Chapter 2. Introduction

Portland General Electric is pleased to share our 2023 Transportation Electrification Plan. This Plan describes the Company's current actions in support of transportation electrification for its customers and provides a roadmap of transportation electrification activities through 2025.

It has been three years since PGE's last filed TE Plan. The TE market is rapidly maturing, through accelerated EV adoption, automaker investment, and state/federal investment and policy action. The transition to electric vehicles is underway in Oregon, with the state surpassing 62,000 registered EVs in 2023[10] and EV's accounting for more than seven percent of new vehicles registered in Oregon in 2021, the fourth-highest percentage nationally.[11] As of 2023 the State of Oregon reports over 2,064 charging sites.[12]

PGE's 2019 TE Plan strategy and perspective informed significant investment to *accelerate* electric vehicle adoption. In 2022, following the Commission completion of their Oregon Administrative Rulemaking Division 87, PGE had planned to submit our draft 2022 TE Plan. Earlier that year, PGE's TE Team shared with stakeholders a portfolio of activity informed by the Oregon Department of Transportation's Transportation Electrification Infrastructure Needs Analysis study (TEINA), our own AdopDER[13] modeling, and the Commission's Transportation Electrification Investment Framework (TEIF) requirements. While PGE has a role in supporting adoption, in some limited cases accelerating adoption, PGE now recognizes the market is accelerating at a rate where PGE customers are best served by PGE focusing on planning for the service of this load and managing the load to the benefit of the system. This perspective is informed by our system planning and TE market development. The Plan proposes only modest incremental customer investment to target PGE activities that inform the proper role of the utility.[14] PGE does propose investment in activity which is ahead of market development (e.g., heavy duty charging, where PGE sees investment as necessary to understand the unique needs and challenges of these high-capacity chargers).

The 2023 TE Plan offered here proposes a portfolio of activities that facilitate PGE's ability to plan for, manage, and serve the TE loads that are rapidly coming to our system. In part this includes activities that will: inform rate design; enable data collection; explore whether unique transportation line extension allowances are needed; inform development of terms and conditions for service such as data sharing and communication system requirements for flex load development; collect lessons regarding how best to meet the needs of underserved communities and PGE's role respective of these needs. The Plan recognizes that PGE must develop standard practices, tool sets, and service structures which create a seamless transportation electrification experience.

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[10] Oregon Department of Transportation. *Oregon Electric Vehicle Dashboard*. Retrieved from https://www.oregon.gov/energy/Data-and-Reports/Pages/Oregon-Electric-Vehicle-Dashboard.aspx.
[11] Wells Fargo (June 21, 2022). *Figure of the Week: EV Sales by State, 2021*.
[12] See footnote 10.
[13] AdopDER is a forecasting model that estimates adoption of electric vehicles, EVSE, and associated load impacts and is used for utility forecasting and planning efforts. ODOT's TEINA report is an assessment of public charging infrastructure (e.g., EVSE) requirements to support a given amount of EV adoption following the State's goals. Aside from methodological differences, which will be discussed throughout the section, this is an important distinction in scope between the two modeling efforts that should be emphasized up front.
[14] In limited cases, PGE envisions that role as one to accelerate EV adoption in markets such as underserved communities where private market actors may not yet be prepared to take action either independently or without utility partnership.

The scope and funding proposed with this TE Plan reflect the needs of the TE market and PGE's need to prepare for associated TE load but are also designed in the context of PGE's other decarbonization activities. As illustrated in our combined March 2023 Integrated Resource Plan (IRP) and our first ever Clean Energy Plan (CEP), meeting the clean energy and GHG reduction targets outlined in HB 2021 will require significant resource investment. The scope and funding proposed with this TE Plan balance the needs of the TE market within that larger context of the clean energy transition.

The PGE's 2023 TE Plan further attempts to find proper balance between expenditure and market needs by optimizing use of Clean Fuels Credit revenues and Monthly Meter Charge funding while requesting a modest incremental customer investment. Our aim in so doing is to position PGE to meet the current emerging market while developing sustainable long term business practices to support transportation electrification.

Table 2, below, is a showing of previously approved budgeted activity. Some of this activity was approved through program proposals between 2020 and 2022. Some of the activity represented in this table was approved through our 2023 Monthly Meter Charge Budget filing.[15] Lastly, some of the items in Table represent Clean Fuels Program activity.

Table 2. Transportation Electrification Budget: Previously Approved Budget[16]

TE Portfolio Approved Spend	2023-2025 Approved Spend
Customer Ratepayer Subtotal	$14,182,557
Business & Multi-Family Make-Ready Solutions	$1,854,630
Fleet Partner Pilot	$7,821,324
Heavy Duty Charging Pilot	$3,620,453
Portfolio Support	$300,000
Public Charging - Municipal Charging Collaboration	$586,150
Monthly Meter Charge Subtotal	$10,552,422
Business & Multi-Family Make-Ready Solutions	$692,500
Business EV Charging Rebates	$1,957,728
EV Ready Affordable Housing Grants	$1,000,000
Fleet Partner Pilot	$832,000
Portfolio Support	$1,511,500
Public Charging - Municipal Charging Collaboration	$3,821,694
Residential Smart Charging Pilot	$737,000
Deferral Subtotal	$3,629,968
Business EV Charging Rebates	$831,000
Public Charging - Electric Ave	$1,118,968
Residential Smart Charging Pilot	$1,680,000
Clean Fuels Program (2023 budget)	*$11,758,817*
Previously Approved Budgets + Clean Fuels Program (2023)	*$40,123,764*

[15] Oregon Public Utility Commission. *Docket UM 2033 Portland General Electric's Proposed Monthly Meter Charge Budget for 2023*, Submitted March 23, 2023 retrieved from https://www.oregon.gov/puc/edockets/pages/default.aspx.

[16] The figures shown in this budget have been approved previously by the Commission through docketed proceedings, detailed in Appendix I.

Table 3, below, encompasses two perspectives regarding incremental funding. The first part of the table shows the incremental spending approval request of PGE's 2023 TE Plan. Though this TE Plan reviews the entire portfolio of work PGE will be conducting through 2025, PGE's 2023 TE Plan requests approval to spend $12.5 million of Monthly Meter Charge funds on program activity found in Table 3. These funds are anticipated to be collected through the Monthly Meter Charge mechanism. Commission's Division 87 rules require Commission approval of the program budgets before spending these funds. The 2023 TE Plan also requests an additional incremental ratepayer investment of $9.9 million to spend on activities noted in Table 3. Further programmatic detail is found within the Plan. The portfolio support line item includes activities such as education and outreach, administrative costs, and technical assistance. Additional detail can be found within this Plan. Table 3 also shows a forecast of Clean Fuels Program revenue for 2024 – 2025. The lower section of Table 3 shows how PGE intends to spend $2.0 million of CFP revenue for our Municipal Charging Collaboration Pilot.

Table 3. Transportation Electrification Budget: Incremental Budget

TE Portfolio Proposed Incremental Spend	2023-2025 Incremental Spend
Customer Ratepayer Subtotal	$9,890,036
Fleet Partner Pilot	$9,463,949
Portfolio Support	$100,000
Public Charging - Municipal Charging Collaboration	$326,087
Monthly Meter Charge Subtotal	$12,494,226
Portfolio Support	$575,000
Public Charging - Municipal Charging Collaboration	$7,843,504
Residential Smart Charging Pilot	$4,075,722
Total Clean Fuels Program Forecast (2024-2025 forecast)	*$33,523,830*
Public Charging - Municipal Charging Collaboration	*$1,953,000*
Clean Fuels Program (2024-2025 forecasts)	*$31,570,830*
Incremental Budgets + Total Clean Fuels Program (2024-2025 forecast)	*$55,908,092*

2.1 Strategy Overview

This 2023 TE Plan retains the 2019 TE Plan's strategy in rates, programs, and infrastructure. This TE Plan proposed activity continues many of the program and infrastructure activities of 2019 TE Plan, while also collecting data to inform new rate and tariff design or rate adjustments. Many of the 2023 TE Plan's program activities have an infrastructure component to inform PGE's infrastructure role and what the role of utility program(s) should be as the market matures. In the 2019 TE Plan PGE showed how important it was for PGE to have role in developing TE charging infrastructure, most notably behind-the-meter infrastructure serving the chargers. Later in ORS 757.357 (HB 2165, 2021) codified PGE role in make-ready infrastructure behind-the-meter. Lastly, the 2019 TE Plan identified rates as a necessary component of utility TE activity. The 2023 TE Plan's strategy expands on that of the 2019 TE Plan by recognizing PGE's role is to plan for, serve, and manage TE load. The reader will find that within the 2023 TE Plan' strategy the main components of the 2019 TE Plan have been incorporated. For example, the rates component of the 2019 TE Plan has been incorporated into the Manage Load component of the 2023 TE Plan.

Below is a synopsis of the 2023 TE Plan strategy elements: **Plan for TE Load**, **Serve TE Load**, and **Manage TE Load**. Greater detail of the 2023 TE Plan Strategy can be found within the Executive Summary section of the TE Plan and throughout the 2023 TE Plan.

2.1.1 Plan for TE Load

PGE will **lead through planning and siting**. This work includes but is not limited to extending forecasting capabilities to provide insight into load, location and impact by feeder, EV class, and customer type. Additionally, PGE will influence siting of larger loads (e.g., medium-to-heavy duty and fleets) at feeders and substations with available capacity. The collection of this data will inform next steps in planning and program development, as well through which tools PGE serves the load.

PGE will focus on **coordinated corporate planning** by consolidating Distributed Energy Resource (DER) and TE forecasting, as well as consolidating planning of CEP, IRP, and TE Plan to ensure coordination across all efforts.

PGE will update TE forecasts to inform **distribution upgrades and planning**. This new practice will inform **capital planning** activities in a strategic manner

PGE's **state, local, and regional planning** will include parties involved in federal and corridor planning, including regional utilities, Oregon Department of Transportation (ODOT), Oregon Department of Environmental Quality (Oregon DEQ or DEQ), and Oregon Department of Energy (ODOE).

2.1.2 Serve TE Load

PGE will **build distribution and grid infrastructure to serve customers,** aligning those investments to support and serve ongoing TE customer load**.** PGE's advanced planning tools now incorporate IRA and IIJA data as well as meter data. As a result, our AdopDER model perspective is both broad enough to encompass market shifts and also granular enough to identify new usage and load pockets unique to TE load. These capabilities allow PGE to plan for TE load in a targeted manner, forecasting local TE-driven load growth and distribution system needs assessments ahead of load materializing.

Our planning tools also inform our need for new power generation balanced against trends in customer DER adoption, which PGE is seeing driven by federal tax credits and state incentives. This adoption of self-generation and energy storage is expected to help manage the need for new supply-side generation and TE-related distribution system upgrades. PGE is implementing site generation and storage similarly at our Electric Island facility. Investments such as these will be operationalized through our prior investments in our Integrated Operations Center and our Advanced Distribution Management System. These advanced capabilities enable PGE to harvest the grid benefits of TE load and the new smart grid capabilities of EV batteries and managed TE load, thereby enhancing how we will serve all TE load reliably, safely, and at "least cost". In addition, PGE will conduct work to inform how to better serve TE customers and how to incorporate both TE load and TE customer needs into current business practices and tools. PGE will pursue learnings from distinct, business, multi-family, municipal, and heavy-duty activities. PGE will look for opportunities to acquire TE load management through traditional tools like rate design and tariffs such as line extension allowances.

Figure 2, below, are a brief review of how the 2023 TE Plan proposes to serve TE load within four program areas. This is not the total portfolio or program activity. Greater detail can be found in the programs section and the appendices of the 2023 TE Plan. Figure 2 shows, at a very high-level, how these programs are structured to serve these different types of TE load:

Public Charging – Municipal Charging

- 180 pole chargers + 160 MR curbside by end of year 2025
- Schedule 50, similar to Residential Charging
- Underserved community partnership

Heavy Duty Charging

- Coordinated site development
- Co-siting of storage and local generation
- Distribution upgrade insights
- West Coast Clean Transit Corridor (WCCTC) coordination

Business and Multi-family

- 100 Level 2 (L2) ports by end of year 2025
- Rebate to support customer ownership
- PGE will support customer in determining rate charged to end-user

Fleet Partner

- Make-ready sites for Level 2 and DC Fast Charging (DCFC)
- 759 L2 and 183 DCFC make-ready ports by end of year 2025
- 13.2 MW of load capacity by 2028

Figure 2. How Proposed Programs Serve Different Types of Load

2.1.3 Manage TE Load

PGE seeks to **effectively manage TE load**, enabling and scaling managed charging with vehicle telematics and delivering flexible load and Virtual Power Plant (VPP) MWs.

PGE will **structure TE rates and tariffs to incent "grid-friendly" behaviors**, developing rates that motivate charging behavior, support grid health, load siting investment (e.g., make-ready), and meet policy requirements.

Figure 3, below, provides a brief review of how the 2023 TE Plan proposed to manage TE load within three program areas. This is not the total portfolio or program activity. Greater detail can be found in the programs section and the appendices of the 2023 TE Plan. Figure 3 shows, at a very high-level, how these programs are structured to manage the different types of TE load.

Residential Smart Charging Pilot

- Scale enrollments, up from 2,200 in March 2023
- 2.6 MW managed charging by EOY 2025

Fleet Managed Charging Pilot

- Develop managed charging program for fleet customers beyond current time of day pricing

Heavy Duty Charging

- Coordinated site development
- Co-siting of storage and local generation
- Distribution upgrade control

Figure 3. How Proposed Programs Manage Different Types of Load

The following icons represent the central elements of PGE 2023 TE Plan Strategy. PGE created these icons to visually connect activity to the 2023 TE Plan Strategy.

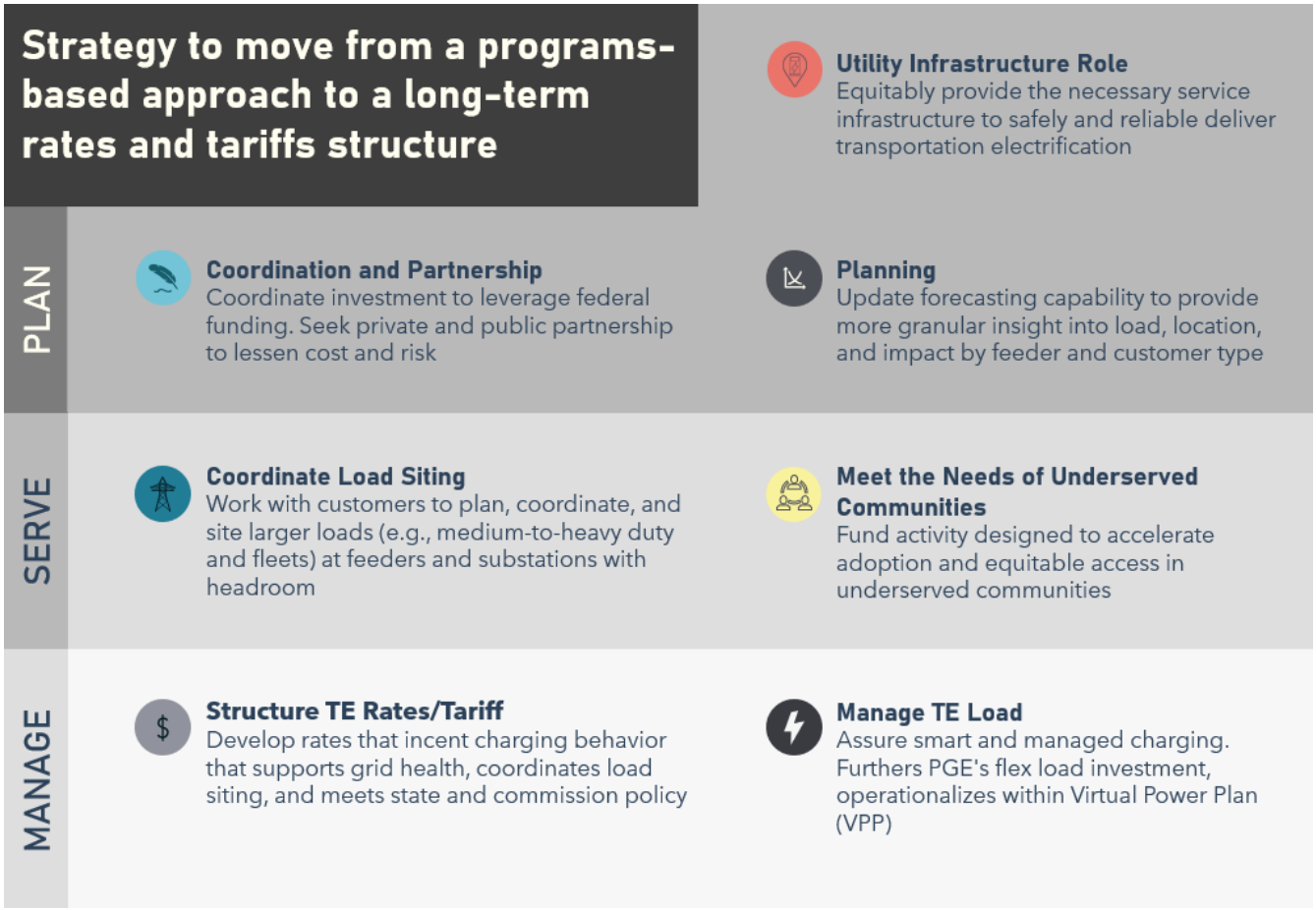

Figure 4. PGE 2023 Transportation Electrification Strategy

Each of the following intersecting components are part of each of the activities outlined within PGE's 2023 TE Plan. The consistence of these cross-cutting activities is a further reflection of the strategy outlined above. These activities include but are not limited to:

- Collect data Particularly load profile data, which informs how to manage TE loads and develop long-term, sustainable, traditional utility structures to incorporate how we serve TE loads into our rates and tariffs.
- Continue to collect market experience To meet the needs of this evolving market PGE must be a market participant, whether as a provider of electricity or other TE specific services. Though adoption is accelerating, additional use cases and needs may yet be identified.
- Cultivate partnerships PGE will continue to cultivate partnerships with private market entities, municipalities, non-profits, community-based organizations, and state, regional and federal entities to solve challenges, address barriers, provide solutions and meet customer needs.
- Meet current demands to inform how to evolve service PGE's 2023 TE Plan attempts to meet current demand in the program areas while carefully managing spending and market

presence. The focus of these activities is to collect information to shape a sustainable long-term approach to TE load.

- Inform planning activities Data is a foundational element in planning but market presence and market activity will also inform our planning activities. Our market presence, customer engagement and site development work will inform PGE's planning activities.
- Learn how best to meet the needs of underserved communities Underserved community TE needs may be unique and may outline a different role for PGE. Therefore, the TE Plan activities are structured to both serve the current need while informing how to meet evolving or emerging needs.

2.2 The Importance of Data

Data collected during the 2023 TE Plan will inform PGE on how to plan, serve and manage TE load. Data collected from the activities will also help create partnerships with the private market for enhanced and more efficient services in the years to come. However, unlike the private market, the data collected by PGE is protected under Commission oversight and its exchange is regulated by the Commission, statutes, and Oregon administrative rule. This fiduciary relationship with customer data is an important role of the public utility.

2.3 What it Means to Plan for TE Load

This is a period of dynamic change for the industry as federal, state, and local policies are driving a clean energy transition at a rapid pace. PGE must plan for TE load growth that is forecasted to accelerate in all categories through 2030 and beyond. To plan for this load growth PGE has developed a forecast model called AdopDER.[17] PGE is investing in updates to our AdopDER model to account for market changes such as federal action through the Infrastructure Investment and Jobs Act[18] and Inflation Reduction Act[19] and the recent announcement of the Environmental Protection Agency's (EPA) automobile tail pipe emission rulemaking.[20]

The following regulatory planning filings are directly affected by TE load development, each of which use the AdopDER model for forecasts and insights into when, where, what kind, and how much TE load is expected to materialize within PGE's service area:

- The IRP and CEP account for TE load growth in their assessment of resource need to meet future loads. The IRP and CEP's assessment assumes load management.
- The Distribution System Plan (DSP) takes a more granular look at TE load growth as it attempts to identify where on the distribution system that growth will appear, what type of TE load it will be, and when it will materialize. These insights help our distribution system planners and the Company understand what distribution infrastructure is necessary to meet this load and whether further distribution infrastructure investment might be needed.
- The Multi-year Plan (MYP) is PGE's flex load program planning filing, which in part outlines activities PGE is undertaking to better understand how to manage TE load and develop it as a flex load resource.

[17] See footnote 13 for additional detail on AdopDER.
[18] IIJA, retrieved from https://www.congress.gov/bill/117th-congress/house-bill/3684/text.
[19] IRA, retrieved from https://www.congress.gov/bill/117th-congress/house-bill/5376/text.
[20] EPA, rulemaking announcement retrieved from https://www.epa.gov/newsreleases/biden-harris-administration-proposes-strongest-ever-pollution-standards-cars-and.

- Lastly, the TE Plan is PGE's regulatory filing which outlines how PGE will address the TE market and what activities PGE will conduct to learn about, develop, and serve/manage this new load.

An overview of how these plans incorporate or address TE load can be found within this Plan in Section 4.8.3.

2.4 What it Means to Serve TE Load

PGE's AdopDER model shows significant growth of TE load through 2030 and beyond. PGE is undertaking efforts—through investments, in part, outlined in this plan, the DSP, and the MYP—to serve and manage the new load. TE load growth will require system investments, which we seek to manage by coordinating capital investments to meet multiple use cases wherever possible. PGE has made investments in our AdopDER model to increase granularity of data and accuracy. Our investments in the Integrated Operation Center and our Advanced Distribution Management System will provide real time visualization and the capability to utilize DERs to manage TE load or, in the future, bi-directional TE load as an energy resource capable of providing energy services the grid. Further, as outlined in this Plan, PGE is gathering information, data, and experience to develop rates, tariffs, practices, and processes that better align with the market and the needs of the different types of TE load. PGE's 2023 TE Plan activities all have components to inform infrastructure and service requirements and identify what adjustments or new approaches PGE will need to develop to meet the service needs and requirements of TE load. This TE Plan also outlines the importance of the customer-to-utility relationship as a pathway and necessary connection to communicate and educate both parties regarding how this new transportation fueling paradigm will work.

2.5 What it Means to Manage TE Load

Managing TE load is an important aspect of controlling costs to serve TE load and extracting system benefits. Simply serving TE load would not allow PGE to utilize it as a resource or manage it against system operating needs. Additionally, managing TE load also requires proper tariff design informed by TE load profiles. PGE's 2023 TE Plan activity is structured to give the utility insight into how to manage the load, whether through active management like DR-capable chargers, vehicle telematics, vehicle-to-building, or through rates specific to TE load types.

To meet our GHG targets in 2030 and beyond, we will need to meet additional load growth with non-emitting resources. Managing customer loads is critical to our ability to meet our goals and manage costs and reliability for our customers. PGE's Integrated Resource Plan (IRP) and Clean Energy Plan (CEP)[21] forecasts the need for load management and its role in incorporating higher level of non-emitting resources onto the PGE system. The 2023 IRP and CEP forecast investment in energy efficiency, community based renewable energy and flexible load. PGE's Distribution System Plan also identifies an important role for distributed energy resources (DER) advancing our grid modernization and decarbonization goals. The management of TE load is considered part of the DER under the sub-category of flexible load or demand response.[22] Further, PGE is investing in development of our virtual power plant (VPP). PGE's VPP is a combination of an operational structure and technology

[21] PGE (2023). *2023 Integrated Resource Plan and Clean Energy Plan.* Filed March 31, 2023 with Oregon Public Utility Commission under Docket LC 80, retrieved from https://apps.puc.state.or.us/edockets/DocketNoLayout.asp?DocketID=23636.
[22] PGE. *PGE Distribution System Plan Part I and Part II*. Filed with Oregon Public Utility Commission under Docket UM 2197, retrieved from https://apps.puc.state.or.us/edockets/docket.asp?DocketID=23043.

platform which incorporates DER into a coordinated system which can visualize, communicate, and operate these resources to the benefits of the customer and the grid.

2.6 The Importance of Market Experience

This TE Plan focuses on the specifics of how to serve the many different types of TE load that will eventually make up 177 aMW of demand by 2030. The meter and charger data exchanges outlined in PGE's 2023 TE Plan will enable the Company to collect insights into the timing, size, and shape of these new load types across customer sectors (residential, commercial, and industrial) and the different and unique customers that make up these sectors such as business charging, fleet charging, residential and multi-family (low, middle, and high income), and underserved communities (residential and businesses).

Data on business type and fleet size, EV model composition, EV model battery capabilities, battery sizes, dwell times, and charge rates will inform PGE of how to develop rates and tariffs which balance the needs of the customer and the grid. The data will help inform PGE of whether to explore new line extension allowance structures or interconnection-like agreements for larger or more dynamic loads. Load shapes and usage patterns have informed PGE that a review of interconnection and line-extension allowances is needed. PGE currently has a line extension allowance as part of Schedule 300, Rule I.[23] This allowance was not developed with transportation electrification in mind. Therefore, collecting data and usage information from our customers participating in each of the proposed 2023 TE Plan program areas will better inform our review of PGE's line extension allowance.

PGE recognizes that underserved communities may be the last to see the private market serve their charging needs. Two of PGE's programs: the Business and Multi-family Make-ready and the Public Charging – Municipal Charging Collaboration are designed to assist these communities. These programs are sized to meet current market need while also demonstrating to the private market the demand for services in these communities. These programs also demonstrate how the private market can meet these communities' needs through charger placement, rate design, and charger capabilities. Identifying the different types of EV load, and that there may be sub-sectors within each type, is an important aspect of understanding market needs.

Our work with the Electric Avenues, supported through the 2019 TE Plan, has informed PGE on how to build and operate public EV charging stations, how to conduct make-ready installations, and how to form partnerships. It has also helped us understand our role in public charging and under what conditions a utility might need to step into the market. Our work with heavy duty charging at Electric Island and the partnership with Daimler Truck North America is helping PGE understand the challenges of serving this load and how to meet those challenges. Our initial pole charger pilot work helped us identify one approach to meeting multi-family, municipal, and underserved community charging needs.

2.6.1 Meeting Current Needs

While collecting market experience to inform PGE of how to plan, serve, and manage these future TE loads it is also important to meet the current needs. PGE's 2023 TE Plan attempts to meet the existing needs for Fleet, Business, Multi-family, Single Family residential, Municipal Charging, and Heavy Duty

[23] PGE. *Schedule 300, Rule I*, retrieved from https://assets.ctfassets.net/416ywc1laqmd/Z9SW1311yNz1OUSoi0Syr/17aaeff01ae3ec499b7ecdae6cb44e33/Sched_300.pdf.

while working intensely with these early adopters to collect important data, market, and customer experience.

2.7 The Importance of the Customer Relationship

Owning and fueling an EV is a paradigm shift for customers. PGE's direct relationship with our customers can be used to help smooth the transition to the new paradigm. EVs are primarily fueled at home or at place of business, which is a significant practice change and a wholly new experience for customers who now own, or will own, an EV.[24] The practice of planning ahead to assure enough range is reserved in the battery for the next day's usage is new. Further, the EV is now and is expected to continue to be the largest load in a customer's home and yet will likely be the most efficient appliance our customers own. Yet, as Ford, Nissan, and other EV manufacturers have found, the EV is also a resiliency investment for customers. PGE, auto manufacturers and others have identified the electric vehicle battery as a source of resilience service to the customer. This approach requires bi-direction chargers capable of sending power stored in the vehicle battery to the building or residence. This promising technology holds promise for a host of use cases which can be co-optimized to meet customer, community, local and system grid needs.

The 2023 TE Plan proposes programs that gather data to not only inform our planning, how we serve and manage the load but also to uncover insights into how customers respond to the TE paradigm shift, how to communicate with customers about fueling their vehicle, how to understand the new use cases customers and automobile manufacturers envision, and again what role PGE and electric system have in these new relationships. PGE cannot overemphasize how different EV ownership will be for our customers. In order to meet the needs of underserved customers and communities, and to incorporate the benefits to the system of EV adoption and transportation electrification promise, PGE must engage with customers through education and outreach, assisting our customers transition to this new transportation fueling paradigm. The exact role of PGE and the approaches to be used are reasons for this and future filings.

2.8 The Importance of Partnership

Partnerships, investments, and coordination among utilities, charging networks, businesses, local governments, states, fleets, and communities are essential to serve and manage EV load at the scale expected this decade. Through our ownership of chargers like those at Electric Avenues, PGE has learned the value of partnership with the private market to operate chargers. Charger providers whose business models are focused on maintaining EV charging infrastructure can be better equipped to manage the operations and maintenance challenges of public EV charger ownership. Similarly, our partnership with municipalities to deploy pole charging is a valuable relationship which can help meet local clean energy and decarbonization goals while also serving underserved community EV charging needs.

PGE has worked with other utilities to identify the need and placement of heavy-duty charging along the I-5 corridor. We have worked with the Oregon Departments of Transportation, Environmental Quality, and Energy to inform their planning, program development, and deployment of funds to support EV charging infrastructure. PGE worked with stakeholders and the Commission Staff in 2021-2022 on the development of the TEIF. Through the Smart Grid Testbed (or Testbed), PGE is currently pursuing managed charging partnerships with automobile manufacturers. In our partnership with

[24] California Air Resources Board. *DriveClean: Battery-Electric Cars*, retrieved from https://driveclean.ca.gov/battery-electric.

Daimler, PGE is learning about how to meet the demands of heavy-duty vehicle charging. Through our Clean Fuels activities we are partnering with community-based organizations to deploy charging and vehicles to various non-profits within our service area. We are also working with the Northwest Energy Efficiency Alliance (NEEA) to identify electric vehicle demonstrations projects that may benefit and be funded by NEEA's regional utility partners.

2.9 The Importance of Planning Flexibility

PGE has proposed activities within the 2023 TE Plan which the company views as necessary and prudent next steps. However, the market is accelerating quickly. New federal policies have been issued and further EPA action is expected by way of rulemaking. The State of Oregon may adjust EV purchase incentives. Automakers are adjusting purchase prices in response to competition and tax credit rules. PGE does not expect that the activity proposed within the 2023 TE Plan is the only activity necessary, nor do we expect it to remain static. Rather, PGE expects adjustments and new activity may be necessary. Where mid-cycle adjustments (those between TE Plans) are necessary, PGE will communicate with stakeholders before filing with the Commission.