

**BEFORE THE PUBLIC UTILITY COMMISSION  
OF OREGON**

UM 2056

In the Matter of

PACIFICORP TRANSPORTATION  
ELECTRIFICATION PLAN

STAFF'S COMMENTS

Staff appreciates the work PacifiCorp (Pacific Power or the Company) put into its first transportation electrification plan (the Plan). In these comments, Staff will identify what additional information is needed to recommend that the Commission accept this Plan. Broadly, the rules<sup>1</sup> for a transportation electrification plan call for the utility to present all of the electric company's near-term and long-term transportation electrification activities. The Plan should identify a portfolio of actions designed to achieve the Legislature's goals.<sup>2</sup> The Plan should also address areas most affected by market barriers in the electric company's service territory and provide benefits for traditionally underserved communities.

Specifically, the transportation electrification plan rules prescribe the required elements of each transportation electrification plan.<sup>3</sup> Staff's comments seek clarification from the Company in the context of these requirements.

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<sup>1</sup> See OAR 860-087-0020(1).

<sup>2</sup> ORS 757.357.

<sup>3</sup> Order No. 19-134 from Docket No. AR 609 later adopted as OAR 860-087-0020 the

## *Knowing Customers and Understanding the TE Market*

The Plan states that: “Pacific Power’s Oregon service territory is composed of predominantly rural counties with an overall average median household income that is 20 percent lower than Multnomah County.”<sup>4</sup> Staff would like PacifiCorp to clarify what effect the Company expects these demographics to have on the adoption of electric vehicles (EV) in its Oregon service territory outside of Multnomah County relative to the expected adoption rate in Multnomah County. If EVs offer a lower total cost of ownership (TCO), lower income owners of motor vehicles may benefit the most, and rural Oregonians that have higher annual vehicle miles traveled may in fact be better poised to replace internal combustion engines with electric motors.

The Plan goes on to say: “In seeking to build a TE plan that meets customer needs, the Company took into account these characteristics across its Oregon service territory to identify barriers and opportunities for customers.”<sup>5</sup> Staff would like PacifiCorp to clarify what aspects of its Plan are uniquely targeted to a rural, low-income population.

More broadly, any underlying issues that pose difficulties for the Company in building the transportation infrastructure necessary to support wide-scale adoption of EVs in rural territory may have parallels to the hurdles faced in establishing wide-scale broadband access in rural America over the past 20 years. These issues include a dispersed population and the cost to modernize an older network.<sup>6</sup> Staff would like the Company’s reply comments to respond to the validity of this comparison. And if PacifiCorp agrees there are similarities, Staff would like the Company to discuss how Pacific Power’s past success in electrifying and serving rural populations can serve as a template to avoid something like the broadband adoption gap when encouraging the infrastructure development necessary for the successful adoption of electric vehicles.

## *Understanding System Impacts and Needs*

PacifiCorp states: “Pacific Power estimates that TE charging load in its Oregon service territory will be just over 2 average megawatt (aMW) in 2020.”<sup>7</sup> That is an energy metric. Staff would like the Company to also provide an estimate for the impact on peak load. Staff would also like PacifiCorp to provide detailed estimates of local distribution system impacts.

## *Number of EVs in Pacific Power’s Service Territory*

In Figure 5, the Plan presents an image using Oregon Department of Environmental Quality data detailing the percent of total registered EVs by county in Oregon.<sup>8</sup>

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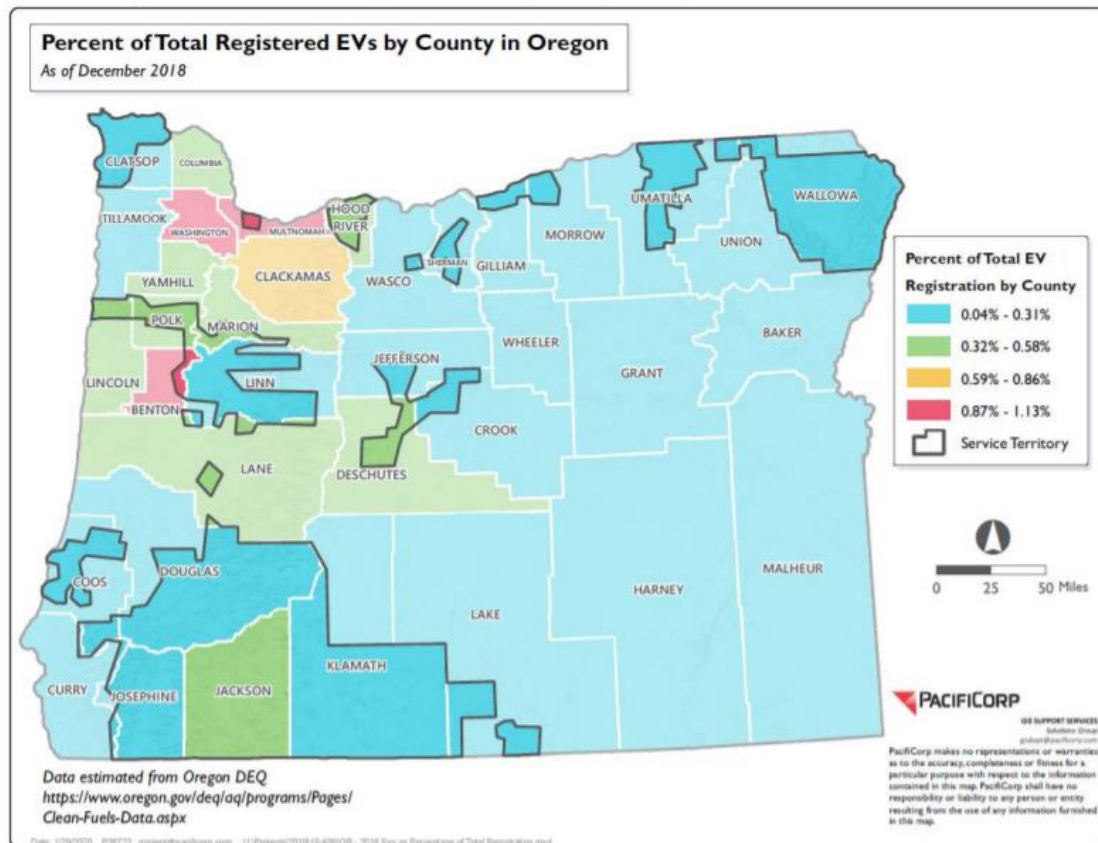
<sup>4</sup> PacifiCorp. *Transportation Electrification Plan* February 3, 2020, page 14.

<sup>5</sup> Ibid.

<sup>6</sup> Anderson, Monica and Kumar, Madhumitha. *Digital divide persists even as lower-income Americans make gains in tech adoption* Fact Tank News in the Numbers, May 7, 2019, page 1.

<sup>7</sup> Ibid.

<sup>8</sup> PacifiCorp. *Transportation Electrification Plan* February 3, 2020, page 18.



A similar kind of comparison would be helpful for Pacific Power’s service territory. In the Company’s reply comments, Staff would like to see either a heat map like the one above, or a table showing the percentage of Pacific Power’s total EV registration by county. Staff is particularly interested in knowing what percentage Multnomah County takes up of the total number of EVs in the Company’s service territory.

The Plan states: “As of September 30, 2019, there were an estimated 5,018 registered light-duty EVs in Pacific Power’s service territory, which represents 18.1 percent of the total registered EVs in Oregon.”<sup>9</sup> The Oregon Department of Environmental Quality has released the final numbers for 2019. At the end of last year, the Company had 4,988 EVs within its territory, which made up 17.8 percent of Oregon’s year-end total of 27,994.<sup>10</sup> Staff finds the Company’s estimate to be a reasonable use of the data that was available at the time the Plan was filed. We include the latest numbers here only to update the Commission on the now available historical data.

### *Projected Number of EVs in Pacific Power’s Territory Through 2025*

PacifiCorp’s forecast methodology averages the national EV estimates of the Energy Information Administration, the Edison Electric Institute, and Bloomberg New Energy

<sup>9</sup> Ibid.

<sup>10</sup> ODEQ. “Final 2019 EV Credits by Utility.xlsx” March 18, 2020, sheet 1.

Finance, and applies this averaged growth rate onto Pacific Power's territory.<sup>11</sup> Staff would like to see this method compared to historical numbers from 2017 to 2018 to see if such an average of past forecasts would have been overestimating or underestimating the Company's known annual EV counts.

In the Plan's description of forecast energy demand, Staff notes an apparent error in the text. The Company states: "Pacific Power used the CFP's average daily residential charging rate of 8.5 kilowatts per hour (kWh)." This sentence refers to both a daily energy requirement and an hourly rate, but the true kilowatts per hour would be that average daily number divided by the average hours spent charging each EV per day. This appears to Staff to be a mere typo, because hourly units were not a component in the Company's energy load forecast.

The Plan displays the EV forecast and energy use in Table 7.<sup>12</sup>

**Table 7. Pacific Power Oregon Average Light-Duty Forecast Through 2025**

Light-Duty Vehicles Average Forecast Through 2025								
	2019	2020	2021	2022	2023	2024	2025	Total
<b>Cumulative EVs</b>	5,558	7,729	10,385	13,427	16,771	21,342	26,630	
<b>Incremental EV Impacts</b>								
<i>Vehicles</i>		2,171	2,656	3,043	3,344	4,571	5,288	<b>21,072</b>
<i>MWh</i>	3,177	6,734	8,240	9,440	10,375	14,181	16,405	<b>65,376</b>
<i>average MW</i>	0.36	0.77	0.94	1.08	1.18	1.62	1.87	<b>7</b>

Staff would like the Company to also provide a forecasted impact on peak load. Additionally, Staff requests PacifiCorp detail how proposed changes in rate design under their recently filed general rate case (UE 374) will help to mitigate peak impacts from light-duty vehicle charging.

Staff appreciates the creative effort PacifiCorp put into forecasting medium and heavy duty EVs.<sup>13</sup>

**Table 8. Pacific Power Oregon Estimated Cumulative Medium- and Heavy-Duty Forecast**

Medium- and Heavy-Duty Vehicle Forecast Through 2025							
	2019	2020	2021	2022	2023	2024	2025
<b>MD/HD Cumulative Total</b>	2	2	6	10	14	20	27

Staff notes that of the three transportation electrification plans filed so far, PacifiCorp is the only regulated Oregon utility to attempt such a forecast. It reflects well on the Company's clear awareness of the strategic location Pacific Power's territory may be for fleet transportation corridors if freight, delivery, and bus transportation were electrified.

<sup>11</sup> PacifiCorp. *Transportation Electrification Plan* February 3, 2020, page 19.

<sup>12</sup> Ibid., page 20.

<sup>13</sup> Ibid., page 22.

Staff would like the Company to also provide a forecast of the corresponding energy and peak load requirements.

### *Potential Impact on Competitive Electric Vehicle Supply Equipment (EVSE) Market*

The Plan's approach to utility-owned charging stations highlights the important competitive principle of avoiding even the unintended abuse of a regulated utility's unique market power. The Company states it supports the development of a private EVSE market by: "Setting fees for charging at its EVSE installations based on the average of rates offered by other private actor in the state. This ensures that Pacific Power will not unintentionally undercut the competitive market as it develops in the region."<sup>14</sup> Staff appreciates PacifiCorp's candor on this issue.

### *Opportunities for Efficient Grid Management and Renewables Integration*

The Plan presents rate design as the primary means for efficiently integrating EVs onto PacifiCorp's grid in the near-term planning horizon. This requires greater detail than merely mentioning the general rate case. As mentioned above, Staff would like detailed estimates of how much more efficient EV charging in Pacific Power's territory could be expected to become if the proposed rate change is adopted.

The Plan states: "Customers on Schedule 45 pay all applicable rates under Schedule 28, plus a 10.738 cents per kilowatt-hour on-peak energy adder that is designed to collect the same amount of revenue as the Schedule 28 demand charges."<sup>15</sup> The Plan later states: "Since July 2017, the average monthly customer bill savings for participants is 50%."<sup>16</sup> Given those savings, Staff would like the Company to explain how the same amount of revenue as the Schedule 28 demand charges are being collected.

An important problem associated with time of use rates is needle peaking, shifting peak demand to hours just after the designated premium hours. Staff would like to know if Schedule 45 participants received higher deliveries between 9pm and 10pm in the winter and 8pm to 10pm in the summer.

The Plan did not map its forecast of EVs onto a model forecasting transformer upgrades. Staff would like the Company to explain how many transformer upgrades PacifiCorp expects EV adoption to require by 2025.

### *Implementation of Customer Pilot Programs*

Staff appreciates the clarity the Plan has provided on cost benefit analysis. On the methodological issue of attribution, the Company states: "One necessary input to any cost effectiveness test is a measurement of program impact or attribution." PacifiCorp goes on to explain how challenging that analysis can be, but Staff's reading of this Plan gives us the impression the Company believes this is possible.

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<sup>14</sup> Ibid., page 25.

<sup>15</sup> Ibid., page 30.

<sup>16</sup> Ibid.


In UM 2033, the Citizens' Utility Board (CUB) expressed skepticism that a utility can significantly spur an acceleration of EV adoption. CUB asserted that this technological trend would happen independent of utility expenditures. However, without utility interaction, this adoption would happen haphazardly, imposing negative costs on all ratepayers, costs that could have otherwise been avoided.<sup>17</sup> CUB instead proposed that PGE – and by extension other electric utilities – invest in transportation electrification with a focus on efficient integration into the grid and treating EVs like other new load. Staff found merits in the concept behind CUB's proposal in UM 2033, and would like to see PacifiCorp's reply comments engage CUB's proposal to PGE in detail, understanding that Pacific Power has a very different utility territory and customer base. Staff is interested in the Company's assessment of the applicability of CUB's "Grid Integration Allowance" for Pacific Power's customers, particularly low-income rural customers, to encourage instalment of residential level 2 EVSE.

### *Conclusion*

Staff appreciates the work PacifiCorp put into the Company's first Transportation Electrification Plan. The additional information Staff has requested will give Staff adequate information to recommend the Commission accept this Plan.

This concludes Staff's comments.

Dated at Salem, Oregon, this 26<sup>th</sup> of March, 2020



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<sup>17</sup> CUB. *Comments of the Citizens' Utility Board* In the Matter of Portland General Electric's Transportation Electrification Plan, December 6, 2019, pages 9,10.