



Portland General Electric
121 SW Salmon Street · Portland, Ore. 97204

April 20, 2021

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

RE: Advice No. 21-09, NEW Schedule 56, Fleet Electrification Make-Ready Pilot

Portland General Electric Company (PGE) submits this filing pursuant to Oregon Revised Statutes 757.205 and 757.210, and Oregon Administrative Rule (OAR) 860-022-0025, for filing proposed tariff sheets associated with Tariff P.U.C. No. 18, with a requested effective date of **July 1, 2021**:

Original Sheet No. 56-1
Original Sheet No. 56-2
Original Sheet No. 56-3
Original Sheet No. 56-4
Second Revision of Sheet No. C-5
Third Revision of Sheet No. I-2
Second Revision of Sheet No. I-3

PGE hereby submits Schedule 56, Fleet Electrification Make-Ready Pilot. In this Pilot, available to fleet operators more fully described in Attachment A, PGE will design, install, own, and maintain electrical infrastructure behind the customer's meter to support customer-installed EV chargers. This approach leverages PGE's expertise in service design and installation, while relieving the customer of the logistical burden of managing such complex projects. This approach also grants PGE deeper insight into EV charging behind the customer's meter—to deliver benefit to PGE and its customers. The Pilot enrollment window will be available for three years or until funding is no longer available.

This filing aligns with and supports PGE's and the State's commitment to transportation electrification (TE). This Pilot will enable and accelerate the electrification of first-mover commercial, public (municipal, county, state, federal), school, non-profit, and transit fleets by reducing the customer cost and complexity associated with transitioning to electric transportation fuel. At the same time, the Pilot will enable PGE to gain the grid learnings necessary to plan for and manage widespread fleet electrification.

As informed by its 2019 TE Plan (UM 2033), PGE identifies goals to address the need for reliable fueling infrastructure to eliminate obstacles to nonresidential customers in converting their fleets to electric vehicles (EVs).¹ Through this Pilot, PGE seeks to accelerate the electrification of the transportation sector and efficiently integrate those loads into the system. Specifically:

1. Fleet Interconnection: Reduced friction in electrifying fleets to put more electric fleets onto PGE's system faster;
2. Charging Optimization: Data and site planning to enable PGE to minimize grid integration costs and create long-term flexible loads that reduce the costs of integrating renewable resources.

PGE will provide the participation agreement and easement template on a confidential basis shortly after the filing of the tariff.

This filing also updates Rules C and Rule I to support residential and nonresidential EV charging more generally. A courtesy redline version of Rules C and I are attached.

To satisfy the requirements of OAR 860-022-0025(2), PGE responds as follows:

Schedules 56 does not increase, decrease, or otherwise change existing retail rates or have anything other than a de minimis impact on revenues.

Please direct questions to Teresa Tang at teresa.tang@pgn.com Please direct all formal correspondence and requests to the following email address pge.opuc.filings@pgn.com

Sincerely,

\s\ Robert Macfarlane

Robert Macfarlane
Manager, Pricing and Tariffs

Enclosures

¹ Portland General Electric 2019 Transportation Electrification Plan Page 135 2.2.3.2

SCHEDULE 56
FLEET ELECTRIFICATION MAKE-READY PILOT

PURPOSE

This Fleet Electrification Make-Ready Pilot provides eligible customers with incentives to install Electric Vehicle (EV) charging infrastructure to support fleet vehicles. The overarching goals of the pilot are to:

- Enable and accelerate the electrification of commercial, public (municipal, county, state, federal), school, non-profit and transit fleets by reducing customer cost and complexity associated with transitioning to electric fuel;
- Create a network of demand-side resources to reduce the costs of serving EV loads by supporting efficient grid operations and future renewables integration;
- Better understand the customer and barriers and opportunities in the fleet electrification market;
- Identify areas for utility process improvement with respect to fleet electrification; and
- Generate an empirical data set that can be leveraged to inform existing utility analyses, support customers in transitioning to electric fleets, and develop future products and programs.

AVAILABLE

In all territory served by PGE.

APPLICABLE

This pilot is applicable to nonresidential customers that use or operate fleets within PGE's service area.

DEFINITIONS

Activation Date – date that PGE first determines an EVSE is Operational.

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 at the Site and the EV.

Electric Vehicle Service Provider (EVSP) – provider of connectivity across a network of EVSE(s).

Line Extension – has the same meaning as set forth in Rule I.

Line Extension Allowance – has the same meaning as set forth in Rule I and is calculated per Schedule 300.

Line Extension Cost – has the same meaning as set forth in Rule I.

SCHEDULE 56 (Continued)

DEFINITIONS (Continued)

Make-Ready Cost – the cost of Make-Ready Infrastructure and Line Extension, excluding those accounted for in the Line Extension Cost.

Make-Ready Infrastructure – the infrastructure at the Site to deliver electricity from the Service Point to the EVSE(s), including any panels, stepdown transformers, conduit, wires, connectors, meters, and any other necessary hardware.

Operational – an EVSE installed at the Site is able to transfer energy between the Site wiring and the EV, with any applicable payment methods (e.g., credit card, phone app, subscription card), and transmitting operational data (e.g. energy usage, session start/end times) to the Qualified EVSP.

Qualified EVSE – list of qualified EVSE(s), determined by PGE.

Qualified EVSP – list of qualified EVSP(s), determined by PGE.

Qualified Service Schedule – list of qualified service schedules, including Schedules 32, 38, 83, 85, and 89. The list of qualified service schedules may be expanded to include new rates in the future.

Service Point – has the same meaning as set forth in Rule B.

Site – has the same meaning as set forth in Rule B.

Site Owner – entity holding title to the Site.

ELIGIBILITY

Eligible customers are nonresidential customers that use or operate fleets (including, but not limited to, commercial, non-profit, public, school or transit fleets) within PGE's service territory installing a minimum of 70 kW of EV charging. Eligible Customers must own or lease the Site.

ENROLLMENT

The customer enrollment period will be open for three years, or until available funds for the pilot have been fully reserved. Eligible customers may apply at PortlandGeneral.com and enroll by signing a participation agreement.

SCHEDULE 56 (Continued)

INCENTIVE

Pilot participants will pay for the Make-Ready Cost, less a custom incentive. The custom incentive will be calculated as the lower of the following amounts:

- Estimated Year 5 EVSE annual energy use x Line Extension Allowance x 15; or
- The participant's Make-Ready Costs; or
- \$750,000.

SPECIAL CONDITIONS

1. Participation in this pilot is not mandatory to install EV charging equipment.
2. The customer's charges for electricity service under any of PGE's Standard Service or Direct Access Service schedules are not changed or affected in any way by participating in this schedule and are due and payable as specified in those schedules.
3. PGE will locate, design, install, own, operate and maintain the Make-Ready Infrastructure. EVSE(s) will be separately metered from any other load at the Site.
4. The Site Owner may be required to grant an easement to PGE to maintain PGE-owned facilities.
5. If the final design of the Make-Ready Infrastructure is estimated to cost in excess of \$15,000, PGE may require the customer to submit a deposit prior to proceeding to final design and enrollment. The deposit will be the amount of the estimated final design costs and will be applied to the Make-Ready Costs or refunded upon the participating customer's enrollment in the Pilot. If the customer does not enroll, the deposit will not be refunded.
6. If the participating customer's custom incentive is in excess of \$250,000, the participating customer agrees that PGE may verify the participating customer's creditworthiness at any time and seek financial security to ensure the Participating customer is able to meet its obligations as set forth in the participation agreement.
7. The participating customer is responsible for the procurement and installation of at least one new Qualified EVSE(s) within 6 months of PGE's completion of the Make-Ready Infrastructure.
8. The participating customer must maintain the EVSE(s) on a Qualified Service Schedule for 10 years following the Activation Date of the first Qualified EVSE installed at the Site.
9. The participating customer will ensure the EVSE(s) remain Qualified EVSE(s) and Operational for 10 years following the Activation Date of the first Qualified EVSE installed at the Site.

SCHEDULE 56 (Concluded)

SPECIAL CONDITIONS (Continued)

10. The participating customer will adhere to an energy usage plan that sets forth the minimum amount of energy the participating customer commits to using over the 10 years following the Activation Date of the first Qualified EVSE installed at the Site, but in no event will the minimum energy usage amount be less than the Estimated Year 5 energy use x 6.
11. The participating customer will authorize and require the Qualified EVSP to provide operational data (e.g. charging session data, energy interval data) to PGE. The participating customer agrees to allow PGE and its agents and representatives to use data gathered as part of the pilot in regulatory reporting, ordinary business use, industry forums, case studies or other similar activities, in accordance with applicable laws and regulations and to participate in PGE-led research such as surveys.
12. If the Site changes ownership or lesseeship, participation in the pilot may be assumed by the new owner or lessee if it is willing to meet the pilot requirements. The participating customer will be responsible for any pro-rata reimbursement for estimated minimum usage deficiencies between the participating customer's original energy usage plan and the new customer's energy usage plan.
13. In the event the participating customer breaches or terminates the participation agreement, the participating customer will reimburse PGE the pro-rata value of the custom incentive, calculated over the 10-year term.

4. **Conditions for Receiving Service**

A. **Generally**

This section describes the physical and technical requirements necessary to interconnect the Company's Facilities with the SP.

B. **Rights-of-Way and Access**

The Customer must provide, without cost to the Company, all rights-of-way and easements on the Premises to be served for the construction, maintenance, repair, replacement, or use of any or all Facilities necessary or convenient for the supply of Electricity. The Customer must grant the Company free and unrestricted access to the Premises at all reasonable times for purposes of reading meters, trimming trees, and inspecting, testing, repairing, removing or replacing any or all Facilities of the Company.

C. **Customer-Supplied Equipment**

1) **Customer's Responsibility**

The Customer will, at the Customer's risk and expense, furnish, install, inspect, and maintain in a safe condition all wiring, equipment, apparatus, protective devices, raceways, and enclosures which may be required beyond the SP for receiving and using Electricity. The Company may, at its option, install and maintain Facilities beyond the SP where deemed necessary to provide adequate Electricity Service. For service(s) that relate to Transportation Electrification (TE) and Electric Vehicle (EV), the Company may install and operate assets beyond the SP in order to facilitate the expansion of TE across the Company's service territory.

2) **Conformance with Codes**

Before the Company will provide Electricity Service, the Customer's wiring and equipment must conform to applicable municipal, county and state requirements, and to accepted standards of the National Electrical Safety Code, the National Electric Code, the Company's published "Electric Service Requirements and Guidelines," and Company standards and practices. As required by law, the Customer or its agent must obtain a certificate of electrical inspection before the Company will provide Electricity Service.

(C)
|
(C)

2) **Distribution Facilities**

Distribution Facilities are all structures and devices needed to distribute Electricity at any of the primary or secondary voltages listed in Rule C. Distribution Facilities will be installed in accordance with applicable laws, codes and Company standards and practices. It is the Applicant's responsibility to provide the Company with accurate information about their usage including but not limited to nameplate ratings of major installed electrical equipment and the intent to operate equipment above or below the nameplate rating. If damage results to Facilities owned by the Company through failure of the Applicant to fully disclose its load requirement to the Company, the repair and, or replacement costs of such Facilities will be paid by the Applicant.

3) **Line Extension**

A Line Extension is the installation of new, additional or upgraded Distribution Facilities from a point on the Company's existing distribution system that the Company has determined has adequate capacity for the Applicant's planned Electricity needs to the Applicant's Service Point (SP). Where the Applicant is requesting either a new individual residential service or an upgrade to an individual residential service, upgrades to existing primary lines will not be considered part of the Line Extension. Any new primary or secondary Line Extensions, transformer additions or replacements necessary to serve the new load will be considered part of the Line Extension. However, for residential Electric Vehicle charging-related line extensions, transformer additions or replacements necessary to serve that charging load will not be considered part of the Line Extension.

(C)
|
(C)

4) **Line Extension Allowance**

The Line Extension Allowance is the portion of the Line Extension Cost that the Company will provide without charge to the Applicant. Estimated annual kWh values used to calculate non-Residential Customer line extension allowances do not reflect onsite generation.

5) **Line Extension Cost**

A Line Extension Cost is the Company's total estimated cost to install new, additional, or upgraded Distribution Facilities to serve the Applicant's planned Electricity needs. Line Extension Costs are intended to recover the expenses of labor, material and equipment involved in the design, installation and inspection of the Line Extension. Line Extension Costs include, but are not limited to, labor costs, the cost of transformers, primary and secondary voltage conductors, tree trimming or tree removal, Company indirect charges and the cost of any necessary rearrangement of existing Facilities. Where the Applicant is requesting either a new individual residential service or an upgrade to an individual residential service and the transformer requires upgrading, the Line Extension Cost will be credited for the estimated original cost, less depreciation, less removal costs, of the existing transformer. However, for residential Electric Vehicle charging line extensions, any transformer additions, or replacements necessary to serve the charging load will not be considered part of the Line Extension. Estimates of Line Extension Costs provided to Applicants are valid for six months from the date of issue. After six months the Company reserves the right to provide a revised estimate. The Line Extension Cost does not include payments to a third party for easements, additional costs associated with Underground Line Extension or other additional costs described in this rule.

(C)
|
(C)

6) **Long Side Service Connection**

A service connection, which runs parallel to the street, rather than perpendicular to the street.

7) **Primary Voltage Project**

A Primary Voltage Project is a planned undertaking of construction, where the Company initially installs only primary voltage facilities. Primary Voltage Projects include large lot residential subdivisions, industrial parks and other similar complexes. It is expected that within the project each Customer will be served from one or more transformers dedicated to that Customer's use.

PGE Advice No. 21-09
NEW Schedule 56, Fleet Electrification Make Ready Pilot

Attachment A



Fleet Electrification Make-Ready Pilot Proposal

April 2021



This page intentionally left blank.

Table of Contents

Executive Summary	1
Pilot Description	1
Pilot Coordination	10
Strategy Alignment.....	11
Pilot Costs.....	13
Pilot Benefits.....	13
Pilot Evaluation.....	14
Transportation Electrification Program Application Requirements.....	17
Appendix: Transportation Electrification Program Requirements Concordance.....	17

List of Tables

Table 1: Customer Forecasting Survey Results.....	4
Table 3: Forecasted Site Adoption (Completed Installations).....	5
Table 4: Pilot Budget	13
Table 5: Transportation Electrification Program Application Requirements Concordance ...	17
Table 6: Transportation Electrification Program Considerations Concordance.....	18

Executive Summary

PGE anticipates the rapid electrification of light-, medium- and heavy-duty fleet vehicles in its service territory in the coming years. Electrification of the fleet sector offers greenhouse gas (GHG) emissions reductions at scale, and the low total cost of ownership for electric vehicles (EVs) provides a compelling business case for fleet operators. However, the market remains in a nascent state at present, limiting the insight that PGE has into how to manage this coming load.

This Fleet Electrification Make-Ready Pilot will enable and accelerate the electrification of first-mover commercial, public (municipal, county, state, federal), school, non-profit, and transit fleets by reducing the customer cost and complexity associated with transitioning to electric fuel. At the same time, the Pilot will enable PGE to gain the grid learnings necessary to plan for and manage widespread fleet electrification in the future.

For customers participating in the Pilot, PGE will design, install, own, and maintain electrical infrastructure behind the customer's meter to support customer-installed EV chargers. This novel approach leverages PGE's expertise in service design and installation, while relieving the customer of the logistical burden of managing such projects. This approach also grants PGE deeper insight into EV charging behind the customer's meter—insight which delivers benefit to PGE and its customers.

The overall budget for the three-year Pilot is \$9.0 million. PGE proposes to recover the cost of this Pilot through subsequent general rate cases.

Pilot Description

Pilot Objectives

This Pilot aims to:

- Support fleet customers by reducing the cost and complexity associated with transitioning to electric fuel
- 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 fleet electrification space
- Identify areas for utility process improvement with respect to fleet electrification; and
- Generate an empirical data set for electric fleets that:
 - Supports PGE and fleet customers in managing electric fleet load, thereby increasing grid utilization and mitigating increases to system peak loads
 - Informs existing utility analyses and helps PGE develop future products and programs.

Pilot Elements

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

- Fleet planning services and the ability to more rapidly scale an electric fleet
- Product qualification of Level 2 and Direct Current Fast Charging (DCFC) Electric Vehicle Supply Equipment (EVSE)
- Vendor qualification of Electric Vehicle Service Providers (EVSP)
- PGE ownership of make-ready assets behind the meter
- Turnkey design and installation of electrical infrastructure up to (but not including) the EVSE
- A custom offset of costs commensurate with the forecasted load at the site, capped on a per-site basis
- Other technical services, as appropriate

PGE's proposed design is intended to future-proof sites: the EVSE will be metered separately from existing site load, and both networked and DR-ready. This will facilitate adoption of follow-on products such as EV rates or flexible load¹ programs. PGE also intends to work with customers to right-size infrastructure in such a way to efficiently accommodate future EV fleet expansion.

Note that the terms and conditions of customer participation in the Pilot provide benefits to all customers and also reduce the risk of stranded utility assets. To ensure that infrastructure is used and useful, PGE will require that participating customers commit to:

- Submit a refundable deposit to cover final site design, should extensive engineering be required
- Install qualified, networked, DR-enabled EVSE within six months of PGE's completion of make-ready infrastructure
- Keep EVSE operational and on a cost-of-service rate for ten years
- Release charging data to PGE
- A pre-determined minimum usage of the EVSE (in kWh) over the ten-year term
- Pro-rata reimbursement of capital costs, should the customer breach these commitments

Pilot Timeline

PGE plans to launch Phase I of the Pilot in the latter half of 2021 and will accept enrollments for three years (or until the available budget is fully reserved). Funding will be available on a first-come, first-served basis. The construction schedule will necessarily lag behind the enrollment window, with all sites forecast to finish construction by the end of 2024.

¹ PGE's 2021 Flexible Load Plan Section 1.1 defines Flexible Load as, "the aggregation of multiple types of behind-the-meter technologies into Virtual Power Plants [which] will lend services to the distribution grid below the substation and the bulk system when possible above the substation."

PGE intends to leverage learnings around customer and market barriers from Phase I implementation to develop and propose Phase II offerings to refine the offering. The specifics will be discussed in future or supplemental filings and dockets, and the timing of those filings will depend on the pace of customer adoption in Phase I.

Expected Outcomes

PGE expects this Pilot will accelerate Transportation Electrification (TE) by supporting fleet customers' installation of charging infrastructure to meet their near- and medium-term fleet electrification goals. PGE projects that this will result in:

- Increased numbers of electric light-, medium-, and heavy-duty fleet vehicles in PGE's service territory
- Increased levels of EV awareness among both fleet and residential customers
- Support for future adoption of EV rates or flexible load programs, creating positive grid impacts
- Enhanced efficiency of existing planning, engineering, and operations services to serve new TE loads
- Enhanced workforce readiness in TE infrastructure design, engineering, construction, operation, and maintenance
- Reduced greenhouse gas emissions, criteria air pollutant emissions, and water pollution in PGE's service territory and beyond
- Increased equitable access to electric mobility through electric transit, shuttle, and/or school buses.

Market Baseline Assumptions

The fleet market is poised to electrify—and quickly—as evidenced by the public commitments of players such as FedEx, UPS, PepsiCo and Amazon to electrify their fleets.² Vehicle manufacturers are following suite: PGE anticipates that several dozen plug-in medium- and heavy-duty vehicle models will arrive in the market over the next decade.³

PGE projects that by 2030, nearly 230,000 EVs will be located in its service territory. This includes 1,500 heavy-duty vehicles and 3,300 medium-duty vehicles—both presumed to be operated by fleets—as well as a portion of the remaining 225,000 light-duty vehicles.⁴

In November of 2020, PGE leveraged its key customer account team and its EV technical services group to survey fleet customers on their current fleet and electrification plans. PGE

² PGE Transportation Electrification Plan, 2019. Section 1.6.1.1, pg. 60
<https://apps.puc.state.or.us/edockets/edocs.asp?FileType=HAA&FileName=haa102039.pdf&DocketID=22127&numSequence=1>.

³ Ibid. Section 1.6.1.2, pg. 62

⁴ Ibid. Table 21—PGE Service Area EV Forecast through 2050 by Vehicle Type (Reference Case), pg. 49

used this data as an input to our forecast of demand for EV charging sites over the next several years.

The survey asked about current vehicle counts, fueling locations, and electrification plans over the next three years. Of a targeted 100 customers, 38 responses were received, spanning a variety of customer types as follows:

Table 1: Customer Forecasting Survey Results

Customer Type	Customer Count	Approximate Vehicles Current Fleet (all fuel types)
State Agencies	2	2,300
Counties	2	1,500
Municipalities	9	2,400
School Districts	6	1,000
Private	19	3,200
Total	38	10,400

In addition to the composition of their current fleet, PGE asked customers how many EVs they would consider purchasing over the next several years *if* PGE were to help evaluate EVs for their fleet and also offer incentives towards the installation of EVSE. A total of 456 EVs were anticipated. Respondents were then asked how many charging locations they anticipated needing over the same time period; the total projected was 97 sites. For forecasting purposes, we discounted these projected 97 sites to account for contingencies.

A final area explored in the survey was how PGE might help customers meet their electrification needs. Customer responses centered around:

- Minimizing the cost of chargers, vehicles, and energy through incentives
- Providing technical support for fleet planning, including the number and type of vehicles available
- Providing tools to evaluate the total cost of ownership for EVs to help customers make informed decisions regarding electrification

Performance Milestones

Major performance milestones for the Pilot include:

- Pilot launch
- Completion of first site
- Commencement of charging data collection
- 50% and then 100% funding reserved
- Evaluation reports

Major per-project milestones include:

- Application
- Enrollment
- Construction completion
- EVSE commissioning
- Vehicle acquisition

Customer Eligibility, Adoption, and Incentives

Eligible customers will be non-residential customers that use or operate fleets (including, but not limited to, commercial, non-profit, public, school, or transit fleets) in PGE’s service area and also plan to install a minimum of 70kW (total) of EV charging. Eligible rate schedules include 32, 38, 83, 85, and 89; note that this list may be expanded to include new rates, including EV rates, in the future.

Customers may participate in the Pilot along with other PGE products and programs as appropriate. Major product dependencies include the standard Line Extension Allowance (LEA) and the Schedule 52 Business EV Charging Rebate Pilot⁵. Customers may participate in the Pilot and take the standard LEA. Likewise, Pilot customers may also participate in the Business EV Charging Rebate Pilot.

Based on our November 2020 market sizing survey, PGE forecasts that as many as 75 sites may be made ready for EV charging through this Pilot. For financial modeling purposes, PGE categorized potential sites based on port count (small, medium, large) and vehicle size (light-, medium-, or heavy-duty vehicles).

Table 2: Forecasted Site Adoption (Completed Installations)

Customer Segment	2021	2022	2023	2024	Total
LDV Small	2	5	10	10	27
LDV Medium		3	7	4	14
LDV Large		4	4	6	14
School Small		2	5	4	11
HDV Small		1	3	3	7
MDV Large		-	1	1	2
Total Additions	2	15	30	28	75
Cumulative		17	47	75	

⁵ Schedule 52, Nonresidential Electric Vehicle Charging Rebate Pilot
<https://apps.puc.state.or.us/edockets/edocs.asp?FileType=UAA&FileName=uaa15947.pdf&DocketID=22522&numSequence=1>

In addition to the non-financial features of the Pilot design described in the above Pilot Elements section, PGE will apply a custom incentive calculation to offset the costs customers would otherwise bear to install make-ready infrastructure to support EV charging. The incentive is designed to help cover the following Make-Ready Costs:

- Customer share of Line Extension Costs following the application of the LEA (as defined in Schedule 300⁶ and Rule I⁷)
- Permitting, trenching, and pathway on the utility side of the meter
- All work—including design, engineering, permitting, construction, and installation—on the customer side of the meter up to, but not including, the EVSE
- Project management for site construction

PGE will use the lower of the following methods to calculate each customer's custom incentive:

- Forecasted Year 5 energy use x Line Extension Allowance (per Schedule 300) x 15, or
- Customer's Make-Ready Costs, or
- \$750,000

This calculation formula is aligned with PGE's pilot approach in several ways. By tying the incentive amount to forecasted load, the incentive structure encourages customers to make planful decisions today to enable a ramp up of fleet electrification over time. The incentive structure also encourages the customer to contemplate efficient site design and charger utilization to keep capital costs low in relation to the incentive.

At the same time, the incentive multiplier is large enough to provide meaningful support to light-duty fleets, which may have a lower forecasted load than their medium- and heavy-duty counterparts. This increases the likelihood that the Pilot will attract participation and glean learnings from the breadth of customer fleet sizes and segments. By capping the incentive for any one site, PGE will be able to better manage risk of default across the portfolio of Pilot participants, as well as mitigate the impact on the Pilot budget of any one customer's decision to participate in the Pilot.

Because of the enhanced ability to attract participation across a variety of customer fleet sizes and segments, this incentive structure should result in a more complete set of customer and market learnings for the Pilot—as well as a more robust empirical data set to inform future planning and product development than would likely occur under other incentive structures contemplated over the course of this docket.

⁶ At https://assets.ctfassets.net/416ywc1laqmd/Z9SW1311yNz1OUs0i0Syr/fdb0972659acb84dcdf126fd1c87b38a/Sched_300.pdf

⁷ At https://assets.ctfassets.net/416ywc1laqmd/6O5exEiUrGrN3R4KugNpgy/4b0cba50ac265f2130bd62be541803c8/Rule_I_-_1919_Eff_Dec_4.pdf

Market Barriers and Solutions

PGE discusses market barriers to fleet electrification in the 2019 TE Plan.⁸ Of the barriers identified, four rated highest in terms of PGE's ability to impact:

- Awareness and knowledge
- Total Cost of Ownership (TCO)
- Fueling infrastructure deployment and cost
- Business planning/process

By combining fleet planning and technical services with cost offsets for charging infrastructure—and ensuring that charging sites are primed to take advantage of future EV rates or flexible load offerings, thereby lowering TCO—this Pilot will effectively address each of these barriers.

Reducing the cost and complexity of fleet electrification through the proposed Pilot lowers the barriers to fleet electrification and provides long term environmental and local business benefits to PGE customers and the State. The Pilot will lower the fueling infrastructure cost to the customer and allow PGE to play an integral, upfront role in the integration of new electric fleets with the grid.

PGE already installs and operates infrastructure on the utility side of the meter. By extending our work behind the meter, PGE will help customers manage costs and minimize capacity constraints through planful site selection and customer education regarding efficient EVSE use. Additionally, investing in behind-the-meter infrastructure supporting electrification of municipal, school, and transit fleets will help PGE and its customers lay the foundation for charging solutions that support resiliency and other grid services, while encouraging equitable access to electric mobility.

Working with PGE, customers can focus their financial resources on other market barriers that PGE is less well-positioned to impact, such as vehicle cost.

Pilot Implementation Barriers and Solutions

The primary Pilot implementation barrier will be establishing and resourcing internal processes to manage the complexity of make-ready infrastructure installation. PGE has laid much of this groundwork already and has developed many of the process maps, procedures, job aids, engineering standards, customer-facing materials, participation agreements, workflow management tools, IT integrations, product qualifications, and vendor relationships that will be required to implement this Pilot. PGE's Pilot adoption forecast ramps up in line with anticipated learning curves among customers, internal resources, and vendors.

⁸ PGE Transportation Electrification Plan, 2019. Section 1.2.2, pg. 29
<https://apps.puc.state.or.us/edockets/edocs.asp?FileType=HAA&FileName=haa102039.pdf&DocketID=22127&numSequence=1>

Utility Role

PGE's role in the Pilot includes:

- Supporting fleet customers with fleet planning services
- Qualification of EVSE products for inclusion in the Pilot
- Ownership, operation, and maintenance of make-ready assets behind the meter up to, but not including, the EVSE
- Design and installation of electrical infrastructure from the existing distribution grid through the meter to the charger pad(s)
- Calculation of custom cost offsets (i.e. applying the incentive to the customer costs)
- Other technical assistance, as appropriate

Distribution System Upgrades

Aside from new or upgraded distribution-level transformers, both of which are accounted for in the budget in the Pilot Costs section below, PGE does not expect that the Pilot to trigger significant distribution system upgrades. With only two exceptions, all the sites that PGE forecasts for participation are below 1 MW in size. The two larger sites in the forecast remain under 3 MW, and it is unlikely, though possible, that these would require significant distribution system upgrades. In this unlikely case, these costs would be part of the Make-Ready Costs and would fall to the customer, less the custom incentive. PGE will work closely with customers to ensure that all options—including right-sized EVSE, managed charging, and planful siting—are considered in order to control distribution system costs and minimize potential impacts (including cost impacts) on participating and nonparticipating customers.

Ownership Structure

To meet the Pilot objectives, PGE proposes to own the make-ready infrastructure behind the meter—up to, but not including, the EVSE—on behalf of the customer.

This approach allows PGE to reduce complexity for the customer by assuming the burden of designing, installing, and maintaining the make-ready infrastructure. It allows fleet operators to focus on the pieces of the project—vehicles and chargers—that are most important in their successful transition to electric fuel.

This approach is warranted because TE is changing how customers use energy, prompting a rethinking of the infrastructure necessary to provide customers flexible access to the grid. As noted in PGE's 2019 TE Plan, "[t]ypically, our view of distribution system stops at the meter, which is the point of delivery tied to a premise. However, as customers' energy use moves

beyond the building, our distribution system must evolve. Delivering power to the point of delivery is necessary to ensure reliable supply of electricity to our customers' vehicles."⁹

PGE's market research indicates that multiple third parties (typically, EVSE vendors) are engaged in the "Charging as a Service" (CaaS) space. Under this model, the vendor owns the EVSE at the customer site, and the customer pays for charging service over time as an off-balance-sheet operating expense. Typically in CaaS, the vendor does not own or operate the make-ready infrastructure.

These third parties are beginning to explore and offer financing for turnkey make-ready infrastructure, acknowledging the market gap and significant cost outlay of designing, installing, and maintaining such infrastructure. However, to PGE's knowledge, entrants in this space are either start-ups, or are EVSE vendors working with financing partners that are themselves new to this type of model. Even among the more established EVSE vendors, many remain young companies, some lacking profitability. PGE continues to view these markets as immature, and PGE customers have expressed the need for solutions from trusted partners.

PGE will leverage this Pilot to test the efficacy, customer value proposition, and cost-effectiveness of this approach to ownership of make-ready infrastructure.

Equipment Interoperability

PGE conducted a Request for Information (RFI) to identify charging hardware models and software vendors that would meet program requirements around interoperability to ensure an optimal customer experience and to ensure that EVSE are DR-enabled for future flexible load offerings. Required interoperability 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.

PGE also recommends the following interoperability features:

- ISO/IEC 15118 (international standard defining a vehicle-to-grid communication interface for bi-directional charging/discharging of EVs)

⁹ Ibid. Section 2.2.2.2.1, pg. 125

<https://apps.puc.state.or.us/edockets/edocs.asp?FileType=HAA&FileName=haa102039.pdf&DocketID=22127&numSequence=1>

National Standards for Measurement and Communication

The above Open ADR and OCPP are important communication standards pertaining to interoperability. Other national standards required for hardware and software qualification include:

- 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.
- Capable of installation in compliance with Americans with Disabilities Act.

PGE also recommends the following national standards:

- EnergyStar certification, which certifies energy efficiency (currently only available for Level 2 EVSE).

PGE's RFI resulted in submissions from multiple vendors whose hardware and software offerings meet these interoperability, measurement, communication, durability, safety, accessibility, and other requirements. Participating customers may select hardware and software that meets their fleet charging needs and PGE will exercise the due diligence required to qualify these products. This allows for customer choice and promotes competition within the market, while ensuring that installations meet baseline requirements.

Pilot Coordination

Stakeholder Engagement

PGE has engaged stakeholders in discussion about this Pilot in a series of workshops under the UE 386 docket¹⁰ and has consulted with several stakeholders offline as well. Workshops were held on February 3, 24, and March 22, 2021.

¹⁰ <https://apps.puc.state.or.us/edockets/docket.asp?DocketID=22739>

Coordination with Related State Programs

This Pilot is consistent with existing state executive and legislative goals supporting TE, including but not limited to:

- Senate Bill 1547 (2016), which suggests that utility TE programs “may include prudent investments in [. . .] electric vehicle charging and related infrastructure.”¹¹
- Senate Bill 1044 (2019), which established statewide goals for zero-emission vehicle (ZEV) adoption and required that at least 25% of all new Oregon Department of Administrative Services leases and purchases of light-duty vehicles be ZEVs.¹²
- Executive Order 20-04 (2020), which encourages electric utilities to “support transportation electrification infrastructure that supports GHG reductions, helps achieve the transportation electrification goals set forth in Senate Bill 1044 (2019), and is reasonably expected to result in long-term benefit to customers.”¹³

PGE will make customers aware of, and support customers in leveraging, the Oregon Clean Vehicle Rebate, the Diesel Emissions Reduction Grants Program, the Oregon Clean Fuels Program, and other relevant state programs, as appropriate.

Coordination with Other Market Actors

PGE issued an RFI seeking to better understand the market for Level 2 and Direct Current Quick Charging (DCQC) hardware and software for fleet charging. While PGE does not plan to publish a qualified product list for this Pilot, we will share fleet EVSE options with customers, and will work directly with customers’ selected vendors to qualify the EVSE and ensure that PGE and the vendor are able to provide the most efficient customer experience.

PGE will also coordinate with vehicle original equipment manufacturers, dealers, trade groups—as well as energy storage system, energy generation, and other vendors—as appropriate to best serve the customer.

Strategy Alignment

Current TE Market

Note: see the above Market Baseline Assumptions section for more detail on the current fleet electrification market.

¹¹ Oregon Laws 2016, Chapter 28.
https://www.oregonlegislature.gov/bills_laws/lawsstatutes/2016orlaw0028.pdf

¹² Oregon Laws 2019, Chapter 565.
https://www.oregonlegislature.gov/bills_laws/lawsstatutes/2019orlaw0565.pdf

¹³ Oregon Executive Order No. 20-04.
https://www.oregon.gov/gov/Documents/executive_orders/eo_20-04.pdf

While PGE remains confident that the electric fleet segment will, as forecasts suggest, continue to develop, this Pilot offers a unique opportunity to both accelerate and manage that growth. Similar pilots in other utility service areas have attracted EV model deployments and fleet customer pilots, establishing regional leadership on TE.¹⁴

The Pilot also offers PGE an opportunity to help customers properly size and locate charging infrastructure, which will benefit both the customer's bottom line and the grid. By requiring the EVSE be separately metered and DR-enabled, PGE has an opportunity to shape this nascent market and ensure that charging installations are optimized to take advantage of future EV rate or flexible load offerings.

Lastly, by requiring that customers' EV charging be on a standard service rate schedule for 10 years, PGE can ensure that benefits accrue to all ratepayers in the form of increased load, spreading fixed costs over a larger load base, and downward pressure on rates.

Market Barriers

In Section 1.2 of the 2019 TE Plan, PGE discusses market barriers to EV adoption. For the medium- and heavy-duty fleet segment, PGE identified seven market barriers:¹⁵

1. First cost (including vehicle cost and charging infrastructure cost)
2. Model availability
3. Model functionality
4. Awareness and knowledge
5. Total cost of ownership
6. Fueling infrastructure deployment and cost
7. Business planning/process

The 2019 TE Plan identifies that PGE is best positioned to impact the last four of these market barriers,¹⁶ and as detailed earlier in this proposal, the Pilot is designed to impact each of these market barriers.

Opportunities for Grid Impact

PGE anticipates fleet vehicle charging infrastructure will present opportunities to improve power system operations by supporting the efficient integration of renewables, which is further detailed in PGE's 2019 TE Plan Section 5.1.

This Pilot will create a network of separately metered, DR-enabled EVSE within PGE's service territory, ideally with a network of fleet operator customers who are satisfied with their

¹⁴ California Public Utilities Commission, Transportation Electrification Activities Pursuant to Senate Bill 350. <https://www.cpuc.ca.gov/sb350te/>

¹⁵ PGE Transportation Electrification Plan, 2019. Section 1.2.2, pg. 29
<https://apps.puc.state.or.us/edockets/edocs.asp?FileType=HAA&FileName=haa102039.pdf&DocketID=22127&numSequence=1>

¹⁶ Ibid.

experience with the company. PGE will explore leveraging this network to develop, test, and deploy follow-on offerings such as EV rates and flexible load programs—all with the aim of benefitting the grid.

Pilot Costs

PGE's proposes a budget of \$9.0 million for the Pilot, as outlined in the following table:

Table 3: Pilot Budget (\$)

	2021	2022	2023	2024	2025	Total
Capex	65,818	1,053,233	2,749,584	2,831,731	-	6,700,366
O&M	204	1,922	5,772	9,554	9,739	27,192
Fleet Planning	75,000	50,000	25,000	-	-	150,000
Administration	339,750	488,640	488,640	280,500	10,800	1,608,330
Marketing	75,000	50,000	25,000	-	-	150,000
Evaluation	40,000	100,000	65,000	80,000	120,000	405,000
Total	595,772	1,743,795	3,358,996	3,201,786	140,539	9,040,888

The forecast Net Present Value (NPV) of costs for this Pilot (including non-budget items such as energy supply costs) is \$17.4 million. Note that estimated participation costs vary significantly across customer segments and site configurations. PGE proposes to recover the cost of this Pilot through subsequent general rate cases.

Pilot Benefits

PGE expects Pilot benefits to accrue to the following groups. Pilot benefits include, but are not limited to:

Participant Benefits

- Support with delivering on sustainability or climate goals
- Cost offset to help cover the cost of EV infrastructure
- Non-financial incentives, including fleet planning services, site design and installation, and other technical assistance as available
- Lower total cost of ownership compared to internal combustion vehicles

Grid & Utility Benefits

- Revenue from increased energy sales

- The creation of a network of separately metered, DR-enabled EVSE within PGE's service territory
- Learnings about fleet customer and market barriers to EV adoption, and PGE's ability to influence such decisions
- Learnings about the costs and benefits of utility ownership of make-ready infrastructure
- Learnings in the energy use, load profiles, and grid impacts of fleet vehicle charging infrastructure

Societal Benefits

- Increased access to and use of public vehicles
- Increased awareness of EVs and confidence in TE
- Reduction in greenhouse gas emissions
- Better air quality for those relying on public transportation or school buses, or impacted by the emissions from fleets
- Reduction in criteria air pollutant emissions, especially in highway corridors, where impacts from diesel emissions are especially detrimental to community health

PGE forecasts that the Pilot will deliver \$15.4 MM NPV in benefits at a 0.88 benefit-cost ratio using the Ratepayer Impact Measure (RIM) test. PGE staff will work to minimize costs, periodically compare actual costs to budgeted costs, and track the cost effectiveness of the Pilot.

Pilot Evaluation

PGE will design the pilot evaluation to measure the Pilot's effectiveness in meeting its objectives, identify areas for continuous improvement, and assess energy impacts on PGE's system.

High-level evaluation learning objectives include:

Customer/Market Learnings

- Validate PGE's assessment of customer barriers to fleet electrification
- Identify additional customer barriers to TE, utility opportunities, and potential solutions
- Identify customer barriers to Pilot participation, including customers' internal processes and timelines, the attractiveness of the incentive, the impact of non-financial support such as fleet planning services, and the impact of customer commitments and requirements
- Understand PGE's level of influence in customers' decisions to operate EV fleets, and the materials, information, and/or analyses that could most effectively accelerate EV fleet adoption
- Track customer participation and satisfaction levels with Pilot offerings (e.g., planning, design, incentives, installation, assistance)
- Track impact on underserved communities, such as the number of projects that increase equitable access to electric mobility
- Assess the above across various customer segments

Pilot Implementation Learnings

- Document the successes and challenges of delivering turnkey charging installations
- Understand impacts on local network of installers for EV infrastructure, assess workforce development needs, and potential economies of scale
- Assess the costs and benefits of utility ownership of make-ready infrastructure
- Identify internal and external implementation successes and challenges, as well as opportunities for process improvement

Empirical Data

Develop an empirical data set to:

- Understand and reduce grid impacts such as coincident peak load or feeder overloading
- Support fleet managers in adopting optimized charging schedules
- Forecast distribution system impacts and infrastructure needs
- Inform future EV rates
- Inform future flexible load opportunities or offerings
- More effectively site future EV charging infrastructure

Evaluation Methods

PGE and its evaluation vendor will develop and implement a comprehensive evaluation scope that details the analysis methods to be used, including the sampling and timing best suited to evaluate the Pilot. Following are brief descriptions of the types of evaluation methods that are anticipated.

Customer/Market Learnings

Customer and market learnings will be derived from interviews and web surveys. Expected customer/market evaluation activities include:

- **Pilot participant in-depth interviews and web surveys:** Topics may include sources of Pilot awareness; ease of enrollment and participation; the project development process and successes/challenges; experience working with PGE; charger reliability and utilization; energy bill impacts and tariff changes (if any); impact of EV charging on fleet operations and sustainability goals; remaining electrification barriers and other elements.
- **Non-participant in-depth interviews:** Primary topics will include sources of Pilot awareness, clarity and comprehension of pilot offerings, experience working with PGE sales/marketing staff, and reasons for non-participation (pilot-specific and/or exogenous).

Pilot Implementation Learnings

The Process Evaluation of the Pilot will help to identify the successes and problem areas of the Pilot design and implementation. Process Evaluation findings can provide periodic feedback to help make continuous improvements to the Pilot. Expected Process Evaluation activities include:

- **Logic Model:** Early in the Pilot evaluation, PGE and its evaluation vendor will review and potentially update the logic model and Pilot objectives included with this application and adjust evaluation activities accordingly. The logic model will illustrate how the Pilot's planned activities should lead to a set of expected short-term outcomes, followed by longer-term outcomes. Should the Pilot's goals not be achieved, the logic model will help to structure the evaluation activities and can help to identify any gaps in the Pilot design, which PGE would then work to remediate.
- **Data Analytics:** The evaluation will track and report Pilot participation levels and include firmographic analysis to determine which types of customers are and are not participating, and other project details such as the number of sites and ports, vehicles served, estimated or actual vehicle miles traveled).
- **Partner Interviews:** PGE's evaluator will conduct in-depth interviews with key partner groups such as construction contractors and EVSPs to understand implementation successes and challenges.
- **PGE Pilot Administrator Interviews:** PGE's evaluator will conduct annual in-depth interviews with PGE Pilot staff and implementation partners on a wide range of Pilot topics. The initial interviews are anticipated to focus on the launched Pilot design, customer targeting and outreach activities, initial contracting experiences, as well as Pilot implementation (planning, design, construction) and staff coordination. Subsequent interviews will focus on implementation successes and challenges, Pilot design or delivery changes enacted and anticipated, and lessons learned.

Data Evaluation

As a condition of participation, PGE will require customers to release session-level charging data (e.g., charger type, start and end times, energy consumption) in a prescribed format so PGE can track charger utilization over time. In addition, PGE's evaluation vendor will analyze customer meter data to further assess customer load impacts and impacts to PGE's system (e.g. on-peak to off-peak ratios). In addition to including data analysis results in regular Pilot reporting, PGE also plans to leverage the data set from the Pilot in regular planning documents such as the TE Plan.

Reporting Timeline

PGE will provide evaluation reports to OPUC one year, two years, and four years after the Pilot launch.

Evaluation Cost

The cost of evaluation for this Pilot is \$405,000. See the Evaluation line item in the Pilot Costs section for more detail.

Transportation Electrification Program Application Requirements

This Pilot Proposal meets the requirements of Oregon Laws 2016, chapter 028, section 20(4)(a)-(f), and we welcome questions and discussion from the Oregon Public Utilities Commission (OPUC), its Staff, and stakeholders.

Appendix: Transportation Electrification Program Requirements Concordance

Table 4: Transportation Electrification Program Application Requirements Concordance

From OAR 860-087-0030:	Section
(a) A description of the program;	Pilot Description (pg. 1)
(b) Data used to support the description;	Pilot Description (pg. 1)
(c) A description of program coordination;	Pilot Coordination (pg. 10)
(d) A description of the electric company's long-term strategy to accelerate transportation electrification in its service territory in an effective and efficient manner and how the proposed program fits within the long-term strategy;	Strategy Alignment (pg. 11)
(e) A description of program costs;	Pilot Costs (pg. 13)
(f) A description of the expected program benefits;	Pilot Benefits (pg. 13)
(g) A description of how the electric company will evaluate the program; and	Evaluation Methods (pg. 15)
(h) A description of how the program addresses the considerations of Oregon Laws 2016, 028, section 20(4)(a)-(f).	Table 5: Transportation Electrification Program Considerations Concordance (pg. 18)

Table 5: Transportation Electrification Program Considerations Concordance

From Oregon Laws 2016, chapter 028, section 20.4), consideration of whether the program’s investments and other expenditures:	Section
(a) Are within the service territory of the electric company;	Expected Outcomes (pg. 3), Market Baseline Assumptions (pg. 3), Current TE Market (pg. 11), Opportunities for Grid Impact (pg. 12), Pilot Benefits (pg. 13)
(b) Are prudent as determined by the commission;	OPUC to determine
(c) Are reasonably expected to be used and useful as determined by the commission;	Pilot Elements (pg. 2)
(d) Are reasonably expected to enable the electric company to support the electric company’s electrical system;	Opportunities for Grid Impact (pg. 12) Distribution System Upgrades (pg. 8) Pilot Benefits (pg. 13)
(e) Are reasonably expected to improve the electric company’s electrical system efficiency and operational flexibility, including the ability of the electric company to integrate variable generating resources; and	Expected Outcomes (pg. 3), Coordination with Other Market Actors (pg. 11)
(f) Are reasonably expected to stimulate innovation, competition and customer choice in electric vehicle charging and related infrastructure and services.	National Standards for Measurement and Communication (pg. 10)

PGE Advice No. 21-09
NEW Schedule 56, Fleet Electrification Make Ready Pilot

Courtesy Redline Version of Rules C and I

4. **Conditions for Receiving Service**

A. **Generally**

This section describes the physical and technical requirements necessary to interconnect the Company's Facilities with the SP.

B. **Rights-of-Way and Access**

The Customer must provide, without cost to the Company, all rights-of-way and easements on the Premises to be served for the construction, maintenance, repair, replacement, or use of any or all Facilities necessary or convenient for the supply of Electricity. The Customer must grant the Company free and unrestricted access to the Premises at all reasonable times for purposes of reading meters, trimming trees, and inspecting, testing, repairing, removing or replacing any or all Facilities of the Company.

C. **Customer-Supplied Equipment**

1) **Customer's Responsibility**

The Customer will, at the Customer's risk and expense, furnish, install, inspect, and maintain in a safe condition all wiring, equipment, apparatus, protective devices, raceways, and enclosures which may be required beyond the SP for receiving and using Electricity. The Company may, at its option, install and maintain Facilities beyond the SP where deemed necessary to provide adequate Electricity Service. For service(s) that relate to Transportation Electrification (TE) and Electric Vehicle (EV), the Company may install and operate assets beyond the SP in order to facilitate the expansion of TE across the Company's service territory.

2) **Conformance with Codes**

Before the Company will provide Electricity Service, the Customer's wiring and equipment must conform to applicable municipal, county and state requirements, and to accepted standards of the National Electrical Safety Code, the National Electric Code, the Company's published "Electric Service Requirements and Guidelines," and Company standards and practices. As required by law, the Customer or its agent must obtain a certificate of electrical inspection before the Company will provide Electricity Service.

2) **Distribution Facilities**

Distribution Facilities are all structures and devices needed to distribute Electricity at any of the primary or secondary voltages listed in Rule C. Distribution Facilities will be installed in accordance with applicable laws, codes and Company standards and practices. It is the Applicant's responsibility to provide the Company with accurate information about their usage including but not limited to nameplate ratings of major installed electrical equipment and the intent to operate equipment above or below the nameplate rating. If damage results to Facilities owned by the Company through failure of the Applicant to fully disclose its load requirement to the Company, the repair and, or replacement costs of such Facilities will be paid by the Applicant.

3) **Line Extension**

A Line Extension is the installation of new, additional or upgraded Distribution Facilities from a point on the Company's existing distribution system that the Company has determined has adequate capacity for the Applicant's planned Electricity needs to the Applicant's Service Point (SP). Where the Applicant is requesting either a new individual residential service or an upgrade to an individual residential service, upgrades to existing primary lines will not be considered part of the Line Extension. ~~A~~However, any new primary or secondary Line Extensions, transformer additions or replacements necessary to serve the new load will be considered part of the Line Extension. However, for residential Electric Vehicle charging-related line extensions, transformer additions or replacements necessary to serve that charging load will not be considered part of the Line Extension.

4) **Line Extension Allowance**

The Line Extension Allowance is the portion of the Line Extension Cost that the Company will provide without charge to the Applicant. Estimated annual kWh values used to calculate non-Residential Customer line extension allowances do not reflect onsite generation.

5) **Line Extension Cost**

A Line Extension Cost is the Company's total estimated cost to install new, additional, or upgraded Distribution Facilities to serve the Applicant's planned Electricity needs. Line Extension Costs are intended to recover the expenses of labor, material and equipment involved in the design, installation and inspection of the Line Extension. Line Extension Costs include, but are not limited to, labor costs, the cost of transformers, primary and secondary voltage conductors, tree trimming or tree removal, Company indirect charges and the cost of any necessary rearrangement of existing Facilities. Where the Applicant is requesting either a new individual residential service or an upgrade to an individual residential service and the transformer requires upgrading, the Line Extension Cost will be credited for the estimated original cost, less depreciation, less removal costs, of the existing transformer. However, for residential Electric Vehicle charging line extensions, any transformer additions, or replacements necessary to serve the charging load will not be considered part of the Line Extension. Estimates of Line Extension Costs provided to Applicants are valid for six months from the date of issue. After six months the Company reserves the right to provide a revised estimate. The Line Extension Cost does not include payments to a third party for easements, additional costs associated with Underground Line Extension or other additional costs described in this rule.

6) **Long Side Service Connection**

A service connection, which runs parallel to the street, rather than perpendicular to the street.

7) **Primary Voltage Project**

A Primary Voltage Project is a planned undertaking of construction, where the Company initially installs only primary voltage facilities. Primary Voltage Projects include large lot residential subdivisions, industrial parks and other similar complexes. It is expected that within the project each Customer will be served from one or more transformers dedicated to that Customer's use.