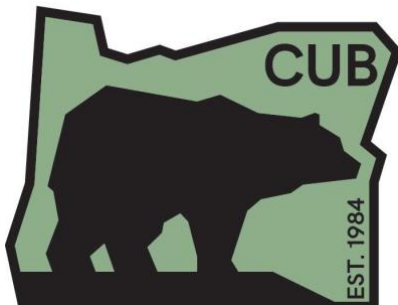


BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON
UM 2056

In the Matter of)
)
PACIFICORP, dba PACIFIC POWER,)
)
Oregon Transportation Electrification Plan.)
_____)

COMMENTS OF THE
OREGON CITIZENS' UTILITY BOARD

March 27, 2020



**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UM 2056

In the Matter of)

PACIFICORP, dba PACIFIC POWER,)

Oregon Transportation Electrification Plan.)

COMMENTS OF THE
OREGON CITIZENS' UTILITY
BOARD

I. INTRODUCTION

The Oregon Citizens' Utility Board (CUB) submits these comments on PacifiCorp's (PAC or the Company) Oregon Transportation Electrification Plan (TE Plan or Plan), filed on February 3, 2020.¹ PAC produced this plan at the direction of Oregon Public Utility Commission (PUC) Order No. 19-134, which adopted rules for the filing and development of TE Plans.²

CUB appreciates PAC's efforts to address the rules promulgated in Order No. 19-134, as well as its efforts to address the goals for advancing transportation electrification in the state as formulated in various bills and measures of Oregon's Governor, the Oregon Legislature, and local communities. The need for transportation electrification was articulated in the state's decarbonization goals, and there is great urgency to electrify the transportation sector given that the transportation sector accounted for 40% of the state's greenhouse gas (GHG) emissions in 2019.³ Further, in 2007 Oregon adopted a target to reduce GHG emissions by 75% from 1990 levels, and in 2019 the State adopted aggressive electric vehicle (EV) targets to have 250,000 EVs on Oregon roads by 2025.⁴ Governor Kate Brown's Executive Order 20-04 directed the PUC to "[e]ncourage electric companies to support transportation electrification infrastructure that supports GHG reductions [and] helps achieve the transportation electrification goals set forth in Senate Bill 1044 (2019)"⁵ While CUB believes there is a role for utilities to play in

¹ UM 2056 – PacifiCorp, dba Pacific Power Oregon Transportation Electrification Plan.

² *In re Rulemaking Regarding Transportation Electrification Plans*, OPUC Docket No. AR 609, Order No. 19-134 (Apr. 16, 2019).

³ Oregon Global Warming Commission, 2018 Biennial Report To The Legislator Report (2018), *available at* <https://static1.squarespace.com/static/59c554e0f09ca40655ea6eb0/t/5c2e415d0ebbe8aa6284fdef/1546535266189/2018-OGWC-Biennial-Report.pdf>.

⁴ ORS 469A.205; Oregon Senate Bill 1044, *available at* <https://olis.leg.state.or.us/liz/2019R1/Downloads/MeasureDocument/SB1044/Enrolled>.

⁵ Office of the Governor, State of Oregon, Executive Order 20-04 at 8 (Mar. 10, 2020).

promoting EV adoption, we believe it must be done in a manner that maximizes the benefits that EVs can bring to the electric system and its ratepayers.

CUB's Comments are organized in two main sections. Section II represents CUB's comments on various aspects of PAC's TE Plan. Section III describes an alternative, innovative method for evaluating whether electric vehicle (EV) investments are cost effective. CUB articulated this method in its comments on Portland General Electric Company's (PGE) TE Plan.⁶ While EVs are not as well established in PAC's service territory as they are in PGE's, PAC estimates there were 5,600 light-duty vehicles in its service territory at the end of 2019, and that number is expected to grow to over 26,000 by 2025.⁷ This corresponds to a growth in light duty EV-related load from 3,177 MWh in 2019 to 16,405 MWh in 2025.⁸ According to more recent data from the Oregon Department of Environmental Quality, there were 4,988 total EVs in PAC's system at the end of December 2019.⁹ Regardless of the number of EVs, CUB believes that PAC is uniquely positioned to help maximize the potential benefits that EVs can bring to its system given the growth in EV load that the Company will be experiencing.

II. COMMENTS ON PAC'S TE PLAN

1. Minimizing system impacts and maximizing ratepayer benefits.

As CUB has emphasized in prior proceedings regarding TE, it is paramount that Oregon's electric utilities plan for EV load in a manner that enables them to minimize any harmful system impacts and maximizes the benefits that all ratepayers—regardless of whether they own an EV—can realize.¹⁰ The integration of EVs can provide great system and ratepayer benefits if the vehicles are properly managed and planned for. Rocky Mountain Institute (RMI) has discussed the need to invest in integrating EVs to the grid to gain the maximum level of benefits that EVs promise. If we ignore EVs and do not proactively manage their loads, there will be costs to the utility system. According to RMI:¹¹

If utilities respond to EV loads late and reactively, that could:

- Shorten the life of grid infrastructure components
- Require greater investment in gas-fired peak and flexible capacity
- Make the grid less efficient
- Increase the unit costs of electricity for all consumers

⁶ *In re Portland General Electric Company's 2019 Transportation Electrification Plan*, OPUC Docket No. UM 2033, CUB's Comments (Dec. 6, 2019).

⁷ UM 2056 – Pacific Power Oregon Transportation Electrification Plan at 3, Table 1 (Feb. 3, 2020) (hereafter PAC TE Plan).

⁸ PAC TE Plan at 20, Table 7.

⁹ Oregon Department of Environmental Quality, Data for the Clean Fuels Program *available at* <https://www.oregon.gov/deq/aq/programs/Pages/Clean-Fuels-Data.aspx>.

¹⁰ *See, e.g.*, UM 1810 – CUB/100/Jenks/4-6 and UM 2033 – CUB's Comments on PGE's 2019 Transportation Electrification Plan at 2.

¹¹ Garrett Fitzgerald, Chris Nelder and James Newcomb. *Electric Vehicles as Distributed Energy Resources*, Rocky Mountain Institute, 2016 p. 6 and 7
http://www.rmi.org/Content/Files/RMI_Electric_Vehicles_as_DERs_Final_V2.pdf

- Inhibit the integration of variable renewables, and increase curtailment of renewable generation when supply exceeds demand
- Increase grid-power emissions
- Make the grid less stable and reliable

However, if utilities anticipate the load of charging EVs and plan for it proactively, they can not only accommodate the load at low cost, but also reap numerous benefits to the entire system. Shaping and controlling EV charging can:

- Avoid new investment in grid infrastructure
- Optimize existing grid assets and extend their useful life
- Enable greater integration of variable renewables (wind and solar photovoltaics) without needing new natural-gas generation for dispatchable capacity, while reducing curtailment of renewable production
- Reduce electricity and transportation costs
- Reduce emissions of CO₂ and conventional air pollutants
- Improve energy security
- Provide multiplier benefits from increased money circulating in the community
- Supply ancillary services to the grid, such as frequency regulation and power factor correction¹²

Perhaps the greatest harm to the electric system from EVs occurs when these vehicles are charged during on-peak hours. In order to avoid this problem, utilities can create price incentives and tariffs to help urge customers to shift their charging to off-peak times. Given that most EV charging occurs at home,¹³ PAC and other Oregon electric utilities should create programs and incentives for residential customers to alter their EV charging behavior in a manner that can benefit the grid.

For its part, the Company believes that its distribution planning study processes are sufficiently robust that it will be able to “account for and prepare the system for the installation of residential EVSE.”¹⁴ The Company performed an independent study to determine the impact that EV penetration could have on its system which included sensitivities that went up to 40 percent higher than the state-level adoption forecast.¹⁵ CUB believes the Company’s methodology in determining whether oncoming EV load will harm its system is sound.

However, there is a difference between ensuring that oncoming EV load will not harm a utility’s system and proactively placing incentives and programs in place to ensure that EV load will benefit *all* ratepayers. Addressing the load shape of home charging is the primary tool to ensure that system and ratepayer benefits are captured. Two key programs and tariffs that can help unlock these benefits are time-of-use (TOU) charging rates and utility managed charging.

¹² Burns & McDonnell, “SPIDERS Delivers First-of-a-Kind Bidirectional Electric Vehicle Charger at Fort Carson, Colorado,” August 30, 2013. http://www.burnsmcd.com/insightsnews/news/releases/2013/08/spidersdeliversfirstofakind-bidirectional-elec___.

¹³ PAC TE Plan at 27.

¹⁴ PAC TE Plan at 28.

¹⁵ *Id.*

TOU charging raises the cost of charging on-peak and lowers the cost of charging off-peak. This creates a price signal to incent EV-driving customers to move their charging off times that would create the greatest costs to the system. By moving charging off-peak, the cost of service that load is reduced and the grid (i.e., distribution system) impact is minimized because the grid is underutilized during off-peak hours.

In its TE Plan, PAC broadly discusses the benefits of TOU rates and states that it “anticipates that it will introduce new time-varying rate options as well as propose ongoing refinement to existing rate structures within the context of ratemaking proceedings.”¹⁶ PAC states that it plans to “propose cost-based rates that promote TE” in its next Oregon general rate case.¹⁷ CUB will appropriately address that proposal in that proceeding. Further, PAC discusses benefits that TOU, direct load control, and distribution system planning tools can potentially offer customers and its system without getting into many details.¹⁸

While these programs and policies can undoubtedly offer benefits, CUB would like to see a more robust discussion of specific deliverables that may come as these are rolled out on PAC’s system, and what barriers need to be overcome for the Company to achieve its goals. For example, PAC has already installed smart meters throughout its service territory. This technology may help the Company get past the two largest barriers to TOU charging. The first barrier is that TOU requires Level 2 charging, because the off-peak period is not long enough to charge an EV. The second is the need to either place a whole house on TOU or add a second meter, which is cost prohibitive. CUB believes that both can be overcome with a grid connected Level 2 charger. In Minnesota, Xcel Energy has agreed to allow EV-only TOU billing utilizing data collected from a single meter, rather than requiring the installation of a second meter.¹⁹ CUB believes that this can be accomplished by using data from a grid connected charger.

CUB would like to see a proposal by the Company to utilize its smart meters to create an EV-only TOU rate with a grid connected Level 2 charger. In its TE Plan, PAC talks about the ability of EVs to integrate renewables, but fails to provide many concrete examples. A grid connected Level 2 charger with a TOU rate would push a substantial amount of home charging off-peak hours and would help integrate variable renewable generation (i.e., wind that blows at night when demand is low). Further, creating home charging options that provide benefits to customers will help spur EV adoption throughout PAC’s service territory. If a potential EV customer’s local utility has programs that can help them charge their vehicle in a manner that benefits them, they are more likely to get an EV.

///
///

¹⁶ PAC TE Plan at 29.

¹⁷ *Id.*

¹⁸ PAC TE Plan at 29-30.

¹⁹ <https://www.utilitydive.com/news/xcel-ev-charging-pilot-would-eliminate-need-for-2nd-meter/511877/>

2. *Utility role in accelerating TE in a mostly rural service territory.*
ii.

CUB believes that PAC is uniquely positioned to help EV growth in rural areas across the state within its service territory. Expanding EV penetration in these areas has been no small feat in recent years. One of the major challenges in EV infrastructure investment decisions in these areas is explained by the “utilization gap” illustrated in Figure 9 in PAC’s TE Plan.²⁰ Generally speaking, the gap exists when charging demand is less than the available charging infrastructure. This gap poses a chicken and egg problem in terms of low utilization of existing charging facilities preventing new infrastructure investment which in turn deters adoption. PAC identifies this issue and states that in order to address the utilization gap, the Company is introducing five DCFC chargers that it believes should help boost EV adoption in the rural areas.

CUB is curious about the analysis that led the Company to come up with the DCFC proposal. In this context, CUB would like to point out available technologies and innovative solutions that are being developed in other parts of the country. For instance, the National Renewable Energy Laboratory (NREL) has developed an Electric Vehicle Infrastructure Projection Tool (EVI-Pro) to estimate customer demand for charging infrastructure.²¹ Has PacifiCorp made use of similar analytical tools to determine the number of DCFC chargers?

CUB would also like to point out alternative and innovative ways that other utilities in other states are addressing the utilization gap.

At Rocky Mountain Institute’s 2019 Mobility Innovation Lab (MIL), several teams addressed the challenge of accelerating EV adoption in rural and underserved communities.²² For rural communities in particular, one important message was that there is significant risk in not preparing for the additional load from EVs even if the benefits to the system do not appear to be significant due to low adoption. The team that proposed a set of actions for load serving entities (LSE), in particular co-ops, in rural areas also stressed on setting specific goals prior to designing actions. The goals include:

- Preparing for the bare minimum so that the utility’s system is not adversely affected;
- Ensuring customers that own EVs to have a great experience; and
- Proactively drive EV adoption and capture opportunities.

PacifiCorp needs to set goals for the rural areas that it serves and design its actions accordingly.

The guidelines provided by the team at the MIL include but are not limited to:

- Dedicating staff and developing models and tools to understand industry and technology trends, and the interaction between current rates and EV charging, and, exploring partnerships with other LSE-s, industry organizations, and others.
- Develop EV charging rates to manage loads

²⁰ PAC TE Plan at 25.

²¹ <https://www.nrel.gov/docs/fy18osti/70831.pdf>

²² <https://rmi.org/spreading-electric-vehicles-beyond-early-adopters/>

- Deploy EV programs or pilots, or provide incentives and financing, deploy public infrastructure, build partnerships with original equipment manufacturers or dealerships.

CUB has already recommended an EV only TOU rate and grid connected Level 2 charger. CUB would like to add that partnership with other LSEs and local businesses would increase the number of potential users and also help mitigate the utilization gap. As seen in the December 2019 update on EV ownership by counties provided by Oregon DEQ, while every county in Oregon has at least 3 EVs, in most rural counties where PacifiCorp serves a considerable number of customers, EV adoptions are much lower than urban areas.²³ As PacifiCorp also recognizes, the utilization gap exists. Therefore, CUB recommends that the Company should look at various alternatives including forming partnerships with local organizations and LSEs to address the gap.

iii.

3. *Identifying and removing market barriers.*

Rule (3)(a)(B) of OAR 360-087-0020 states that a TE Plan must identify “market barriers that the electric company can address and other barriers that are beyond the electric company’s control, including any identified emerging challenges to transportation electrification.”²⁴

In compliance with the requirement PAC identifies six categories of market barriers that could impede EV adoption in its service territory. These include, awareness, decision-making, economic, policy/regulatory, technical/infrastructure and supply chain barriers. PAC also shows that it has varying degrees of influence over each of these barriers, by classifying these barriers under either “More” or “Less” in terms of the ability of the Company to impact them.²⁵ Although this provides some basic idea about market barriers and PacifiCorp’s influence, CUB believes a more detailed analysis is necessary in order to prioritize investment decisions.

CUB would like to refer to PGE’s 2019 TE Plan, in which the utility presents a ranking (1=low through 5= high) of its influence on various market barriers.²⁶ The ranking provides more detailed knowledge of the utility’s ability to create an impact. However, CUB pointed out that in order to realize the net impact of PGE’s ability there needs to be a relative ranking analysis of the barriers themselves. CUB appreciates that PGE responded to this recommendation and this additional analysis revealed that at present PGE is not able to have significant influence in removing the most important market barriers. CUB believes this type of detailed analysis is extremely important in prioritizing investment plans.

In this regard it would be useful to point out that SB 1547 § 20(4) states:
“If market barriers unrelated to the investment made by an electric company prevent

²³ Table 2, <https://www.oregon.gov/deq/FilterDocs/CFP-electricvehicles.pdf>

PacifiCorp serves all of Jackson county which has the highest number of EVs at 1,070 among its rural counterparts.

²⁴ https://oregon.public.law/rules/oar_860-087-0020

²⁵ PAC TE Plan at 35.

²⁶ Table 8, P. 27-28, Portland General Electric 2019 Transportation Electrification Plan.
<https://edocs.puc.state.or.us/efdocs/HAA/haa102039.pdf>

electric vehicles from adequately utilizing available electric vehicle charging infrastructure, the commission may not permit additional investments in transportation electrification without a reasonable showing that the investments would not result in long-term stranded costs recoverable from the customers of electric companies.”

CUB recommends that PacifiCorp perform a relative ranking analysis of the barriers separately for its urban and rural territories, along with the impact ranking for a better understanding of its role in removing market barriers for EV adoption.

III. FROM LINE EXTENSION ALLOWANCE TO GRID INTEGRATION ALLOWANCE

In our comments on PGE’s TE Plan, CUB unveiled a new methodology based off of PGE’s Line Extension Allowance (LEA)—the Grid Integration Allowance (GIA).²⁷ In an effort to be concise and distill that proposal, CUB incorporates it here by reference, but will provide a brief discussion of our proposal in UM 2033. In PGE’s territory, there is already sufficient new load being brought on by EVs that CUB believes PGE can justify spending money to serve that load now. Beyond “justifying spending” money, it is within the core responsibility of an electric utility to make investments to meet and manage load on its system.

Under a GIA methodology, the level of investment that is cost effective based on current EVs in the system and expected EVs over the next two to five years will be determined. Utilities would then be able to spend up to that amount of money—similar to a LEA methodology. PAC, for instance, could propose a budget for grid integrated charging and other distribution investments that are below the cap established by the GIA. Evaluation of the TE Plan would consider whether the programs are reasonable as a way to integrate electric vehicle load and whether each program should be acknowledged. Importantly, the portfolio of GIA-related investments should be acknowledged by the Commission prior to the Company expending capital to build them and later seeking rate recovery. This would align with traditional utility capital expenditure planning.

To be abundantly clear, CUB does not believe that a GIA method is appropriate for all parts of PAC’s service territory. Unlike PGE, there are simply not enough EVs to create sufficient load to make a program like this feasible. However, there are areas in PAC’s service territory (i.e. Multnomah County, Benton County, Deschutes County, Hood River County, and Jackson County) in which a version of this approach may make sense. In these areas, clearly identifying the load that will be brought on by EVs may be sufficient to justify EV-related investments to help manage and serve that load. For example, PAC can spend money in these areas to help customers get on a TOU tariff that is coupled with a grid-connected level 2 charger.

As discussed, PAC is uniquely situated. Unlike PGE, there is not already a ton of EVs on their system with uncontrolled charging. This enables PAC to get ahead of the EV curve to put systems and investments in place to ensure that the aforementioned system and ratepayer

²⁷ See UM 2033 – CUB’s Comments at 6-18 (Dec. 6, 2019).

benefits are realized. CUB would like to see a proposal from the Company to use a GIA-type approach to target and prioritize investments in areas of their service territory that already have a relatively high penetration of electric vehicles.

Signed this 27th of March, 2020.



Michael P. Goetz, OSB #141465
General Counsel
Oregon Citizens' Utility Board
610 SW Broadway, Ste. 400
Portland, OR 97205
(503) 227-1984 phone
(503) 224-2596 fax
mike@oregoncub.org



Sudeshna Pal, Economist
Oregon Citizens' Utility Board
610 SW Broadway, Ste. 400
Portland, OR 97205
T | 503.227.1984 x 10