

Docket No. UM 1810
Exhibit PAC/100
Witness: Eli M. Morris

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

PACIFICORP

Direct Testimony of Eli M. Morris

April 2017

TESTIMONY OF ELI M. MORRIS

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ATTACHED EXHIBIT

EXHIBIT PAC/101 – Letters of Stakeholder Support

1 **Q. Please state your name, business address, and present position with PacifiCorp**
2 **d/b/a Pacific Power (PacifiCorp or the Company).**

3 A. My name is Eli M. Morris. My business address is 825 N.E. Multnomah Street, Suite
4 1500, Portland, Oregon 97232. My title is Program Manager, Customer Solutions.

QUALIFICATIONS

6 Q. Briefly describe your education and professional experience.

7 A. I received a Bachelor of Arts in Physics from Carleton College in Northfield,
8 Minnesota. I have worked in Demand-Side Management (DSM) and Customer
9 Solutions at PacifiCorp for five years, focusing on program planning and
10 incorporation of programs into other Company planning efforts, including load
11 forecasting and integrated resource planning. Before joining PacifiCorp, I worked at
12 the Cadmus Group (formerly Quantec, LLC) consulting for utilities on DSM program
13 planning and evaluation.

14 Q. Have you testified in previous regulatory proceedings?

15 A. No.

PURPOSE AND SUMMARY OF TESTIMONY

17 Q. What is the purpose of your testimony in this proceeding?

18 A. My testimony presents and describes the supplemental application and proposed pilot
19 programs in the context of the Company's Transportation Electrification Strategy.
20 The Company is requesting approval of three pilot programs designed to test the
21 effectiveness of utility market intervention strategies and gather data to inform future
22 system and program planning.

23 My testimony will address:

- 1 • New material included in the supplemental application;
- 2 • Pacific Power's transportation electrification strategy;
- 3 • Market baseline assumptions and pilot program evaluation; and
- 4 • Overview of the proposed Public Charging Pilot, the proposed Outreach
- 5 and Education Pilot, and the proposed Demonstration and Development
- 6 Pilot.

7 **Q. Why is Pacific Power filing a supplemented application and what supplemental**
8 **information has been added?**

9 A. In accordance with Senate Bill 1547, Pacific Power filed our initial pilot program
10 applications on December 27, 2017. In February, Public Utility Commission of
11 Oregon (Commission) staff requested additional information to expedite the review
12 process. In response to this request, the initial applications were consolidated and
13 supplemented to include:

- 14 • Information on greenhouse gas emissions from the transportation sector;
- 15 • An overview of the electric transportation market;
- 16 • A more robust discussion of market barriers to increased transportation
- 17 electrification; and
- 18 • Additional detail on program objectives, elements, and timelines.

19 **Q. Have the proposed pilot programs changed from what was presented in the**
20 **initial applications?**

21 A. No. Program concepts and total budgets have not changed from the December
22 application. However, in the proposed Outreach and Education pilot, the program
23 element previously referred to as "Education and Awareness" is split into two distinct

1 elements: Customer Communications and Self-Service Tools. This modification was
2 made to more clearly delineate direct communications with customers and tools
3 deployed for customer use.

4 **Q. What is the Company requesting in its application?**

5 A. The Company requests the Commission approve Pacific Power's three transportation
6 electrification pilot programs. In addition, the Company requests the Commission
7 approve concurrent recovery of the pilot program costs through the Company's
8 existing Schedule 95 – Pilot Program Cost Adjustment.

9 **Q. Please describe the testimony of other Company witnesses in this case.**

10 A. Robert M. Meredith, Manager of Pricing and Cost of Service provides testimony,
11 which supports the manner in which the Company proposes to price electric vehicle
12 charging service from Company-operated stations along with presenting an
13 illustrative tariff for this service.

14 **TRANSPORTATION ELECTRIFICATION STRATEGY**

15 **Q. What is PacifiCorp's Transportation Electrification Strategy?**

16 A. PacifiCorp's Transportation Electrification Strategy (TES) can be summarized in two
17 words: flexibility and responsiveness. PacifiCorp's TES envisions starting with pilot
18 programs that allow the Company to test market assumptions, gather data and
19 respond to changing market conditions. In establishing its TES, PacifiCorp was
20 guided by the following set of principles:

- 21 • Work with stakeholders on program development to incorporate the wide
22 range of perspectives, experiences, and ideas.
- 23 • Lead by example.

- 1 • Understand Oregon customers' specific market barriers to adopting electric
- 2 transportation.
- 3 • Use electric transportation to support a modern and efficient electrical system.
- 4 • Partner with customers to deploy vehicle charging solutions.
- 5 • Simplify the plug-in electric vehicle charging experience.
- 6 • Support underserved communities.
- 7 • Leverage funding and lessons learned from strategic partnerships to inform
- 8 future planning.
- 9 • Coordinate with related state programs.
- 10 • Phase-in investments and keep an eye on the future.

11 I envision a future where PacifiCorp is partnering with customers, state agencies, and
12 other market actors to ensure that transportation electrification is accessible, well-
13 understood, and supports a modern and efficient electrical grid. The pilot programs
14 proposed in this application are an initial step in this direction to educate customers
15 on electric transportation options and benefits, stimulate electric vehicle supply
16 equipment (EVSE) development, and gather data to inform future planning and the
17 long-term role for PacifiCorp in the transportation electrification market. If
18 successful, we may expand these programs after the initial pilot period, but will not
19 necessarily wait until after the pilot period to propose additional programs as
20 opportunities become available.

21 **Q. How did the Transportation Electrification Strategy inform the design of**
22 **PacifiCorp's proposed pilot programs?**

23 **A. The proposed pilot programs are designed to be flexible and responsive to changes in**

1 the market and customer needs. To ensure alignment with the TES, PacifiCorp relied
2 on its guiding principles, beginning with understanding barriers to adoption for
3 customers in its Oregon service territory. To date, transportation electrification has
4 not occurred in PacifiCorp's service area at the same rate as for the state of Oregon as
5 a whole, likely due to the dispersed and rural nature of PacifiCorp's service territory,
6 relatively lower income, and a lack of private investment in visible and available
7 public EVSE.

8 In these areas, there may be a "chicken and egg" problem. Consumers do not
9 adopt plug-in electric vehicles because of a lack of exposure to the technology and
10 range anxiety from a lack of publicly-accessible EVSE, and public EVSE is not
11 developed because the number of plug-in electric vehicles (PEVs) is insufficient to
12 make ownership profitable. PacifiCorp designed a set of pilot programs to address
13 this issue from both sides: educate customers on technology, benefits, and how to
14 determine whether PEVs and EVSE will meet their needs, and stimulate development
15 of EVSE that can support increased adoption of PEVs. Specific pilot program
16 components were developed to align with the other guiding principles, including
17 partnering with customers, coordinating with stakeholders and related state programs,
18 and phasing in investments while looking toward the future.

19 **MARKET BASELINE ASSUMPTIONS AND PILOT PROGRAM EVALUATION**

20 **Q. What market baseline assumptions did PacifiCorp use in designing its proposed**
21 **pilot programs?**

22 **A.** I developed market baseline assumptions in response to the following questions:

- 1 • What is the current state of transportation electrification in PacifiCorp's
- 2 Oregon service area?
- 3 • What additional transportation electrification is likely to occur in the absence
- 4 of PacifiCorp programs?

5 To answer the first question, I analyzed available data on current PEV adoption
6 levels and publicly-available direct current fast chargers (DCFCs) in PacifiCorp's
7 Oregon service area. For EVSE, I focused on publicly-available DCFCs, as visible
8 and available DCFCs are likely to have a larger impact on PEV adoption than Level 2
9 EVSE, given considerably faster charging times.

10 To answer the second question, I relied on summary results from a 2016
11 PacifiCorp customer satisfaction survey, supplemented with other Oregon and
12 national studies on consumer likelihood to adopt PEVs. At this time there is limited
13 information on the likelihood of additional DCFC development in the Company's
14 Oregon service area.

15 **Q. How did PacifiCorp develop the market baseline assumptions?**

16 A. Current PEV adoption levels in PacifiCorp's Oregon service area were developed
17 from ZIP-code level registration data provided by the Oregon Department of
18 Environmental Quality (DEQ). I created a forecast of PEV adoption over the next 10
19 years based on the historical adoption trend since 2010, which will naturally capture
20 general market advancements. Many factors can affect PEV adoption, including the
21 future of federal tax incentives, the rate of battery technology and cost improvements,
22 the price of gasoline and the rate of development of accessible public EVSE. Given
23 the large uncertainty around the future of each of these factors, the Company opted to

1 project future adoption rates based on historical trends rather than attempting to
2 forecast individual market factors and their impact on PEV adoption.

3 I developed market baseline assumptions for the current state of publicly-
4 available DCFCs in Pacific Power's Oregon service area from data from the U.S.
5 Department of Energy's Alternative Fuel Data Center (AFDC) Alternative Fueling
6 Station Locator.¹ The AFDC database is a publicly-available source with data
7 imported directly from several major charging service providers, or submitted by
8 other parties. The National Renewable Energy Laboratory validates all data and
9 reviews existing stations on an ongoing basis to ensure they are still operational.

10 I did not attempt to project the rate at which additional EVSE may be
11 deployed in PacifiCorp's service area in the absence of the proposed pilot programs.
12 The majority of public DCFCs are currently located in major metropolitan areas and
13 along Alternative Fuel Corridors² and I expect this trend to continue in the absence of
14 the Company's proposed pilot programs. For example, Volkswagen's Electrify
15 America has already indicated that these are the priorities for the first round of
16 investment under the Clean Air Act Civil Settlement.³

17 **Q. Did PacifiCorp consider any alternative market baseline assumptions?**

18 A. Yes, however, while projections of PEV adoption exist, they are typically national or
19 global, highly variable depending on underlying assumptions for cost and technology
20 improvements and do not reflect the specific factors affecting adoption in

¹ U.S. Department of Energy, *Alternative Fueling Station Locator*, <http://www.afdc.energy.gov/locator/stations/> (last visited Feb. 24, 2017).

² U.S. Department of Transportation, *Alternative Fuel Corridors*, https://www.fhwa.dot.gov/environment/alternative_fuel_corridors/ (last visited Feb. 24, 2017).

³ Electrify America, *Our Plan*, <https://www.electrifyamerica.com/our-plan> (last visited Mar. 31, 2017).

1 PacifiCorp's Oregon service area, such as population density, income, and access to
2 EVSE. For the purpose of creating market baseline assumptions specific to
3 PacifiCorp's Oregon service area, I determined the data sources and methods
4 described above were most appropriate. I plan to track these data sources over time
5 to determine the extent to which market baselines are shifting.

6 **Q. How does the Company propose to evaluate its proposed pilot programs?**

7 A. PacifiCorp proposes to employ a third-party evaluator to assess the effectiveness of
8 the pilot programs based on the objectives described in the supplemental application.
9 The third-party evaluator will use data from a variety of sources to assess participant
10 satisfaction, program cost-effectiveness, and the extent to which the pilot programs
11 accelerated transportation electrification. Data sources will include:

- 12 • PacifiCorp website analytics, and user surveys;
- 13 • Responses to questions in annual PacifiCorp annual customer service surveys;
- 14 • Surveys of ride-and-drive and community event attendees;
- 15 • Surveys of technical assistance and Demonstration and Development
16 recipients;
- 17 • Utilization data from Public Charging Pilot and Demonstration and
18 Development Pilot EVSE; and
- 19 • Updated PEV and EVSE adoption information from the Oregon DEQ and
20 AFDC, respectively.

21 The results of these efforts will be summarized in a report, provided to the
22 Commission in 2019, which will include recommendations on whether pilots should
23 be expanded, extended, or terminated.

1 **Q. How will the market baseline be used in the Company's evaluation of its**
2 **proposed pilot programs?**

3 A. The Company will track DEQ PEV registrations and AFDC public DCFCs to assess
4 changes in adoption in the service area during the pilot period. Changes in adoption
5 levels may be directly attributed to the Company's efforts, but may also be influenced
6 by other factors, such as improvements in technology and costs, gasoline prices, and
7 the efforts of others working to promote transportation electrification in Oregon, such
8 as Drive Oregon. Through its program evaluation efforts, PacifiCorp will investigate
9 the extent to which the pilot programs increased adoptions of PEVs and publicly-
10 available EVSE.

11 Some of the Company's efforts are not expected to increase adoption
12 immediately. For example, the proposed Outreach and Education program is largely
13 focused on improving customer awareness of electric transportation options and
14 benefits. The Company will track customer likelihood of considering a PEV relative
15 to the market baseline, however, improved awareness likely will not impact a
16 customer's vehicle decisions until the next time he or she would have acquired a new
17 vehicle anyway, which may be in several years. While changes in adoption levels
18 relative to the current and projected baseline will be informative for future program
19 and system planning changes in the market baseline during the pilot period will not be
20 a key indicator of pilot program success.

21 **Q. How will the evaluation determine whether the pilot programs were successful?**

22 A. Evaluation efforts will assess the performance of the pilot programs against the
23 objectives described for each program in the supplemental application. These

1 objectives include improving customer awareness and perceptions of PEV and EVSE
2 options and benefits, increasing the availability of reliable, visible public EVSE and
3 gathering data and experience that can inform future system and program planning
4 and testing. The evaluation will also attempt to determine to what extent the pilot
5 programs accelerated transportation electrification. However, given the pilot
6 timeframe and the typical vehicle purchase cycle, increased levels of adoption
7 resulting from the pilot programs may not occur until after the pilot period.

8 **Q. Will the Company's evaluation of its proposed pilot programs include an**
9 **evaluation of the cost effectiveness of the proposed pilot programs?**

10 A. Yes, the Company will engage a third-party evaluator to assess the cost-effectiveness
11 of the pilot programs during the pilot period, where possible. For the Outreach and
12 Education program, it may be difficult to directly tie program spending to increased
13 adoption of PEVs or EVSE. The Company will look to the third-party evaluator to
14 determine whether a direct link to increased adoption can be drawn, and if so, to what
15 extent.

16 **Q. Did the Company assess the cost-effectiveness of the proposed pilot programs in**
17 **the supplemental application?**

18 A. No. Given the uncertainty around the impact the pilot programs may have on the
19 transportation electrification market, the Company did not attempt to quantify pilot
20 program benefits at this time. The pilot programs will gather data to use in assessing
21 cost-effectiveness of investments as part of the program evaluation.

1 **Q. How does the Company propose to evaluate the cost-effectiveness of the**
2 **proposed pilot programs?**

3 A. From the standard DSM tests, the Company proposes to use the Ratepayer Impact
4 Measure (RIM) test from the *California Standard Practice Manual: Economic*
5 *Demand-Side Programs and Projects* to assess the cost-effectiveness of the proposed
6 pilot programs. The RIM test is an appropriate test for assessing the cost-
7 effectiveness of load-building programs. Although not all transportation
8 electrification programs are load-building, the proposed pilot programs likely fall into
9 this category because they are designed to increase the adoption of electricity as a
10 transportation fuel compared to what would likely have occurred in the absence of the
11 program. In contrast, a program promoting efficient EVSE in place of standard
12 EVSE may be considered energy efficiency, as it focuses on improving equipment
13 efficiency and saving electricity compared to what would have otherwise occurred.
14 Cost-effectiveness for such a program could be assessed using established procedures
15 for energy efficiency programs in Oregon.

16 **Q. Did the Company consider alternative methods for evaluating cost effectiveness?**

17 A. Yes, the Company evaluated all of the five standard DSM cost-effectiveness tests
18 described in the California Standard Practice Manual:

- 19 • The Participant Cost Test (PCT) assesses the costs and benefits to program
20 participants;
- 21 • The RIM test assesses the program's impact on all customers' rates;
- 22 • The Total Resource Cost (TRC) Test assesses the costs of DSM as a resource
23 option as compared to supply-side alternatives;

- 1 • The Societal Cost Test (SCT) is a variant of the TRC that includes
- 2 externalities, for example environmental benefits and national security; and
- 3 • The Program Administrator Cost Test (PACT, also known as the Utility Cost
- 4 Test, or UCT) assesses DSM as a resource considering only the costs borne by
- 5 the program administrator.

6 **Q. Why is the RIM test the most reasonable of the standard DSM tests for**
7 **evaluating cost-effectiveness of transportation electrification pilot programs?**

8 A. The TRC, SCT, and PACT are designed to assess DSM programs as resource options.
9 For example, the Commission uses the TRC test when assessing the cost-
10 effectiveness of energy efficiency programs because these programs avoid costs
11 associated with generating or purchasing and delivering electricity. However, these
12 tests are not as meaningful for assessing programs that *increase* load, as stated in the
13 Standard Practice Manual: “[f]or load building programs, only the RIM tests are
14 expected to be applied. The Total Resource Cost and Program Administrator Cost
15 tests are intended to identify cost-effectiveness relative to other resource options. It is
16 inappropriate to consider increased load as an alternative to other supply options.”

17 While the Company plans to educate customers on the costs and benefits of
18 transportation electrification, the PCT also has limitations in assessing the cost-
19 effectiveness of these programs, as it only considers benefits to program participants,
20 not all customers.

21 For these reasons, of the established tests for assessing cost-effectiveness of
22 DSM programs, the RIM test is the most appropriate test for utility transportation
23 electrification programs that are expected to build load. Under this framework,

1 program benefits include increased retail revenue, payments from drivers for use of
2 Company-owned equipment, Clean Fuels Program credits generated and monetized
3 from Company-owned equipment and tax credits realized from Company-owned
4 equipment. Program costs include costs to serve new load (including any required
5 upgrades to the distribution system) and any costs borne by Pacific Power in
6 implementing the program, including incentives to participants, capital expenditures,
7 operations and maintenance, and administrative costs.

8 It is important to draw a distinction between transportation electrification
9 programs and programs that focus on PEVs and/or EVSE. For example, a program
10 designed to encourage customers to purchase EVSE that is more energy-efficient than
11 baseline equipment should be considered energy efficiency and subject to standard
12 procedures for assessing cost-effectiveness of energy efficiency in a given
13 jurisdiction. Similarly, a program to control charging patterns of existing EVSE
14 should be considered a load management program and assessed accordingly.

15 **STAKEHOLDER ENGAGEMENT AND STATE PROGRAM COORDINATION**

16 **Q. Did PacifiCorp engage in a stakeholder process as part of the development of its**
17 **proposed pilot programs?**

18 A. Yes, Pacific Power engaged in a robust stakeholder process through public input
19 workshops, meetings with individual entities and requests for feedback on initial
20 program plans.

21 **Q. How did PacifiCorp incorporate the results of the stakeholder process into the**
22 **design of the proposed pilot programs?**

23 A. The stakeholder process identified the following themes:

- 1 • Lack of awareness of electric transportation options and benefits is a major
2 barrier to widespread adoption.
- 3 • Transportation electrification represents an opportunity to help low-income
4 customers, but the barriers to adoption in these communities are not well-
5 understood.
- 6 • Current levels of PEV and EVSE adoption are unlikely to adversely affect the
7 electrical grid, but the importance of off-peak charging will grow over time.
- 8 • Utility efforts should stimulate innovation, competition, and customer choice.
- 9 • Standard non-residential rate schedules make the business case for DCFC
10 operation challenging. At current utilization levels, utilities should look for
11 creative solutions to tying DCFC rates to energy consumption rather than peak
12 demand.
- 13 • Utilities should propose programs in phases, testing program concepts and
14 benefits on a small scale before proposing large investments.
- 15 • Program participants should have some “skin in the game” to ensure they are
16 invested in maintaining charging equipment.
- 17 • Because of the mobile nature of vehicles, utilities should focus incentives on
18 EVSE, which is tethered to the utility service area.

19 The Company used this stakeholder input to develop its TES, initial pilot programs,
20 and Public DC Fast Charger Optional Transitional Rate.

21 **Q. What programs did PacifiCorp evaluate for potential coordination**
22 **opportunities?**

23 A. The proposed pilot programs are designed to complement other efforts to accelerate

1 transportation electrification in Oregon, including:

- 2 • Oregon's Zero Emission Vehicle Mandate;
- 3 • Oregon's Clean Fuels Program;
- 4 • State tax credits for residential and business vehicle charging equipment and
- 5 alternative fuel fleet vehicles (currently scheduled to expire at the end of
- 6 2017);
- 7 • The Oregon Department of Transportation's efforts to increase the availability
- 8 of EVSE along the state's highways;
- 9 • Portland General Electric Company's proposed transportation electrification
- 10 programs;
- 11 • Drive Oregon's efforts, including the development of the EV Showcase;
- 12 • Local communities' climate and/or transportation action plans;
- 13 • Potential future involvement by the Northwest Energy Efficiency Alliance, the
- 14 Energy Trust of Oregon, or other organizations; and
- 15 • Outreach and education efforts and EVSE development that may stem from
- 16 the Volkswagen Clean Air Act Partial Settlement.

17 PacifiCorp is also actively engaged in the Washington Utilities and
18 Transportation Commission's process to establish policies around utility
19 transportation electrification programs, will file its initial transportation electrification
20 programs with the California Public Utilities Commission this summer, and has
21 proposed a transportation electrification program to the Utah Public Service
22 Commission. Over time, there may be opportunities to coordinate program offerings
23 across PacifiCorp's multi-state service area.

1 **Q. After evaluating these programs, did PacifiCorp identify opportunities for**
2 **coordination?**

3 A. Yes. Through the proposed Outreach and Education program, we will look for
4 opportunities to co-develop and co-brand educational materials with Drive Oregon,
5 Clean Cities Coalitions, or other organization working in this space to provide
6 credible and consistent information to customers. The program will also make
7 customers aware of available benefits from other programs, including tax credits and
8 Clean Fuels Program credits, which may help offset the upfront or ongoing costs of
9 transportation electrification. When considering potential sites for Company-owned
10 public charging infrastructure, the Company plans to engage the Oregon Department
11 of Transportation to understand which areas are most underserved by existing
12 DCFCs.

13 **Q. Will PacifiCorp continue to monitor state programs for coordination**
14 **opportunities?**

15 A. Yes.

16 **Q. Has PacifiCorp received stakeholder support for its proposed pilot programs?**

17 A. Yes, we have received support from entities across our Oregon service territory. I
18 have included letters of support from the following entities as Exhibit PAC/101:

- 19 • City of Albany
20 • City of Corvallis
21 • City of Dallas
22 • City of Independence
23 • City of Portland, Bureau of Planning and Sustainability

- 1 • City of Sutherlin
- 2 • Hacienda Community Development Corporation
- 3 • Klamath Falls Downtown Association
- 4 • OReGONbike LLC
- 5 • Rogue Valley Clean Cities (representing 10 cities in Jackson County)
- 6 • Sunset Empire Transportation District

7 **PUBLIC CHARGING PILOT**

8 **Q. Please describe the Company's proposed public charging pilot.**

9 A. Through the proposed pilot, Pacific Power will install, own, and operate public fast
10 charging "pods"⁴ within its Oregon service area. These pods will fill gaps in the
11 existing network of public DCFCs in the Company's service area, where private
12 investment has been slow to develop to date.

13 **Q. How many public charging pods does the Company propose to own as part of**
14 **this pilot?**

15 A. The Company proposes to own up to seven fast charging pods through this pilot.

16 **Q. Did the Company consider owning more public charging pods as part of this**
17 **pilot?**

18 A. Yes, the Company considered larger levels of investment, but understood stakeholder
19 interest in a phased approach to test this ownership model and potential impacts on
20 the competitive market before proposing a larger investment. The seven pods
21 considered in the pilot will allow the Company to deploy EVSE in areas that are not
22 well-served by other market actors while the market continues to develop.

⁴ A typical pod configuration is expected to consist of four dual-standard DCFCs and one Level 2 charger.

1 Volkswagen's Electrify America, for one, will be making a considerable investment
2 in public DCFCs, but has already indicated that the first 30 months of that investment
3 will be focused on major metropolitan areas and long-range corridors.⁵ If, after the
4 pilot period, the Company's Oregon service area continues to be underserved by
5 public EVSE, there may be a larger role for the Company in deploying public EVSE.

6 **Q. Where does the Company propose to locate these public charging pods?**

7 A. All pods will be located within the Company's Oregon service area. To maximize
8 access, visibility, and convenience for drivers, the Company will look for
9 opportunities to site charging pods in the public right-of-way, preferably curbside. If
10 enough suitable locations in the public right-of-way cannot be identified, the
11 Company will assess the suitability of its own property, followed by opportunities to
12 locate charging pods on non-residential customer property.

13 **Q. How will the Company determine what type of equipment and services to**
14 **procure as part of this pilot?**

15 A. The Company will issue a Request For Proposals (RFP) to providers of vehicle
16 charging equipment, network services, installation, and maintenance. To streamline
17 program administration, the Company prefers to select a single vendor offering a
18 turnkey solution, but will also consider bidders offering individual components.

19 **Q. Who will operate and maintain the public charging pods?**

20 A. Vendors selected through the RFP process will operate and maintain the equipment.

21 **Q. Does the Company intend to charge the users of the public charging pods?**

22 A. Yes.

⁵ Electrify America, *Our Plan*, <https://www.electrifyamerica.com/our-plan> (last visited Mar. 31, 2017).

1 **Q. How will the Company determine the appropriate rate to charge users of the**
2 **public charging pods?**

3 A. Before the go-live date of the first charging pod, the Company will make an advice
4 filing with the Commission to establish station pricing. The rates will consider the
5 prices for public charging services offered by other entities in its Oregon service area
6 to propose rates that:

- 7 • Stimulate competition during the period when pods will be in operation;
- 8 • Encourage off-peak charging;
- 9 • Encourage efficient use of the equipment (i.e., parking space turnover);
- 10 • Are comparable to typical rates for public charging services charged by other
11 entities in the Company's Oregon service territory; and
- 12 • Recognize the difference in cost and value of DCFCs and Level 2 EVSE.

13 **Q. Does the Company intend to file a tariff setting forth rates for public charging**
14 **offered by the Company?**

15 A. Yes. Please refer to Mr. Meredith's direct testimony for an illustrative tariff and
16 additional details regarding how the Company proposes to charge for this service.

17 **Q. Will all of the public charging stations in this pilot program charge users the**
18 **same rate? If not, please explain how the Company proposes to differentiate**
19 **rates at different locations.**

20 A. Yes, the rates in the tariff will apply to all stations. Local taxes and fees may apply.

21 **Q. What are the potential benefits of public charging within PacifiCorp's service**
22 **territory?**

23 A. Driver payments for station use and any available tax credits will be considered

1 benefits in cost-effectiveness analysis. Additionally, the intent of these stations is to
2 promote additional adoption and/or use of PEVs. The new revenue from these
3 vehicles charging at locations in the Company's service area other than at Company-
4 owned charging pods will also be a benefit to the Company's customers.

5 **Q. Will these potential benefits accrue to the Company's customers?**

6 **A.** Yes.

7 **OUTREACH AND EDUCATION PILOT**

8 **Q. Please describe the Company's proposed Outreach and Education pilot.**

9 **A.** The proposed Outreach and Education pilot is designed to increase awareness of
10 electric transportation options and help the Company's customers make informed
11 decisions about the adoption and operation of plug-in electric vehicles and EVSE.
12 The pilot program will test the effectiveness of different outreach tactics on
13 accelerating transportation electrification, through four distinct program components:

14 1. **Customer communications:** Pacific Power will develop direct customer
15 communications and paid advertising to educate customers on PEV options
16 and benefits. Messaging will help build awareness, promote off-peak
17 charging, and direct customers to additional Outreach and Education pilot
18 elements and other proposed pilot programs.

19 2. **Self-service resources and tools:** Pacific Power will expand its electric
20 transportation online resources and contract for additional online tools
21 accessible to all customers. Educational resources will allow customers to
22 access customized information about electric transportation technologies,
23 costs, benefits, incentives, and additional resources.

1 3. **Technical assistance:** Pacific Power will sponsor customized technical
2 assistance for non-residential customers considering EVSE projects in its
3 Oregon service area. Through a competitive bidding process, the Company
4 will develop a network of qualified consultants to perform on-site EVSE
5 feasibility assessments for interested non-residential customers.

6 4. **Community events:** Pacific Power will fund an estimated eight ride-and-
7 drive events in its communities and make funding available to sponsor
8 additional events in the service area promoting electric transportation that can
9 increase awareness of electric transportation.

10 **Q. Why is it important for the Company to perform electric transportation**
11 **education and outreach to its customers?**

12 A. Today, very few of PacifiCorp's customers indicate a willingness to even *consider* a
13 PEV in the next five years. This is likely due to a lack of awareness about the true
14 cost of ownership, vehicle options, and features and uncertainty about how and where
15 to charge. For widespread transportation electrification to occur, consumers require
16 access to accurate, objective information from a trusted source to determine whether
17 PEVs are right for them. Given existing customer relationships, communication
18 channels and excellent customer service ratings, PacifiCorp is optimally situated to
19 play this role. The Company's outreach and education efforts will not only help build
20 the market generally, but will also inform customers about other pilot program,
21 increasing their effectiveness.

DEMONSTRATION AND DEVELOPMENT PILOT

Q. Please describe the Company's proposed demonstration and development pilot.

A. Through the Demonstration and Development pilot program, the Company will award competitive grant funding to non-residential customers to encourage development of creative, customer-driven electric transportation projects in its Oregon service area. These grants are designed to help non-residential customers overcome upfront cost barriers to EVSE development and empower customers to develop projects that can address additional market barriers, such as lack of awareness, lack of public EVSE and limited access for low-income customers and other underserved communities. Grant recipients will be required to share project cost information and EVSE utilization data with Pacific Power, which will help the Company better understand transportation electrification projects in different market segments and potential impacts to the electrical system to inform future planning.

On a quarterly basis, the Company will invite customers across its dispersed Oregon service area to bring transportation electrification projects forward for grant funding. Pacific Power grants will be available specifically for the EVSE costs associated with a project, which can include make-ready, hardware, installation and upfront software purchase costs. Pacific Power will engage a third-party grant manager to review and score projects based on established criteria. Pacific Power will work closely with the grant manager to ensure that applicant evaluation tools and practices align with program objectives.

Q. Does the Company have experience with similar program designs?

A. Yes, the design of the proposed pilot program is similar to the grant funding process

1 under the Company's Blue Sky program. Since 2006, the Blue Sky funding process
2 has helped bring nearly 100 community-driven renewable energy projects online in
3 over thirty Pacific Power communities, on behalf of participating Blue Sky program
4 customers.

5 **Q. Can you provide examples of potential demonstration and development projects**
6 **the Company expects to see as part of this pilot?**

7 A. Yes, the pilot project Pacific Power participated in with Hacienda Community
8 Development Corporation, Drive Oregon and the City of Portland is a prime example
9 of the type of projects envisioned for this pilot. The project brought together multiple
10 partners to test a new model for increasing access to electric transportation in low
11 income communities.

12 **Q. How will the Company evaluate and select proposed projects?**

13 A. Following successful practices of Pacific Power's Blue Sky funding awards, the
14 Company will engage an independent, third-party grant manager, selected through a
15 competitive request for proposals process, to review and score projects based on
16 established criteria, including: project feasibility and expected utilization, customer
17 and Company funding commitments, and opportunities to test advanced technologies.
18 Pacific Power will work closely with the grant manager to ensure that applicant
19 evaluation tools and practices align with program objectives.

20 **Q. Did the Company consider alternative methods for evaluating and selecting**
21 **projects?**

22 A. Yes, the Company considered performing in-house application evaluation, but
23 determined that the third-party evaluation process utilized for Blue Sky grant funding

1 would be appropriate in this pilot as well. Because Company representatives may
2 have existing relationships with some or all applicants, an independent third-party
3 evaluator will increase objectivity of the selection process and ensure that funding
4 awards adhere to the established evaluation criteria. The Company also considered
5 limiting program eligibility to non-profit organizations and government entities, but
6 determined it was premature to limit participation before gaining experience with the
7 types of customers who were likely to participate in the pilot. Program experience
8 will allow the Company to determine whether non-profit organizations face different
9 barriers to EVSE development, such as an inability to monetize available tax credits.
10 Rather, non-profits and government entities will be given priority in the application
11 evaluation process to encourage community-driven projects and decrease the
12 likelihood of program funding going to businesses with sufficient resources to
13 implement these projects.

14 **Q. How does the Company intend to weight the evaluation criteria?**

15 A. The Company will work with the selected third-party grant manager to develop criteria
16 weighting that reflects the objectives and priorities of the program for the initial funding
17 solicitation. For example, gathering project data is a primary objective, whereas
18 employing local labor, while encouraged, is not a primary program objective. After
19 one or two funding cycles, we expect to have a large enough pool of applications to
20 determine whether the weighting should be adjusted to stimulate projects that further
21 the program objectives.

1 **Q. Does the Company propose soliciting feedback from stakeholders or the**
2 **Commission before awarding grants?**

3 A. No, the Company will not solicit input from stakeholders or the Commission on
4 specific grant awards, but welcomes input from stakeholders during this proceeding
5 on the proposed evaluation criteria. Once the evaluation criteria are established, the
6 Company will utilize these to screen applications and award grants. The Company
7 will report on grant awards in 2019 as part of its 2017-2019 progress report to the
8 Commission and in its 2020 Transportation Electrification Pilot Report.

9 **Q. Please explain why grants are limited to only upfront costs of EVSE.**

10 A. As discussed previously in this testimony, the Company's stakeholder input process
11 identified concerns with utilities providing funding for vehicles, due to their mobile
12 nature. Additionally, given the 3-year timeframe of the proposed pilot, the Company
13 did not want to commit to funding ongoing expenses beyond the pilot period. For
14 these reasons, pilot funding is limited to offsetting upfront EVSE costs. In addition to
15 enabling projects that may have occurred in the absence of Company funding,
16 funding for EVSE may allow grant recipients to repurpose funds that would have
17 been designated for EVSE for vehicles, ongoing expenses or awareness-building.

18 **Q. How are other market actors likely to engage with this pilot program?**

19 A. As the Company is not prescribing specific types of transportation electrification
20 project or technology, grant applicants will be able to engage with various market
21 actors to identify projects, technology and services that best meet their needs. The
22 Company is hopeful that transportation electrification market actors will help build

1 awareness for the pilot as they engage with non-residential customers interested in
2 transportation electrification projects.

3 **Q. What are the likely benefits of this pilot program to PacifiCorp's customers?**

4 A. Pacific Power and its customers will benefit from the pilot through new retail revenue
5 associated with funded projects, increased awareness of and access to EVSE and from
6 new data on market barriers and vehicle charging patterns that can be used for future
7 program and system planning. Program participants will receive a direct benefit in
8 the form of grant funds to offset upfront project costs.

9 **COST RECOVERY**

10 **Q. How does the Company propose to recover the costs of these pilot programs?**

11 A. The Company proposes to recover the operating costs of the pilot programs through
12 Schedule 95 – Pilot Program Cost Adjustment. Pacific Power estimates that the
13 Public Charging Pilot will result in an average 0.03 percent rate impact over the pilot
14 period; the Outreach and Education Pilot will result in an average 0.03 percent rate
15 impact over the pilot period; and the Demonstration and Development Pilot will result
16 in an average 0.04 percent rate impact over the pilot period. Collectively, the pilot
17 programs will result in an average 0.1 percent rate impact over the pilot period.

18 **Q. Is the proposed cost recovery consistent with other pilot programs the Company**
19 **operates?**

20 A. Yes. The cost recovery methodology proposed here is the same as that which the
21 Commission has approved for the Company's irrigation load control program.⁶ The

⁶ PacifiCorp d/b/a Pacific Power Oregon Tariff Advice No. 16-04 (Mar. 4, 2016) and Tariff Advice No. 16-07 (Apr. 21, 2016).

1 Company has proposed a measured approach to investment in these pilot programs to
2 test program design, market barriers, and the ability to accelerate transportation
3 electrification. The proposed cost recovery method will allow the Company to
4 recover the costs associated with these modest investments and allow for a pass-
5 through of benefits from the pilot program, such as revenue from public charging
6 equipment or other locations.

7 **Q. How does the Company propose to show that pilot program costs are prudently**
8 **incurred?**

9 A. The Company proposes an annual report to the Commission on the status of the pilot
10 programs. As part of this annual report, the Commission and stakeholders will have
11 the opportunity to review the pilot program costs.

12 **CONCLUSION**

13 **Q. What is your recommendation regarding the Company's supplemental**
14 **application and proposed pilot programs?**

15 A. I recommend approval of the Company's proposed pilot programs, as outlined in the
16 Company's supplemental application and supported by my testimony and that of Mr.
17 Meredith. Approval of these programs will be an initial step to ensure that
18 transportation electrification is accessible, well-understood, and supports a modern
19 and efficient electrical grid. In addition, I recommend the Commission approve
20 concurrent recovery of the pilot program costs through the Company's existing
21 Schedule 95 –Pilot Program Cost Adjustment.

22 **Q. Does this conclude your direct testimony?**

23 A. Yes.

Docket No. UM 1810
Exhibit PAC/101
Witness: Eli M. Morris

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

PACIFICORP

**Exhibit Accompanying Direct Testimony of Eli M. Morris
Letters of Stakeholder Support**

April 2017

April 3, 2017

Public Utility Commission of Oregon
201 High Street, S.E.
P.O. Box 1088
Salem, OR 97308-1088

Dear Commission:

We are writing to express support for Pacific Power's proposed Transportation Electrification Pilot Programs, filed December 27, 2016. These initial efforts represent a significant opportunity for Oregon to embrace a cleaner, more sustainable future through electric transportation.

Pacific Power's suite of proposed pilot programs are thoughtfully designed to tackle major barriers to transportation electrification in its 233 Oregon communities. These programs were developed in collaboration with a wide array of stakeholders and are designed to create a multitude of local benefits such as:

- Supporting Cities' sustainability and transportation goals;
- Improving local air quality and reducing local greenhouse gas emissions;
- Educating community members about this innovative technology and how it can save money and protect the environment;
- Increasing access to charging infrastructure across the state;
- Bringing investment to underserved Oregon communities

We are enthusiastic to partner with Pacific Power in driving adoption of electric transportation in our communities and hope that you will approve the pilot programs as proposed.

Thank you for your consideration.

Sincerely,

A handwritten signature in blue ink, appearing to read "Sharon Konopa".

Sharon Konopa

Mayor of Albany, Oregon



City Manager's Office
501 SW Madison Avenue
PO Box 1083
Corvallis, OR 97339-1083
(541) 766-6901
FAX: (541) 766-6780
City.Manager@corvallisoregon.gov

April 6, 2017

Public Utility Commission of Oregon
201 High Street, S.E.
P.O. Box 1088
Salem, OR 97308-1088

Dear Commission:

SUPPORT FOR PACIFIC POWER'S TRANSPORTATION ELECTRIFICATION PILOT PROGRAMS

We are writing to express support for Pacific Power's proposed Transportation Electrification Pilot Programs, filed December 27, 2016. These initial efforts represent a significant opportunity for Oregon to embrace a cleaner, more sustainable future through electric transportation.

Pacific Power's suite of proposed pilot programs is thoughtfully designed to tackle major barriers to transportation electrification in its 233 Oregon communities. These programs were developed in collaboration with a wide array of stakeholders and are designed to create a multitude of local benefits such as:

- Supporting Cities' sustainability and transportation goals
- Improving local air quality and reducing local greenhouse gas emissions
- Educating community members about this innovative technology and how it can save money and protect the environment
- Increasing access to charging infrastructure across the state
- Bringing investment to underserved Oregon communities

We are enthusiastic to partner with Pacific Power in driving adoption of electric transportation in our communities and hope you will approve the pilot programs as proposed.

Sincerely,

Mark W. Shepard, P.E.
City Manager

MWS:prj



Public Utility Commission of Oregon
201 High Street, S.E.
P.O. Box 1088
Salem, OR 97308-1088

Dear Commission:

We are writing to express support for Pacific Power's proposed Transportation Electrification Pilot Programs, filed December 27, 2016. These initial efforts represent a significant opportunity for Oregon to embrace a cleaner, more sustainable future through electric transportation.

Pacific Power's suite of proposed pilot programs are thoughtfully designed to tackle major barriers to transportation electrification in its 233 Oregon communities. These programs were developed in collaboration with a wide array of stakeholders and are designed to create a multitude of local benefits such as:

- Supporting Cities' sustainability and transportation goals;
- Improving local air quality and reducing local greenhouse gas emissions;
- Educating community members about this innovative technology and how it can save money and protect the environment;
- Increasing access to charging infrastructure across the state;
- Bringing investment to underserved Oregon communities

We are enthusiastic to partner with Pacific Power in driving adoption of electric transportation in our communities and hope that you will approve the pilot programs as proposed.

Thank you.

Sincerely,

Ron Foggin, ICMA-CM
City Manager



City of Independence, Oregon

April 6, 2017

Public Utility Commission of Oregon
201 High Street, S.E.
P.O. Box 1088
Salem, OR 97308-1088

Dear Commission:

I am writing to express support for Pacific Power's proposed Transportation Electrification Pilot Programs, filed December 27, 2016. These initial efforts represent a significant opportunity for Oregon to embrace a cleaner, more sustainable future through electric transportation. Pacific Power's suite of proposed pilot programs are thoughtfully designed to tackle major barriers to transportation electrification in its 233 Oregon communities. These programs were developed in collaboration with a wide array of stakeholders and are designed to create a multitude of local benefits such as:

- Supporting Cities' sustainability and transportation goals;
- Improving local air quality and reducing local greenhouse gas emissions;
- Educating community members about this innovative technology and how it can save money and protect the environment;
- Increasing access to charging infrastructure across the state;
- Bringing investment to underserved Oregon communities

The City of Independence has a community-wide fiber to the home broadband system, and we are leveraging it to facilitate smart city solutions. We are enthusiastic to partner with Pacific Power in driving adoption of electric transportation in our communities and hope that you will approve the pilot programs as proposed.

Thank you.

Sincerely,

Shawn Irvine
Economic Development Director



Bureau of Planning and Sustainability
Innovation. Collaboration. Practical Solutions.

April 7, 2017

Public Utility Commission of Oregon
201 High Street, S.E.
P.O. Box 1088
Salem, OR 97308-1088

Dear Commissioners:

We are writing to express our support for Pacific Power's proposed Transportation Electrification Pilot Programs, filed December 27, 2016. These initial efforts represent a significant opportunity for Oregon to embrace a cleaner, more sustainable future through electric transportation.

Portland's Climate Action Plan directs the City to reduce carbon emissions 40 percent by 2030 and 80 percent by 2050. As the transportation sector accounts for nearly 40 percent of local carbon emissions, shifting from gasoline and diesel to electricity is a key strategy to achieving Portland's climate action goals. To accelerate the transition to electric vehicles, publicly available charging infrastructure must be increased and accessible to all, including low-income populations and communities of color. We believe Pacific Power's pilot programs will make significant strides in that direction.

Pacific Power's proposed pilot programs are thoughtfully designed to tackle major barriers to transportation electrification. These programs were developed in collaboration with a wide array of stakeholders and are designed to create a multitude of local benefits such as:

- Supporting Cities' sustainability and transportation goals.
- Improving local air quality and reducing local greenhouse gas emissions.
- Educating community members about how electric vehicles can save money and protect the environment.
- Increasing access to public charging infrastructure across the state.
- Bringing benefits of electric vehicles to underserved communities.

We are enthusiastic to partner with Pacific Power in accelerating the adoption of electric transportation in Portland and hope that you will approve pilot programs to accelerate EV infrastructure.

Sincerely,

Susan Anderson
Director



City of Portland, Oregon | Bureau of Planning and Sustainability | www.portlandoregon.gov/bps
1900 SW 4th Avenue, Suite 7100, Portland, OR 97201 | phone: 503-823-7700 | fax: 503-823-7800 | tty: 503-823-6868



Community Development

126 E. Central Avenue
Sutherlin, OR 97479
(541) 459-2856
Fax (541) 459-9363
www.ci.sutherlin.or.us

City of Sutherlin

March 30, 2017

Public Utility Commission of Oregon
201 High Street, S.E.
P.O. Box 1088
Salem, OR 97308-1088

Dear Commission:

We are writing to express support for Pacific Power's proposed Transportation Electrification Pilot Programs, filed December 27, 2016. These initial efforts represent a significant opportunity for Oregon to embrace a cleaner, more sustainable future through electric transportation.

Pacific Power's suite of proposed pilot programs are thoughtfully designed to tackle major barriers to transportation electrification in its 233 Oregon communities. These programs were developed in collaboration with a wide array of stakeholders and are designed to create a multitude of local benefits such as:

- Supporting Cities' sustainability and transportation goals;
- Improving local air quality and reducing local greenhouse gas emissions;
- Educating community members about this innovative technology and how it can save money and protect the environment;
- Increasing access to charging infrastructure across the state;
- Bringing investment to underserved Oregon communities

We are enthusiastic to partner with Pacific Power in driving adoption of electric transportation in our communities and hope that you will approve the pilot programs as proposed.

Thank you.

Sincerely,

Brian Elliott
City of Sutherlin
Community Development Director
126 E. Central
Sutherlin, Or 97479
541-459-2856
b.elliott@ci.sutherlin.or.us

Public Utility Commission of Oregon
201 High Street, S.E.
P.O. Box 1088
Salem, OR 97308-1088

Dear Commission:

I am writing to express my support for Pacific Power's proposed Transportation Electrification Pilot Programs, filed December 27, 2016. These initial efforts represent a significant opportunity for Oregon to embrace a cleaner, more sustainable future through electric transportation.

Pacific Power's suite of proposed pilot programs are thoughtfully designed to tackle major barriers to transportation electrification in its 233 Oregon communities. These programs were developed in collaboration with a wide array of stakeholders and are designed to create a multitude of local benefits such as:

- Supporting Cities' sustainability and transportation goals;
- Improving local air quality and reducing local greenhouse gas emissions;
- Educating community members about this innovative technology and how it can save money and protect the environment;
- Increasing access to charging infrastructure across the state;
- Bringing investment to underserved Oregon communities

With the recent shift away from environmental protection on a federal level, it has become imperative to continue to push for green practices on a local level. Many local organizations have already piloted several programs regarding this. Recently Drive Oregon presented my organization with a fantastic way to enhance our community, by loaning us three Honda Fits to be used by Hacienda CDC staff and residents. Drive Oregon also partnered with Pacific Power to secure us 3 charging stations. Outside of downtown Portland, charging stations are scarce. There has been a significant push by many local organizations to expand this infrastructure to underserved communities, particularly to those of color and those who are of low-income. The three charging stations will remain in the Cully neighborhood after the project is complete, and we will be able to then offer that infrastructure to our residents and community members for years to come.

I am enthusiastic to partner with Pacific Power in driving adoption of electric transportation in our communities and hope that you will approve the pilot programs as proposed.

Thank you.

Sincerely,



Gena Scott
Asset Manager
Hacienda Community Development Corporation



KLAMATH FALLS DOWNTOWN ASSOCIATION
425 Walnut Ave.
Klamath Falls, OR 97601

March 31, 2017

Public Utility Commission of Oregon
201 High Street, S.E.
P.O. Box 1088
Salem, OR 97308-1088

Dear Commission:

On behalf of the Klamath Falls Downtown Association, I am writing to express our boards support for Pacific Power's proposed Transportation Electrification Pilot Programs, filed December 27, 2016. These initial efforts represent a significant opportunity for Oregon to better meet the needs of all its residents that choose forms of electric transportation.

We feel that Pacific Power's suite of proposed pilot programs are thoughtfully designed to tackle major barriers to transportation and electrification in its 233 Oregon communities. Klamath Falls specifically would benefit from a Public Charging Pilot program as it would promote the use of downtown green spaces and support economic growth by providing means for residents to shop and enjoy the downtown area. All this will help support and create an even more vibrant downtown for our 250+ business owners and residents. Other benefits to Klamath Falls and the downtown district include:

- Supporting the City's vision statement which states, "The City of Klamath Falls is a vibrant, cohesive community built on a strong economic base which balances urbanization with its existing historic character and values."
- Promoting the City's Blue Zones designation by making efforts to improving local air quality.
- Increasing access to charging infrastructure for electric vehicles in the downtown area.
- Bringing investment into Klamath Falls.

We are enthusiastic to partner with Pacific Power in driving the opportunity of electric transportation in our community and hope that you will approve the pilot programs as proposed.

Thank you.

Sincerely,

Nicolas R. Phair
President, Klamath Falls Downtown Association

Public Utility Commission of Oregon
201 High Street, S.E.
P.O. Box 1088
Salem, OR 97308-1088

23 March 2017

Dear Commission Members,

I am writing to express support for Pacific Power's proposed Transportation Electrification Pilot Programs, filed December 27, 2016.

I am an active member of the Douglas County Smart Energy (organization), and specifically working on the planning and installation of electric vehicle charging stations in our City of Roseburg, OR. I authored the grant proposal for the Volkswagen "Electrify America" project to install DC Fast Charging stations in our city, and worked with others to develop our county-wide Strategy for charging stations. More public fast charging stations are needed locally.

I have worked with our local city manager, who is a strong proponent of electrical energy reduction, renewable energy and electric vehicle charging station installations.

My small business is retail sales of electric assist bicycles. These (above mentioned) items support local projects to reduce energy consumption which will improve the climate sustainability and reduce the energy cost of transportation / mobility.

These initial efforts represent a significant opportunity for Oregon to embrace a cleaner, more sustainable future through electric transportation.

Pacific Power's proposed pilot programs seem thoughtfully designed to tackle major barriers to transportation electrification in its 233 Oregon communities. These programs were developed in collaboration with a wide array of stakeholders and are designed to create a multitude of local benefits such as:

- Supporting Cities' sustainability and transportation goals;
- Improving local air quality and reducing local greenhouse gas emissions;
- Educating community members about this innovative technology and how it can save money and protect the environment;
- Increasing access to charging infrastructure across the state;
- Bringing investment to underserved Oregon communities

I am enthusiastic to partner with Pacific Power in driving adoption of electric transportation in our communities and hope that you will approve the pilot programs as proposed.

Thank you.

Sincerely,

David Reeck, 2090 NW Excello Drive, Roseburg, OR 97471

Marketing Director - OReGONbike LLC - electric assist bicycles



ROGUE VALLEY
Clean Cities Coalition

Rogue Valley Clean Cities Coalition
4497 Brownridge, Medford, OR 97504
(541) 621-4853 www.roguevalleycleancities.org

December 19, 2016

Oregon Public Utility Commission
201 High St. SE #100
Salem, OR 97301

RE: Pacific Power Transportation Electrification Proposals

Oregon Public Utility Commission,

Rogue Valley Clean Cities Coalition (RVCCC) , an organization operating under the authority of the U.S. Department of Energy, is pleased to provide comment to PacifiCorp's proposed transportation programs.

It is RVCCC's position that, although the proposals have yet to provide detailed ratepayer impact information, these transportation proposals are wholly consistent with our organization's mission statement to decrease dependency on imported petroleum and to advance strategies that promote clean air and water in the Rogue Valley via alternative fuels.

We recognize the potential for their proposals to promote and educate the public on the value of alternative fuels. RVCCC's vision is to enhance the livability of the Rogue Valley by building and bridging relationships with those interested in sustainable energy strategies.

Rogue Valley Clean Cities Coalition submits this letter of support for the proposed Pacific Power Transportation Electrification programs for Oregon customers.

Respectfully submitted,

Rogue Valley Clean Cities Coalition

Michael A. Montero, Board Chair

CC: File
PacifiCorp



SUNSET EMPIRE TRANSPORTATION DISTRICT
900 Marine Drive Astoria, Oregon 97103

Public Utility Commission of Oregon
201 High Street, S.E.
P.O. Box 1088
Salem, OR 97308-1088

Dear Commission:

We are writing to express support for Pacific Power's proposed Transportation Electrification Pilot Programs, filed December 27, 2016. These initial efforts represent a significant opportunity for Oregon to embrace a cleaner, more sustainable future through electric transportation.

Pacific Power's suite of proposed pilot programs is thoughtfully designed to tackle major barriers to transportation electrification in its 233 Oregon communities. These programs were developed in collaboration with a wide array of stakeholders and are designed to create a multitude of local benefits such as:

- Supporting Cities' sustainability and transportation goals;
- Improving local air quality and reducing local greenhouse gas emissions;
- Educating community members about this innovative technology and how it can save money and protect the environment;
- Increasing access to charging infrastructure across the state;
- Bringing investment to underserved Oregon communities

Sunset Empire Transportation District is pursuing the feasibility of purchasing electric buses. The technology has improved dramatically and we are working other transit providers in the state and with the Oregon Department of Transportation's Rail and Public Transportation Division on the potential of submitting a grant for the purchase of electric buses. We have been holding meetings with Pacific Power on this project as well.

We are enthusiastic to partner with Pacific Power in driving adoption of electric transportation in our communities and hope that you will approve the pilot programs as proposed.

Sincerely,

A handwritten signature in black ink that reads "Kathy Kleczek". The signature is fluid and cursive.

Kathy Kleczek
Chairperson

Docket No. UM 1810
Exhibit PAC/200
Witness: Robert M. Meredith

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

PACIFICORP

Direct Testimony of Robert M. Meredith

April 2017

TESTIMONY OF ROBERT M. MEREDITH

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ELECTRIC VEHICLE CHARGING STATION ILLUSTRATIVE TARIFF	2

ATTACHED EXHIBIT

EXHIBIT PAC/201 – Illustrative Tariff

1 **Q. Please state your name, business address, and present position with PacifiCorp**
2 **d/b/a Pacific Power (PacifiCorp or Company).**

3 A. My name is Robert M. Meredith. My business address is 825 NE Multnomah Street,
4 Suite 2000, Portland, Oregon 97232. My title is Manager, Pricing and Cost of
5 Service.

QUALIFICATIONS

7 Q. Please describe your education and professional background.

8 A. I graduated magna cum laude from Oregon State University in 2004 with a Bachelor
9 of Science degree in Business Administration and a minor in Economics. In addition
10 to my formal education, I have attended various industry-related seminars. I have
11 worked for the Company for twelve years in various roles of increasing responsibility
12 in the Customer Service, Regulation, and Integrated Resource Planning departments.
13 I have over six years of experience preparing cost of service and pricing related
14 analyses for all of the six states that PacifiCorp serves. I assumed my present position
15 in March 2016.

16 **Q. Have you testified in previous regulatory proceedings?**

17 A. Yes. I have previously filed testimony on behalf of the Company in regulatory
18 proceedings in California, Washington, Utah, and Idaho.

PURPOSE AND SUMMARY OF TESTIMONY

20 Q. What is the purpose of your testimony in this proceeding?

21 A. The purpose of my testimony is to present the Company's illustrative tariff for
22 Company-operated electric vehicle charging station service that supports the public
23 charging program discussed in Company witness Mr. Eli M. Morris' direct testimony.

1 **ELECTRIC VEHICLE CHARGING STATION ILLUSTRATIVE TARIFF**

2 **Q. Why is the Company filing an illustrative tariff for Company-operated electric**
3 **vehicle charging station service?**

4 A. As described in Mr. Morris' direct testimony, the Company will own and operate
5 electric vehicle charging stations as part of the Company's proposed public charging
6 program. To access the Company's electric vehicle charging stations, users will pay
7 the Company a fee for that service. The Company proposes to charge this fee in
8 accordance with a tariffed rate schedule. Considering that the Company is still many
9 months away from opening an electric vehicle charging station and given the rapidly
10 evolving nature of the public electric vehicle charging environment, the Company is
11 only providing an illustrative tariff at this time. The illustrative tariff describes the
12 nature of the service being provided as well as the manner in which the Company
13 proposes charging for its service without indicating actual prices. After receiving
14 approval for its public charging program and at a time closer to when it would
15 anticipate opening its first station, the Company will make an advice filing requesting
16 approval of a Company-operated electric vehicle charging service tariff.

17 **Q. Please describe the Company's illustrative tariff.**

18 A. The Company's illustrative tariff for Company-operated electric vehicle charging
19 station service, designated as Schedule 60, is provided as Exhibit PAC/201. The
20 illustrative tariff is designed to provide service to any individual who uses Company-
21 operated electric vehicle charging stations for the purpose of recharging the battery of
22 an electric vehicle. The illustrative tariff explains the Company's responsibility to
23 keep its existing charging station in good operating condition and to make any repairs

1 as soon as reasonably possible. Finally, the illustrative tariff sets forth the manner in
2 which the Company proposes to charge for this service.

3 **Q. How does the illustrative tariff propose to charge individuals for Company**
4 **operated electric vehicle charging station service?**

5 A. Under the illustrative tariff, individuals will be charged for each minute of electric
6 vehicle station charging service. Specifically, Exhibit PAC/201 sets forth four
7 placeholders for prices which the Company will charge for its service. Individuals
8 will be charged for minutes of service provided from a level 2 charger (under 19.2
9 kilowatts) or from a direct current (DC) fast charger (over 19.2 kilowatts) for either
10 the on-peak period or the off-peak period.

11 **Q. Why would individuals be charged per minute of usage instead of by kilowatt-**
12 **hour?**

13 A. To help the Company's electric vehicle charging stations be more fully utilized and to
14 ensure individuals make these stations available for others to use, it is important to
15 send a price signal that encourages users to vacate the location after the vehicle's
16 charging is complete. Charging on a per kilowatt-hour basis does not provide an
17 incentive to leave and make the station available for other drivers after charging has
18 completed. In addition, charging for usage on a per minute basis provides a
19 reasonable proxy for per kilowatt-hour rates, since energy consumption will likely
20 correspond to the time spent charging.

21 **Q. Why does the Company propose charging different prices for service provided**
22 **from level 2 and DC fast chargers?**

23 A. As described in Mr. Morris' direct testimony, the Company plans to include level 2

1 charging as a backup for its DC fast chargers. The Company proposes charging
2 lower prices for service from level 2 charging because they are less costly to install
3 and provide a slower charge for drivers.

4 **Q. Why does the Company propose charging different prices based upon time-of-**
5 **use period?**

6 A. Senate Bill 1547 requires the Company to file transportation electrification programs
7 that “(a)re reasonably expected to improve the electric company’s electrical system
8 efficiency and operational flexibility”. Charging different prices based upon time-of-
9 use period will encourage individuals to use the Company’s charging stations during
10 the off-peak period and discourage usage during the on-peak period. Deterring an
11 increase to the Company’s peak usage due to transportation electrification strongly
12 aligns with the goal of improving electrical system efficiency.

13 The time periods for the on- and off-peak periods included in the Company’s
14 illustrative tariff are the same as those used in the Company’s Schedule 210 –
15 Portfolio Time-of-Use Supply Service that is available for residential and small non-
16 residential customers. These hours correspond with shifting usage away from the
17 Company’s peak usage. Additionally, keeping the time-of-use periods consistent
18 with Schedule 210 ensures that the experience for individuals utilizing the
19 Company’s charging stations and residential customers participating in time-of-use is
20 consistent, particularly for electric vehicle owners who charge under Pacific Power
21 time-of-use rates at home.

1 **Q. How does the Company propose to develop prices for Company operated**
2 **electric vehicle charging station service?**

3 A. If the Public Utility Commission of Oregon approves the Company's public charging
4 program, the Company will develop the per-minute prices described above to be
5 generally reflective of prices that other providers charge for comparable service. The
6 goal is for the Company's price to reflect market prices for charging while also
7 sending appropriate price signals to encourage proper charging.

8 **Q. Will the Company's proposed electric vehicle charging rates be set to exactly**
9 **recover the costs of electric vehicle charging?**

10 A. Not necessarily. One of the considerations specified for transportation electrification
11 programs in Senate Bill 1547 is that they "(a)re reasonably expected to stimulate
12 innovation, competition, and customer choice in electric vehicle charging and related
13 infrastructure and services." Setting the Company's electric vehicle charging rates at
14 a level similar to the rates that other providers charge helps to ensure that the
15 Company's provision of electric vehicle charging service does not stifle competition
16 in this nascent industry. If electric vehicle charging rates were set at the level
17 required to recover the Company's costs, then the Company could have an unfair
18 advantage over other providers if its rates were lower. Conversely, if the price
19 needed to recover its costs was in excess of what other providers charge, Company
20 charging stations might be at a disadvantage.

21 **Q. How does the Company propose to reconcile revenues from electric vehicle**
22 **charging to the costs of electric vehicle charging?**

23 A. The Company proposes to distribute any excess revenues or collect any unrecovered

1 costs from customers through an electric-vehicle-related rate in Schedule 95 – Pilot
2 Program Cost Adjustment. This rate will also recover the costs of the pilot programs
3 as described in the Company's supplemental application. After receiving approval
4 for its electric vehicle charging programs, the Company will file an advice letter to set
5 an appropriate adjustment rate. The rate will be reviewed and updated periodically to
6 reflect changes in program costs and to include reconciliation amounts for electric
7 vehicle charging stations.

8 **Q. Does this conclude your direct testimony?**

9 **A.** Yes.

Docket No. UM 1810
Exhibit PAC/201
Witness: Robert M. Meredith

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

PACIFICORP

**Exhibit Accompanying Direct Testimony of Robert M. Meredith
Illustrative Tariff**

April 2017

COMPANY OPERATED ELECTRIC VEHICLE CHARGING STATION SERVICE

Page 1

Available

In all territory served by the Company in the State of Oregon.

Applicable

To electric vehicle charging service provided from Company operated electric vehicle charging stations.

Billing

Any individual using Company operated electric vehicle charging stations for the purpose of recharging the battery of an electric vehicle shall pay for such service at the rates described below:

Charging Stations under 19.2 kW (Level 2)

On-Peak, per minute	To Be Determined
Off-Peak, per minute	To Be Determined

Charging Stations over 19.2 kW (DC Fast Charging)

On-Peak, per minute	To Be Determined
Off-Peak, per minute	To Be Determined

On-Peak Period

Winter

Monday through Friday 6:00 a.m. to 10:00 a.m. and 5:00 p.m. to 8:00 p.m.

Summer

Monday through Friday 4:00 p.m. to 8:00 p.m.

Due to the expansions of Daylight Saving Time (DST) as adopted under Section 110 of the U.S. Energy Policy Act of 2005, the time periods shown above will begin and end one hour later for the period between the second Sunday in March and the first Sunday in April and for the period between the last Sunday in October and the first Sunday in November. At such time as updated DST programming is available and has been applied to a Consumer meter, the time periods shown above will apply on all days for that Consumer. Consumers will be notified of their change to updated DST programming in a timely manner.

Off-Peak Period

All non On-Peak Period plus the following holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day.

Seasonal Definition

Winter months are defined as November 1 through March 31. Summer months are defined as April 1 through October 31.

Provisions

1. Operation, repair and maintenance of electric vehicle charging stations on this rate schedule will be responsibility of the Company.
2. Inoperable electric vehicle charging stations will be repaired as soon as reasonably possible, during regular business hours or as allowed by Company's operating schedule and requirements, provided the Company receives notification from a Consumer or a member of the public by notifying Pacific Power's customer service (1-888-221-7070).
3. The Company may at its discretion install, relocate, modify, or remove electric vehicle charging stations. Potential modifications to Company operated electric vehicle charging stations may include adding, removing, or changing electric vehicle supply equipment available for charging service.

(continued)