ITEM NO. RA1

PUBLIC UTILITY COMMISSION OF OREGON
STAFF REPORT
PUBLIC MEETING DATE: June 16, 2020

REGULAR **X** **CONSENT** ____ **EFFECTIVE DATE** **June 16, 2020**

DATE: June 8, 2020

TO: Public Utility Commission

FROM: Eric Shierman

THROUGH: Bryan Conway, Michael Dougherty, JP Batmale, and Sarah Hall **SIGNED**

SUBJECT: OREGON PUBLIC UTILITY COMMISSION STAFF:
(Docket No. UM 2056)
Recommendation on acceptance of Pacific Power's Transportation Electrification Plan.

STAFF RECOMMENDATION:

Accept Pacific Power's (PacifiCorp or Company) Transportation Electrification Plan as having met the requirements of OAR 860-087-0020.

DISCUSSION:

Issue

Whether the Public Utility Commission of Oregon (Commission) should accept Pacific Power's Transportation Electrification Plan.

Applicable Rule

On April 16, 2019, the Commission issued Order No. 19-134, prescribing the required elements of utility transportation electrification plans (TE Plans or Plan). These elements were adopted as OAR 860-087-0020(3), under which utilities must report:

a) Current condition of the transportation electrification market in the electric company's Oregon service territory, including, but not limited to:

   A) A discussion of existing state policies and programs;

B) Market barriers that the electric company can address and the barriers that are beyond the electric company's control, including any identified emerging challenges to transportation electrification;

C) Existing data on the availability and usage patterns of charging stations;

D) Number of electric vehicles of various sizes in the utility service territory and projected number of vehicles in the next five years;

E) Other transportation electrification infrastructure, if applicable;

F) Charging and vehicle technology updates; and

G) Distribution system impacts and opportunities for efficient grid management.

b) A summary of the electric company's transportation electrification program(s) and future transportation electrification concepts and actions in its Oregon service territory. The TE Plan must incorporate project learnings and any other relevant information gathered from other transportation electrification infrastructure investments, programs, and actions to ensure that lessons learned are carried forward;

c) A discussion of how the electric company's investments, programs, and actions are expected to accelerate transportation electrification, address barriers to adoption, and extend access to traditionally underserved communities;

d) Supporting data and analysis used to develop the TE Plan, which may be derived from elements such as review of costs and benefits, rate design, energy use and consumption, overlap with other electric company programs, and customer and electric vehicle user engagement;

e) A discussion of the electric company's potential impact on the competitive electric vehicle supply equipment market, including consideration of alternative infrastructure ownership and business models, and identification of a sustainable role for the electric company in the transportation electrification market;

f) A discussion of the current and anticipated electric company system impacts resulting from increased transportation electrification and the electric company's portfolio of actions, how transportation electrification can support the efficient integration of renewable energy, and how the TE Plan is designed to address these system impacts; and

g) A discussion of how programs and concepts in the TE Plan relate to carbon reduction goals, requirements and other state programs, including expected greenhouse gas emission reductions based on publicly available metrics.

Under OAR 860-087-0020(2), Commission acceptance of a TE Plan means the Commission finds that a plan satisfies the requirements of this rule and does not constitute a determination on the prudence of the individual actions discussed in the plan. Non-acceptance means that the plan does not meet the rule requirements.

Analysis

Background
Pacific Power filed its TE Plan on February 3, 2020. In comments filed on March 26, 2020 and information requests send on May 18, 2020, Staff sought clarification and additional information in several areas. Five other parties also filed comments on this Plan: The Alliance of Western Energy Consumers (AWEC), The Oregon Citizens' Utility Board (CUB), ChargePoint, the Northwest Energy Coalition (NWEC), and Greenlots. The Company filed reply comments on May 1, 2020.

Staff Review
The Company's reply comments and later responses to Staff information requests addressed most of Staff's outstanding concerns. However, Staff believes it is worth exploring the issues from some of our May information requests in this report as those responses round out Staff's understanding of and view on PacifiCorp's Plan.

Knowing Customers and Understanding the TE Market
The Plan contrasted the demographics of most of Pacific Power's service territory with that of Multnomah County.[1] The Company described its Plan as uniquely tailored to its mostly rural territory.[2] Staff asked the Company to clarify what aspects of its plan are uniquely targeted to a rural, low-income population.[3] In reply comments, the Company said:

> Targeting specific population segments will be a crucial aspect of program design. TE programs will require flexible program design characteristics and timing to meet different needs in rural and urban areas. Needs of low income populations, weather in urban or rural areas, will require nuanced program design as well.
>
> Supporting vehicle electrification in rural America comes with a unique set of challenges. In the Company's comparison of this technology transition to that of wide-scale broadband access in rural America, the broadband example highlights a potential outcome Pacific Power is working to avoid, specifically, that rural areas get left behind. To avoid this outcome, the Company wants to support policies and offer programs that assure the dollars and focus of the programs remain available through an adoption period that is likely later and slower than in more urban markets.[4]

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[1] PacifiCorp. *Transportation Electrification Plan* February 3, 2020, page 14.
[2] PacifiCorp. *Transportation Electrification Plan* February 3, 2020, page 14.
[3] OPUC Staff. *UM 2056 Comments* March 26, 2020, page 2.
[4] PacifiCorp. *UM 2056 Reply Comments* May 1, 2020, page 13.

Staff sought further comment on how analogous rural transportation electrification is to rural access to broadband.[5] In reply comments the Company said:

> The broadband "rural digital divide" informs Pacific Power's strategy of rural community engagement in an effort to deploy resources to communities that may not yet have significant TE scale, but are key to ensuring a more inclusive and equitable charging infrastructure that connects urban areas with key transit points and destinations in rural areas.[6]

Staff agrees that if EVs become a lower-cost mode of transportation, transportation electrification may risk becoming analogous to the distribution of broadband services.

Number of EVs in Pacific Power's Service Territory

The Plan used the distribution of EVs in Oregon by county as a proxy for the distribution of EVs in the Company's service territory.[7] Staff sought this distribution based on Pacific Power's service territory. In reply comments, PacifiCorp said the Company does not have this county data broken down by utility service territory. Staff was able to obtain this data from the Oregon Department of Environmental Quality (DEQ).[8] For convenience and future reference, Staff includes this data here and encourages the Company to further reach out to DEQ in the future for this data.

County	BEV	PHEV	Total EVs	% of Grand Total
Benton County	376	250	626	11.37%
Clatsop County	88	66	154	2.80%
Coos County	53	67	120	2.18%
Crook County	11	10	21	0.38%
Deschutes County	460	265	725	13.17%
Douglas County	79	104	183	3.32%
Hood River County	87	46	133	2.42%
Jackson County	180	151	331	6.01%

[5] OPUC Staff. *UM 2056 Comments* March 26, 2020, page 2.
[6] PacifiCorp. *UM 2056 Reply Comments* May 1, 2020, page 13.
[7] PacifiCorp. *Transportation Electrification Plan* February 3, 2020, page 18.
[8] DEQ. *PacifiCorp by County.xlsx* May 14, 2020.

Jefferson County	10	13	23	0.42%
Josephine County	117	115	232	4.22%
Klamath County	46	58	104	1.89%
Lake County	1	3	4	0.07%
Lincoln County	39	37	76	1.38%
Linn County	159	134	293	5.32%
Marion County	43	53	96	1.74%
Multnomah County	1,470	709	2,179	39.59%
Polk County	64	64	128	2.33%
Sherman County	2	5	7	0.13%
Umatilla County	20	26	46	0.84%
Wallowa County	5	5	10	0.18%
Wasco County	9	4	13	0.24%
Grand Total	**3,319**	**2,185**	**5,504**	**100.00%**

This is helpful information, because without more granularity, it's not clear how much of the EVs are in PacifiCorp's Multnomah County service territory. Around 60 percent of the EVs registered in Pacific Power territory are outside Multnomah County. This granularity confirms the Company's EV count is not driven entirely by its customers in Portland.

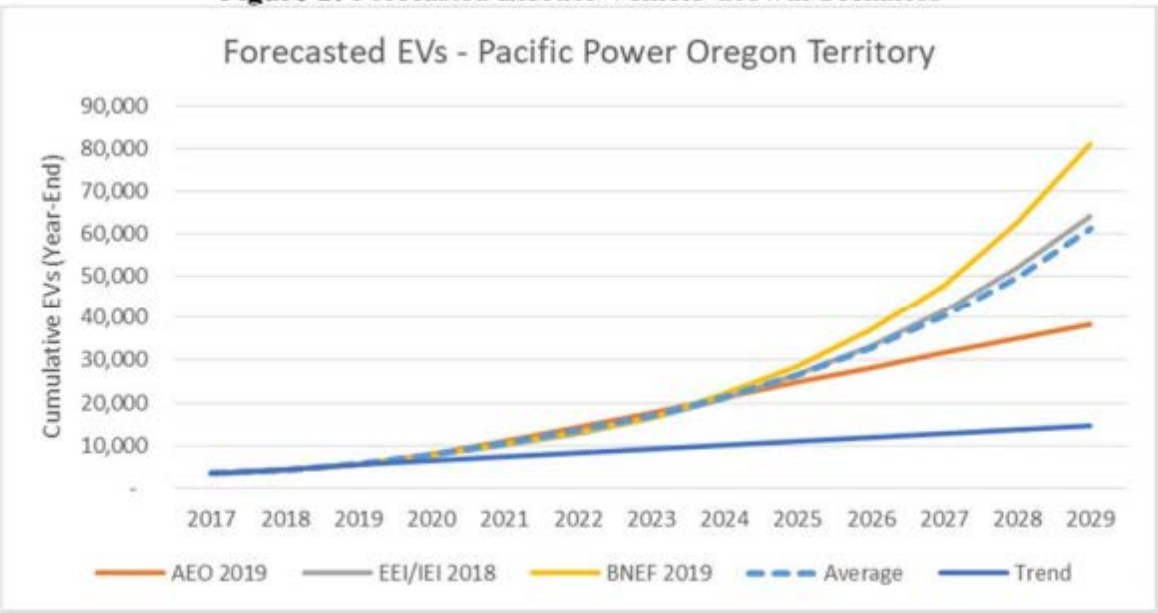
Projected Number of EVs in Pacific Power's Territory Through 2025

The Plan included the Company's first forecast of EVs in its Oregon service territory.[9] Staff sought a comparison of the forecast method with historical numbers from 2017 to 2018 in order to determine if the averages of past forecasts overestimated, or underestimated, the Company's known annual EV counts.[10]

[9] PacifiCorp. *Transportation Electrification Plan* February 3, 2020, page 19.
[10] OPUC Staff. *UM 2056 Comments* March 26, 2020, page 4.

In Figure 2, the Company replied with a trend analysis utilizing actuals from 2016 to 2019:[11]

Figure 2: Forecasted Electric Vehicle Growth Scenarios



All forecasts grow at a higher rate than an extrapolated trend of what has been observed in Pacific Power's service territory in recent years. This suggests the Company's forecast may overestimate EV adoption by Pacific Power's customers, a problem that can be further addressed in the next integrated resource plan and distribution system plan.

The Company's forecast of light duty EVs also included a load forecast in average MWs, an energy metric, which we appreciated.[12] However, Staff sought the corresponding forecast of peak load.[13] The Company replied that it has not conducted an EV peak load forecast and will not do so until the next IRP.[14] Staff is disappointed in this answer. We see an EV peak load forecast as a necessary component to basic planning for the impact of EVs on the Company's system.

PacifiCorp deserves credit for being the only regulated electric company in Oregon that ventured a forecast of medium and heavy duty vehicles.[15] Staff sought the energy and

[11] PacifiCorp. *UM 2056 Reply Comments* May 1, 2020, page 5.
[12] PacifiCorp. *Transportation Electrification Plan* February 3, 2020, page 22.
[13] OPUC Staff. *UM 2056 Comments* March 26, 2020, page 4.
[14] PacifiCorp. *UM 2056 Reply Comments* May 1, 2020, page 7.
[15] PacifiCorp. *Transportation Electrification Plan* February 3, 2020, page 22.

peak load implications of these larger EVs.[16] In Table 2 of the Company's reply comments, PacifiCorp presented the energy load in average MWs:[17]

Table 2: Pacific Power Oregon Average Cumulative Medium- and Heavy-Duty Vehicle Forecast through 2025

Year	2019	2020	2021	2022	2023	2024	2025	Total
Cumulative MD/HD Vehicles	2	2	6	10	14	20	27	
Incremental EV Impacts								
Vehicles	-	*0*	*4*	*4*	*4*	*6*	*7*	*25*
kWh	*226,000*	*0*	*369,705*	*411,780*	*478,498*	*569,866*	*717,159*	*2,773,009*
average MW	*0.03*	*0.00*	*0.04*	*0.05*	*0.05*	*0.07*	*0.08*	*0.32*

But again, PacifiCorp has no analysis for peak load. Staff would like to see a peak load forecast in the Company's next TE Plan.

Opportunities for Efficient Grid Management and Renewables Integration
The Company has been pursuing a time of use strategy to managing charging. Staff's review sought clarification in two issues that might inform future ratemaking decisions: how revenue collected from EV rates recover their costs and what future distribution costs ratepayers can expect to see from EV adoption. Staff appreciates the Company's responses, which indicate it is worth investigating potential cross-subsidization and cost recovery performance as well as possible needle peaking and increased system costs issues in proceedings related to the Company's rates. Staff will continue to review this data and, rather than detail the data exchanged on these particular issues in this report, will recommend the Commission address these issues in the appropriate ratemaking fora.

Staff also looked into ambiguity over how much money ratepayers will need to pay for distribution system upgrades caused by EV adoption in the Company's territory. The Plan did not map its forecast of EVs onto a model forecasting transformer upgrades. Staff sought the number of transformer upgrades PacifiCorp expects EV adoption to require by 2025.[18]

In reply comments, the Company stated:

> Pacific Power's Oregon service territory consists of urban, suburban, and rural areas that will have different EV adoption rates for each area. It is expected that urban areas will have higher adoption rates of EVs compared to suburban and

[16] OPUC Staff. *UM 2056 Comments* March 26, 2020, page 4.
[17] PacifiCorp. *UM 2056 Reply Comments* May 1, 2020, page 5.
[18] OPUC Staff. *UM 2056 Comments* March 26, 2020, page 5.

> rural areas. In rural and suburban areas, PacifiCorp expects one percent of the transformers will require upgrades by 2025. Urban area impact studies assume load will increase on feeders that primarily serve residential customers, since it is expected that these customers will have a higher adoption rate. Pacific Power expects a higher percentage of urban feeders could require upgrades. One initial analysis of limited sample size showed up to seven percent of transformers on urban feeders could require upgrades by 2025. These percentages are estimates and are based on limited sample size and the EV forecast.[19]

Staff followed up with four information requests. First we asked: "On page 7 of PacifiCorp's reply comments, the Company states: 'In rural and suburban areas, PacifiCorp expects one percent of the transformers will require upgrades by 2025.' How many total transformers will constitute one percent in 2025, and how many transformers are normally upgraded on an annual basis in rural and suburban areas?"[20]

The Company replied:

> In rural and suburban areas, one percent of the transformers that would require upgrades in 2025 would be approximately 60-100 transformers. This does not include new transformers installed as a part of new construction or accommodation projects. This one percent, or 60-100 transformers, is based on PacifiCorp's current electric vehicle forecast and review of historical trends regarding the number of transformers requiring upgrades due to new load additions. To provide context, PacifiCorp is currently upgrading approximately 10-20 transformers per year on average due to new load additions in suburban and rural areas.[21]

Next Staff asked: "Do current customer charges cover the increases in distribution costs (e.g., feeder upgrades) associated with EV customer charging?"[22] The Company replied: "No. As described on page 29 of Mr. Robert M. Meredith's direct testimony in the Company's general rate case (docket UE 374), the present basic charge does not cover the current marginal cost of billing- and commitment-related cost."[23]

Next Staff asked:

> The Company goes on to state: "Urban area impact studies assume load will increase on feeders that primarily serve residential customers, since it is expected that these customers will have a higher adoption rate. Pacific Power

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[19] PacifiCorp. *UM 2056 Reply Comments* May 1, 2020, page 7.
[20] OPUC Staff. *IR 7* May 18, 2020, page 1.
[21] PacifiCorp. *Response to OPUC Data Request 7* June 1, 2020, page1.
[22] OPUC Staff. *IR 8* May 18, 2020, page 1.
[23] PacifiCorp. *Response to OPUC Data Request 8* June 1, 2020, page1.

> expects a higher percentage of urban feeders could require upgrades." What higher percentage is expected, and how many total urban feeders are expected to require upgrades in 2025?[24]

The Company replied:

> PacifiCorp expects up to 3.5 percent of urban feeders could require upgrades based on the current electric vehicle (EV) forecast and adoption rates. It is critical to note that this forecast can be significantly impacted by customer demand and/or changing market conditions outside of PacifiCorp's control. As is expected, the forecast of expected percentage of upgrades will change as the EV forecast or adoption rates change. As with any customer or load request, the detailed scope of work for an upgrade on urban feeders based on the need to accommodate load can vary significantly from location to location and project to project. Specific to EV chargers in urban locations, the number of EV chargers added to a particular feeder has the potential to comparatively be much larger than non-urban locations due to customer density and, therefore, a higher percentage of urban feeders may require upgrades.[25]

Finally Staff asked what the expected cost of these upgrades is.[26] The Company replied:

> PacifiCorp recently performed an independent study to understand the potential system impacts from electric vehicle (EV) chargers and determined that, in most instances, accommodating an EV charger would require the replacement and upgrade of an overhead transformer, line fuse, or both. In rare instances, accommodating an EV charger may also require reconductoring a portion of the overhead/underground line. The costs associated with these upgrades can vary significantly based on location and exact scope required based on existing system configuration. However, PacifiCorp anticipates that the expected costs per upgrade associated with suburban, rural, and urban areas may range from $2,000 to $100,000, where the typical or average accommodation falls within the range of $4,000 to $10,000.[27]

From this series of information requests, an estimate of EV-caused distribution costs for the rural portions of Pacific Power's service territory can be derived using the more "typical" upgrade price range given of $4,000 to $10,000. By 2025, the expected distribution cost of rural transportation electrification is between $240,000 and

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[24] OPUC Staff. *IR 9* May 18, 2020, page 1.
[25] PacifiCorp. *Response to OPUC Data Request 9* June 1, 2020, page1.
[26] OPUC Staff. *IR 10* May 18, 2020, page 1.
[27] PacifiCorp. *Response to OPUC Data Request 10* June 1, 2020, page1.

$1,000,000, and the decision as to how these costs will be recovered has not yet been made.

Staff cannot yet derive the expected distribution costs of urban transportation electrification, because the Company failed to give the total number of upgrades that constitutes 3.5 percent of urban feeders as was requested in OPUC IR 9. In Staff's opinion, all of this analysis should have been in the Plan. The Commission needs to get the best estimates available of what these distribution costs will entail at some point. They should be included in the next TE Plan.

Rates
Staff sought the expected impact on peak load from proposed changes in rate design from the Company's general rate case.[28] In reply comments, PacifiCorp explained that because these are proposed pilot tariffs, estimations of their effects would be "speculative."[29] Disclosing the hypothesis that a pilot program is intended to test is not baseless speculation. It's an important part of the scientific method. Staff is disappointed in this answer and hopes the record developed in appropriate other proceedings will shed more light on what can be reasonably expected of the proposed pilot.

Stakeholder Comments
The Alliance for Western Energy Consumers (AWEC) filed comments, finding the Plan meets the reporting requirements of OAR 860-087-0200(2)(a). So AWEC recommends acceptance of PacifiCorp's Plan but qualifies that recommendation:

> AWEC's review of PacifiCorp's TE Plan indicates that it complies with the strict requirements of the above-mentioned rules and, therefore, should be accepted by the Commission. AWEC emphasizes, however, that its recommendation for acceptance is based solely on the requirements of the rules and does not indicate support for any subsequent TE Program PacifiCorp proposes from its TE Plan, or the substantive conclusions of PacifiCorp's TE Plan.[30]

The Oregon Citizens' Utility Board (CUB) filed comments, describing the need for an efficient integration of EV charging into PacifiCorp's grid. CUB would have preferred "to see a more robust discussion of specific deliverables" from the Plan.[31] Staff agrees.

CUB identified two barriers to EV adoption and utility programs to overcome them. The first is the length of time it takes to charge a vehicle at home, using Level 1 charging, can exceed the length of off-peak hours. CUB sees the dissemination of Level 2

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[28] OPUC Staff. *UM 2056 Comments* March 26, 2020, page 4.
[29] PacifiCorp. *UM 2056 Reply Comments* May 1, 2020, page 9.
[30] AWEC. *UM 2056 Comments* March 27, 2020, page 5.
[31] CUB. *UM 2056 Comments* March 27, 2020, page 5.

charging infrastructure as the solution. Staff agrees that EV owners will likely be frustrated with the time required to charge an EV with Level 1 charging equipment.

The second barrier is the cost of having to choose either a second meter or having the entire household on a TOU rate. CUB identifies an Xcel Energy program in Minnesota that allows EV-only billings from a single meter as a solution.[32] Staff notes the Company did not address this idea in its reply comments. EV-only billing from a single meter could be investigated further in the rate case as PacifiCorp is proposing a TOU rate pilot.

CUB asked if the Company uses an Electric Vehicle Infrastructure Projection Tool (EVI-Pro) developed by the National Renewable Energy Laboratory (NREL).[33] PacifiCorp replied:

> The Company is familiar with EVI-Pro available publically through the U.S. DOE's website. While Pacific Power has not relied on the tool to date to determine the placement of public charging locations, the Company is open to discussing its usefulness as a resource should the Company expand the public charging pilot program.[34]

Without endorsing this particular tool over others that might be available, Staff sees this kind of analytics playing a useful role in UM 1810 for evaluating the cost effectiveness of the Company's public charging station pilot.

CUB then asked PacifiCorp to rank the barriers to EV adoption in relation to an electric utility's ability to overcome them.[35] The Company replied with Table 3:[36]

Table 3. Relative ranking of market barriers

Customer Barriers to Adoption	Rural	Urban	Pacific Power Ability to Impact
	(1=high impact, 6=low impact)		*(1=high impact, 6=low impact)*
Awareness	4	4	2
Decision making	6	3	3
Economic	1	1	1
Policy / Regulatory	5	6	5
Technical/infrastructure	3	2	4
Supply Chain	2	5	6

[32] CUB. *UM 2056 Comments* March 27, 2020, page 5.
[33] CUB. *UM 2056 Comments* March 27, 2020, page 6.
[34] PacifiCorp. *UM 2056 Reply Comments* May 1, 2020, page 16.
[35] CUB. *UM 2056 Comments* March 27, 2020, page 8.
[36] PacifiCorp. *UM 2056 Reply Comments* May 1, 2020, page 9.

Staff notes PacifiCorp ranked its relative impact on the economic barrier as high. Such an impact may take a considerable amount of cross subsidies from other ratepayers to have a material impact on the total cost of owning an EV; so the answer depends on how much ratepayer money is assumed in the conjecture.

CUB also introduced the Grid Integration Allowance that was first proposed in UM 2033, qualifying the concept for the Company's mostly rural Oregon service territory.[37] In reply comments, PacifiCorp weighed in on this proposal:

> The Company views CUB's proposal as an intriguing approach to the challenges of incentivizing TE. Efficient integration of EVs and charging load has many potential grid benefits, including renewable integration, grid asset optimization, and demand response. CUB's suggestion of a GIA may be an appropriate measure of utility investment in residential TE programming. The Company is open to continuing discussions around this methodology as a starting point to determining an appropriate measure of utility spending on TE. Questions to explore could include defining a reasonable number of years of distribution system revenues to include in the calculation and how to differentiate distribution system upgrades purely related to new EV charging load.
>
> CUB and Commission Staff fine tune their comments in questioning the applicability of the GIA related to Pacific Power's more rural service territory with a larger proportion of low income customers and overall less penetration of EV than PGE. At this time, the Company believes that a mechanism like the GIA could apply broadly across Pacific Power's service territory; however, this approach may fall short of meeting all the funding needs to support state goals and would need to be coupled with other sources. The Clean Fuels Program funding will serve to meet some aspects of TE programming targeted to underserved communities and residential needs and might complement a GIA approach. Exploring other metrics to program success, such as those used in performance based regulation, is an example of additional ideas to consider with Commission Staff and stakeholders in future regulatory proceedings outside of the TE Plan.[38]

Staff is broadly supportive the concept behind CUB's proposal, but their analysis does not appear to include the cost of distribution system upgrades. We also note the GIA proposal uses a ratepayer impact measure for cost effectiveness.

ChargePoint filed comments, voicing support for utility assistance to the private electric vehicle supply equipment (EVSE) market that does not undercut competition. ChargePoint identified two things a utility can do to meet that standard:

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[37] CUB. *UM 2056 Comments* March 27, 2020, pages 8,9.
[38] PacifiCorp. *UM 2056 Reply Comments* May 1, 2020, page 15.

1) rebates for residential and commercial customers to purchase smart, networked chargers, and/or
2) make ready programs that allow the utility to invest in and own the lines, wires and conduit (collectively known as "make read") necessary to install a charger.[39]

Staff notes this is a different direction than PacifiCorp is currently going. We have yet to see evidence the Company's tariff proposals in UE 374 would be more or less cost effective than ChargePoint's recommendation.

ChargePoint also called for demand charge relief, backing PacifiCorp's Schedule 45.[40] ChargePoint believes that all EV-specific rates should be optional "because at this point in market development the focus should be on ensuring that every customer contemplating investment in EV charging stations is able to access whatever applicable rate is best for their circumstances and load profile."[41]

Staff understands why EVSE owners and their EV-owning customers would not want to pay demand charges. Staff is open to considering other options that meet established rules for cost recovery of cost causation in the appropriate proceeding.

The Northwest Energy Coalition (NWEC) filed comments, finding the Plan presented an insufficient level of detail. NWEC had a series of requests for additional information. The Company attempted to answer these questions in the reply comments.

NWEC sought to determine the current distribution of home charging technologies. PacifiCorp replied:

> As part of PacifiCorp's 2019 Residential Survey, PacifiCorp asked Oregon customers how they charge their electric vehicle at their home. Survey results indicate that approximately 50 percent of respondents utilize Level 2 charging, 47 percent utilize Level 1 charging, and the remaining respondents did not know what type of charging they use. Of those respondents with Level 2 charging, 35 percent have a unit that allows them to monitor and control charging remotely.[42]

NWEC asked the Company for more information on the technological development of interoperability, vehicle to grid, fleet charging optimization. PacifiCorp replied:

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[39] ChargePoint. *UM 2056 Comments* March 27, 2020, page 1.
[40] ChargePoint. *UM 2056 Comments* March 27, 2020, page 2.
[41] ChargePoint. *UM 2056 Comments* March 27, 2020, page 3.
[42] PacifiCorp. *UM 2056 Reply Comments* May 1, 2020, page 2.

> Interoperability between charging networks, equipment, and vehicles continues to be a critical and necessary focus across the nascent TE industry. Pacific Power required participation in and information on Open Charge Point Protocol as part of the charging equipment and network provider request for proposals for the Company's Public Charging Pilot under docket UM 1810. Program staff participates in working groups through Berkshire Hathaway Energy, EEI and the Smart Electric Power Alliance (SEPA) focused on established and emerging TE technologies, including interoperability, vehicle-to-grid (V2G), managed charging, and other promising technologies.
>
> When appropriate, the Company also attends virtual or in-person technology demonstrations to understand available technologies. While some of these technologies, like V2G, are emerging and will require demonstration pilots, others such as technology solutions that influence charging habits (i.e., FleetCarma) are more mature. The Company will consider technology solutions that align with the TE Plan and within any approved program budgets.[43]

NWEC found PacifiCorp adequately addressed the Company's rural characteristic. But the Plan "diminishes the role they also play as an urban electricity provider."[44]

NWEC argued utilities should be proactive supporters of transportation electrification, making investments guided by metrics beyond traditional cost-effectiveness tests.[45] NWEC offered a series of helpful footnotes for alternative metrics:

- The Future of Transportation Electrification: Utility, Industry and Consumer Perspectives, Future Electric Utility Regulation, 2018
- Making Electric Vehicles Work for Utility Customers, Synapse Energy Economics, Inc., 2019
- Beneficial Electrification of Transportation, Regulatory Assistance Project, 2019
- Electric Vehicle Cost-Benefit Framework, M. J. Bradley & Associates, LLC[46]

Staff thanks NWEC for the recommended sources. We will weigh their merits against the California Standard Manual. We also encourage NWEC to draft a white paper presenting a proposed cost / benefit analysis method, with as much detail as CUB has offered with their GIA proposal.

NWEC's reading of Section 2.4.1.2 of the Plan "indicates that Pacific Power does not have any immediate intention to utilize direct load control"[47] (DLC). NWEC encouraged

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[43] PacifiCorp. *UM 2056 Reply Comments* May 1, 2020, pages 15,16.
[44] NWEC. *UM 2056 Comments* March 27, 2020, page 1.
[45] NWEC. *UM 2056 Comments* March 27, 2020, page 2.
[46] Ibid.
[47] NWEC. *UM 2056 Comments* March 27, 2020, page 5.

Pacific Power to consider DLC in the future. The Company replied it will study the potential for EV demand response in the next Conservation Potential Assessment Study for PacifiCorp's 2021 IRP.[48] Staff appreciates this and looks forward to the results of seamlessly shifting charging to off-peak hours.

NWEC offered four suggestions to improve access and economic viability:

- NWEC encourages Pacific Power to consider an updated line extension allowance for residential customers in addition to non-residential customers.
- We are encouraged by the initial concept proposed for the residential EVSE infrastructure incentive program but we feel it is important for any residential EVSE program to include the use of smart level 2 chargers. There is significantly greater value to this technology as it can support charging data collection and facilitate various types of demand response.
- We would support the expansion of the infrastructure grant program to include technical assistance if it were to be deemed a relevant and impactful program to expand.
- We encourage Pacific Power to expand their public charging station program and additional ways to support open and accessible charging. Pacific Power mentioned that a lack of favorable EV electricity rate options can impact fuel cost saves and contribute to greater economic barriers. We support public charging efforts that help ensure EV electricity rates are fairly priced.[49]

Staff appreciates NWEC's list of suggestions. We withhold judgement on them for two of the reasons NWEC mentioned. Staff will carefully analyze the data collected by pilot projects to assess how impactful they are and how fairly their costs would be recovered if deployed as utility scale programs.

Greenlots filed comments, commending "the Company on developing a thorough and well researched document that will serve as an important foundation for its future activity in transportation electrification."[50] Greenlots said medium and heavy duty fleets offer the greatest magnitude of climate benefits, single family residences offer the most grid benefits, and multi-unit dwellings present the most challenge.[51]

Reason for Staff Recommendation

OAR 860-087-0020 requires comprehensive planning for transportation electrification by a regulated utility. In Staff's opinion, parts of PacifiCorp's Plan do not necessarily rise to the level of planning anticipated by the Commission's rule. However, Staff extends the

[48] PacifiCorp. *UM 2056 Reply Comments* May 1, 2020, page 8.
[49] NWEC. *UM 2056 Comments* March 27, 2020, page 6.
[50] Greenlots. *UM 2056 Comments* March 27, 2020, page 1.
[51] Greenlots. *UM 2056 Comments* March 27, 2020, page 2.

same recommendation of lenience for this company's first Transportation Electrification Plan as we supported for PGE and Idaho Power.

Staff is convinced PacifiCorp has made a good faith effort to disclose its current state of EV planning to the public. Staff also notes the effort the Company made to address stakeholder comments. The Company has not previously produced some of the analysis required by OAR 860-087-0020. Staff finds the current small size and remaining uncertainty of the EV market as reasonable explanations for PacifiCorp's current level of EV planning. Staff expects a more mature EV market in two years and will expect more mature planning from PacifiCorp when we review the Company's next TE Plan.

Conclusion

After engaging with Staff in the Company's reply comments and information requests, PacifiCorp has reasonably met the requirements of OAR 860-087-0020, given the current state of the EV market in the Company's Oregon service territory.

PROPOSED COMMISSION MOTION:

Accept Pacific Power's Transportation Electrification Plan.

Pacific Power UM 2056