

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UM 1811

In the Matter of

PORTLAND GENERAL ELECTRIC
COMPANY,

Application for Transportation
Electrification Programs.

ORDER

DISPOSITION: STIPULATION ADOPTED IN PART; MODIFIED IN PART

In this order, we adopt a stipulation that authorizes Portland General Electric Company (PGE) to undertake three pilot programs designed to accelerate transportation electrification. These programs include a pilot with TriMet, an education and outreach program, and a proposal to build up to six additional utility-owned charging stations. We also adopt the agreement for PGE to propose two additional pilots for our later consideration. We modify, however, provisions in the stipulation addressing future meetings and processes related to developing specific learnings from PGE's pilot programs.

I. BACKGROUND

As part of Senate Bill (SB) 1547, the 2016 Oregon Legislature adopted a state goal to increase the use of electricity for transportation.¹ The legislature found that transportation electrification was necessary "to reduce petroleum use, achieve optimum levels of energy efficiency and carbon reduction, meet federal and state air quality standards, meet this state's greenhouse gas emissions reduction goals * * * and improve the public health and safety."²

¹ Or Laws 2016, chapter 28. Although the provisions governing Transportation Electrification have now been codified in statute under ORS 757.357, we adopt in the order the parties' use of legislative citations.

² SB 1547, § 20(2)(a).

To help achieve this statewide goal, the legislature identified specific roles for electric companies.³ The legislature determined that "widespread transportation electrification requires that electric companies increase access to the use of electricity as a transportation fuel[,]"⁴ especially in "low and moderate income communities."⁵ The legislature also found that the electric companies' role in this effort could achieve "a net benefit for the customers of the electric company"⁶ by assisting in "managing the electrical grid, integrating generation from renewable energy resources and improving electric system efficiency and operational flexibility, including the ability of an electric company to integrate variable generating resources."⁷

We implemented provisions of SB 1547 relating to transportation electrification in docket AR 599.⁸ Those rules, set forth in OAR chapter 860, division 087, direct electric companies to file applications for programs to accelerate transportation electrification and prescribe the form and manner of those applications.

II. PROCEDURAL HISTORY

On December 27, 2016, PGE filed an application proposing four programs to accelerate transportation electrification. Along with Commission Staff, the following intervenors participated in this docket: Industrial Customers of Northwest Utilities (ICNU); Oregon Citizens' Utility Board (CUB); ChargePoint, Inc.; Drive Oregon (now Forth); Oregon Department of Energy (ODOE); TriMet; Greenlots; PacifiCorp, dba Pacific Power; and Tesla, Inc.

On March 15, 2017, PGE filed a supplemental application and opening testimony. On April 24, 2017, Staff and intervenors filed reply testimony analyzing the programs proposed by PGE, raising many preliminary questions, and proposing to treat these programs as pilots to collect necessary data to enable PGE to later propose larger programs.

In May 2017, PGE, Staff, and intervenors held settlement discussions. As a result of those discussions, all parties, with the exception of ChargePoint, reached an agreement resolving all issues in this docket. The stipulating parties submitted a stipulation and supporting joint testimony on June 27, 2017.

³ The term "electric company" as used in SB 1547 has the same meaning as defined in ORS 757.600. SB 1547 §20(1)(a).

⁴ SB 1547 § 20(2)(b).

⁵ SB 1547 § 20(2)(c).

⁶ SB 1547 § 20(2)(f).

⁷ SB 1547 §20(2)(e).

⁸ Order No. 16-447 (Nov 23, 2016).

On July 12, 2017, ChargePoint filed an objection to the stipulation and requested a hearing. On the same day, the Electric Vehicle Charging Association (EVCA), a party that had not been involved in the settlement discussions but had been granted intervenor status on June 30, 2017, also filed comments objecting to the stipulation. Siemens, a charging infrastructure manufacturer, intervened on August 31, 2017, and subsequently filed comments in support of the stipulation.

A hearing was held on October 10, 2017. This matter was submitted for Commission resolution following briefing of the parties.

III. STIPULATION

The stipulation is intended to resolve all issues in this docket and seeks approval of three pilot programs to accelerate transportation electrification, with two additional pilots to be proposed for our later consideration. The stipulation also includes, as an attachment, a draft of specific learnings for each program that will be further refined by the stipulating parties if the stipulation is approved.

A. Pilot Programs

The stipulating parties support approval of three transportation electrification pilots. The pilots are time-limited, cost-limited, and designed to produce specific learnings.

1. *TriMet Electric Mass Transit Pilot Program*

PGE will begin a pilot to install, own, and manage six electric bus charging stations for use by TriMet. PGE's participation will allow TriMet to use grant funding from the Federal Transit Administration to purchase enough electric buses to cover an entire bus route. In the stipulation, PGE agrees that this pilot is not a model to allow utility ownership of transit charging infrastructure beyond this pilot's term and scope. The stipulating parties agree to a maximum allowable cost for this program of \$800,000 (10-year net present value).

2. *Education and Outreach Pilot Program*

PGE will begin a pilot to increase awareness of electric vehicles (EVs) and charging infrastructure, in order to stimulate consumer consideration and subsequent adoption of EVs. PGE identifies lack of awareness as the single largest barrier to EV adoption. The component parts of this pilot, as agreed to in the stipulation, are summarized below:

Component	Description
Technical Assistance	Training and support for non-residential customers considering fleet electrification or planning to install workplace charging infrastructure
Builders Facilities Outreach	Working with builders, electricians, architects, and engineers to better understand the simplicity of EV charging and the benefits for their customers, as well as training facility managers' technical staff to ensure they understand key siting considerations, maintenance practices, and operating costs for installing, operating, and maintaining EV charging infrastructure
Ride and Drives	Provide opportunities for potential buyers of EVs to test them out and learn about them
Regional Market Transformation	Collaboration with regional stakeholders to promote regional market transformation through development of standards, best practices, and exploring charging network interoperability between regional utilities

The stipulating parties agree to a maximum allowable cost for this program of \$400,000 (10-year net present value).

3. *Electric Avenue Pilot Program*

PGE will expand its Electric Avenue project by installing and owning six new charging stations in its service territory that will each contain up to four DC fast chargers and one level 2 charger. Among other lessons, the parties believe this pilot will provide valuable information about the impact of the presence of visible, reliable, and accessible charging infrastructure on a customers' willingness to purchase and use an EV, will help identify predominant users of the public charging infrastructure, and will determine network load profiles and the impacts on PGE's distribution system and non-coincident peak loads of DC fast chargers.

PGE will select sites for the new charging stations using selection criteria to help maximize geographic diversity and visibility, and to make accessible to low-income and multi-family dwellings. PGE anticipates deploying sites in Portland, Gresham, Hillsboro, Salem, Beaverton, and Wilsonville, but will consider all locations in its service territory. Although the new charging stations may be sited on PGE-owned or third-party locations, PGE will use a competitive bidding process to procure all charging station equipment and installation, station operations such as payment processing and customer service, and

equipment maintenance. The parties agree to a maximum allowable cost for this program of \$2,600,000 (10-year net present value).

B. Future Pilot Programs

The stipulating parties further agree that PGE will propose and submit for future consideration two additional pilot programs.

First, PGE agrees to propose a residential home charging pilot. This pilot, which PGE had originally included in its application but withdrew as part of the stipulation, includes rebates for customers installing a connected level 2 charger and going on a time-of-use rate schedule. Noting that a majority of EV charging continues to occur at home, CUB notes that this future pilot was an essential component of its support of the stipulation, and was intended to help the program application meet the criteria contemplated in SB 1547 Section 20(2)(d)-(e). The stipulating parties agree that PGE will propose this pilot within one year of Commission approval of the stipulation.

Second, the stipulation includes an allocation of approximately \$1 million for a workplace charging and/or fleet charging program. ICNU requested, and the stipulating parties supported, that the program would be open to both cost-of-service and direct access customers. This will provide additional opportunities to increase customer awareness of EVs and support acceleration of transportation electrification through access to charging that is not home-based. The parties agree that PGE will propose this pilot within one year of the date of the stipulation.

The parties agree that PGE will separately consider developing programs to increase access to electricity as a transportation fuel at multifamily dwellings.

C. Learnings

The stipulating parties also agree that specific learnings for each program will be developed through meetings with the stipulating parties. The stipulating parties included a draft of these learnings as an attachment to the stipulation, and indicated that the list will be further refined if the stipulation is approved. They explain that these learnings will create the knowledge base to assist our evaluation of whether these programs achieve the legislature's articulated goals.

In addition, paragraph 26 of the stipulation contains a required list of information that PGE must report annually regarding the Electric Avenue pilot. The stipulation gives us the authority to specify what form this report should take and what process might be used to make sure that interested parties receive access to this information.

The parties agree to a maximum allowable cost for pilot evaluation of \$500,000 (10-year net present value).

IV. OBJECTIONS TO STIPULATION

ChargePoint and EVCA object to the Electric Avenue pilot portion of the stipulation. These parties oppose PGE's ownership and operation of public charging stations, and argue that the stipulating parties have failed to show that the pilot meets the requirements of SB 1547 and that it is in the public interest.

At the outset, ChargePoint and EVCA acknowledge that utilities play an important role in promoting transportation electrification, but contend that role should not include ownership of EV service equipment. They note that transportation electrification is not an area of utility expertise. EVCA adds that PGE's role should not be to provide cheap, reliable power to EVs, but rather to "stimulate innovation and competition, provide customers with increased options in the use of charging equipment and in procuring services from suppliers of electricity, [and] attract private capital investments * * *."⁹

ChargePoint and EVCA fear that the pilot will allow PGE to become the dominant provider of public charging stations in its service territory. ChargePoint explains that PGE could install up to 24 new DC fast chargers (*i.e.*, four DC fast chargers at each of the six charging stations) in addition to the 11 DC fast chargers it currently owns. By contrast, ChargePoint notes there are only ten ChargePoint DC fast chargers in the Portland metro area.

According to ChargePoint and EVCA, PGE's ownership of such an extensive network of public chargers will harm the developing EV charging market. Both contend that, with the backing of ratepayer money and access to low-cost capital, PGE's advantages will make it extremely difficult for existing private EV charging companies to compete, ultimately reducing competition and customer choice. ChargePoint believes that the Electric Avenue pilot, if approved, would make the public charging market dependent on ratepayer subsidies on a long-term basis.

For these reasons, ChargePoint and EVCA argue that the Electric Avenue pilot does not comply with SB 1547, primarily because it is not "reasonably expected to stimulate innovation, competition and customer choice in EV charging and related infrastructure and services."¹⁰ They contend that, by precluding alternative ownership models and allowing PGE to become the primary provider of public chargers, the Electric Avenue pilot will dampen, rather than stimulate, innovation, competition, and customer choice in

⁹ SB 1547 § 20(2)(d)

¹⁰ SB 1547 § 20(4)(f).

the development of EV charging infrastructure. ChargePoint also contends the stipulating parties have failed to show that the pilot meets SB 1547's other five criteria—most notably that the pilot supports PGE's system and improves its efficiency and operational flexibility.

ChargePoint and EVCA recommend we modify this pilot to shift PGE's role with regard to public charging infrastructure. ChargePoint argues that PGE would be more effective at accelerating transportation electrification by offering rebates to site-hosts to reduce the upfront costs of EV service equipment. Alternatively, ChargePoint suggests PGE could install the "make ready" infrastructure needed for a charging station, such as the trenching, conduit, and wiring. ChargePoint explains that a rebate or make-ready program would promote innovation, competition, and customer choice by allowing a site-host to choose the brand and features of charging stations to be installed on their property. EVCA similarly argues that site-hosts should have the ability to choose among EV charging equipment vendors that best meet their specific needs.

Finally, EVCA recommends that we condition any acceptance of the stipulation on two important clarifications. First, EVCA notes that, in addressing future meetings and processes concerning PGE's pilot programs, the stipulation appears to limit these activities to the stipulating parties. EVCA believes such processes should be open to all parties to the docket—not just those who joined the stipulation. EVCA states that it intends to actively participate in future efforts to electrify the transportation sector and it would be inappropriate to exclude EVCA from the future processes envisioned by the stipulation. Second, EVCA asks that we confirm that the stipulation, and the pilot programs contained therein, have no precedential effect. Although it acknowledges that no party believes the stipulation has precedential effect, EVCA requests that we affirmatively clarify that the pilot programs are not precedential, adopted only to produce learnings for EV development, and that utility ownership is not the only means by which to obtain data to inform the learnings.

V. DISCUSSION

A. Statutory Construction

Before we turn to the merits of the stipulation, we address two issues related to the meaning and intent of SB 1547. When interpreting a statute, our goal is to determine the intent of the legislature. To do this, we begin with the text of the statute itself, which serves as "the best evidence of the legislature's intent."¹¹ In this analysis, we may also examine legislative history, but the statute's "text and context remain primary, and must

¹¹ *PGE v. Bureau of Labor and Industries*, 317 Or 606, 610 (1993).

be given primary weight in the analysis.”¹² If ambiguity remains as to the legislature’s intent after an examination of the text in context of any legislative history, we may resort to general maxims of statutory construction.¹³

First, we confirm, as ChargePoint concedes, that SB 1547 does not prohibit utility ownership of EV service equipment. Although the bill contains no language that expressly addresses utility ownership, testimony during the passage of the bill makes clear that the legislature expected utilities to own and operate EV charging infrastructure. When summarizing SB 1547 to her colleagues in the House, Representative Vega Pederson stated that the bill “sets up a transportation electrification program, which allows electric companies to apply to the PUC for installing and ownership of EV charging stations * * * in addition, this also allows utilities to construct and operate these charging stations * * *.”¹⁴

Second, we conclude that the language in Section 20(4) of SB 1547 sets out six factors we must *consider* in evaluating a program to accelerate transportation electrification, and does not, as ChargePoint contends, establish six *criteria* that must be met for each program. The relevant language provides:

- (4) When considering a transportation electrification program and determining cost recovery for investments and other expenditures related to a program proposed by an electric company * * * , the commission shall consider whether the investments and other expenditures:
 - (a) Are within the service territory of the electric company;
 - (b) Are prudent as determined by the commission;
 - (c) Are reasonably expected to be used and useful as determined by the commission;
 - (d) Are reasonably expected to enable the electric company to support the electric company’s electrical system;
 - (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

¹² *State v. Gaines*, 346 Or 160, 171 (2009).

¹³ *Id.* at 172.

¹⁴ House Chamber, 2016 Leg., 78th Sess. (Or. Mar 1, 2016) (comments by Rep. Vega Pederson at 1:05:00).

- (f) Are reasonably expected to stimulate innovation, competition and customer choice in electric vehicle charging and related infrastructure and services.¹⁵

As Staff points out, the express language of SB 1547 requires that we “consider” the six factors when deciding to approve a program and when determining rate recovery. The plain, natural, and ordinary meaning of “consider” is “to reflect on; think about with a degree of care or caution.”¹⁶ The legislature’s use of the word “consider,” read in its immediate context, makes clear that we are to take in account these factors during our review, but that we retain discretion in our decision-making whether to approve a program. Indeed, as Staff notes, five of the six factors themselves reflect this discretion given the use of language “as determined by the commission” and “are reasonably expected.”¹⁷

Furthermore, when “consider” is read in the broader context of the bill, it becomes clear that the legislature did not intend the Commission to make affirmative findings for each factor in order to approve a program. Section 20(3), which immediately precedes the six factors, provides that a transportation electrification program may include customer rebates for EV charging. However, the third factor of Section 20(4) addresses “used and useful.” As Staff explains, the phrase “used and useful” is a required prerequisite for rate recovery of a utility’s capital investment—that is, costs related to physical assets used to service customers. Because customer rebates are not physical assets, the adoption of ChargePoint’s reading of the six factors would preclude customer rebate programs—in direct conflict with legislative intent.

Accordingly, we conclude that SB 1547 only requires that we take into account the six factors enumerated in Section 20(4) when deciding program approval, and provides us the discretion to determine the applicability and importance to a given program.

B. Resolution

We adopt the stipulation and approve PGE’s three pilot programs to accelerate transportation electrification. We also adopt the parties’ agreement that PGE will submit for future consideration two additional pilot programs. We modify the stipulating

¹⁵ SB 1547 § 20(4)(a)-(f).

¹⁶ *Webster’s Third New Int’l Dictionary* 483 (unabridged ed 2002).

¹⁷ We acknowledge ChargePoint’s argument that the first factor could be interpreted as requiring the projects to be located within a utility’s service territory. On the other hand, that provision does not expressly preclude an extra-territorial project. Because PGE will site all new charging stations within its service territory, the exact meaning of that factor is not before us and we do not address it.

parties' agreement by clarifying and supplementing the process to be used for post-order activities related to the stipulation.

We find the TriMet Electric Mass Transit pilot, the Education and Outreach pilot, and the Electric Avenue pilot to be consistent with the legislative findings of SB 1547 and will help increase the use of electricity as a transportation fuel. The programs protect both ratepayers and the EV market due to their modest scope and costs, and are designed to produce significant learnings to inform further actions to electrify the transportation sector and integrate EVs into a utility's electric grid. The programs also have broad support from various stakeholders representing divergent interests, including from companies active in the EV charging market who believe the programs will lead to EV market growth and greater opportunity for all market participants.

We are not persuaded by the objections raised by ChargePoint and EVCA to the Electric Avenue pilot. Although we agree that the provision of public EV charging is not a traditional utility service, we agree with the stipulating parties that additional investment in EV infrastructure is necessary in order to achieve widespread transportation electrification. With its Electric Avenue pilot, PGE will help contribute to that needed investment and make reliable charging infrastructure available to the growing number of EV users. The additional Electric Avenue charging stations will also serve to increase awareness of EVs and provide confidence to potential EV users that chargers will be available to them should they decide to make such a purchase. In short, the Electric Avenue pilot will make a contribution to increasing access to and awareness of the use of electricity as a transportation fuel.

PGE has experience partnering with EV service equipment vendors as part of the Oregon Electric Highway Pilot, and currently owns public charging infrastructure with its existing Electric Avenue station outside its headquarters and the 13 community charging stations that were installed as part of the Highway Pilot and later assumed by PGE.¹⁸ We find it appropriate to leverage PGE's experience and expertise with EV charging and allow the utility to own and install additional EV chargers in this pilot.

We embrace the stipulating parties' agreement that the expansion of Electric Avenue is only a pilot program and that the stipulation does not contemplate further expansion of PGE's role in the public charging market. We acknowledge the desire of ChargePoint and EVCA that we resolve the issue of proper utility ownership before moving forward with any pilot projects, but conclude that, given the nascent state of the public EV charging market, an initial pilot is appropriate to stimulate and inform further market development.

¹⁸ PGE/100; Spak-Goodspeed/17

Given the need for investment in EV infrastructure and the modest scope of the pilot, we are not persuaded by ChargePoint's arguments that PGE's ownership of the number of additional EV chargers to which the parties stipulated will distort and harm the competitive marketplace. Rather, we believe the opposite to be true—a view shared by Forth, a signatory to the stipulation that is a trade association with members that compete in the EV charging marketplace. As Forth explains, “as more utility investment deploys more charging infrastructure, more drivers adopt electric vehicles, and more infrastructure is necessary creating more opportunities to sell and provide charging equipment and services. More vehicles on the road also creates greater utilization of charging infrastructure, which in turn improves the economics of infrastructure deployment, likely to attract more private investment.”¹⁹ Similarly, Siemens, a market competitor that offers EV charging hardware and software, concluded that the Electric Avenue pilot will stimulate innovation and competition “by stimulating the overall growth of the electric vehicle (EV) market by reducing barriers to ownership and operation for EV owners.”²⁰

Moreover, we note that the stipulation contains safeguards to help protect the EV charging marketplace. PGE has structured pricing for its Electric Avenue charging stations to avoid undercutting the market-based pricing offered by other providers, and will monitor its public charging tariffs to determine if charges or other terms need to be changed. In addition, PGE will use a competitive bidding process to procure the EV charging equipment, allowing vendors to compete on criteria to promote affordability, reliability, and quality.

We emphasize that our decision to adopt the Electric Avenue pilot is based on the state of the EV charging market as it exists today, and acknowledge the continuing need to monitor that marketplace to examine the proper role of utility participation. For that reason, we affirm the need, stated in the stipulating parties' joint testimony, for PGE to continue to assess its role to determine whether its participation “is necessary as presently structured, if another model or intervention strategy would be better for the market, or if PGE should exit the charging market.”²¹ In addition, to ensure a structured and dedicated review of the status of the EV charging marketplace, we also commit to revisiting a requirement that electric companies file for Commission review a “Transportation Electrification Plan” that outlines the company's long-term framework to accelerate transportation electrification. Staff had originally proposed such a requirement in docket

¹⁹ Forth/200; Allen-Shaw/5.

²⁰ Siemens/100; King/3.

²¹ Stipulating Parties/100; Spak – Klotz – Jenks – Mullins – Shaw – Ashley – Whiteman – Hesse – Ratcliffe/8. We interpret this testimony as supplementing and clarifying the terms of paragraph 29 of the stipulation.

AR 599 to implement the transportation electrification provisions of SB 1547, but was not adopted at that time. Such plans would require, among other things, a reporting on the current condition of the transportation electrification market in the utility's service territory, existing market barriers, and impacts to that market expected from the utility's electric transportation programs.

We now turn to our clarifications and amendments to the stipulation regarding future activities. First, with regard to future meetings related PGE's pilot programs, we share EVCA's belief that all processes should be open to all parties to the docket—not just signatories to the stipulation. We adopt these pilots to produce learnings for EV development, and conclude that efforts to identify those specific learnings would benefit from a transparent and open forum that allows the participation, expertise, and insight from all parties. We recognize that the specific learnings to be developed flow directly from the pilots agreed to in the stipulation, and that the stipulating parties that developed the pilots will play the lead role in finalizing them. We do not believe, however, that opening up these discussions to non-signatories will slow down or unravel the work already completed. We direct the stipulating parties to lead an expedited effort with all parties to finalize the specific learnings, and to report results at a public meeting before April 10, 2018.

Second, with regard to paragraph 6 addressing the establishment of methods to calculate the cost cap and for recovery for invested capital related to these pilots, we clarify that all final decisions related to these matters will be determined by the Commission, based on recommendations from Staff and the parties.

Third, with regard to paragraph 29 addressing PGE's annual review of its tariffs for public charging, we clarify that all parties may participate in that review, and that PGE must present the results of that review and any proposed changes to the Commission for review and consideration.

Finally, we confirm EVCA's observations about the precedential effect of the stipulation and the pilot programs. We have already explained that the Electric Avenue pilot is not intended to be precedential. Furthermore, the stipulation itself confirms that none of its provisions are "appropriate for resolving issues in any other proceeding."²²

²² Stipulation at ¶ 36.

VI. CONCLUSION

After review of the terms of the stipulation and the supporting information provided in the joint testimony, we find the settlement agreement, with the modification described above, is consistent with SB 1547 and will help accelerate transportation electrification. It should be adopted as amended consistent with this order.

VII. ORDER

IT IS ORDERED that:

1. The stipulation between Portland General Electric Company; Staff of the Public Utility Commission of Oregon; Oregon Citizens' Utility Board; the Industrial Customers of Northwest Utilities; the Oregon Department of Energy; Tesla, Inc.; the Tri-County Metropolitan Transportation District of Oregon; Forth; and Greenlots; attached as Appendix A, is adopted in part and modified in part.
2. As provided by paragraph 35 of the stipulation, any stipulating party may, within five business days of this order, withdraw from the stipulation upon written notice and request additional proceedings.

Made, entered, and effective FEB 16 2018.



Lisa D. Hardie
 Chair



Stephen M. Bloom
 Commissioner





Megan W. Decker
 Commissioner

A party may request rehearing or reconsideration of this order under ORS 756.561. A request for rehearing or reconsideration must be filed with the Commission within 60 days of the date of service of this order. The request must comply with the requirements in OAR 860-001-0720. A copy of the request must also be served on each party to the proceedings as provided in OAR 860-001-0180(2). A party may appeal this order by filing a petition for review with the Court of Appeals in compliance with ORS 183.480 through 183.484.

BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

UM 1811

In the Matter of

PORTLAND GENERAL ELECTRIC
COMPANY

Application for Transportation Electrification
Programs

STIPULATION

This stipulation (“Stipulation”) is between Portland General Electric Company (“PGE”), Staff of the Public Utility Commission of Oregon (“Staff”), the Citizens Utility Board of Oregon (“CUB”), the Industrial Customers of Northwest Utilities (“ICNU”), the Oregon Department of Energy (“ODOE”), Tesla, Inc. (“Tesla”), the Tri-County Metropolitan Transportation District of Oregon (“TriMet”), Forth, and Greenlots (collectively, “Stipulating Parties”). ChargePoint also participated in settlement discussions and has elected not to participate in this Stipulation.

PGE filed an Application for Transportation Electrification (“TE”) Programs on December 27, 2016, and supplemented the Application and provided supporting testimony on March 15, 2017. In the following three months, Staff, CUB, ICNU, and ChargePoint sent 86 data requests regarding PGE’s filing. On April 24, CUB, ICNU, Staff, Forth, ChargePoint, and Greenlots filed written reply testimony. Parties to this docket participated in a Settlement Conference on May 12, during which stakeholders discussed concerns and opportunities. During that discussion, PGE accepted a number of Stipulating Parties’ proposals and offered modifications regarding other proposals. The Stipulating Parties also accepted a number of PGE’s suggestions, which represented compromises that Stipulating Parties deemed reasonable for settlement purposes. Details of the settled issues are described in detail below.

TERMS OF STIPULATION

1. This Stipulation settles all issues in this docket. In its application, PGE proposed four TE programs; however, PGE has agreed to withdraw the “Residential Smart Charging” proposal, therefore, this Stipulation contains terms for PGE’s three remaining TE programs: TriMet Mass Transit; Education and Outreach; and Electric Avenue Network; as well as two future programs to be proposed by PGE.

Terms Applicable to All Three of PGE’s Programs¹

2. For the Stipulating Parties to support approval of PGE’s three Transportation Electrification programs as modified in this Stipulation, PGE agrees that the proposals are pilot programs only, meaning that the Stipulating Parties have not agreed that the TE proposals meet the six statutory criteria outlined in SB 1547, but rather, these TE programs may provide value as pilot programs. As pilots, the programs must be time-limited, cost-limited, and be designed to produce specific learnings.
3. PGE is to hold workshops with Staff and intervenors to develop cost effectiveness and attribution methodologies for TE programs. PGE is encouraged to work with Pacific Power to coordinate or co-develop these models.
4. PGE will schedule meetings, with the Stipulating Parties to this docket, to identify the specific and detailed learnings for each of the three TE pilots included in this Stipulation. Once the Stipulating Parties agree on the specific learnings to be gained from these pilots, PGE will file a written list of said learnings in this docket, and will track and report on such learnings. A draft of the type of

¹ The three programs include: TriMet Mass Transit; Education and Outreach; and Electric Avenue Network.

learnings expected from these pilots is included in Appendix 1, but is subject to revision by the Stipulating Parties.

5. When PGE proposes cost recovery for the TE programs in this Stipulation, all costs will be subject to a prudence review.
6. The Stipulating Parties agree to work toward establishing a method for cost recovery, subject to the cost caps specified herein, for invested capital that includes options other than a deferral. Further, the Stipulating Parties will determine how the cost cap is calculated, i.e., how revenues will be applied against costs over the life of the project, as well as requirements for tracking and reporting of costs and revenues.
7. Amounts in this Stipulation are net present values (NPV) in 2017 dollars of 10-years of nominal net costs (capital carrying costs, maintenance, and power costs less tax credits, user fees, and revenue from low-carbon fuel standard credits from chargers deployed as part of the TriMet and Electric Avenue pilots).
8. A summary of allowable costs are included below:

Table 1: Maximum Allowable Costs by Program, 10-year NPV (\$,000)

	Maximum Allowable Costs
Outreach and Technical Assistance	\$ 400
TriMet Pilot	\$ 800
Electric Avenue Network*	\$ 2,600
Residential Home Charger Pilot	-
Pilot Evaluation	\$ 500
Total	\$4,300

* If federal tax credits are available, allowable decrease based on federal tax credits received.

9. Costs for each pilot represent a total cap on customer exposure to costs from the pilot.

TriMet Pilot

10. Maximum allowable cost for the TriMet pilot, if determined to be prudent, is \$800,000 (NPV in 2017 dollars of 10-years of nominal net costs).
11. Pilot is time limited: 10 year asset life for charging stations. Contract with TriMet is 10 years.
12. PGE to report annually on program progress, program costs and costs recovered, estimates of costs to be recovered, specific learnings, and any recommended changes to methodology.
13. PGE agrees to register as a credit generator under the Clean Fuels Program and to credit any value it receives from Clean Fuels Program credits associated with the TriMet charging stations to all customers and ratepayer classes to offset the cost of these pilots.
14. PGE agrees that the TriMet pilot program is not a model to allow utility ownership of transit charging infrastructure beyond this pilot's terms and scope.
15. PGE will file a copy of the executed PGE-TriMet agreement, after it is executed, in the UM 1811 docket.
16. In the vendor contracts for the TriMet program charging station equipment, PGE agrees to use best efforts to place the costs of equipment risk or failure on the vendor/manufacturer; if equipment costs or failure risks exceed the spending cap agreed to in this Stipulation, PGE agrees that PGE customers will not be responsible for the cost overruns.

17. PGE will not undertake any future action that commits ratepayer funding for mass transit electrification projects without first participating in a discussion with the Commission. Any future proposals to use ratepayer money for mass transit electrification will be discussed with Staff and Stipulating Parties in advance of any commitments, and will be filed with the Commission for review.
18. Approving this TriMet pilot program is not intended to suggest that future investment by PGE in mass transit electrification is appropriate.
19. PGE will identify in writing the specific learnings to be gained from this pilot and provide annual reporting on the pilot—as described in paragraph 4 above.

Education and Outreach

20. Maximum allowable cost for Education and Outreach is \$400,000 over an initial three-year pilot period. Additional spending will be subject to application of the forthcoming cost effectiveness analysis and attribution methodology.
21. \$1M has been removed from the Education and Outreach proposal to be allocated for a future workplace and/or fleet charging program noted at paragraph 31.
22. The 1.0 FTE dedicated to Education and Outreach will be pulled from PGE's TE proposal and Stipulating Parties agree to support the addition of 1.0 FTE (at no more than \$183,000) for TE technical assistance in PGE's pending general rate case, UE 319.
23. \$400,000 will be allocated over 3 years to the remaining education and outreach initiatives, as displayed in Table 2.

Table 2: Outreach & Education Budget, 10-year NPV (\$,000)

	Maximum Allowable Costs
Technical Assistance	\$ 75
Builders & Facilities Outreach	\$ 125
Ride & Drives	\$ 75
Regional Market Transformation	\$ 125
Total	\$ 400

Electric Avenue Charging Stations

24. PGE is limited to investing in a maximum of six additional Electric Avenue Charging sites under this settlement.
25. Costs for additional Electric Avenue charging stations will be capped at \$2.6M, assuming no tax credits are available for this equipment. If tax credits are available for additional Electric Avenue deployments, costs will be capped at \$2.6M less the value of tax credits PGE received.
26. PGE will collect and report information and data on a yearly basis that includes, but is not limited to, load profiles, utilization, charging frequency, charging duration, voltage and power quality, kWh delivery, insights into price sensitivity of customers charging at the Electric Avenue chargers, revenue generated, types of vehicles customers drive, and any additional insights.
27. Time limited: this Pilot is limited to the 10-year asset life for charging stations.

28. PGE agrees to register as a credit generator under the Clean Fuels Program and credit any value it receives from Clean Fuels Program credits associated with the Electric Avenue charging stations to all customers and all ratepayer classes to offset the cost of these pilots.
29. As part of the reporting requirements in paragraph 6, PGE is to review its tariff charges for public charging at least annually to determine if charges or other terms need to be changed; Stipulating Parties may participate in this review.

Agreement to Future Pilot Proposals

30. PGE agrees to propose a residential home charging pilot, which includes rebates for customers installing a connected level 2 home charger and going on a time-of-use rate schedule, within one year of Commission approval of this plan.²
31. PGE agrees to propose a workplace charging and/or fleet charging program within one-year of the date of the Stipulation, conditioned on Commission approval of the Stipulation. The approximate total cost of the proposal will be \$1M. The program shall be open to both cost-of-service and direct access customers. The proposed \$1M results from a removal of \$1M from the PGE's proposed Education and Outreach budget in its application. PGE will also separately consider developing programs to increase access to electricity as a transportation fuel at multifamily dwellings.
32. Pilot Evaluation: Costs for program evaluation are capped at \$500,000.

² This future program will be proposed in lieu of the "Residential Smart Charging" program that PGE has agreed to withdraw at this time.

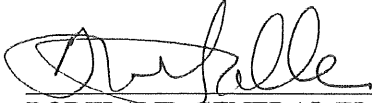
33. The Stipulating Parties recommend and request that the Commission approve this Stipulation as an appropriate and reasonable resolution of the issues in this docket.
34. The Stipulating Parties agree that this Stipulation represents a compromise in the positions of the Stipulating Parties. Without the written consent of all Stipulating Parties, evidence of conduct or statements, including but not limited to term sheets or other documents created solely for use in settlement conferences in this docket, and conduct or statements made at settlement conferences, are confidential and not admissible in the instant or any subsequent proceeding, unless independently discoverable or offered for other purposes allowed under ORS 40.190.
35. The Stipulating Parties have negotiated this Stipulation as an integrated document. If the Commission rejects all or any material part of this Stipulation, or adds any material condition to any final order that is not consistent with this Stipulation, each Stipulating Party reserves its right: (i) to withdraw from the Stipulation, upon written notice to the Commission and the other Stipulating Parties within five (5) business days of service of the final order that rejects this Stipulation, in whole or material part, or adds such material condition; (ii) pursuant to OAR 860-001-0350(9), to present evidence and argument on the record in support of the Stipulation, including the right to cross-examine witnesses, introduce evidence as deemed appropriate to respond fully to issues presented, and raise issues that are incorporated in the settlements embodied in this Stipulation; and (iii) pursuant to ORS 756.561 and OAR 860-001-0720, to

seek rehearing or reconsideration, or pursuant to ORS 756.610 to appeal the Commission order. Nothing in this paragraph provides any Stipulating Party the right to withdraw from this Stipulation as a result of the Commission's resolution of issues that this Stipulation does not resolve.

36. This Stipulation will be offered into the record in this proceeding as evidence pursuant to OAR 860-001-0350(7). The Stipulating Parties agree to support this Stipulation throughout this proceeding and in any appeal, provide witnesses to support this Stipulation (if specifically required by the Commission), and recommend that the Commission issue an order adopting the settlements contained herein. By entering into this Stipulation, no Stipulating Party shall be deemed to have approved, admitted or consented to the facts, principles, methods or theories employed by any other Stipulating Party in arriving at the terms of this Stipulation. Except as provided in this Stipulation, no Stipulating Party shall be deemed to have agreed that any provision of this Stipulation is appropriate for resolving issues in any other proceeding.
37. This Stipulation may be signed in any number of counterparts, each of which will be an original for all purposes, but all of which taken together will constitute one and the same agreement.

DATED this 27th day of June, 2017.

ORDER NO. 18 054



PORTLAND GENERAL ELECTRIC
COMPANY

STAFF OF THE PUBLIC UTILITY
COMMISSION OF OREGON

CITIZENS' UTILITY BOARD
OF OREGON

INDUSTRIAL CUSTOMERS OF
NORTHWEST UTILITIES

OREGON DEPARTMENT
OF ENERGY

TESLA, INC.

TRI-COUNTY METROPOLITAN
TRANSPORTATION DISTRICT OF
OREGON

FORTH

GREENLOTS

ORDER NO. 18 054

PORTLAND GENERAL ELECTRIC
COMPANY

Kayla Klem 6/22/17
STAFF OF THE PUBLIC UTILITY
COMMISSION OF OREGON

CITIZENS' UTILITY BOARD
OF OREGON

INDUSTRIAL CUSTOMERS OF
NORTHWEST UTILITIES

OREGON DEPARTMENT
OF ENERGY

TESLA, INC.

TRI-COUNTY METROPOLITAN
TRANSPORTATION DISTRICT OF
OREGON

Jeanette W. Shaw 6/22/17
FORTH

GREENLOTS

PORTLAND GENERAL ELECTRIC
COMPANY

STAFF OF THE PUBLIC UTILITY
COMMISSION OF OREGON



CITIZENS' UTILITY BOARD
OF OREGON

INDUSTRIAL CUSTOMERS OF
NORTHWEST UTILITIES

OREGON DEPARTMENT
OF ENERGY

TESLA, INC.

TRI-COUNTY METROPOLITAN
TRANSPORTATION DISTRICT OF
OREGON

FORTH

GREENLOTS

ORDER NO. 18 054

PORTLAND GENERAL ELECTRIC
COMPANY

STAFF OF THE PUBLIC UTILITY
COMMISSION OF OREGON

CITIZENS' UTILITY BOARD
OF OREGON

Don O. Gornish 0/6/0 Tyler C. Pepple

INDUSTRIAL CUSTOMERS OF
NORTHWEST UTILITIES

OREGON DEPARTMENT
OF ENERGY

TESLA, INC.

TRI-COUNTY METROPOLITAN
TRANSPORTATION DISTRICT OF
OREGON

FORTH

GREENLOTS

PORTLAND GENERAL ELECTRIC
COMPANY

STAFF OF THE PUBLIC UTILITY
COMMISSION OF OREGON

CITIZENS' UTILITY BOARD
OF OREGON

INDUSTRIAL CUSTOMERS OF
NORTHWEST UTILITIES

Richard Wallace 6/27/17
OREGON DEPARTMENT
OF ENERGY

TESLA, INC.

TRI-COUNTY METROPOLITAN
TRANSPORTATION DISTRICT OF
OREGON

FORTH

GREENLOTS

PORTLAND GENERAL ELECTRIC
COMPANY

STAFF OF THE PUBLIC UTILITY
COMMISSION OF OREGON

CITIZENS' UTILITY BOARD
OF OREGON

INDUSTRIAL CUSTOMERS OF
NORTHWEST UTILITIES

OREGON DEPARTMENT
OF ENERGY

Michael J. ... Attorney for
TESLA, INC. 6/27/2017

TRI-COUNTY METROPOLITAN
TRANSPORTATION DISTRICT OF
OREGON

FORTH

GREENLOTS

PORTLAND GENERAL ELECTRIC
COMPANY

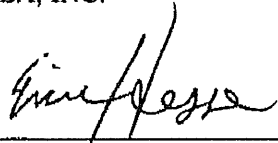
STAFF OF THE PUBLIC UTILITY
COMMISSION OF OREGON

CITIZENS' UTILITY BOARD
OF OREGON

INDUSTRIAL CUSTOMERS OF
NORTHWEST UTILITIES

OREGON DEPARTMENT
OF ENERGY

TESLA, INC.



TRI-COUNTY METROPOLITAN
TRANSPORTATION DISTRICT OF
OREGON

FORTH

GREENLOTS

PORTLAND GENERAL ELECTRIC
COMPANY

STAFF OF THE PUBLIC UTILITY
COMMISSION OF OREGON

CITIZENS' UTILITY BOARD
OF OREGON

INDUSTRIAL CUSTOMERS OF
NORTHWEST UTILITIES

OREGON DEPARTMENT
OF ENERGY

TESLA, INC.

TRI-COUNTY METROPOLITAN
TRANSPORTATION DISTRICT OF
OREGON

FORTH



GREENLOTS

APPENDIX 1:

UM1811 Draft Pilot Learnings by Program, Subject to Revision by Stipulating Parties to this Docket

- TriMet
 - Future Program design elements, including
 - What's pricing
 - tariff structure
 - line extension
 - Line drop
 - Suppliers
 - What distribution requirements
 - Technical assistance program elements
 - The impacts of depot chargers on PGE's distribution system and non-coincident peak loads.
 - Coincident peak demand impacts of high-powered bus charging.
 - The additional infrastructure, if any, needed to support and ensure high reliable bus charging infrastructure (and applicable costs).
 - Fleet impacts and fleet facility upgrade costs (to support technical assistance to other bus-fleet customers).
 - Charging infrastructure installation, operation, and maintenance costs.
 - Our initial deployment with TriMet will include time of use rates with demand charges (through Schedule 85-P). We intend to study the system impacts on peak days, evaluate the bus charging use case, assess the customer's needs, and develop models that we believe will be beneficial to all customers. We may include these alternative dynamic pricing elements in the future to maximize the benefit of this program to all customers.
- Outreach & Education
 - The impact of outreach efforts on awareness of electric vehicles in the service area.
 - The impact of technical assistance programs on the installation of workplace EV chargers.
 - The impact of outreach efforts on the consideration of electric vehicle for new car shoppers.
 - The impact of outreach efforts on overall sales and leases of electric vehicles in the service area.
 - The major challenges business customers face when planning for and siting electric vehicle charging infrastructure.
 - Survey customers on their awareness of electric vehicles and their exposure to our electric vehicle marketing campaigns. This approach will provide important data in case impacts are difficult to decipher from market-level sales data analysis. We will also ask customers whether marketing influenced their purchase as an indicator of effectiveness.
 - Deploy survey instruments to a variety of populations, including:
 - Recent EV purchasers

- Recent technical assistance customers
 - Recent non-EV purchasers
 - Trade allies (dealers, manufacturers)
 - Key stakeholders (Drive Oregon, transportation authorities, program staff)
 - Data collected from these populations will be critical in measuring impacts at each step of the vehicle purchasing process and on EV owners' charging behavior.
- Electric Avenue Network
 - The impact of the presence of visible, reliable, and accessible charging infrastructure on
 - Customers' willingness to purchase an EV
 - Customers' willingness to take longer trips in an EV
 - Who the predominant users of the charging infrastructure are
 - Whether there are distinct use cases with predictable load profiles
 - Whether the chargers are regularly utilized by non-PGE customers
 - Network load profiles and the impacts on PGE's distribution system and non-coincident peak loads of DC Quick Chargers, which will become increasingly important as we look at upgrading quick chargers to >100 kW units.
 - The impacts of time-variant rates on customer use of charging infrastructure.
 - The additional infrastructure, if any, needed to support and ensure high reliable public charging infrastructure (and applicable costs). What siting criteria can be utilized to limit or reduce distribution system upgrades necessary to install quick charging infrastructure.
 - Charging infrastructure installation, operation, and maintenance costs.
 - Challenges and best practices in permitting, designing, and siting DC quick charging infrastructure.
 - Revenue
 - Coincidence Factor of Charging Stations
 - Utilization
 - Load Profile
 - Load Factors
 - Accessibility
 - Other relevant data:
 - Load profile
 - Utilization
 - Duration
 - Voltage & Power quality
 - kWh delivery
 - Insight about price sensitivities
 - Insight about time-variant rates
 - How often customers charge
 - Type of vehicles customers drive

Any additional insights as a result of the pilot