



Portland General Electric

121 SW Salmon Street • Portland, OR 97204
portlandgeneral.com

October 3, 2022

Public Utility Commission of Oregon
Attn: Filing Center
201 High Street, S.E.
P.O. Box 1088
Salem, OR 97308-1088

RE: UM 2033 Residential and Nonresidential Electric Vehicle Charging Rebate Infrastructure Measure Applications, to accompany Portland General Electric's Proposed 2022 Monthly Meter Charge Budget

In accordance with the requirements in House Bill (HB) 2165¹ that electric companies collect a monthly meter charge to support transportation electrification (TE), PGE submitted its budget for 2022 monthly meter charge implementation on July 29, 2022.² PGE also submitted a Municipal Charging Collaboration Pilot proposal pursuant to Oregon Administrative Rules (OARs) 860-087-0001 through 860-087-0040 as part of the 2022 monthly meter charge implementation plan and indicated in the plan that it intended to submit two additional applications for infrastructure measures to support expenditures proposed under the plan. With this filing PGE submits the two additional applications indicated, for a Business EV Charging Rebate Pilot Expansion and for a Residential Panel Upgrade Rebate Pilot. PGE seeks the Commission approval for both filings. Concurrently with this filing, PGE is submitting Advice No. 22-22, seeking to update the Residential (Schedule 8) and Nonresidential (Schedule 52) Vehicle Charging Rebate Pilot Tariffs.

The 2022 Monthly Meter Charge Budget was developed under HB 2165, the Staff guidance regarding the implementation of the Monthly Meter Charge issued on November 24, 2021³ and a Staff Report for a special public meeting on December 7, 2021.⁴ Prior to filing the budget, PGE engaged stakeholders through multiple venues over multiple years. This included presentations and feedback regarding the two applications in this filing. All stakeholder feedback was provided in the budget Appendix.

As described in the budget filing, the Business EV Charging Rebate Pilot Expansion (Pilot Expansion) will build on and expand PGE's current Business EV Charging Rebate Pilot. The current pilot offers rebates only for Level 2 (L2) EVSE; the new Pilot Expansion will offer additional rebates to support L2 EVSE installation and introduce rebates for Direct Current Fast Charge (DCFC) EVSE. Rebates will be made available for sites including workplaces, retail locations, destination centers, schools, fleet depots, houses of worship, and multifamily locations. The increased charging access at locations where PGE's residential customers live, work, and visit will in turn support the charging needs of current and future EV drivers.

¹ HB 2165, <https://olis.oregonlegislature.gov/liz/2021R1/Downloads/MeasureDocument/HB2165/Enrolled>

² PGE's proposed HB 2165 Monthly Meter Charge Budget for 2022, <https://edocs.puc.state.or.us/efdocs/HAH/um2033hah1673.pdf>

³ OPUC Staff Report dated Nov. 24, 2021, UM 2165, <https://edocs.puc.state.or.us/efdocs/HAU/um2165hau1331.pdf>

⁴ OPUC Order No. 21-484, incorporating Staff Report dated Dec. 7, 2021, <https://apps.puc.state.or.us/orders/2021ords/21-484.pdf>

The Residential Panel Upgrade Rebate Pilot (Pilot), will offer an additional rebate for any customers enrolling in PGE's existing Residential EV Charging Pilot that require an electric panel upgrade to install a Level 2 charger. Eligible customers are those who enroll in the Residential EV Charging Pilot by applying for a Standard EVSE Installation Rebate or an Income-Eligible EVSE Installation Rebate. Customer application, enrollment, and rebate issuance will be streamlined between the two programs.

This Pilot not only addresses an additional cost barrier for potential participants in the Residential EV Charging Pilot, but also seeks to advance equity, since PGE is proposing a higher rebate for low-to-moderate income customers that will help underserved communities participate in the Pilot.

PGE is developing its next TE plan and will submit later this year. The Monthly Meter Charge Budget will infuse funding to strengthen existing programs, help to launch new programs, such as those described in this filing, that will allow PGE to move quickly in the near term, and build capacity and momentum so that PGE can have immediate impact in 2023 when the programs in our next TE Plan are launched.

The following infrastructure measure applications are included as attachments below:

- Attachment A Business EV Charging Rebate Pilot Expansion
- Attachment B Residential Panel Upgrade Rebate Pilot

Please direct any questions regarding this filing to Casey Manley at casey.manley@pgn.com Please direct your communications related to this filing to the following email address: pge.opuc.filings@pgn.com.

Sincerely,

\s\ Robert Macfarlane

Robert Macfarlane
Manager, Pricing & Tariffs

Enclosure

cc: UM 2033 Service List
Eric Shierman, OPUC Staff

Business EV Charging Rebate Pilot Expansion Infrastructure Measure Application

Portland General Electric

September 2022

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Executive Summary

While many of PGE's commercial, multifamily and fleet customers are interested in installing EV charging, the up-front cost and complexity of installing this infrastructure is a deterrent.

This Business EV Charging Rebate Pilot Expansion (Pilot Expansion) will build on and expand PGE's current Business EV Charging Rebate Pilot. The current pilot offers rebates only for Level 2 (L2) EVSE; the new Pilot Expansion will offer additional rebates to support L2 EVSE installation and introduce rebates for Direct Current Fast Charge (DCFC) EVSE. Rebates will be made available for sites including workplaces, retail locations, destination centers, schools, fleet depots, houses of worship, and multifamily locations. The increased charging access at locations where PGE's residential customers live, work, and visit will in turn support the charging needs of current and future EV drivers.

For customers participating in the Pilot Expansion, PGE will offer a rebate for the supporting infrastructure (for L2 chargers) or the EVSE itself (for DCFC). Rebates may be reserved in advance for a period of time, in order to offer the customer assurance that the funding will still be available once their project is complete. Customers will select their EV chargers from a pre-qualified list, and PGE will receive charging session data. This data will help PGE better understand the grid impacts of EV charging and plan for more widespread passenger and fleet electrification in the future.

The overall budget for this Pilot Expansion is just under \$2 MM. PGE proposes to spend revenues collected from customers under the 2022 HB 2165 Monthly Meter Charge¹ on this Pilot Expansion.

Background on Business EV Charging Rebates

PGE's Business EV Charging Rebates Pilot² launched on December 18, 2020, and is governed by Schedule 52³. This pilot is available to all non-residential customers who install qualified Level 2 EVSE at their premises. The pilot launched with a standard rebate of \$500 per port (increased to \$1,000 per port in July 2021) and an income-qualified multifamily rebate of \$2,300 per port. Customers agree to keep the EVSE operational and on a PGE cost-of-service rate for 10 years and release the charger data to PGE for analysis and reporting purposes. If these commitments are not met, PGE has the right to reclaim the pro-rata value of the rebate, calculated over the 10-year term.

¹ See budget filing at

<https://apps.puc.state.or.us/edockets/edocs.asp?FileType=HAH&FileName=um2033hah1673.pdf&DocketID=22127&numSequence=36>

² See program webpage at <https://portlandgeneral.com/energy-choices/electric-vehicles-charging/business-charging-fleets/ev-charging-pilot-program-business>

³ See tariff at

https://assets.ctfassets.net/416ywc1laqmd/4kQwkhxFjQiA3zg1zFbWGI/70b713aa73ffaae5f60127e93d64a0de/Sched_052.pdf

The pilot launched with three software providers, and 10 EVSE hardware models, on the qualified product list. PGE continues to add products to the list as vendors are engaged and data sharing agreements are signed; as of June 1, 2022 the list contains four software providers and 18 EVSE hardware models.

The budget for the Business EV Charging Rebates Pilot was set at \$1 million of nominal O&M in an amended stipulation among parties in Docket UM 1811⁴, approved by the OPUC in Order No. 19-385 on November 7, 2019⁵. In its application to increase the rebate amount in mid-2021, PGE identified that the budget was projected to support the issuance of 588 rebates, and last through the end of 2023.

As of June 30, 2022, halfway through the pilot’s projected timeline, PGE had issued 61 rebates through the pilot, or slightly more than 10% of the total number of projected rebates. No rebates have been issued to income-qualified multifamily residences. Feedback from PGE’s sales teams and charging vendor sales teams, who are in regular discussion with potential customers, indicate that the rebates at their current level are insufficient and too narrow in applicability to promote the desired level of participation.

Key Terms and Concepts

Table 1: Key Terms and Concepts

Term	Definition
Electric Vehicle Supply Equipment (EVSE)	The device, including the cable(s), coupler(s), and embedded software, installed for the purpose of transferring electricity between the electrical infrastructure and the EV.
Electric Vehicle Service Providers (EVSPs)	Companies that provide the connectivity across a network of EVSE(s). Connecting to a central server, they manage the software, database, and communication interfaces that enable operation of the EVSE.
Port	The cable and coupler used to transfer energy from the EVSE to the EV. The number of Ports is defined by the number of EVs that can be charged simultaneously by a given EVSE. There are commonly one or two Ports per EVSE.

⁴ See docket at <https://apps.puc.state.or.us/edockets/docket.asp?DocketID=20573>

⁵ See Order at <https://apps.puc.state.or.us/edockets/orders.asp?OrderNumber=19-385>

Chapter 1 Pilot Description

1.1 Objectives

This Pilot Expansion aims to:

- Expand charging access and adequacy for current and future EV drivers at sites such as workplaces, retail locations, destination centers, schools, houses of worship, and multifamily locations
- Expand charging access for fleet vehicles at sites such as fleet depots
- Support business customers by reducing the cost and complexity associated with installing EV charging
- Create a network of demand response (DR) enabled EV charging that can support efficient grid operations and future renewables integration
- Better understand the customer and market barriers and opportunities in the EV charging space
- Identify areas for utility process improvement with respect to EV charging; and
- Generate an empirical data set for EV charging that:
 - Supports PGE in managing electric vehicle load, thereby increasing grid utilization and mitigating increases to system peak loads
 - Informs existing utility analyses and helps PGE develop future products and programs

1.2 Elements

From the customer's perspective, key features of the Pilot Expansion offering include:

- Product qualification of L2 and DCFC EVSE
- Vendor qualification of EVSPs
- Rebates to offset the customer's out-of-pocket costs

PGE's proposed design is intended to future-proof sites: the EVSE will be both networked and DR-ready. This will facilitate adoption of follow-on products such as EV rates or flexible load programs.

Note that the terms and conditions of customer participation in the Pilot Expansion provide benefits to all customers and reduce the risk of stranded utility assets. PGE will require that participating customers commit to:

- Keep EVSE operational and on a cost-of-service rate for ten years
- Release charging data to PGE
- Pro-rata reimbursement of the rebate amount, should the customer breach these commitments

1.3 Timeline

Pending Commission approval, PGE intends to launch the Pilot Expansion on November 2, 2022. Rebate applications must be submitted after EVSE installation is complete, so will lag the Pilot Expansion launch by 1-2 quarters. Funding will be reservable on a first-come, first-served basis, but will not be issued until after the EVSE installation is complete. If a customer does not install their EVSE by the end of their rebate reservation window, reserved funding will revert to the general funding pool and be made available to other customers. Funding is anticipated to last at least through the end of 2023. Final evaluation will begin at the end of 2023, with an evaluation report forecasted to be finalized in Q4 2024.

1.4 Expected Outcomes

PGE expects this Pilot Expansion will support transportation electrification by:

- Supporting residential EV adoption by expanding access to EV charging at sites where residential customers live, work and travel
- Encouraging business customers to add charging to their property as an amenity for their employees, customers, tenants, residents, and visitors
- Making it easier for fleet customers to electrify their vehicle fleets by reducing the cost of installing EV charging
- Enabling future flexible load opportunities by encouraging the installation of networked, DR-enabled EV charging

1.5 Market Baseline Assumptions

PGE's surveys and interviews with residential and non-residential customers indicate that current and prospective EV drivers need access to more charging infrastructure, and our business customers want PGE to support them in deploying workplace and public charging. This customer research is supported by the results of the Oregon Department of Transportation's (ODOT) Transportation Electrification Infrastructure Needs Analysis (TEINA),⁶ which suggests that there be a focus on light-duty zero emission vehicle charging infrastructure in urban, rural and corridor areas, and support for on-site depot charging for public and private electrification.

PGE's analysis, using the TEINA methodology, suggests that by the end of 2025, drivers will require more than 5,000 public and workplace L2 ports within PGE's service area, and will need around 1,500 public DCFC ports.⁷ Meanwhile, PGE's DSP Part I notes that as of 2021, there were only 818 public and workplace L2 ports in PGE's service area, along with 167 public DCFC ports.⁸ In addition, a total of 61 L2 ports have been installed and rebated in the last year under PGE's current Business EV Charging Rebates Pilot.

⁶ See <https://www.oregon.gov/odot/Programs/Pages/TEINA.aspx>

⁷ More complete analysis to come in PGE's upcoming TE Plan.

⁸ PGE Distribution System Plan Part I, October 2021, pg. 36

This Pilot Expansion, with its projected support of 250 L2 make-ready installations and 20 DCFC ports (note that some of these may be installed to support fleets), will continue to incrementally advance the objective of charging adequacy within PGE's service area, but will by no means fulfill the needs that PGE anticipates that current and future EV drivers will have.

1.6 Performance Milestones

Major performance milestones for the Pilot Expansion include:

- Q4 2022
 - Launch
- Q1 2023
 - First rebate applications processed
- Q2 2023
 - Commencement of data collection
- Q3 2023
 - 50% of funding reserved
 - 10 DCFC rebates issued
 - 125 L2 make-ready rebates issued
- Q4 2023
 - 100% of funding reserved
 - 20 DCFC rebates issued
 - 250 L2 make-ready rebates issued
- Q4 2024
 - Evaluation report, including assessments of Pilot Objectives:
 - Expanded charging access
 - Customer satisfaction
 - Efficiency of port delivery and utility process
 - Customer and market barriers
 - Charging session data analysis

1.7 Utilization

PGE forecasts that this Pilot Expansion will result in 250 L2 make-ready installations and 20 DCFC ports by the end of 2023.

1.8 Eligibility

This Pilot Expansion is available to non-residential customers in PGE's service area. Customers must install qualified EVSE, the technical requirements for which are discussed in section 1.16 below. Customers must own, lease, or demonstrate control over the site where the EVSE(s) are installed, and must adhere to the Pilot Expansion's terms and conditions. Fleet Partner customers are eligible for the DCFC rebates, but are not eligible for the L2 make-ready infrastructure and EVSE installation rebates that are part of this Pilot Expansion since Fleet Partner customers do not own the make-ready infrastructure.

1.9 Incentives

PGE proposes the following incentives:

1.9.1 L2 make-ready infrastructure and EVSE installation rebates

PGE proposes rebates to cover customer-owned make-ready infrastructure and EVSE installation for L2 EVSE. These make-ready rebates will cover 80% of the customer's make-ready and installation costs, up to a maximum of \$6,000 per L2 port and \$36,000 per site. This rebate structure removes additional barriers to adoption, yet still incentivizes the customer to be cost-conscious in their site design, as they remain responsible for a portion of the installation costs. It is also designed to offer the highest cost coverage for small sites (6 or fewer ports); these sites are unlikely to be good candidates for other current or envisioned PGE programs that that might offer utility-owned make-ready infrastructure, like Fleet Partner, which have minimum load or minimum port count requirements.

1.9.2 DCFC rebates

PGE proposes DCFC rebates of \$350 per kW (e.g., a \$10,500 rebate for a 30 kW DCFC; a \$17,500 rebate for a 50 kW DCFC), up to a maximum of \$25,000 per DCFC port. DCFC would not be eligible for make-ready rebates unless the customer paired DCFC with L2 chargers.

1.10 Market Barriers and Solutions

PGE discusses market barriers to vehicle electrification in the 2019 TE Plan.⁹ Of the barriers identified, three are intended to be addressed by this Pilot Expansion:

- Awareness and knowledge
- Total Cost of Ownership (TCO)
- Fueling infrastructure deployment and cost

Reducing the cost and complexity of installing EV charging through the proposed Pilot Expansion lowers the barriers to widespread charging access and provides long term environmental and local business benefits to PGE customers and the State. The Pilot Expansion will help make vehicle fueling less costly and more convenient for current and future EV drivers, reducing TCO, and the visibility of such charging opportunities may build EV awareness and give potential EV drivers the confidence to make the switch to electric.

1.11 Implementation Barriers and Solutions

PGE plans to leverage the existing operational infrastructure that supports the company's current Business EV Charging Rebates Pilot to reduce implementation barriers for this Pilot Expansion. Key implementation barriers include:

- Program marketing, and the challenge of selling EV charging as an amenity during uncertain economic times. PGE will mitigate this barrier by relying on relationship-

⁹ PGE Transportation Electrification Plan, September 2019, pg. 24

based marketing and sales efforts, and enabling customers to pair program enrollment with other in-market programs such as Fleet Partner.

- The complexity of a rebate reservation system, which PGE must maintain and enforce. While complicated, the customer benefits of such an approach—increased customer satisfaction, cost certainty, and ability to better coordinate with other PGE programs such as Fleet Partner and Drive Change Fund—outweigh the costs.

1.12 Performance Area Categories

PGE's proposed Pilot Expansion design addresses relevant Division 87 performance area categories in the following ways:

- Environmental benefits including greenhouse gas emissions impacts; Increased access to electricity as a transportation fuel will reduce greenhouse gas emissions across PGE's service area.
- Electric vehicle adoption; Increased charging adequacy, including chargers that are visible and available at the retail, workplace, multifamily and other destinations residential customers frequent, may help potential EV drivers feel more confident in their ability to successfully transition to electric fuel, thus boosting EV adoption across PGE's service area.
- Equity of program offerings to meet underserved communities; The expansion of public and semi-public charging that is anticipated to take place as a result of this Pilot Expansion will better meet the needs of underserved communities, including renters, multifamily residents, and others who lack access to charging at home. In addition, the rebate reservation system offers better cost certainty and ability to coordinate with other PGE programs (such as Fleet Partner and Drive Change Fund) for underserved customers.
- Distribution system impacts and grid integration benefits; As noted, PGE does not anticipate distribution system impacts stemming from this Pilot Expansion. Grid integration benefits are largely represented by the networked and DR-capable requirements in the technical standards that PGE sets. There is no formal DR component to this Pilot Expansion.
- Program participation and adoption; PGE anticipates that customers will submit rebates for 20 DCFC chargers. It is expected that 250 customers will submit incentives to L2 make-ready infrastructure and installation. PGE cannot predict how many individual customers, or individual EV drivers, will access these chargers, but will track this information as we are able to within the evaluation process, and report on results.
- Infrastructure performance including charging adequacy which considers, but is not limited to reliability, affordability, and accessibility; PGE tracks charger uptime and cost to charge across its fleet of utility-supported chargers, and will report on this information in future TE Plan Reports. If the site host elects to bill EV drivers, PGE requires multiple forms of payment be available. This requirement increases accessibility of chargers to all types of residential customers.

1.13 PGE's Role

PGE's role in the Pilot Expansion includes:

- Qualification of EVSE products for inclusion in the Pilot Expansion
- Ownership, operation, and maintenance of assets on the utility side of the meter
- Calculation of rebate amounts
- Maintenance and enforcement of rebate reservation system
- Program administration

The customer's role in the Pilot Expansion includes:

- Selecting qualified equipment from PGE's qualified product list
- Engaging a vendor to procure and install the EVSE and associated electrical infrastructure within the timeframe of the rebate reservation
- Submitting invoices, photos and other supporting documentation to PGE as requested
- Releasing the charger session data to PGE
- Maintaining an ongoing relationship with a qualified vendor for data and software services
- Maintaining the chargers in good working condition, and on a cost-of-service rate, for 10 years
- Paying the retail energy rate at the meter
- Determining charger access and pricing for EV drivers, if any

1.14 Distribution System Upgrades

Aside from new or upgraded distribution-level transformers, both of which are accounted for in PGE's typical new service and line extension processes, PGE does not expect that the Pilot Expansion to trigger significant distribution system upgrades.

1.15 Ownership Structure

Participation in this Pilot Expansion alone does not impact ownership structure—for many participants, ownership will remain as it does today, with PGE owning equipment on the utility side of the meter and customers owning equipment on the customer side of the meter. Some customers may elect to pair the DCFC rebates with another PGE program that has implications for ownership structure, such as Fleet Partner. In Fleet Partner, PGE owns the electrical infrastructure from the meter to the EVSE, and the customer owns the EVSE and is eligible for a rebate on that equipment. Fleet Partner customers are not eligible for the L2 make-ready infrastructure and EVSE installation rebates that are part of this Pilot Expansion because Fleet Partner customers do not own the make-ready infrastructure.

1.16 Technical Requirements

For this Pilot Expansion, PGE will rely on its existing qualification process and qualified product list. Required features include:

- Compliance with Open Charge Point Protocol (OCPP) v1.6 or later. This open application protocol allows EV charging stations and central management systems from different vendors to communicate with each other.
- Compliance with Open Automated Demand Response (OpenADR) 2.0B. This open communication platform enables coordination with Distributed Energy Resources (DER) and DR.
- National Electrical Manufacturers Association (NEMA) Type 3R or 4, which certifies that equipment is weatherproof and certified for either indoor or outdoor use.
- Listed by a nationally recognized test lab to the requirements of UL 2251 and 2594, demonstrating that products are tested to UL's recognized safety standards.
- Equipment compliant with recommended practice Society of Automotive Engineering (SAE) J2894/1_201112 or later (power quality requirements for EVSE).
- Compliant with National Electric Code, National Fire Protection Association (NFPA) article 625, which covers wires and equipment used to supply electricity for EV charging.
- For L2 EVSE, equipment compliant with Society of Automotive Engineering (SAE) J1772 standard for EVSE connectors.
- For public DCFC EVSE, equipment compliant with both SAE J1772 Combined Charging System and CHAdeMO standards for EVSE connectors.
- Capable of installation in compliance with Americans with Disabilities Act.
- If the EVSE owner opts to bill EV drivers for the energy consumed at the charger, multiple forms of payment must be made available to the driver.

PGE also recommends the following features:

- ISO/IEC 15118 (international standard defining a vehicle-to-grid communication interface for bi-directional charging/discharging of EVs).
- EnergyStar certification, which certifies energy efficiency (currently only available for Level 2 EVSE).

PGE's qualification process has qualified multiple vendors whose hardware and software offerings meet these interoperability, measurement, communication, durability, safety, accessibility, and other requirements. Participating customers may select from this list hardware and software that meets their business needs. Customers and vendors may also request to add products to the list; PGE's qualification process remains open to vendors. This allows for customer choice and promotes competition within the market, while ensuring that installations meet baseline requirements.

Chapter 2 Pilot Coordination

2.1 Stakeholder Engagement

PGE's 2022 Monthly Meter Charge Budget, and the programs and infrastructure measures supported by it, reflect feedback gathered from stakeholders in multiple venues over multiple years. Examples of this include surveys and focus groups conducted in 2018, 2019 and 2022 on the needs of PGE customers generally—and underserved communities in particular—with respect to TE. Other examples of stakeholder engagement include discussions within regulatory dockets such as the UM 1826 Clean Fuels Program proceedings¹⁰; the UM 2165 TE Investment Framework discussions¹¹; and the AR 654 Division 87 rulemaking proceedings¹². PGE also integrated customer and market insights, and feedback from partners who support our existing programs, in developing this Pilot Expansion.

On April 28, 2022, PGE hosted a stakeholder meeting to discuss the company's draft proposal for allocation of the 2022 Monthly Meter Charge. PGE subsequently held follow-up meetings with several stakeholders and received written responses from several others. PGE's plans for the 2022 Monthly Meter Charge were also touched on during the company's stakeholder meeting on June 14, 2022, to discuss its upcoming TE Plan, and more extensively in the company's stakeholder meeting on August 4, 2022, discussing the 2022 Monthly Meter Charge Budget shortly after it was filed.

Following the filing of the 2022 Monthly Meter Charge Budget, PGE received feedback from its rapid needs assessment with underserved communities that the inability to reserve rebates in advance presented a potential barrier to the cost confidence that communities would need in order to install EV charging infrastructure. PGE responded to this by introducing a rebate reservation system into the program design.

Specific stakeholder feedback to PGE's draft proposal, and the company's responses, are found in the Appendix to the 2022 Monthly Meter Charge Budget.

2.2 Coordination with State Programs

PGE will make customers aware of, and support customers in spreading the word about, the Oregon Clean Vehicle Rebate, the Oregon Clean Fuels Program, and other relevant state programs, as appropriate.

PGE anticipates that some customers may elect to stack these rebates with ODOT's deployment of National EV Infrastructure (NEVI) funding, or other federal, state and/or local funding sources such as grants. PGE welcomes this type of coordination, and will work as necessary with federal, state and/or local entities to ensure a smooth incentive delivery for customers.

¹⁰ See docket at <https://apps.puc.state.or.us/edockets/docket.asp?DocketID=20725>

¹¹ See docket at <https://apps.puc.state.or.us/edockets/docket.asp?DocketID=22828>

¹² See docket at <https://apps.puc.state.or.us/edockets/docket.asp?DocketID=23161>

2.3 Coordination with Market Actors

PGE is pleased to support increased customer choice and increase the availability of and access to public and private EV charging by working with EVSE hardware and software vendors in the execution of this Pilot Expansion. Some of the ways we work together include:

PGE manages a qualification process for hardware and software for EV charging. PGE collects details and specifications about each of the hardware options on the qualified list, and reviews this information to ensure the EVSE and software meet the technical requirements specified in section 1.16.

PGE has executed data sharing agreements with each of the vendors on the qualified list, and will obtain charging session data directly from the vendors (customers will sign a data release as part of the enrollment process). This ensures that customers do not have to provide data directly to PGE on an ongoing basis.

PGE also works regularly with the vendors on the qualified list to ensure that they are informed about PGE's various TE programs and have marketing and other collateral on hand to share with their customers. In this way, vendors play an integral role in raising awareness of PGE's programs with customers. Meanwhile, PGE shares EVSE options and details with customers and will work directly with customers' selected vendors to ensure that PGE and the vendor are able to provide the most efficient customer experience.

PGE will also coordinate with installers, dealers, and trade groups as appropriate to best serve the customer.

Chapter 3 Strategic Alignment

In its 2022 Monthly Meter Charge Budget filing, PGE acknowledged the somewhat discordant timing of new programs and infrastructure measures supported by the 2022 Monthly Meter Charge, which are filed as we move toward a new framework for utility investments in TE, but in advance of PGE filing a comprehensive TE Plan and sharing its broader portfolio more formally. We are pleased nonetheless at the opportunity that this Pilot Expansion presents: to infuse funding to strengthen existing program areas; to launch a new program that will allow us to move quickly in the near term; and to build capacity and momentum so that we can have immediate impact in 2023-25 when the programs in our next TE Plan are launched. We have endeavored to provide context for this Pilot Expansion through the stakeholder workshops about our larger TE roadmap and portfolio. We appreciate the feedback we have received regarding this Pilot Expansion so far, and we look forward to continuing the conversations with stakeholders.

Chapter 4 Pilot Costs

PGE proposes a budget of just under \$2 MM for the Pilot Expansion, as outlined in the following table:

Table 2: Pilot Budget, 2022-2023

Activity	Amount
Incentives	\$1,500,000
Program Delivery	\$200,000
Evaluation	\$150,000
Marketing	\$100,000
Total	\$1,950,000

PGE plans to use revenue collected under its 2022 Monthly Meter Charge to pay for this Pilot Expansion.

Final costs to participants in this Pilot Expansion are unknown and will vary depending on customer. Participants who participate in this Pilot Expansion as a standalone will be responsible for the following out-of-pocket costs, which may be offset by the rebates. Participants who participate in this Pilot Expansion in coordination with another PGE program (such as Fleet Partner) may additionally have some or all of the following costs covered:

- Make-ready and line extension costs
- Acquisition of EVSE
- Installation and commissioning of EVSE
- Maintenance of EVSE, including data/software fees
- Energy and other costs via the PGE bill, for the meter serving the EVSE

Participants can claim and monetize Clean Fuels Program credits generated at the EVSE, either themselves or through a brokerage, to help offset their out-of-pocket costs. Participants may elect to additionally recover their costs by requiring payment from EV drivers; the specific pay structure and amount will be set by the participant.

Chapter 5 Pilot Evaluation

The evaluation will be conducted by a third party and will measure the effectiveness of the Pilot Expansion in meeting its objectives and identify areas for enhancement. PGE may coordinate evaluation of this Pilot Expansion with evaluation of its existing Business EV Charging Rebates Pilot. Pilot Expansion evaluation will begin in 2023 and run through 2024. The following are the learning objectives of this Pilot Expansion:

- Track customer participation and satisfaction levels with pilot offerings (e.g. rebates, equipment choices);
- Understand PGE's ability to influence customers' decisions to install charging equipment and/or (as appropriate) operate EV fleets;
- Document charging installation successes and challenges, and customers' perceptions of working with PGE;
- Understand the load curves of EV charging based on site type, and potential implications for the distribution grid; and
- Identify pilot implementation successes and challenges, and improvement opportunities.

Expected process evaluation activities include:

- Logic Model - Early in the evaluation process, PGE and its evaluator will review and update the logic model to ensure that it accurately illustrates how the pilot's planned activities lead to a set of expected short- and longer-term outcomes. The logic model will help to structure evaluation activities and help identify gaps in the pilot design if goals are not achieved.
- Data analytics - The evaluation will track and report participation levels and include firmographic analysis to determine which types of customers are participating. The evaluation will also leverage metering data from the EVSE(s) to establish load curves.
- PGE administrator interviews - PGE's evaluator will conduct annual in-depth interviews with PGE staff and implementation partners on a wide range of pilot topics. The initial interviews will focus on the launched pilot design, customer targeting and outreach activities, as well as pilot implementation and staff coordination. Subsequent interviews will focus on implementation successes and challenges, pilot design or delivery changes enacted (and anticipated), and lessons learned.
- Participant web surveys - Topics may include sources of pilot awareness, ease of enrollment, satisfaction with equipment choices and the rebates process, impacts on employee EV ownership/leasing, experience working with PGE, energy bill impacts and tariff changes (if any), and impact of EV charging on fleet operations (where applicable).
- Attribution analysis - The participant surveys will include a series of questions to help gauge the influence of PGE's rebates on their decisions to install EV charging and/or operate EV fleets. These types of "self-report" questions cannot conclusively measure

the value of PGE's pilot to customers but can provide feedback to shape the pilot design.

Conclusion

PGE appreciates the time that stakeholders, OPUC Staff, and Commissioners will take to consider this proposal, and looks forward to further discussion and approval.

Appendix: Infrastructure Measure Requirements Concordance

Table 3: Transportation Electrification Infrastructure Measure Application Requirements Concordance

From OAR 860-087-0020(4):	Section
(A) A description of the infrastructure measure;	Ch 1, Pilot Description
(B) Data used to support the description;	Ch 1, Pilot Description
(C) A description of infrastructure measure coordination;	Ch 2, Pilot Coordination
(D) A description of how the proposed infrastructure measure fits within the electric company's long-term strategy to support TE;	Ch 3, Strategic Alignment
(E) A description of costs;	Ch 4, Pilot Costs
(F) A description of learning objectives and how the electric company will evaluate the infrastructure measure; and	Ch 5, Pilot Evaluation
(G) For infrastructure measures, a description of how the measure addresses the considerations of Oregon Laws 2021, 095, section 4(b)	Table 4

Table 4: Transportation Electrification Infrastructure Measures Considerations Concordance

From Oregon Laws 2021, chapter 95, section 4:	PGE Response
(1) As used in this section:	
(b) (A) "Infrastructure measures" includes, but is not limited to, investments in, expenses related to or rebates for: <ul style="list-style-type: none"> (i) Distribution system infrastructure that supports transportation electrification; (ii) Communication and control technologies that support transportation electrification; and (iii) Behind the meter infrastructure that supports transportation electrification and is owned by an electric company or by a customer. 	The rebates proposed in this Pilot Expansion meet the description of infrastructure measures in (iii), as they are issued for behind-the-meter infrastructure that supports transportation electrification and is owned by a customer.
(b) (B) "Infrastructure measures" does not include investments in or expenses related to education and outreach activities related to transportation electrification, or other transportation electrification-related activities determined by the Public Utility Commission to be separate and distinct from the development of infrastructure.	While this Pilot Expansion has an associated marketing budget, it is for enrollment only, not more general education and outreach to advance transportation electrification.

<p>(5) If undertaken by an electric company, an infrastructure measure to support transportation electrification is a utility service and a benefit to utility customers if the infrastructure measure can be reasonably anticipated to:</p>	
<p>(a) Support reductions of transportation sector greenhouse gas emissions over time; and</p>	<p>Section 1.12 Performance Area Categories</p>
<p>(b) Benefit the electric company’s customers in ways that may include, but need not be limited to:</p> <ul style="list-style-type: none"> (A) Distribution or transmission management benefits; (B) Revenues to utilities from electric vehicle charging to offset utilities’ fixed costs that may otherwise be charged to customers; (C) System efficiencies or other economic values inuring to the benefit of customers over the long term; or (D) Increased customer choice through greater transportation electrification infrastructure deployment to increase the availability of and access to public and private electric vehicle charging stations. 	<p>Section 1.12 Performance Area Categories</p> <p>Section 2.3 Coordination with Market Actors</p>

Residential Panel Upgrade Rebate Pilot Infrastructure Measure Application

Portland General Electric

September 2022

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Executive Summary

Portland General Electric Company's (PGE or Company) Residential EV Charging Pilot launched in October 2020. Among other enrollment options, this program offers rebates towards the purchase and installation of Level 2 charging in customer homes. Once customers receive the rebate, they are automatically enrolled in smart charging, where they can receive seasonal incentives for participating in demand response (DR) events.

Although participation in the Residential EV Charging Pilot is as expected, some customers face significant financial barriers to enrollment. When installing a higher-powered Level 2 charger in their home, around 17% of customers find their electric panel must be upgraded to support the additional load from the charger. PGE's customer insights research reveals that the cost of this panel upgrade (often up to \$5,000) can be enough of a financial burden that customers choose not to go forward with installing a Level 2 charger and not participate in the smart charging program.

In this filing, PGE proposes a Residential Panel Upgrade Rebate Pilot (Pilot), which would offer an additional rebate for any customers enrolling in the Residential EV Charging Pilot, that require an electric panel upgrade to install a Level 2 charger. Eligible customers are those who enroll in the Residential EV Charging Pilot by applying for a Standard EVSE Installation Rebate or an Income-Eligible EVSE Installation Rebate. Customer application, enrollment, and rebate issuance would be streamlined between the two programs.

This Pilot not only addresses an additional cost barrier for potential participants in the Residential EV Charging Pilot, but also seeks to advance equity, since PGE is proposing a higher rebate for low-to-moderate income customers that will help underserved communities participate in the Pilot.

The budget for this Pilot is approximately \$600,000. PGE proposes to support the Pilot with funds collected from customers through the 2022 HB 2165 Monthly Meter Charge.¹

Background on Residential EV Charging

PGE's Residential EV Charging Pilot² was launched on October 23, 2020, is scheduled to run through December 31, 2024, and is governed by Schedule 8.³ The Pilot provides rebates for the purchase, installation and integration of technologies that help manage and increase the flexibility of load associated with residential EV charging.

¹ See budget filing at

<https://apps.puc.state.or.us/edockets/edocs.asp?FileType=HAH&FileName=um2033hah1673.pdf&DocketID=22127&numSequence=36>

² See program webpage at <https://portlandgeneral.com/energy-choices/electric-vehicles-charging/charging-your-ev/charging-your-ev-at-home>

³ See tariff at

https://assets.ctfassets.net/416ywc1laqmd/2CrkwfPNPaDoM1tiVX68k0/6e29d4c934d17d55f7911aeba73606d/Sched_008.pdf

Once the customer applies for the Pilot and is accepted, they are automatically enrolled in the smart charging program. The customer can earn seasonal incentives by participating in smart charging events.

Program incentives are as follows:

Table 1: Residential EV Charging Pilot Incentives

Incentive Type	Amount	Description
Standard Electric Vehicle Supply Equipment (EVSE) Installation Rebate	Up to \$500; capped at price paid	For the purchase and installation of a Qualified L2 EVSE and enrollment in Smart Charging.
Income-Eligible EVSE Installation Rebate	Up to \$1,000; capped at price paid	For income-eligible Qualifying Customers for the purchase and installation of a Qualified L2 EVSE and enrollment in Smart Charging.
Bring Your Own Charger (BYOC) Rebate	\$50	For the enrollment in Smart Charging of a previously installed Qualified L2 EVSE.
Vehicle Telematics Participation Incentive	\$50	For the enrollment in Smart Charging of a qualified vehicle via vehicle telematics.
Smart Charging Participation Reward	\$25 / season	For participating in Smart Charging events
Smart Charging Reconnection Incentive	\$25	For reconnecting an EVSE if connection is lost

This program is available to up to 5,000 eligible residential customers that elect to enroll and participate. As of September 23, 2022, 1,449 customers have enrolled.

Key Terms and Concepts

Table 2: Key Terms and Concepts

Term	Definition
Electric Vehicle (EV)	An electric vehicle is any vehicle propelled in whole or in part by electric energy stored on board for the purpose of propulsion, and where charging of the on-board electrical storage is provided in whole or in part, through a connection to the utility distribution system. Types of EVs include, but are not limited to, plug-in hybrid EVs and battery electric vehicles.
Electric Vehicle Supply Equipment (EVSE)	The device, including the cable(s), coupler(s), and embedded software, installed for the purpose of transferring alternating current electricity at 208 or 240 volts between the electrical infrastructure and the EV.
Demand Response (DR)	Demand response programs allow electric utilities to balance the short-term supply and demand of power. It is a non-persistent intentional change in net electricity usage by end-use

	customers from normal consumptive patterns in response to a request by the utility. ⁴ If demand for electricity is greater than the available supply, blackouts and brownouts can occur. To minimize the risk of both, utilities may ask customers to participate in demand response by 1. Voluntarily shifting their energy usage to off-peak hours or 2. Agreeing to allow the utility to remotely control their connected device (e.g. EVSE).
Vehicle Telematics	Device installed in a vehicle that allows the sending, receiving, and storing of telemetry data.

⁴ Northwest Power and Conservation Council. *Demand Response Advisory Committee*. Retrieved from <https://www.nwcouncil.org/energy/energy-advisory-committees/demand-response-advisory-committee>

Chapter 1 Pilot Description

1.1 Objectives

The Residential Panel Upgrade Rebate Pilot aims to:

- Expand charging access and adequacy for current and future residential EV drivers
- Promote PGE's understanding of customer and market barriers and opportunities in the EV charging space
- Reduce barriers to participation in the Residential EV Charging pilot
- Increase equitable participation in the Residential EV Charging pilot
- Advance future opportunities for home electrification among pilot participants

1.2 Elements

From the customer's perspective, key features of this Pilot include:

- Additional financial rebates to enable the installation of a Level 2 charger in their home
- Help with the potentially unexpected complexity and cost of home panel upgrades
- Higher incentives for low-to-moderate income customers

Participating customers will agree to:

- Use a qualified electrician
- Hardwire the Level 2 charger at their home
- Upgrade their panel to at least 200 Amp service
- Submit an invoice or receipt during the application process displaying the panel upgrade work that was completed and the amount the customer was charged
- Participate in Schedule 8, Residential EV Charging Pilot, including enrollment in the smart charging program

1.3 Timeline

PGE intends to launch the Pilot on November 2, 2022. Rebate applications must be submitted after EVSE installation is complete, so will lag the Pilot launch by 1-2 quarters. Funding will be available on a first-come, first-served basis, and is anticipated to last through the end of 2024. Final evaluation will begin at the end of 2024, with an evaluation report forecasted to be finalized in Q4 2025.

1.4 Expected Outcomes

PGE expects this Pilot will support transportation electrification by:

- Offering financial support to customers who are interested in driving an EV but encounter the barrier of needing to upgrade their home electrical panel
- Increasing the number of residential customers who may participate in the Residential EV Charging Pilot

- Increasing the number of income-qualified customers who may participate in the Residential EV Charging Pilot

1.5 Market Baseline Assumptions

Forty-six percent of EV “considerers” note the cost of installing a home charging station as a barrier to purchasing an EV.⁵ The Residential EV Charging Pilot helps address that barrier. But many customers still face a barrier of needing a service panel upgrade prior to installing an EV charger—for example, 17% of customers enrolled in the Residential EV Charging Pilot, or 187 customers, have needed to get a panel upgrade prior to installing their at-home Level 2 charger.

Meanwhile, analysis of PGE’s internal data shows that about 4,000 residential customers requested service upgrades from PGE between 2019-2021, with the vast majority upgrading from 100-amp service to 200-amp service. Based on market research, PGE understands that these costs can typically be between \$1,000 and \$5,000 to complete.

1.6 Performance Milestones

Major milestones for the Pilot include:

- Q4 2022
 - Launch
- Q1 2023
 - First panel rebate applications processed
- Q4 2025
 - Evaluation report, including assessments of Pilot Objectives:
 - Expand charging access and adequacy for current and future residential EV drivers
 - Promote PGE’s understanding of customer and market barriers and opportunities in the EV charging space
 - Reduce barriers to participation in the Residential EV Charging pilot
 - Increase equitable participation in the Residential EV Charging pilot
 - Advance future opportunities for home electrification among pilot participants

1.7 Utilization

PGE expects this Pilot will enable:

- 300 standard panel upgrades
- 50 income-eligible panel upgrades

⁵ Section 5.3.2, Figure 14. Prompted Barriers Mentioned to Purchasing or Leasing an EV/PHEV in UM 1938 Evaluation of PGE’s Transportation Electrification Pilot: [um1938had165623.pdf\(state.or.us\)](https://www.pge.com/assets/pdf/um1938had165623.pdf)

1.8 Eligibility

Eligible customers are those who enroll in the Residential EV Charging Pilot by applying for a Standard EVSE Installation Rebate or an Income-Eligible EVSE Installation Rebate.

PGE's Residential EV Charging Pilot is limited to 5,000 total participants who can receive enrollment rebates. These customers must own or lease an electric vehicle (EV) and either install a new Level 2 charger from the Qualified Products List, enroll a previously installed Level 2 charger from the Qualified Products List, or enroll through vehicle telematics. Only customers that take the Standard EVSE Installation Rebate or the Income-Eligible EVSE Installation Rebate in the Residential EV Charging Pilot will be eligible for the Panel Upgrade Rebates through this Pilot.

1.9 Incentives

PGE proposes the following incentives for this Pilot:

Table 3: Pilot Incentives

Schedule 8 Enrollment Pathway	Description of Schedule 8 Enrollment	Panel Upgrade Rebate Amount
Standard EVSE Installation	Rebate for the purchase and installation of a Qualified L2 EVSE and enrollment in Smart Charging.	Standard Panel Upgrade Rebate: up to \$1,000, capped at price paid
Income-Eligible EVSE Installation	Rebate for income-eligible Qualifying Customers for the purchase and installation of a Qualified L2 EVSE and enrollment in Smart Charging.	Income-Eligible Panel Upgrade Rebate: up to \$5,000, capped at price paid
Bring Your Own Charger (BYOC)	Rebate for the enrollment in Smart Charging of a previously installed Qualified L2 EVSE.	Not eligible ⁶
Vehicle Telematics	Rebate for the enrollment in Smart Charging of a qualified vehicle via vehicle telematics.	Not eligible ⁷

PGE anticipates over 300 customers participating in the Residential EV Charging Pilot will enroll and receive the Standard Panel Upgrade Rebate over the course of the remainder of the Pilot (end of Q4 2024), and over 50 customers will enroll and receive the Income-Eligible Panel Upgrade Rebate through the end of the Pilot.

1.10 Market Barriers and Solutions

PGE's Residential EV Charging Pilot has helped over 898 customers install home EV charging (due to the Vehicle Telematics enrollment option, these customers represent a subset of the

⁶ BYOC customer are not eligible for this rebate because if a panel upgrade was required, they have already completed the work.

⁷ Vehicle telematics customers are not eligible for this rebate because they are not required to install a L2 charger in order to participate.

program's total participants). But there remains an additional financial hurdle for those customers who require an electric panel upgrade prior to installing a Level 2 charger in their home—this group includes about 21% of those currently participating in the Standard EVSE, Income-Eligible EVSE and Bring Your Own Charger options of the Pilot. In a recent customer conversation forum with EV drivers and EV intenders, several customers said that the cost of a panel upgrade was a concern and possibly a barrier to installing Level 2 charging at their home.

1.11 Implementation Barriers and Solutions

PGE intends to implement this Pilot in coordination with the Residential EV Charging Pilot, as customers enrolling in this Pilot will necessarily be enrolling in the Residential EV Charging Pilot at the same time. This implementation, therefore, is not projected to require any additional resources of PGE's team. From the customer's perspective, enrollment will be part of the same application and rebate process as the current Residential EV Charging Pilot.

PGE is aware that the upfront cost of installing a panel and EVSE may represent a barrier to enrollment, especially for income-qualified customers. For that reason, PGE is developing an optional trade ally network of qualified electricians, who could provide a streamlined enrollment process—and ideally, instant rebates—for the customer. This work is budgeted separately through PGE's 2022 Monthly Meter Charge Budget.

1.12 Performance Area Categories

PGE's proposed Pilot design addresses relevant Division 87 performance area categories in the following ways:

- Environmental benefits including greenhouse gas emissions impacts
Increased access to electricity as a transportation fuel will reduce greenhouse gas emissions across PGE's service area.
- Electric vehicle adoption
Increased home charging adequacy may help potential EV drivers feel more confident in their ability to successfully transition to electric fuel, thus boosting EV adoption across PGE's service area.
- Underserved community inclusion and engagement
PGE has engaged, and continues to engage, underserved communities to better understand their needs within the TE landscape and adjust our program design or implementation accordingly. For example, as a result of the feedback provided in PGE's underserved communities rapid needs assessment in Q3 2022, PGE is exploring the following program enhancements: a point-of-purchase rebate rather than the current post-purchase model to help remove the initial financial barrier; conducting more targeted marketing and outreach to underserved communities; and providing educational toolkits for renters of single-family homes on advantages of EV driving to share with landlords.
- Equity of program offerings to meet underserved communities

This Pilot is anticipated to meet the needs of underserved communities by providing a higher panel upgrade rebate amount, enabling members of underserved communities to better participate in the Residential EV Charging Pilot.

- Distribution system impacts and grid integration benefits
As noted, PGE does not anticipate distribution system impacts stemming from this Pilot. Grid integration benefits, such as the 2250 kW of forecasted flexible load from the Smart Charging program, do not increase because of this Pilot. However, the customer benefits of flexible load participation will be more equitably distributed, as customers who might not otherwise be able to enroll in the Residential Smart Charging Pilot will have additional assistance in doing so.
- Program participation and adoption
Based on the assumption that 25% of customers applying for the Standard EVSE Installation Rebate and 15% of customers applying for the Income-Eligible EVSE Installation Rebate will also apply for their respective panel upgrade rebates, PGE anticipates that this Pilot will support the upgrade of 350 home electrical panels through the lifetime of the Residential Smart Charging Pilot.
- Infrastructure performance including charging adequacy which considers, but is not limited to reliability, affordability, and accessibility
PGE tracks charger uptime and cost to charge across its fleet of utility-supported chargers, and will report on this information in future TE Plan Reports. Home charging on PGE's residential rates represent an EV driver's most accessible, affordable form of charging.

1.13 PGE's Role

PGE's role in the Pilot includes:

- Reviewing the electrician invoice/receipt the customer submitted during the application process
- Confirming panel upgrade work was completed and charged on invoice/receipt
- Ensuring the applicant qualifies for the rebate for which they have applied
- Calculating the amount of the rebate check
- Sending the rebate check to the customer within 4-6 weeks
- Program administration

The customer's role in the Pilot includes:

- Contracting with an electrician to perform the panel upgrade work along with installing the Level 2 charger
- Uploading site installation photos and documents as part of the Residential EV Charging Pilot application process, demonstrating that the panel upgrade work was completed
- Submitting an invoice or receipt displaying the amount paid for the panel upgrade work

1.14 Distribution System Upgrades

Aside from new or upgraded distribution-level transformers, both of which are accounted for in PGE's typical new service and line extension processes, PGE does not expect that the Pilot to trigger significant distribution system upgrades.

1.15 Ownership Structure

Participation in this Pilot alone does not impact ownership structure—ownership will remain as it does today, with PGE owning equipment on the utility side of the meter and customers owning equipment on the customer side of the meter.

1.16 Technical Requirements

For this Pilot, PGE will require that new panels provide a minimum of 200 amperes of service.

Chapter 2 Pilot Coordination

2.1 Stakeholder Engagement

PGE's 2022 Monthly Meter Charge Budget, and the programs and infrastructure measures supported by it, reflect feedback gathered from stakeholders in multiple venues over multiple years. Examples of this include surveys and focus groups conducted in 2018, 2019 and 2022 on the needs of PGE customers generally—and underserved communities in particular—with respect to TE. Other examples of stakeholder engagement include discussions within regulatory dockets such as the UM 1826 Clean Fuels Program proceedings;⁸ the UM 2165 TE Investment Framework discussions;⁹ and the AR 654 Division 87 rulemaking proceedings.¹⁰ PGE also integrated customer and market insights, and feedback from partners who support our existing programs, in developing this Pilot.

For example, PGE conducted a customer conversation forum from May 31-June 9 to field customer feedback on the proposed panel upgrade rebates. PGE learned the idea of home electric panel upgrade rebates was supported by a majority of customers who took part in the forum. A majority of these survey participants also support a two-tiered rebate structure wherein low-to-moderate income earners receive a higher rebate. In the same customer forum, many of these customers said they believe a rebate for electric panel upgrades was necessary to make purchasing an EV or a Level 2 charger more feasible.

On April 28, 2022, PGE hosted a stakeholder meeting to discuss the company's draft proposal for allocation of the 2022 Monthly Meter Charge. PGE subsequently held follow-up meetings with several stakeholders and received written responses from several others. PGE's plans for the 2022 Monthly Meter Charge were also touched on during the company's stakeholder meeting on June 14, 2022, to discuss its upcoming TE Plan, and more extensively in the company's stakeholder meeting on August 4, 2022, discussing the 2022 Monthly Meter Charge Budget shortly after it was filed.

Specific stakeholder feedback to PGE's draft proposal, and the company's responses, are found in the Appendix to the 2022 Monthly Meter Charge Budget.

2.2 Coordination with State Programs

PGE will make customers within this Pilot aware of the Oregon Clean Vehicle Rebate, the Oregon Charge Ahead Rebate, and other relevant state programs, as appropriate. For example, PGE may elect to accept an Oregon Charge Ahead Rebate receipt as evidence of a customer's income qualification, without requiring additional documentation.

PGE will also track the impacts of the federal Inflation Reduction Act on the home panel upgrade landscape, and adjust our approach accordingly, if appropriate.

⁸ See docket at <https://apps.puc.state.or.us/edockets/docket.asp?DocketID=20725>

⁹ See docket at <https://apps.puc.state.or.us/edockets/docket.asp?DocketID=22828>

¹⁰ See docket at <https://apps.puc.state.or.us/edockets/docket.asp?DocketID=23161>

2.3 Coordination with Market Actors

PGE is pleased to support increased customer choice and increase the availability of, and access to, private EV charging by working with installers and EVSE vendors in the execution of this Pilot. Some of the ways we work together include:

PGE manages a qualification and flexible load integration process for EVSE models. PGE collects all charger details and rates the specifications and customer experience with each of the hardware options on the qualified list. Once it passes this stage, PGE works to develop a back-end software integration between the charger software and PGE's DR aggregator.

PGE has executed data sharing agreements with each of the vendors on the qualified list, and obtains charging session data directly from the vendors (customers sign a data release as part of the enrollment process). This ensures that customers do not have to provide data directly to PGE on an ongoing basis.

PGE's design supports significant customer choice within the electrical contracting market in that customers can select their own electrician. PGE may also in the future offer an optional trade ally network of qualified electricians, who could provide a streamlined enrollment process for the customer.

PGE will also coordinate with installers, dealers, and trade groups as appropriate to best serve the customer.

Chapter 3 Strategic Alignment

In its 2022 Monthly Meter Charge Budget filing, PGE acknowledged the somewhat discordant timing of new programs and infrastructure measures supported by the 2022 Monthly Meter Charge, which are filed as we move toward a new framework for utility investments in TE, but in advance of PGE filing a comprehensive TE Plan and sharing its broader portfolio more formally. We are pleased, nonetheless, at the opportunity that this Pilot presents: to infuse funding to strengthen existing program areas; to launch a new infrastructure measure that will allow us to move quickly in the near term; and to build capacity and momentum so that we can have immediate impact in 2023-25 when the programs in our next TE Plan are launched. We have endeavored to provide context for this Pilot through the stakeholder workshops about our larger TE roadmap and portfolio. We appreciate the feedback we have received regarding this Pilot so far, and we look forward to continuing the conversations with stakeholders.

Chapter 4 Pilot Costs

PGE proposes the following budget for the Pilot:

Table 4: Pilot Budget for 2022-2024

Activity	Amount
Incentives	\$583,500
Program Costs	\$4,000
Marketing	\$20,000
Total	\$607,500

Program costs such as staff time will be covered by existing product development and program management resources. PGE plans to use revenue collected from customers under the 2022 Monthly Meter Charge to pay for this Pilot. Final costs to participants in this Pilot are unknown and will vary depending on customer.

Chapter 5 Pilot Evaluation

The evaluation will be conducted by a competitively-selected a third party and will be coordinated with evaluation of PGE's existing Residential EV Charging Pilot. Evaluation of that pilot has been delayed due to the pandemic's impact on enrollment (the first DR season was delayed by six months) and international supply chain disruptions that have limited availability of the EVSE on the Qualified Products List.¹¹

Pilot evaluation will begin in 2023 and run through 2024. The following are the learning objectives of this Pilot:

- Track customer participation and satisfaction levels with pilot offerings (e.g., rebates, equipment choices);
- Understand PGE's ability to influence customers' decisions to install charging equipment;
- Document charging installation successes and challenges, and customers' perceptions of working with PGE;
- Understand the load curves of EV charging based on site type, and potential implications for the distribution grid; and
- Identify Pilot implementation successes and challenges, and improvement opportunities.

Expected process evaluation activities include:

- Logic Model - Early in the evaluation process, PGE and its evaluator will review and update the logic model to ensure that it accurately illustrates how the Pilot's planned activities lead to a set of expected short- and longer-term outcomes. The logic model will help to structure evaluation activities and help identify gaps in the Pilot design if goals are not achieved.
- Data analytics - The evaluation will track and report participation levels and include demographic analysis to determine which types of customers are participating. The evaluation will also leverage metering data from the EVSE(s) to establish load curves.
- PGE administrator interviews - PGE's evaluator will conduct annual in-depth interviews with PGE staff and implementation partners on a wide range of pilot topics. The initial interviews will focus on the launched pilot design, customer targeting and outreach activities, as well as pilot implementation and staff coordination. Subsequent interviews will focus on implementation successes and challenges, pilot design or delivery changes enacted (and anticipated), and lessons learned.
- Participant web surveys - Topics may include sources of Pilot awareness, ease of enrollment, satisfaction with equipment choices and the rebates process, impacts on

¹¹ Advice No. 20-18, Addendum on Schedule 8, Residential Electric Vehicle Charging, Pilot Reporting Timeline: [Microsoft Word - PGE Advice No. 20-18 Addendum Sch 8 Residential EV Charging Reporting_Ltr_12.20.21\(state.or.us\)](#)

EV ownership/leasing, experience working with PGE, energy bill impacts and tariff changes (if any).

- Attribution analysis - The participant surveys will include a series of questions to help gauge the influence of PGE's rebates on their decisions to install EV charging and/or drive an EV. These types of "self-report" questions cannot conclusively measure the value of PGE's Pilot to customers but can provide feedback to shape the Pilot design.

Conclusion

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