

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UM 1810

In the Matter of)	
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PUBLIC UTILITY COMMISSION OF)	REPLY TESTIMONY OF THE OREGON
OREGON)	DEPARTMENT OF ENERGY
)	
PacifiCorp Applications for)	
Transportation Electrification Programs,)	
Implementing Section 20 of Senate)	
Bill 1547 (2016))	
_____)	

Introduction

The Oregon Department of Energy (“ODOE,” or “Department”) appreciates the opportunity to comment on the PacifiCorp (doing business as Pacific Power, also known as PacifiCorp) Application for Transportation Electrification Programs, docketed as UM 1810. The Department looks forward to engaging in this proceeding over the coming months. Overall, ODOE wishes to acknowledge PacifiCorp’s significant efforts in developing a pilot project that fits within the complex guidance defined by Section 20 of Senate Bill 1547 (2016) and by the Public Utility Commission’s (PUC, or Commission) interpretations of that guidance in administrative rule (AR 599).

**General Comments on Legislative Guidance for Transportation Electrification Programs:
Senate Bill 1547 (2016)**

In Section 20(4) of Senate Bill 1547 (2016), the Legislature directs the Public Utility Commission to consider several factors “when determining cost recovery for investments and

other expenditures” for programs to accelerate transportation electrification.¹ ODOE’s comments and engagement in this proceeding will focus on the following factors identified in SB 1547, which are related to the Department’s goal of promoting energy efficient transportation:

(4)(c) [whether the investments and other expenditures] are reasonably expected to be used and useful as determined by the Commission;

...

(4)(f) [whether the investments and other expenditures] are reasonably expected to stimulate innovation, competition and customer choice in electric vehicle charging and related infrastructure and services.²

A third factor cited in Section 20(4) relates to a state energy goal established by the Legislature in ODOE’s founding statute, to encourage “the development and use of a diverse array of permanently sustainable energy resources.”³ Through a variety of projects, ODOE is working with other stakeholders to expand and improve the ability of the grid to accommodate an increasing percentage of renewable energy resources while maintaining grid reliability, and furthermore, to realize the potential for renewable energy resources to provide ancillary services that support grid resilience. When considering transportation electrification programs, the Legislature directs the Commission to consider:

(4)(e) [whether the investments and other expenditures] 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[.]⁴

In its application, PacifiCorp cites the first of three paragraphs from the definition of “transportation electrification” in SB 1547: “(A) the use of electricity from external sources to provide power to all or part of a vehicle.”⁵ The Department respectfully suggests that the second

¹ Senate Bill 1547 (2016), codified as Oregon Laws 2016, Chapter 28, Section 20(4).

² Senate Bill 1547 (2016), codified in Oregon Laws 2016, Chapter 28, Section 20(4)

³ ORS 469.010(2)(a).

⁴ Senate Bill 1547 (2016), codified in Oregon Laws 2016, Chapter 28, Section 20(4).

⁵ Senate Bill 1547 (2016), codified as Oregon Laws 2016, Chapter 28, Section 20(1).

and third paragraphs of the definition provide more relevant guidance for an electric utility: “(B) *Programs related to developing the use of electricity for the purposes described in subparagraph (A) of this paragraph and (C) Infrastructure investments related to developing the use of electricity for the purpose described in subparagraph (A) of this paragraph.*”⁶ ODOE interprets this definition to mean that not all programs under SB 1547 need to focus directly on the electric vehicle itself, but that there should also be consideration given to the system-scale physical infrastructure needed to support commercial and residential charging of electric vehicles, as well as critical aspects such as rate structures and incentives. ODOE’s comments will focus on the elements in paragraphs (B) and (C).

Oregon Department of Energy Specific Areas of Interest

PacifiCorp’s application proposes to launch pilot efforts to stimulate the use of electricity as a transportation fuel and to collect data to better understand the market for supplying energy to electric vehicles (EVs) and the forces that influence the EV market. The Department agrees with PacifiCorp that the EV market is nascent and currently poorly understood in relation to key market drivers, and believes that PacifiCorp’s emphasis on pilot programs is appropriate. PacifiCorp’s proposals include: 1) a public charging pilot, 2) an outreach and education pilot, and 3) a demonstration and development pilot.

ODOE is largely supportive of the Company’s proposals for its outreach and education pilot and demonstration and development pilot programs, but has included suggestions below for strengthening these programs. In addition, ODOE suggests the following topics for discussion concerning the public charging Pilot:

⁶ Senate Bill 1547 (2016), codified as Oregon Laws 2016, Chapter 28, Section 20(1).

- 1) Appropriateness of the Company's proposed infrastructure for its Oregon service territory, including considerations like current and expected EV market penetration, and geographic and demographic characteristics;
- 2) Rate structures, taking into account impacts and opportunities to support innovative grid functions like storage, demand response, load management, and managed charging;
- 3) EV charger infrastructure siting criteria and strategy; and
- 4) Information and evaluation metrics.

1) Appropriate Charging Infrastructure Location and Technology for PacifiCorp's Service Territory

ODOE acknowledges the challenges in understanding and planning for electric utility involvement in the use of electricity as a transportation fuel. ODOE suggests that perhaps a finer scale analysis of market participants may lead to more accurate conclusions and increase the likelihood of success for pilot programs.

In the April 12, 2017 supplement to its initial application, PacifiCorp cited feedback the Company received from its initial outreach attempts that resulted in comments from 52 end-users, 30 of whom reside in the Portland area.⁷ PacifiCorp emphasizes that most of its 600,000 Oregon customers are in rural areas; therefore ODOE suggests that while the Portland view of EV growth strategy may be applicable to dense urban metropolitan environments, this viewpoint may not apply to the majority of PacifiCorp customers. This leaves 22 people, or 0.0042 percent of PacifiCorp's customer base, providing input to assist in defining strategies for the Company's Transportation Electrification proposal. It is unclear from the April 12, 2017, UM 1810

⁷ UM 1810 – PacifiCorp's Application for Transportation Electrification Programs – Supplement, April 12, 2017.

supplemental submission what influence this small, but willing to participate, survey group had on the proposed general program outline. Given the reference documents cited in the proposal, ODOE questions PacifiCorp's conclusion that installation of utility owned public and non-residential charging stations are the best strategy for the Company to assist in supporting the EV market across its diverse Oregon territory. The low EV ownership values for rural areas presented in PacifiCorp's UM 1810 application seem to indicate that much of PacifiCorp's rural territory has not gone through the introductory phase of EV use with a significant number of first adopters. In addition, the studies PacifiCorp mentions seem to suggest that first adopters tend to use home charging for more than 80 percent of their charging needs. Jumping past this market segment by focusing only on non-residential or public chargers may result in stranded assets and misinterpretation of market signals.

ODOE acknowledges the significant challenge of identifying market drivers, and suggests that PacifiCorp develop a more targeted strategy that divides its potential end users into finer categories such as dense urban metropolitan users, rural users, long distance drivers, and urban commuters. Each of these potential user segments should influence the type and location of public infrastructure, commercial versus residential EV charging schedules, and location-specific incentive programs. A theoretical example could include helping fund (and site) public Direct Current Fast Charging (DCFC) chargers for long-distance travelers or dense urban areas, and Level 2 residential chargers in rural areas where there are very low EV penetration rates. A further benefit of a more granular approach should be better data to support PacifiCorp's self-directed system improvements, including but not limited to storage, smart grids, two-way communication, demand response capabilities, transformer or substation upgrades or other innovative approaches needed to smoothly incorporate increased demand for electricity to charge

EVs, and the opportunities it represents, as technologies and the associated business models evolve.

PacifiCorp has also identified in its UM 1810 application that multifamily housing is not being supported with EV infrastructure. PacifiCorp cites evidence from an Oregon Department of Transportation study that found that affordability is a major constraint for EV ownership in rural Oregon.⁸ A secondary market for used EVs may exist in larger metropolitan areas, but may not exist in smaller communities, including the rural portions of PacifiCorp's territory. Furthermore, without the development of first adopter markets that would then provide vehicles to the secondary market, growth of a secondary EV market segment in rural Oregon may not be likely in the near future. Because cost is such a significant factor for EV ownership in these areas, ODOE suggests that PacifiCorp consider strategies other than DCFC pods at multifamily housing in the rural portions of PacifiCorp's territory.

2) Innovative rate structures

ODOE commends PacifiCorp on its initial efforts to develop innovative rate structures that can help commercial EV charging companies maintain viability in the short term market development period as well as encourage EV use. These innovative rate schedules should also encourage the residential charger to operate at times and in a manner that is both beneficial to and supportive of opportunities in utility company controlled operation and management of the electric grid. Some rate structure expansions may be necessary if PacifiCorp takes a more granular market approach and further differentiates the end user group categories.

⁸ Oregon Department of Transportation, Final Report on Impacts of Road Usage Charges in Rural, Urban and Mixed Counties, June 2013, <http://www.oregon.gov/ODOT/HWY/RUFPP/Road%20Usage%20Charge%20Program%20Documents/08-Impacts%20of%20Road%20Usage%20Charging%20in%20Rural,%20Urban,%20Mixed%20Counties%202013.pdf>.

One topic not mentioned in any of the pilots is the needed common network and communication technology that would allow end users to seamlessly access any commercial charging station with a single ID and billing application, receive clear pricing information prior to charging, and allow communication (and control) between the car, charger, billing network, and the utility. While this direct task may be beyond PacifiCorp's current scope, PacifiCorp could make a significant contribution to the solution by starting a conversation on system-wide, universally-accepted communications and control technologies that could benefit the utility, the commercial charging companies, and the end user of PacifiCorp-provided electricity.

3) Siting Criteria

Given the general nature of the PacifiCorp proposal, accurate siting of DCFC for maximum end user acceptance and use could be problematic. In addition, the lack of a clear monitoring strategy that ties goals to objectives and metrics could make it difficult to determine the market drivers of success.

PacifiCorp's siting criteria are: in the public right of way, preferably curbside, donated or low cost easements, PacifiCorp's owned lands, visibility, availability of electrical service, future proofing, and permitting.⁹

It is unclear how siting criteria for EV charging infrastructure will vary depending on the target end user. For the long range EV traveler will it be freeway proximity, visual security, or convenience to amenities while charging, while for the urban EV owner will it include charging locations at a grocery store or, public buildings, or community amenities? How will the siting criteria be applied and weighted to ensure success, or measure effectiveness for the end user, as

⁹ UM 1810 PacifiCorp's Application for Transportation Electrification Programs- Supplement, April 12, 2017, at page 37, table 5 and page 38, table 6.

opposed to criteria that support development or ownership convenience as the primary deciding factor? ODOE suggests that PacifiCorp develop ranking/weight factors for its siting criteria and a method for applying these criteria to specific user group goals.

4) Information gathering and proposed evaluation metrics

ODOE has concerns about the lack of detailed metrics to evaluate the effectiveness of the public charging proposals within UM 1810. If PacifiCorp's intent with this proposal is to "reduce market barriers identified in its service area,"¹⁰ then ODOE suggests a more granular evaluation of those distinctly different service areas, and their unique customer profiles, rather than the currently proposed more general approach. The program in Chapter 3 could benefit from a clearer hypothesis against which PacifiCorp can collect data and test assumptions. For instance, would increasing the number of publicly available DCFC stations increase EV use, or EV ownership, within the Portland metro area in a similar manner as in Pendleton, White City, or Sweet Home? Would a larger number of publicly available DCFC stations increase urban use/ownership or long distance travel? The Department suggests that PacifiCorp develop a clear hypothesis and metrics to measure and evaluate these hypothesis for each user demographic. ODOE is also concerned that there does not seem to be clear metric-to-goal relationships defined in the document with regard to measuring the effectiveness of siting decisions.

Outreach and Education Pilot

ODOE finds that the PacifiCorp outreach and education plan is comprehensive and a reasonable extension of its existing green energy and conservation outreach efforts. ODOE suggests that PacifiCorp modify its technical support proposal to include residential support in

¹⁰ UM 1810 PacifiCorp's Application for Transportation Electrification Programs- Supplement, April 12, 2017, at page 2.

communities that do not have a significant number of first adopters for EVs. In addition, ODOE would be interested to see the best practices recommendations for siting, configuration, installation, and equipment management that the supplemental proposal references and that PacifiCorp is proposing to provide to interested non-residential entities.

Demonstration and Development Pilot

Consistent with our earlier comments, ODOE suggests that PacifiCorp's demonstration and development pilot program could be strengthened by evaluating the different market segments and developing more tailored strategies for improving EV acceptance. In this vein, it may be appropriate to offer incentives to some segments of the market to install Level 2 residential chargers with the requirement that it is in conjunction with a new (new to that household) EV purchase or lease.

Conclusion

The Department appreciates this opportunity to provide initial comments on UM 1810 and is looking forward to continued participation in the development of this innovative program.

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Respectfully submitted,

ELLEN F. ROSENBLUM
Attorney General

/s/ Jesse D. Ratcliffe

Jesse D. Ratcliffe, OSB #043944
Senior Assistant Attorney General
Natural Resources Section