

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF OREGON

Docket No. UM 2033

**IN THE MATTER OF PORTLAND GENERAL ELECTRIC'S TRANSPORTATION
ELECTRIFICATION PLAN**

COMMENTS OF CHARGEPOINT, INC.

ChargePoint appreciates the opportunity to provide comments on Portland General Electric's (PGE) Transportation Electrification (TE) Plan ("Plan"), pursuant to the Oregon Public Utility Commission's (PUC) Order No. 19-134.

I. Overview

ChargePoint is the world's largest and most open electric vehicle (EV) charging network with more than 104,000 Level 2 and direct current fast EV charging spots, including 694 ports in Oregon. ChargePoint designs, develops, and deploys residential and commercial AC Level 2 ("L2") and DC fast charging ("DCFC") electric vehicle charging stations, cloud-based software applications, data analytics, and related customer and driver services aimed at creating a robust, scalable, and grid-friendly EV charging ecosystem.

ChargePoint sells EV charging supply equipment ("EVSE") and network services that enable EV charging station owners to provide charging services. In almost every case, ChargePoint does not own or operate the equipment. ChargePoint sells charging solutions to a wide variety of customers, including residential EV owners, employers, commercial and industrial businesses, cities and public agencies, ports, schools, public transit, delivery truck fleet operators, and multi-unit dwelling owners. ChargePoint also offers a broad array of products and services that can serve light, medium or heavy-duty electric vehicles.

The site host network services offered by ChargePoint enable customers to manage their charging infrastructure using cloud-based software tools. These tools provide the station owner or operator with everything needed to manage and optimize utilization of their charging stations, including online management tools for data analysis, billing and payment processing, load management and access control. Stations connect to ChargePoint over a secure, cellular data network (or Wi-Fi in the case of single-family residential) allowing station owners to manage all their charging operations from a single dashboard. Maintenance and customer service are a priority for our company. ChargePoint offers a comprehensive set of support services, including: a 24/7/365 hotline for station users, parts and labor warranty, site qualification, installation and validation services, and a helpline for site host specific questions.

ChargePoint recommends that PGE align incentives to make EV charging equitably accessible to drivers of all income levels and accelerate sustainable and scalable growth in Oregon’s competitive EV charging market. Pursuant to SB 1547, policies and regulations to encourage the deployment of EVSE must also encourage innovation, competition, and customer choice in EV charging equipment and network services.

ChargePoint welcomes the opportunity to work with PGE to support efficient integration of EV load onto the grid, design tariffs that support EV charging, modify existing programs (*e.g.*, line extension policies), and encourage the installation of additional networked charging stations in ways that do not duplicate or conflict with the private market providing EV charging services (*e.g.*, support make ready infrastructure programs). When properly designed, these programs can expand EV adoption, support private investment in charging infrastructure, and allow the utility to have a role in enabling or accelerating transportation electrification for its customers.

Across the country, utilities in many jurisdictions have supported the adoption of electric vehicles through programs that enable the build-out of networked charging infrastructure across a range of use cases. Those programs can significantly lower barriers to EV charging infrastructure deployment and accelerate EV charging markets overall. Most importantly, utility investment in EV charging infrastructure can be structured to offer wider choices for customers while catalyzing and fostering a long-term, scalable, and competitive market for EV charging equipment and networks. To that end, ChargePoint strongly supports utility investment in EV charging infrastructure that seeks to employ these best practices to achieve those outcomes.

II. PGE Can and Should Assist with Market Barriers to EVSE Deployment

ChargePoint notes two additional barriers associated with EVSE deployment as discussed on page 24 of PGE’s Plan:

Rate Design: Traditional, demand-based rate structures that focus too much on demand charges rather than kWh charges may make certain charging technologies uneconomic. Solutions to this barrier are discussed in more detail below.

Capital Cost: The capital cost of installing EVSE can exceed equipment costs. Updating line extension policies and authorizing “make ready” utility investment programs, which would lower the cost of deploying EVSE, help overcome this barrier. We urge PGE to prioritize investing in make-ready infrastructure for public, businesses, multi-family, and workplace.

We look forward to continuing to work with PGE to overcome these barriers and hope our comments below are a start to this.

III. Customer Considerations Regarding EV Adoption (MDV/HDV fleet vehicles)

To help address EVSE infrastructure deployment and costs for fleets, as discussed on page 29, we urge PGE to prioritize make-ready costs, which are often the costliest.¹ These costs include line extension on the distribution side of the meter as well as wiring, conduit, and sub-panels that are often needed to provide power to EVSE located in a site host's parking lot on the customer side of the meter. Additionally, covering these costs will help avoid stranded assets in the future.

IV. PGE Should Prioritize Fast Chargers with Multiple Chargers to Increase Availability

As discussed on page 33 of PGE's Plan, currently, not all public charging stations serve all customers. To ensure EVSEs serve all customers, we encourage PGE to prioritize fast chargers that have multiple connectors to ensure multiple types of vehicles are able to use them.

V. PGE Should Support Charging Industry Technology Updates

ChargePoint appreciates PGE's support for the charging industry's important work on interoperability. PGE has been an early partner and advocate for interoperability between networks, known as roaming, which has now been achieved across the majority of networks in North America using the standard OCPI. ChargePoint has announced roaming agreements with Flo, Greenlots, Electrify America, EV Connect, EV Box, and EVgo, and many of these networks have announced similar agreements with each other. We are also working hard to further the development of other standards for interoperability, including interoperability between charging hardware and networks, and interoperability between vehicles and charging networks. PGE should continue to monitor industry developments and avoid adopting technology requirements not yet standardized.

VI. PGE Should Prioritize Effective Grid Management (page 85)

Starting on page 85, PGE correctly notes that innovative rate design and smart/managed charging are critical to successful transportation electrification. EVs can be more than simply new load for utilities. With the right policies, rate structures, and incentives, EVs can be beneficial loads. The key to effective smart charging is to ensure that utility ratepayers understand that by leveraging the technology they can manage their charging to achieve any number of goals including but not limited to: saving money, alignment with renewable energy generation, participation in demand response programs, or all of the above. For example, through EV-specific TOU rates, a utility could encourage residential customers to charge when it is most beneficial to the grid. Customers with smart networked charging stations can also opt in to demand response programs, which the utility could direct using the OpenADR protocol.

¹ See https://afdc.energy.gov/files/u/publication/evse_cost_report_2015.pdf

VII. Low- and Moderate-Income Customers Should be Prioritized in Customer Outreach

PGE should provide clear and concise information about electric rate options, particularly for any special EV charging rates. To the extent that EV and EVSE pilots are designed and approved, (1) customer input should be solicited to ensure that program goals meet community needs and (2) approved program details are provided to all customers. Finally, PGE should encourage transportation electrification that, through appropriate incentives, puts a downward pressure on electricity rates for all ratepayers. However, utilities should not promote specific brands or types of EV and EVSE to preserve and support the competitive nature of those industries.

Importantly, PGE is in an excellent position to help educate utility customers, especially low- and moderate-income customers, about the benefits of EVs, and this should be a priority in customer outreach overall.

VIII. Best Practices should be Employed in Future Infrastructure Investments

As discussed on page 113, there are three primary models for utility investment in EV charging infrastructure:

1. **Ownership:** A utility procures, deploys, owns, and maintains charging infrastructure in its jurisdiction, typically on the property of commercial customers.
2. **Make-Ready:** A utility directs investments toward the *installation* of charging hardware, and more specifically, installing and maintaining the supporting electrical infrastructure on the distribution side as well as the customer side of the meter up to the connection point for the charging station equipment. In covering this work, a utility prepares a site for installation of the charging station itself, which is purchased and operated by the site host.
3. **Rebate-based:** A utility provides rebate incentives to site hosts, which are used toward the purchase and/or installation of qualifying EV charging stations onsite. Qualification standards for charging stations can be determined to ensure capabilities that will enable grid benefits.

The right model for utility investment in EV charging markets can take many forms, and no single solution is appropriate for every use case. Moreover, each segment of the charging market – fleets, multi-unit dwellings, retail establishments, workplaces, municipalities, and corridors – has a different set of circumstances to consider when deciding upon the most effective investment strategy. ChargePoint supports all three utility investment models for supporting EV charging and for supporting customer choice and maintains that a suite of offerings may most adequately address the needs of different site hosts and uses cases.

ChargePoint's experience as the leading provider of EV charging infrastructure in the United States has informed its recommendations regarding regulated utility investments in EV charging infrastructure. As a result, ChargePoint has developed best practices to support successful implementation of utility programs that align the goals of the utility, competitive market participants, and most importantly – EV drivers. Working with utilities across the country,

ChargePoint has strongly supported and recommended approval of programs that promote the following best practices related to deploying EV charging infrastructure. Accordingly, to the maximum extent possible, utility programs should incorporate:

1. A core outcome to foster and support the existing competitive market for EV charging infrastructure.
2. Ongoing support for a diversity of competitive market offerings, allowing site hosts to continue to have a choice in charging solutions from multiple, qualified vendors of equipment and charging networks, as required by SB 1547.²
3. Site host operational control of EV charging infrastructure located on their properties, including pricing and access control, to align charging offerings with their circumstances, preferences, and desired driver experience.
4. Stimulate and leverage private investment in EV charging infrastructure to ensure site hosts have “skin-in-the-game,” lowering risks to ratepayer funds and ensuring that certain site hosts are invested in the success of deployments, as also required by SB 1547.³
5. A requirement for all deployments to be smart, networked charging infrastructure, to maximize flexibility and control, and to deliver grid benefits as also required by SB 1547.⁴

From these elements, it is apparent that the most critical topics relate to (1) the variety of technology choices available to the market, (2) the degree to which site hosts can make choices about how to operate the charging stations, and (3) the impact of spurring private investment alongside the deployment of ratepayer funds. In the current EV charging market, there are charging hardware providers and national network providers – similar to providers of mobile phone devices and cellular network services – and site hosts choose from both hardware and network providers to get the suite of smart features to fit their needs and circumstances. A smart charging network is a cloud-based platform that connects to charging hardware, collects data on charging sessions, and enables advanced features and controls to manage charging stations. Just like a customer chooses the smart phone that they want *and* chooses the carrier that they want, the choice of both EV charging hardware and network makes for a cohesive customer experience. Notably, in the EV charging market, charging networks provide a vast array of smart features and functions that differ from network to network, making the choice of network provider arguably more consequential to an EV charging customer than their choice of hardware.

ChargePoint believes that the best practices summarized above are critical features of cohesive, complementary utility programs for EV charging infrastructure. Importantly, these principles have already been incorporated into many utility programs across the country. ChargePoint submits that regardless of the model, all three of the primary utility investment models for EV charging infrastructure can and should accommodate program designs to maintain a site host’s choice and control of charging assets to support the current competitive market for EV charging. Together, these factors work to enhance the effectiveness of utility programs in electric transportation and amplify the impact of ratepayer funding.

² ORS § 757.357(2)(d).

³ *Id.*

⁴ *Id.* at (2)(g).

In PGE’s discussion of utility investments, it states it seeks to “update traditional view of the distribution system to support the investments required to ensure that customers have access to charging infrastructure (and that our region does not fall behind), including but not limited to ownership and operation of:

- Make-ready infrastructure from the utility meter up to new EV charging equipment;
- Charging infrastructure at transit agencies and schools, which serve the community at large; and
- Public charging to address gaps that impede market growth.”

IX. Utility Ownership Should Have Parity with Site Host Ownership

Utilities are ideally situated to ensure that the associated new load from EV charging is incorporated in a safe, reliable, and efficient manner. There are many appropriate roles for utilities in supporting efficient integration of EV load. With the right program design, utilities can encourage the installation of more charging stations in a manner that complements, and does not duplicate or conflict with, the private market.

Utilities can effectively incentivize smart charging behaviors without directly owning or operating EVSE through customer incentives and targeted rate structures. ChargePoint believes there may be limited circumstances where utility ownership of charging stations may be appropriate, so long as the competitive market best practices of customer choice, site host choice and site host control are maintained.

Regardless of the entity owning or operating charging infrastructure, the local EV charging site host must maintain the ability to set pricing for EV charging services to ensure the most efficient, equitable, and appropriate pricing and access to public EV charging stations.

EV charging is a combination of vehicle refueling and parking and often results in a parked/unattended vehicle. PGE should send appropriate price signals to site hosts, the customer of record. Site hosts, which have a direct relationship with their visitors/customer (*i.e.*, EV drivers), are best positioned to determine the price that will optimize station utilization.

When using ratepayer dollars to invest in EVSE ownership, a prudence test should be used to ensure actual gaps are being filled and that other investments are not being duplicated or preempted. As a prudent practice, ratepayer investments are most efficient when paired with other investments and programs that match other public and/or private funds should be prioritized.

As discussed above, we strongly urge PGE to prioritize make-ready investments as these are significant market barrier, are often the costliest barrier to entry, and help prevent stranded assets in the future.

Additionally, when PGE states it will “invest in public charging to address gaps that impede market growth”, it is unclear what these investments will look like and this discussion would benefit from clarity. It would be valuable for PGE and the Commission to also review the impact that PGE’s current ownership of public charging has had on competition for public charging in the Portland

area. In our experience, it is difficult to sell a charging station to a business at full cost when the assumption is that drivers will use PGE's provided infrastructure nearby instead. Furthermore, when investing in public transit, consideration should be given to how the charging will fit into the core operations to manage fleet and to what extent the agency has control over the charging. Providing incentives towards the cost of this infrastructure, rather than assuming ownership is necessary, may achieve the same shared goals that we all have.

X. Fleet Electrification Is Unique and Special Circumstances should be Considered

A few points should be kept in mind when addressing incentives and rate design for fleets since in these cases, the EVSE is directly integrated with the vehicles in operation. Other important customer-focused aspects of networked EV charging that are of particular relevance to fleet markets, include integration with fleet cards, telematics and asset management systems, flex billing, pricing/access control to manage different types of users, etc. Additionally, electric buses and truck technology is still evolving, and "standard" connectors are not yet standard across all vehicle types.

These and other considerations need to be considered in order to create program parameters that optimize customer value and customer choice. Fleet managers should own and operate networked EVSE with embedded metering in order to allow customers to respond to rate offerings and enable communications capabilities, which include managed charging and participation in demand response.

Additionally, as discussed above, make-ready costs should be prioritized and, in the case of fleets, the make ready infrastructure should anticipate the full fleet being electric. For example, TriNet currently has 688 buses. When investing in make-ready infrastructure, it should be designed for this sized fleet (if not more). Also, in light of the developing technology, by providing make-ready enables flexibility to technology choices and avoids stranded assets as this part of the industry rapidly evolves, thus better future proofs investments and protects ratepayers.

Finally, as the cost of fueling is a high consideration for fleet electrification, reducing costs should be a top priority for this Plan. To that end, we are very pleased see that PGE anticipates working on rate structure developments addressing demand charge relief and hedge/long-term fleet fueling contracts as this gives cost certainty to fleet operators and can provide the option for cost-competition with other fuel sources.

One option to pursue is an overnight rate with demand time of use to incentivize overnight charging, but not significantly penalize day-time EV charging (relative to the business as usual) which may be necessary for certain fleet use cases (e.g. taxis, urban delivery, certain municipal fleets, school buses), and other EV charging loads (e.g. large workplace installations). In addition, this rate provides station owners/operators with a clear and predictable rate structure that will allow them to effectively manage and schedule charging activity. This rate option will deliver grid benefits and cost savings, while providing charging station owners/operators the flexibility to manage their charging loads effectively.

XI. Rate Designs Should Continue to Alleviate Demand Charges

Providing customers with the flexibility to select between rate options is a valuable attribute that will benefit not only fleets, but a wide range of EV charging station owners/operators with diverse EV charging loads.

We appreciate PGE's efforts to alleviate demand charges and note there are many sustainable ways to alleviate demand charges, which are being piloted or are already common practice in other jurisdictions. For example:

- Replacing or pairing demand charges with higher volumetric pricing to provide greater certainty for charging station operators with low utilization. This rate could be scaled based on utilization or load factor as charging behavior changes over time.⁵
- A monthly bill credit representing a percentage of the nameplate demand associated with installed charging station's behind a commercial customer's metered service.⁶
- Implement a "rate limiter" as EV adoption increases, in which the average cost equivalent of a customer's demand charges would be limited to no more than a set cents/kWh value.⁷
- A retroactive and variable credit based on the difference of the effective blended per kWh distribution charge, including demand charges, and an agreed upon target blended rate, multiplied by the volumetric energy throughput in a given billing cycle for commercial customers with dedicated EV charging stations.⁸
- Forgive a portion of billed demand when the customer has a low load factor.⁹
- Charging stations could separately-metered with a unique "EV charging" rate.¹⁰

It is important to note that alternative electricity rate structure for EV charging can be designed by utilities to be revenue-neutral, track revenues and costs, and effectively reduce operating cost barriers for system profiles.

We greatly appreciate the opportunity to review PGE's Plan in advance of the program filing to provide an opportunity for a collaborative process to work on the Plan with a broad cross-section of stakeholders. We welcome further discussions with PGE on these comments and the opportunity to work with PGE to modify some aspects of the Plan before filing. That said, we also hope that the Commission expeditiously moves forward with the discussion and review of programs and cost recovery associated with these efforts.

⁵ An example of this is Pacific Power's *Public DC Fast Charger Optional Transitional Rate*.

⁶ Such as PECO's EV-FC Rider, which was recently approved by the Pennsylvania PUC.

⁷ For example, Ameren Illinois has implemented "rate limiters" during difficult transition periods that were raised over time in steady increments until it was phased out (e.g., rates DS-3 and DS-4).

⁸ LIPA proposal in New York PSC Matter No. 14-01299: *PSEG Long Island Utility 2.0 PLAN*

⁹ Examples of this include Xcel Minnesota's general service rates.

¹⁰ Alternative rate structures have been recently proposed by Pacific Gas & Electric ("PG&E") and Southern California Edison ("SCE") to the California Public Utilities Commission.

Thank you for your consideration of our comments. Please do not hesitate to contact me at alexandra.leumer@chargepoint.com if you have any questions or if we can provide additional information to help inform the Plan.

Sincerely,

A handwritten signature in cursive script, appearing to read "Alexandra Leumer".

Alexandra Leumer
Director, Public Policy
ChargePoint