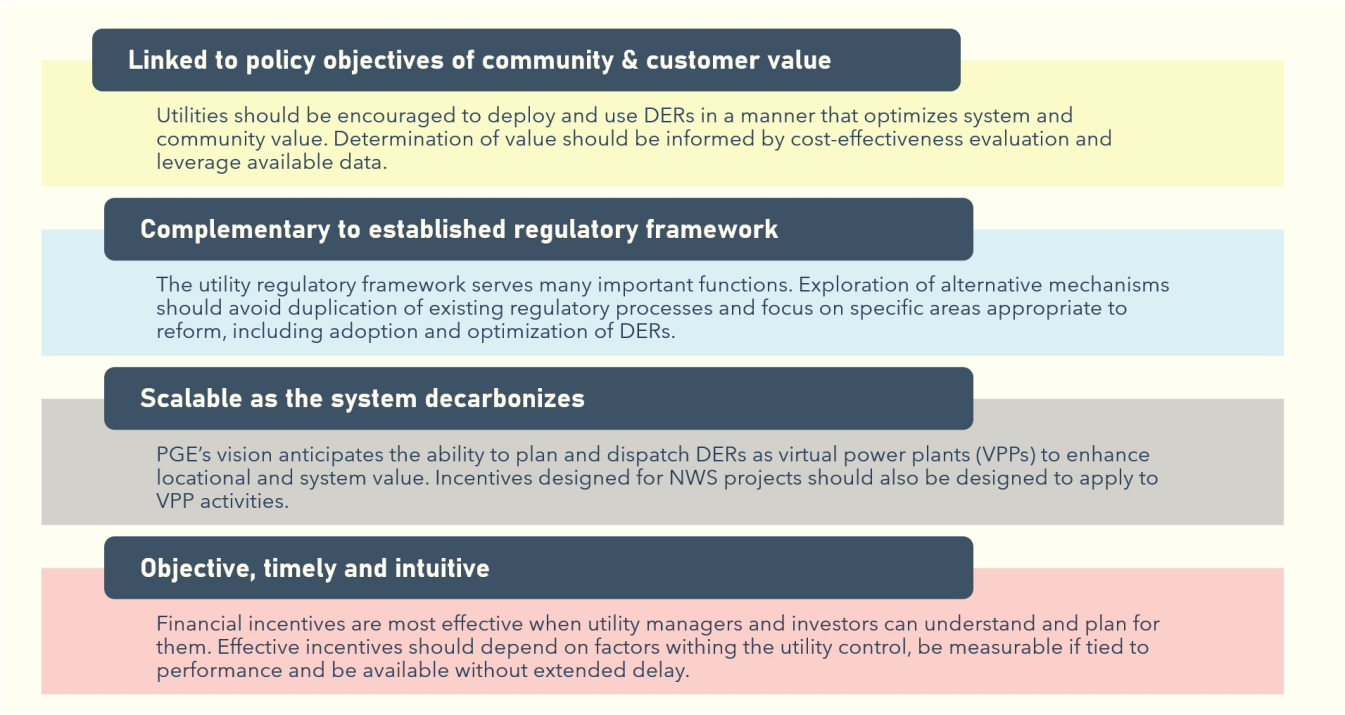
Throughout the UM 2005 process, there has been recognition that the utility business model under the traditional regulatory framework may need to evolve to align with the needs of a decentralized future.[76] While recognizing that changes to utility incentives need to be addressed thoughtfully, we seek to advance this conversation by including a pilot incentive mechanism in our NWS proposals.

PGE recognizes there has been varying and limited progress in normalizing non-wires solution projects by other jurisdictions. A review of utility efforts across the country shows that in spite of considerable work to develop new planning frameworks, establish applicable cost-effectiveness criteria, screen project opportunities and identify candidate resources, implemented NWS projects have been notably rare.[77]

An incentive mechanism for NWS and VPP operationalization can help to address challenges experienced in other jurisdictions. Under this approach, a new earnings element would be determined by the value provided by DER portfolios. The incentive would reward utility success in pursuing solutions that maximize customer and community benefits in a way that is agnostic to resource type and ownership structure.

As a starting point in developing a new incentive structure, we suggest a structure guided by the following principles (**Figure 55**):[78]

Figure 55. Example incentive structure



76. The possibility of business model reform was addressed in Order 20-485 which provided DSP guidance and included as a core element of PGE's DSP Part 1 (7.4.2). Order 22-083, in which the OPUC approved all three utilities' DSP Part 1 documents, states that "Revision of utility incentives and proactive grid investments are topics that will require deliberate discussion and consideration by Staff, stakeholders and the Commission."
77. For example, see Wood Mackenzie's 2020 research summary, "US utilities are leaving non-wires alternatives on the table", available at: https://www.woodmac.com/news/editorial/us-nwa-on-the-table/. Further discussion of this topic can be found in Table 48 and Section 7.4.5 of PGE's DSP Part 1.
78. PGE's suggested principles are informed by best practices publicized by groups such as LBNL and RMI and design guidelines proposed and adopted in stakeholder processes and PUC orders in performance-based regulation dockets in states including Hawaii, Minnesota, and Washington.

Using these principles, an approach could be to calculate earnings eligibility as a function of DER utilization and total benefits. In all cases, cost-benefit analysis would be used to evaluate whether net incremental costs of DER development and utilization would be less than net benefits. Since the incentive's value would be directly tied to quantity and quality of DERs used to provide customer and community value, it would help shift the utility's business motivation toward DER development, utilization and optimization in service of customer and community benefits.

PGE encourages development of a properly aligned regulatory mechanism, but we are not asking for the Commission to acknowledge or approve any mechanism through the DSP. We seek to work with the OPUC to advance the discussion of such a mechanism in our next rate case, drawing on nationally recognized recommendations and best practices. We readily acknowledge the numerous complexities associated with introduction of a new element of the regulatory framework; however, an incentive mechanism for the NWS projects could be treated as a pilot that can inform future investigations.

This incentive structure could fit within our current regulatory framework, if a NWS is planned for, designed and implemented just as traditional resources are under established capital planning processes in alignment with DER forecasts and resource planning processes (IRP and CEP). We look forward to the evolution of DSP guidance in UM 2005 to formalize procedural expectations that support NWS identification, selection, and implementation within the evolved regulatory framework.

7.4.4 DISTRIBUTED ENERGY RESOURCE COST-EFFECTIVENESS

PGE's ability to accurately and consistently account for costs and benefits is crucial to achieving the goals of grid modernization, decarbonization and customer satisfaction. Enhanced cost-effectiveness (CE) methodologies and tools will enable us to conduct broader, more detailed analysis, allowing enhanced cost-benefit analysis which will help us improve DER forecasts, program design and operational decisions. This strategy will result in capabilities for us to look broader at opportunities to modernize the grid and provide customer choice and help outcomes listed in **Table 49**.

Table 49. Cost effectiveness desired outcomes

Outcome	Objective
Consistency and alignment	Create consistency and coordination between analysis and recommendations in DSP, IRP, CEP, MYP and TEP
	Streamline regulatory and stakeholder review and rework
	Increase transparency for prudency reviews and potential earning mechanisms
Robust decision-making framework	Enhance target setting across planning efforts leading to improved integration with CEP and IRP
	Inform planning standards and guidance for cost allocation at the measure, program and portfolio level
	Promote standard approaches to evaluation scope and cadence
	Enable better decision-making process for company investments
Operational efficiencies	Use a company-wide CE model
	Conduct CE with new value streams
Program development and implementation	Develop high value measures/programs/products
	Accelerate DER adoption for higher value DERs
	Create data discipline and consistency
	Assist customers in reducing bills
	Reduce energy burden and promote equity by incorporating social and environmental benefits

PGE's development of robust and transparent valuation methodologies can promote streamlined regulatory approval of DER-related proposals, reducing uncertainty and rework. Our CE evaluation approach is evolving as we update valuation methodologies for generation capacity, T&D avoided costs, locational value, bulk ancillary services, resiliency, and incorporate equity metrics as discussed in Chapter 2. The CE project is underway and will continue into 2023. In addition to their use in NWS project assessment, we intend to continue refining these inputs as they are applied in upcoming MYP, TEP and CEP filings:

- **DSP** — The Grid Modernization Chapter of PGE's DSP Part 1 described progress made on CE in 2021 and outlined plans for a future CE model. These capabilities have implications throughout DSP Part 2, where updated CE values factor into numerous analytical workstreams, including DER forecasting, NWS project assessment, and regulatory evolution.
- **MYP (August 2022)** — PGE's 2022 MYP will address Staff and stakeholder feedback to the 2021 MYP by incorporating improvements to cost-effectiveness methodologies. We are working toward alignment of valuations by updating our tools and capabilities for assessing flexible loads.
- **TEP (Fourth quarter 2022)** — CE work will support advancement of electrification policy and program proposals based on cost-benefit analysis for transportation and building electrification. This work will provide strategic direction on evaluating costs and benefits as well as the integration of DERs on the distribution system.
- **CEP (March 2023)** — As PGE develops its first CEP, examinations of DER opportunities to reduce emissions and provide community benefits will incorporate CE tools developed in DSP.

7.5 Evolution of DSP guidelines

The 2023 DSP guideline update planned by OPUC offers the opportunity to streamline and clarify several topics, reducing administrative workloads on OPUC Staff, stakeholders, partners and utilities.

Table 50 summarizes actions identified by PGE, stakeholders and partners from DSP Part 1, along with items we have identified in the DSP Part 2 work.

Table 50. Evolution of DSP guidelines recommendations

Topic	Recommendation	Status
DER cost-effectiveness / standardized valuation framework	An updated cost-effectiveness model that includes social and environmental policy considerations supports design and evaluation of DER programs and assists in development and approval of non-wires solutions	Staff has recognized this need across multiple dockets. Staff notes its potential inclusion in DSP Guideline revisions in Order 22-083
Comparable treatment of NWS and traditional investments	Regulatory approval process and utility revenue mechanisms should provide explicit incentives to pursue NWS projects that maximize community benefits relative to traditional T&D solutions	Staff notes its potential inclusion in DSP Guideline revisions in Order 22-083
Community engagement metrics	Metric development should be informed by new Community Benefits & Impacts Advisory Group and consistent across engagement areas	Staff notes its potential inclusion in DSP Guideline revisions in Order 22-083. Similar metrics are also being considered in UM 2225 (HB 2021 Investigation into Clean Energy Plans)
System-level and customer data policy	Engage stakeholders in review of additional system attributes recommended by IREC in their DSP Part 1 comments [1]	Staff notes its potential inclusion in DSP Guideline revisions in Order 22-083
Docket integration	Consolidation of several reports and plans into comprehensive DSP guidance can eliminate redundancies	Initially proposed in PGE DSP Part 1 and recognized as need in Order 22-083. Consolidation will require update to guidelines and in some cases may require rule updates

1. IREC DSP Part 1 comments, available at: https://apps.puc.state.or.us/edockets/edocs.asp?FileType=HAC&FileName=um2197hac153720.pdf&DocketID=23043&numSequence=11