CASE: UM 1810
WITNESS: JASON R. SALMI KLOTZ

# PUBLIC UTILITY COMMISSION
# OF
# OREGON

# STAFF EXHIBIT 100

# Reply Testimony

# May 24, 2017

**Q. Please state your name, occupation, and business address.**

A. My name is Jason R. Salmi Klotz. I am a Principle Executive Manager employed in the Energy Resources and Planning Division of the Public Utility Commission of Oregon (OPUC). My business address is 201 High Street SE, Suite 100, Salem, Oregon 97301.

**Q. Please describe your educational background and work experience.**

A. My witness qualification statement is found in Exhibit Staff/101.

**Q. What is the purpose of your testimony?**

A. To review Pacific Power's (Company) three Transportation Electrification Program proposals to accelerate transportation electrification as required by Oregon Laws 2016, Chapter 28, Section 20 (SB 1547), and to provide a recommendation to the Commission on whether the programs are consistent with the six statutory factors and should be approved at this time.

**Q. Did you prepare any exhibits for this docket?**

A. Yes. I prepared Exhibit Staff/101-Witness Qualification Statement, consisting of two pages, and Exhibit Staff/102-Company Responses to Staff DRs, consisting of 12 pages.

**Q. How is your testimony organized?**

A. My testimony is organized as follows:

**Q. Would you please summarize your testimony and recommendations?**

A. Yes. Overall, I commend Pacific Power on a well-crafted inaugural proposal. The Company is transparent about its proposed activities, what it knows currently and what information it lacks, and what information it expects to gather through the pilot activities. Pacific Power has done an excellent job of revising and supplementing its original application and has answered many of Staff's questions regarding the initial filing. Additionally, Pacific Power has crafted its proposal to directly address the transportation electrification rules adopted by the Commission. Staff appreciates this attention to detail.

In my testimony, I first outline the current policy landscape for utility entrance into the electric vehicle (EV) market and how Staff recommends the Commission address the first round of transportation electrification program proposals from the utilities—as pilot programs. Second, I discuss what the general evaluation criteria should be for future proposals. Third, I outline issues relating to program scope. Fourth, I address the Company's lack of engagement in a cost effectiveness and attribution model, and what Staff expects going forward with regard to methodology development. Fifth, I discuss Staff's evaluation of Pacific Power's three pilot proposals, and sixth, I address pilot program costs.

In sum, I recommend approval of the Company's three pilot programs with some minor changes, which may delay program rollout but will help

stakeholders and the Commission better evaluate the pilots. I make the following recommendations:

- The three programs be reviewed and assessed as pilot programs,[1] meaning they are time-limited, cost-limited, and require specific learnings; moreover, approval does not imply that the proposals meet the six statutory criteria;
- Pacific Power look to examples of the work from entities that develop market transformation models for energy efficiency products to assist in its efforts to develop an attribution methodology. Once Pacific Power has developed an attribution model, Staff encourages broad stakeholder input on the model.
    - Even better, Staff suggests Pacific Power and PGE combine efforts, and possibly funding, for the development of an attribution methodology that meets the needs of both utilities, stakeholders and the Commission.
    - Staff recommends Pacific Power host a series of workshops on the development and presentation of its attribution methodology, as such methodology will be important for Commission determination of whether or not to approve program proposals in the future.
- Pacific Power not undertake the activities outlined in the "Community Events" portion of its Outreach and Education Pilot.

[1] This is consistent with Pacific Power's application, which proposes the three programs as "pilots."

- Pacific Power submit a more detailed description of the activities and materials to be funded under its Outreach and Education pilot prior to program approval that includes draft sample materials for customer communications and self-service resources, such as examples of brochures, messages and tools that are expected to be used. Staff would also like Pacific Power to submit additional details on how the Electric Vehicle Supply Equipment (EVSE), non-residential technical assistance would lead to more fleet and workplace charging.
- Staff recommends Pacific Power not fund ride and drive events or sponsor other community events, as these activities are tenuous in terms of the scope of utility activity outlined in SB 1547. Additionally such activities are unlikely to be cost-effective or trackable under an attribution methodology.
- Pacific Power undertake efforts to better identify where it would place charging infrastructure and report a list of candidate sites to Staff, explaining why the sites seem viable to Pacific Power, what objectives such sites would fulfill, and what data would be generated and for what purpose.
- Staff recommends approving funding for the grant funding pilot but on the condition that Pacific Power submit to the Commission the details of grant projects the Company decides to fund. Pacific Power's filing should also state why the grant was awarded and how the project meets the objectives outlined by Pacific Power in its UM 1810

proposal. This filing would be an informational report such that all parties can follow the progress and decisionmaking undertaken by Pacific Power.

- The portion of total project costs covered by Pacific Power's grant should represent on an equal basis the ratepayer interest in the Clean Fuels Program (CFP) credits generated from the EVSE until such time as the ratepayer's investment is returned in full. In other words, for each grant given for EVSE, Pacific Power shall contract for the rights to the CFP credits generated by the EVSE to help offset the cost of the ratepayer investment. At such time that the ratepayer investment has been recovered, either through increased electricity sales or the collection and sale of CFP credits, Pacific Power would relinquish its rights to the CFP credits generated by the grant-funded EVSE.
- Pacific Power concentrate its efforts on educating its customers on the benefits of electric vehicle ownership through concrete, practical messaging and tool development to assist customers in understanding the benefits of EV ownership. This includes concentrated efforts to promote residential time-of-use rate adoption for EV owners and the development of online tools to assist customers in developing their own personal EV investment case.

## EVALUATION FRAMEWORK

**Q. Please explain the framework for Staff's evaluation and the difficulties Staff encountered in evaluating this inaugural filing of transportation electrification proposals.**

A. Staff began its review of Pacific Power's proposed programs by evaluating the programs in accordance with the six statutory factors (a)-(f) provided in SB 1547, which Staff understands is the universe of criteria by which the Commission may evaluate transportation electrification programs. However, Staff struggled in its evaluation of Pacific Power's programs given that some of the factors appear inconsistent with common Commission practice for review of utility investments, such as the new factor (c) that capital investments must be "reasonably expected" to be used and useful and are determined to be (b) "prudent" for cost-recovery purposes before the project has even been outlaid. In addition, Staff found that evaluating programs against several of the factors related to (d) enabling the utility to support the electrical system, (e) improving system efficiency and operational flexibility, and (f) stimulating innovation and competition required new methods to quantify and justify such expected benefits.

Further, and perhaps more importantly, the difficulty of determining which proposals promise clear benefits to Oregon ratepayers was compounded by the absence of hard data supporting Pacific Power's specific proposals, the lack of an evaluation methodology for cost effectiveness, and the lack of an attribution methodology. Staff certainly recognizes the difficulty Pacific Power

likely encountered in preparing these proposals in accordance with SB 1547's pressing statutory deadline and the Commission's new transportation electrification rules. Staff concedes that some of the data deficiencies simply cannot be cured by Pacific Power at this time because (as Pacific Power accurately notes) some of the data does not currently exist for the state of Oregon.

For the reasons mentioned above, Staff found it very difficult to find measureable and verifiable benefits associated with the proposed programs, and therefore hesitates to recommend approval of Pacific Power's proposed programs based on consideration of the six statutory factors. However, Staff does recognize that we are still in the early evolutionary stages of a market where traditional utility incentive programs and outreach methods may not actually produce an accelerated uptake of EVs by customers. Staff understands that the legislature intended for utilities to operate in this nascent market to provide the push necessary to accelerate EV charging and electrified transportation that private factors have yet to accomplish.

Thus, Staff finds itself in a perplexing position—to make a meaningful attempt to transform the EV market, Pacific Power would have to make significant inroads in installing multiple dozens of public charging stations throughout its service territory and saturate the service territory with outreach and direct incentives, but that would require an approval of a hefty outlay of Oregon ratepayer funds based on little to no supporting data, no way to measure attribution, and the inability to demonstrate that such a magnitude of

investments are prudent. On the other hand, some of Pacific Power's programs proposed in its inaugural application could be approved with minimal detriment to ratepayers, but Staff doubts that they will result in significant incremental impacts necessary to actually "accelerate transportation electrification" and stimulate innovation and competition as the legislature envisioned.

Therefore, after careful review of Pacific Power's initial application and its supplemental filing made on April 12th, Staff finds that, like PGE's application, the only way Staff can recommend approval of these first-round proposals is to evaluate them as *pilot* programs and not hold them to the standard of the six statutory criteria. As a result, where Staff recommends approval of programs in its testimony, those recommendations are based on an understanding that these initial programs, as Pacific Power has indicated, are pilot programs subject to specific required conditions proposed by Staff, namely, time limitations, spending limitations, and specific learnings that Pacific Power will track and report back to the Commission.

Perhaps more importantly, Staff believes that improving stakeholder understanding of program attribution, which is how Pacific Power's specific program positively affected acceleration of transportation electrification, is an essential question that must be addressed as utilities continue to propose transportation electrification programs into the future. Staff believes the data from Pacific Power's inaugural pilot programs, if properly measured and tracked, will enable Pacific Power and stakeholders to develop an attribution

methodology that should allow for superior assessment of new utility transportation electrification programs going forward.

To that end, Staff suggests Pacific Power look to examples of the work from entities that develop market transformation models for energy efficiency products to assist Pacific Power in its efforts to develop an attribution methodology. Once Pacific Power has developed an attribution model, Staff would encourage broad stakeholder input on the model. Additionally, Staff recommends that Pacific Power's pilot efforts eventually be aligned to support a broader long-term plan to accelerate transportation electrification. Staff expects that when data from the pilot programs becomes available and the utilities are in the position of implementing programs that fit within the "plan" (as will be described in a future rulemaking or order), Staff will have the tools to efficiently and thoroughly review transportation electrification programs in accordance with the six statutory criteria.

## STAFF ANALYSIS

**Q. What issues has Staff identified with Pacific Power's three Transportation Electrification Program proposals?**

A. Staff has identified three broad issues among the three programs proposed by Pacific Power:

1. Scope of Activity – Pacific Power's proposed transportation electrification programs should fit within the scope of activity outlined by the legislature.

2. Attribution and Cost Effectiveness – Pacific Power has chosen not to submit estimates of cost effectiveness or attribution. While Staff understands this choice given the narrative submitted by Pacific Power, Staff must better understand Pacific Power's approach to program evaluation and specific learnings to be gained from each program, as well as how Pacific Power will develop a methodology to assess attribution in order to support program approval as pilots.
3. Cost – Pacific Power has requested a total of $4.6M in ratepayer funds over a three-year period to conduct several activities intended to accelerate transportation electrification. However, Pacific Power has provided no estimates of how much of these costs, which will be borne by ratepayers, could be offset by revenue sources generated from people who charge their EVs at the new charging stations, or for example, the value of CFP credits. Staff does believe the costs requested by the Company are reasonable for the activities proposed, but Pacific Power must make every effort to recapture value from these proposed investments to help offset the cost of the ratepayer investment (this includes tracking the revenue from electricity sales from chargers to reduce the costs of the ratepayer investment in the infrastructure accordingly).

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## ISSUE 1. GENERAL EVALUATION OF PROGRAMS TO ACCELERATE TRANSPORTATION ELECTRIFICATION

**Q. How does Staff anticipate proposed transportation electrification programs will be evaluated at the Commission?**

A. Oregon Laws, Chapter 28, Section 20(4)(a)-(f)[2] directs the Commission to consider six factors when assessing transportation electrification programs proposed by electric companies, specifically, whether the proposed investments and expenditures are:

a) Within the service territory of the electric company;

b) Prudent as determined by the Commission;

c) Reasonably expected to be used and useful as determined by the Commission;

d) Reasonably expected to enable the electric company to support the electric company's electrical system;

e) Reasonably expected to improve the electric company's electrical system efficiency and operational flexibility, including the ability of the electric company to integrate variable generating resources; and

f) Reasonably expected to stimulate innovation, competition and customer choice in electric vehicle charging and related infrastructure and services.

[2] The six factors can be found at Oregon Laws Chapter 28, Section 20, as the law is not yet codified in Oregon Revised Statutes (ORS).

**Q. What about factor (a) "within the service territory of the electric company" do you find informative in relation to the programs proposed by Pacific Power?**

A. Factor (a), investment within the service territory of the utility, could indicate that investments undertaken by a utility should occur within its exclusive service territory to ensure that at least some benefits accrue to the ratepayers who are subsidizing the investments. Staff believes that efforts undertaken by Pacific Power to install charging pods within its service territory in locations that will result in moderate or high use requires greater upfront investigation, as opposed to charging pod location efforts in a more highly concentrated service territory such as Portland General Electric's (PGE). Pacific Power is clearly cognizant of this challenge as it has stated that it will need to research proper sites for charger placement, and that in some areas, namely rural areas, the default charger pod configuration may be changed to include fewer chargers out of concern for lack of use.[3]

Given Pacific Power's service territory configuration, Staff believes there might be an opportunity for Pacific Power to locate charging pod units adjacent to other utility service territories. This may lead to the possibility of co-funding, and Staff suggests that Pacific Power seek out such opportunities where they naturally arise; further, Staff believes this should be part of Pacific Power's charging pod siting criteria.

[3] *See* Pacific Power Response to OPUC Data Request 7, 8, 9 and 14.

**Q. How do factors (d), (e), and (f) of the law inform your analysis of the programs Pacific Power proposed?**

A. Items (d) and (e) refer to system impacts and system operations, and the benefits of operational flexibility that EV load could possibly provide to the system, including better integration of variable renewable resources. Factor (f) is constructed such that the direct objective is electric vehicle charging and related infrastructure, but also indicates that innovation, competition, and customer choice are reasonably expected to be stimulated as a result of the utility's proposed projects. Taken as whole, factors (a), (d), (e) and (f) all reference infrastructure and infrastructure-related services as activities that the utility would propose to the Commission to accelerate transportation electrification. Thus, Staff thinks it is important that Pacific Power's primary focus be infrastructure investments that provide access to electricity as a transportation fuel or programs that encourage beneficial integration of EV's onto the Company's system.

**Q. Did any other parts of the statute provide guidance for your assessment and evaluation of Pacific Power's proposed programs?**

A. Yes. First, subsection three of the law states, "A program proposed by an electric company may include prudent investments in or customer rebates for electric vehicle charging and related infrastructure." This is informative because it indicates that a program proposed by a utility may include rebates to customers for EV charging and related infrastructure.

Second, in factor (f), the legislature used the term "services." Staff likens this to the obligation of the utility to provide safe and reliable electric service at least cost. Additionally, the law on acceleration of transportation electrification (SB 1547) and the Clean Fuels Program (developed by way of Oregon's Low Carbon Fuels Standard) both refer to electricity as a transportation fuel.[4] In Staff's opinion, this framework may indicate that the utility role with regard to transportation electrification is primarily as a service provider of electricity and electricity infrastructure to more readily provide electricity as an accessible transportation fuel and a tool to optimize the grid and integrate renewables, as opposed to investing in programs such as Outreach and Education, where it is very difficult, if not impossible, to evaluate whether the Company's efforts in fact accelerated transportation electrification.

Further, the statute supports this scope with its definition of "transportation electrification" as the use of electricity to provide power to a vehicle, programs related to developing the use of electricity to power vehicles, and through related infrastructure investments.[5] Staff used this framework regarding the scope of utility activities to accelerate transportation electrification when evaluating Pacific Power's proposed programs.

**Q. Do you think this perspective can help the Commission better define prudency in the context of transportation electrification?**

A. I think that this perspective can help the Commission with its determination of prudency, but I don't think it fully defines prudency. From the lens discussed

[4] *See* Chapter 28 Section 20 (2)(b),(c) and (g).
[5] Oregon Laws, Chapter 28, Section 20(1)(b).

above, the Commission's prudency determination can be informed by whether Pacific Power's programs accelerate EV infrastructure and related infrastructure services, while providing net benefits to customers. However, Staff also believes that whether a utility program truly accelerates transportation electrification is a matter of attribution. Pacific Power has proposed conducting evaluations of their programs *ex post* but provides little discussion of assessing attribution related to its pilots; attribution is a way to measure how or if action by Pacific Power, through specific programs, actually was the cause that accelerated transportation electrification in its service territory. At present, Pacific Power's proposal lacks recognition of the need for, or contemplation of, an attribution methodology, how attribution is defined and how to acquire the necessary data to assess attribution.

Staff believes that attribution, cost effectiveness, and the flow of net benefits to ratepayers should inform prudency and must be developed if future non-pilot programs are to be proposed to the Commission.

**Q. The legislation also asks the Commission to consider whether investments are reasonably expected to be used and useful. Do you find this factor informative?**

A. Yes and no. Staff struggles to see how non-infrastructure investments, such as Outreach and Education items, can be reasonably expected to be used and useful. However, given the utility's new role in a market as defined by the legislature, it may be possible to find a connection between some Outreach and

Education programs, such as Pacific Power's Technical Assistance proposal, which attempts to assist with privately-owned charger investments.

**Q. Are there other aspects of the law that informed your assessment of the programs to accelerate transportation electrification or the question of prudency?**

A. Yes. I would offer the language in the current law where the legislature used the term "net benefit." This term, in the context of a transportation electrification investment, comes from a 2012 Commission decision, Order No. 12-013. In this order, the Commission adopted a policy that in order for a utility to justify general rate recovery of electric vehicle investments, "prudence, in the context of EVSE investment, requires a showing of net benefits to customers." The legislature (in SB 1547) referenced this term but modified it to state that by deploying transportation electrification, the utility has the opportunity to propose that a net benefit for the customers of the electric utility *is attainable*.

## ISSUE 2. SCOPE OF ACTIVITY

**Q. Does your assessment of the role for utilities in the electric transportation market inform your assessment of Pacific Power's program proposal, and if so, what guidance can you offer Pacific Power?**

A. Yes. Pacific Power has proposed several programs that fit within the scope of activity as outlined earlier in my testimony. Staff recommends that Pacific Power not undertake the "Community Events" portion of its Outreach and Education Pilot (an estimated eight ride-and-drive events and sponsorship of additional events promoting electric transportation) given that no data has been

provided to support how these events will actually accelerate transportation electrification. As stated earlier, Staff is concerned that such activities do not fit within the legislative scope of activity. Additionally, attribution of such activities to transportation acceleration will be very hard to track or quantify.

**Q. Please explain Staff's rationale for why ratepayers should not fund the Community Events Portion of Pacific Power's Outreach and Education Pilot.**

A. First, Staff does not believe that the proposed activities correspond with the role Pacific Power is to play as a new entrant to the electric vehicle market. Funding of ride-and-drive events and sponsoring of other undefined events in an effort to promote electric vehicle ownership are likely not the types of activities contemplated by the legislature, and importantly, other market actors exist today that currently conduct such activity. Thus, additional ratepayer funds need not be spent on these activities, as they are primarily promotional in nature. Second, the question of a proper attribution methodology and the connection to the Commission prudency determination remains unresolved. Third, it would be very difficult for Pacific Power to argue that such events, and its co-funding of such events, lead directly to an increase in electric vehicle ownership or an acceleration of transportation electrification; in other words, it is unclear how the Company would be able to show attribution regarding these activities.

**Q. Do you have other concerns and recommendations regarding Pacific Power's Outreach and Education Pilot regarding scope of activity?**

A. Yes. I have concerns about the breadth of activity contemplated; I recommend that Pacific Power concentrate its efforts on educating its customers on the benefits of electric vehicle ownership through concrete, practical messaging and tool development to assist customers in understanding the benefits of ownership. This specifically includes concentrated efforts to promote residential time-of-use rate adoption for EV owners, which also lays the groundwork for successful future integration of EVs into the system as a "benefit" to the system rather than increased load at suboptimal times, and the development of online tools to assist customers in developing their own personal EV investment case.[6] Staff is concerned that Pacific Power will use ratepayer money to essentially develop corporate goodwill, rather than develop materials that actually result in EV adoption. To that end, I recommend that Pacific Power submit a more detailed filing of the activities to be funded under its Outreach and Education pilot that includes draft sample materials for customer communications and self-service resources such as examples of brochures, messages, and tools that are to be used. Staff would also like Pacific Power to submit more detail on how the EVSE, non-residential technical assistance would lead to more fleet and workplace charging.

## ISSUE 3. ATTRIBUTION AND COST EFFECTIVENESS METHODOLOGY

**Q. Unlike PGE's proposal, Pacific Power's transportation electrification program proposal does not provide a discussion of cost effectiveness or attribution; is this problematic?**

[6] *See* Pacific Power Response to OPUC Data Request 5.

A. Yes and no. There is very little data and information from which to evaluate these programs and make a funding decision, thus Staff, like Pacific Power, views this initial round of investments as a pilot effort. Traditionally, pilot programs have not needed to pass cost effectiveness tests and generally do not run for an extended period of time. However, Staff does appreciate cost effectiveness estimates because it helps assess the reasonableness of an investment and whether there are other benefits that may help to justify an initial investment into a pilot project.[7] Additionally, had Pacific Power undertaken the task of crafting a draft cost effectiveness test, stakeholders might have a better idea of the long-term potential of the proposed pilot programs to affect the market, and whether and when net benefits might accrue to ratepayers.[8] Similarly, had Pacific Power undertaken the task of developing a draft attribution methodology, it would have been better informed of what activities are more likely to accelerate transportation electrification. This, in turn, would have better informed the Company of the market barriers that need attention first, how to construct a strategy to address each market barrier, and in what sequence.

In sum, we lack any methodology or data from which to analyze cost effectiveness and attribution. Pacific Power makes a point that it will make cost effectiveness part of the programs *ex post* evaluation. This position is not optimal but could be expected with a pilot project filing because many pilot

[7] The different cost effectiveness tests are thoroughly discussed in Staff's testimony in UM 1811; however, because Pacific Power did not use or propose any cost effective tests in its application or testimony, Staff did not discuss the standard tests here.
[8] *See* Pacific Power's Response to OPUC Data Requests 18 and 20.

projects are conducted to collect data to inform the development of various tools for analysis of full program adoption. However, the issue is more pronounced here where the utility is entering a marketplace that is not part of its historic business model or business practices, and is doing so through the expenditure of ratepayer funds.

**Q. Do you have any recommendations regarding cost effectiveness and attribution for Pacific Power?**

A. Staff suggests Pacific Power look to examples of the work of entities that develop market transformation models for energy efficiency products to assist Pacific Power in its efforts to develop an attribution methodology. Once Pacific Power has developed an attribution model, Staff would encourage broad stakeholder input on the model. Additionally, I suggest Pacific Power and PGE combine efforts, and possibly funding, for the development of an attribution methodology that meets the needs of both utilities, the stakeholders and the Commission. It would be helpful if Pacific Power held a series of workshops on the development and presentation of its attribution methodology, as this will be an important part of how the Commission determines whether or not to fully fund program proposals in the future. Finally, I suggest Pacific Power make sure that any evaluation work undertaken addresses cost effectiveness and attribution.

## ISSUE 4. EVALUATION OF PACIFIC POWER'S PROPOSALS

**Q. Please summarize Pacific Power's Transportation Electrification Program Proposals.**

A. Pacific Power has proposed three broad Transportation Electrification programs: (1) Public Charging, (2) Outreach and Education, and (3) a Demonstration and Development Pilot. Pacific Power defines these activities as pilot activities because at present, Pacific Power does not have the necessary information to move forward in the electric vehicle market to affect electric vehicle purchases—that is, to accelerate electric vehicle purchases through targeted programmatic efforts. Staff appreciates the Company's candidness in its explanation of what it does know and what information it must gain going forward.

**(1) Public Charging Pilot**

**Q. What activities make up Pacific Power's first proposal, the Public Charging Pilot?**

A. Pacific Power proposes to construct and own seven charging pods in its diverse Oregon service territory between 2017 and 2019. Each pod will feature multiple adjacent dual-standard DC fast chargers (DCFC), at least one level 2 port and visible signage. Pacific Power does not know where in its service territory it will place these pods nor does Pacific Power know how many chargers will be sited at each pod. Pacific Power will use the Public Charging Pilot to test an approach to increase the number of public dual-standard DCFC in Pacific Power's Oregon service territory. In its application, Pacific Power explains that these chargers are intended to generate utilization data to inform future program development and system planning.

Pacific Power has submitted Table 6, which lists the criteria by which it will make charging pod site selections.[9] In 2017, Pacific Power will issue a Request for Proposals (RFP) to competitively select a provider for charging equipment, network services, site design, installation, and maintenance services. Pacific Power has also provided Table 7, outlining the criteria by which it will choose equipment and service providers, which includes future proofing for charging greater than 150 kW.[10]

All together, the Public Charging Pilot will cost ratepayers $1,850,000 over three years, with the possibility that a portion of the total cost will be recovered through incremental sales or subscription fees in later years.

**Q. Has Staff identified any benefits and/or concerns with this proposal?**

A. Yes. At present, Pacific Power has three broad objectives for public charging infrastructure owned by Pacific Power: to test the ability of utility owned charging pod development to overcome barriers to transportation electrification; to gather data about charging patterns; and to increase awareness of electric transportation. Within its Public Charging proposal, Pacific Power states that it expects to improve driver confidence that charging will be available and that such charging will be dual standard and accessible. These are all very important goals and fit within the directive to accelerate transportation electrification.

However, Pacific Power also states that most of its charging infrastructure is currently sited within the urban corridors of Pacific Power's

[9] UM 1801 Pacific Power Transportation Electrification Proposal at 38-39.
[10] *Id.* at 40-41.

service territory.[11] That being the case, Pacific Power may have an opportunity with this pilot to serve more rural areas, but therefore may need to adjust its objectives, such as extending EV long distance trip range and opportunities, because it is less likely to meet private market investment requirements; that private market investments in rural areas are unlikely to be viable for some time.[12]

As noted earlier in my testimony, I'm concerned about effective placement of charging infrastructure in Pacific Power's rural service territory. For example, the placement of a public charger in a rural area would inform not only the number of and types of chargers that should be installed, but how Pacific Power would make EV drivers aware of the charging stations. Rural chargers will also likely be used less and will generate different data, in turn, raising different questions and informing new objectives. For example, messaging, customer awareness, strategy, and placement for rural chargers will require different messaging and communication strategies then placement of charging infrastructure in urban and high capacity travel corridors.

In sum, Staff is not saying that Pacific Power should not invest in charging infrastructure within the urban corridor, as such investment will likely offer valuable data to the Company, but recommends that Pacific Power concentrate its charging infrastructure investment in rural areas in order to meet

[11] As Pacific Power states, the public charger investments are meant in part to help determine whether Pacific Power will continue to have a role in the public charging market. One can speculate that, with PGE's and Pacific Power's investments in public charging, Pacific Power's grant funding for charger infrastructure and private market actor investments, the urban corridor of Pacific Power's service territory will be well served.

[12] *See* Pacific Power's Response to OPUC Data Request 16.

different objectives than those that Pacific Power has currently stated in its proposal. For instance, rural chargers may increase driver confidence that long distance intrastate travel is comfortably possible.

**Q. What is your final recommendation regarding funding Pacific Power's Public Charging Pilot?**

A. I recommend that Pacific Power be very thoughtful about placement of public charging and that the Company revisit its stated objectives for public charging. Unlike PGE, a utility with a more urban service territory, Pacific Power has the opportunity to site public charging infrastructure in more rural areas. The anticipated lower utilization rate of these chargers would likely limit private market actor investment. Thus, because the pilot period is not subject to cost effectiveness—the value of activity is simply the data generated and the lessons learned—in other words, Pacific Power has a unique opportunity to explore public charging in rural areas that might extend the geographic reach of EVs and make the proposition of EV ownership less challenging.

I therefore recommend that Pacific Power adjust its public charging objectives to better contemplate and allow for rural area siting. This will also help Pacific Power revisit whether it need to install a full seven charging pods to reach its objectives and generate the data needed to make a determination on market acceleration. Additionally, I recommend that Pacific Power submit information to the Commission about possible high value sites for public charging, and demonstrate coordination with PGE over urban public charger placement. Further, Pacific Power should coordinate placement of Company-

owned charging infrastructure and grant-funded charging infrastructure. Finally, I recommend that Pacific Power submit to the Commission yearly updates on progress, monies expended, lesson learned and anticipated upcoming activity.

**(2) Outreach and Education Pilot**

**Q. What activities make up Pacific Power's second proposal, the Outreach and Education Pilot?**

A. Pacific Power proposes four general activities in its Outreach and Education Pilot, which include: customer communications, self-service resources, community events and technical assistance.

Pacific Power's customer communications proposal includes bill inserts, e-mail campaigns, newsletters, use of social media, and brochures to help build awareness, promote off-peak charging, and direct customers to other Pacific Power transportation electrification efforts.

Pacific Power's self-service resources include online resources such as on-line tools for customers to help inform them of the benefits of driving electric cars.

Pacific Power's community events include funding for eight ride-and-drive events and additional funding to other electric vehicle transportation promotional events.

Pacific Power's technical assistance would consist of onsite technical assistance for non-residential EVSE projects such as fleet vehicle charging, workplace or public charging.

In sum, Pacific Power states that the purpose of these pilots is to test Pacific Power's ability to reduce barriers to transportation electrification through customer outreach and education. These barriers include lack of awareness of electric transportation options and benefits, the issue of upfront costs (which the Company hopes to remedy by helping customers identify the true cost of electric vehicle adoption), and the lack of EVSE access (which the Company plans to remedy based on efforts to increase EVSE at the work-place).

The proposed Outreach and Education Pilots will cost Pacific Power ratepayers $1,105,000 over three years, between 2017 and 2019.

**Q. Has Staff identified any benefits and/or concerns with this proposal?**

A. Yes. Staff is concerned about the amount of funding for Outreach and Education in relation to other proposed activities that include infrastructure (which was expressly contemplated by the legislature in SB 1547). Staff is also concerned about the money being spent on "Community Events" as outlined in Pacific Power's Proposal. However, Staff does see a benefit in educating and messaging Pacific Power's customers, many of whom are not urban inhabitants, about the benefits of EVs.

Staff is pleased to see Pacific Power will offer technical assistance, but is concerned that Pacific Power has not demonstrated a connection between offering technical assistance that would result in workplace and fleet vehicle charging. Therefore, Staff is reservedly supportive of Pacific Power's self-service resources, with the understanding that proper tools will assist customers in their choice to purchase and EV.

**Q. What is your final recommendation regarding funding Pacific Power's Outreach and Education Pilot?**

A. I recommend Pacific Power reduce its Outreach and Education Pilot funding to reflect withdrawal of funding for "Community Events." Additionally, I recommend the Company submit a new narrative and objectives for technical assistance activities that links such activities with the installation of workplace and fleet charging infrastructure investments. Lastly, I recommend that Pacific Power submit examples of the customer communication and self-service resources it plans to use so the Commission can better understand the activities undertaken.

**(3) Demonstration and Development Pilot**

**Q. What activities make up Pacific Power's third proposal, the Demonstration and Development pilot?**

A. Pacific Power's demonstration and development pilot is a proposal to invite Oregon Pacific Power customers to bring transportation electrification projects forward for grant funding; for example, grant funds could be used to pay for EVSE costs, including make-ready hardware, installation, and upfront software purchase costs. Although applicants are encouraged to explore additional funding, Pacific Power is offering 100 percent funding for eligible costs. The objective of the program is to test the ability of grant funding for customer-owned EVSE to overcome barriers to transportation electrification project development and to acquire data on project costs and equipment utilization that can inform future planning efforts. Pacific Power states that its

demonstration and development pilot will cost ratepayers $1,685,000 over three years.

**Q. Has Staff identified any benefits and/or concerns with this proposal?**

A. Staff sees a benefit to Pacific Power undertaking a different funding model for EVSE investment, i.e., the use of grants. This approach may be more palatable to private market actors and may also leverage private investment and stimulate innovation and competition. The funding model may garner different learnings than utility infrastructure ownership, and thus, may better inform stakeholders on how best to accelerate transportation electrification.

However, the grant proposal timeline shows that Pacific Power intends to announce the first round of funding by first quarter 2018. Similarly, the Company expects that construction on the first charging pod will begin by the first quarter of 2018, with a total of three pods installed in 2018 and an additional four pods installed in 2019. This means that Pacific Power should have knowledge internally of where possible grant funding for EVSE will be placed and what types of projects will be funded in time to inform Pacific Power's own investment of company-owned public charging infrastructure. Considering the possible timeline delay of asking Pacific Power to develop a list of candidate sites for public charging investments, Pacific Power should be coordinating its grant EVSE investments with its public charging investment.

Finally, Staff has concerns that Pacific Power has not offered a proposal on how they would attempt to recover the investment made by ratepayers in grant-funded EVSE. Staff is also concerned that Pacific Power may have

trouble coordinating such investment with other market actors investments in EVSE, and thus, should be careful about saturation or clustering of EVSE buildout.

**Q. What is your final recommendation regarding funding Pacific Power's Demonstration and Development Pilot?**

A. I recommend funding the Demonstration and Development Pilot be approved with a requirement that Pacific Power submit an update to the Commission with each grant approval cycle with information about each project that was approved for grant funding including: the amount of money granted, total project costs, the site of each project funded, the entity receiving the grant funds, information about the entity, why the project was chosen for funding, what Pacific Power will learn from each project, how the project will be evaluated, expected life of the project, any identifiable non-energy benefits, and lastly, how the project can reduce or offset the ratepayer investment in the project. Lastly, I recommend that for any charging infrastructure funded by a grant from Pacific Power, that Pacific Power retain rights to any CFP credits in proportion to the grant funding share of the overall project costs until such time as each project's grant funds have been repaid to ratepayers.

## ISSUE 5. PROGRAM COSTS

**Q. How much does Pacific Power estimate the pilot programs will cost ratepayers in total?**

A. Pacific Power has proposed roughly $4.6M in program expenditures over a pilot period of three years.[13]

**Q. How has Pacific Power proposed to recover these pilot program costs?**

A. The Company has proposed to implement a surcharge to contemporaneously cover the costs of the pilot programs though its existing Schedule 95, Pilot Program Cost Adjustment.[14] The Company also proposes to use a balancing account to track the actual costs and surcharge collections. If the programs are approved, the Company plans to submit an advice filing to implement the surcharge. Importantly, the Company offers to provide annual reporting of the activity in the balancing account and to provide an opportunity for prudency review of incurred costs. Staff could support the Company's proposed mechanism for cost recovery, with annual reporting of costs and revenues and the opportunity for prudence review prior to cost recovery from customers. Pacific Power estimates the rate impact of the estimated costs of the three programs to be approximately 0.1 percent during the three-year pilot period.[15]

**Q. Do you have any concerns and/or recommendations regarding the costs of these pilots?**

A. Yes. I am concerned that Pacific Power did not estimate how much revenue could be recovered through the sale of subscriptions from its public chargers.

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[13] Pacific Power's Application for Transportation Electrification Programs at 2 (April 12, 2017). For more cost detail, see Pacific Power's April 12, 2017 application at 52, 78, and 100.
[14] The Company notes that Schedule 95 will be used to recover the annual revenue requirement (i.e., return on, and depreciation expense). Staff proposes to work cooperatively with the Company in determining the appropriate cost recovery mechanism for approved programs, noting that a deferral likely cannot be used to recover the revenue requirement effects of capital investments.
[15] Pacific Power's Application for Transportation Electrification Programs at 2 (April 12, 2017); *See also* Pacific Power's Response to OPUC Data Request 27, 28 and Attachment.

In its transportation electrification filing, PGE estimated the amount of offsetting revenues to reduce the cost of the investment. Pacific Power does mention in its proposal that it will attempt at a later date to estimate what costs could be recovered through subscription sales and electricity sales from the chargers. It is imperative that Pacific Power track the revenue from electricity sales from chargers to reduce the cost of the ratepayer investment, and make such estimates before proceeding to propose additional charging infrastructure.

It is also important that Pacific Power, where possible, leverage other potential value streams, such as value from CFP credits. To that end, for the CFP credits available to Pacific Power, the utility should offset pilot program costs, including utility-owned public charging infrastructure and the EVSE community grant programs.[16] For example, I recommend that whatever portion of total project costs are covered by Pacific Power's grant, that same portion should represent ratepayer interest in the CFP credits generated from the EVSE, and should be captured until such time as the ratepayer's investment is returned in full.

## CONCLUSION

**Q. In sum, what is Staff's recommendation with regard to each of the three programs evaluated in this testimony?**

A. Staff recommends approval of the following programs in the form of pilot programs only, conditioned on the following requirements:

- Public Charging Pilot:

[16] *See* Pacific Power's Response to OPUC Data Request 15.

Approval of proposed project and proposed funding amount of $1.85M with the requirement that Pacific Power adjust its public charging objectives to contemplate and allow for targeted rural area siting. I also recommend that Pacific Power submit information to the Commission about possible high value sites for public charging; demonstrate coordination with PGE over urban public charger placement; and demonstrate intra-company coordination regarding placement of Pacific Power-owned charging infrastructure and the grant-funded charging infrastructure proposed in this application. Additionally, I recommend that Pacific Power submit to the Commission yearly updates on progress, monies expended, lessons learned and anticipated upcoming activity. Lastly, Pacific Power must track the revenue from electricity sales from chargers to reduce the costs of the ratepayer investment accordingly.

- Outreach and Education Pilot:

  Approval of Pacific Power's Outreach and Education pilot with an adjusted budget to reflect disapproval of Pacific Power's "Community Events" activity. Additionally, I recommend the Company submit a new narrative and objectives for technical assistance activities that links such activities with the installation of workplace and fleet charger infrastructure investments. Lastly, I recommend that Pacific Power submit examples of the customer communication and self-service

resources Pacific Power plans to use in its program so the Commission can better understand the activities to be undertaken.

- Demonstration and Development Pilot:

  Approval of Pacific Power Demonstration and Development Pilot and proposed budget of $1.685M with the requirement that Pacific Power submit an update to the Commission with each grant approval cycle that contains information about each project that was approved for grant funding, including the amount of money granted, total project costs, the site of each project funded, the entity receiving the grant funds, information about the entity, why the project was chosen for funding, what Pacific Power will learn from each project, how the project will be evaluated, expected life of the project, any identifiable non-energy benefits, and how the project can reduce or offset the ratepayer investment in the project. Additionally, I recommend that for any charging infrastructure funded by a grant from Pacific Power, that Pacific Power retain rights to any CFP credits in proportion to the grant funding share of the overall project costs until each grant amount has been repaid to ratepayers. Lastly, I recommend Pacific Power track the revenue from electricity sales from chargers to reduce the cost of the ratepayer investment accordingly.

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

A. Yes.

CASE: UM 1810
WITNESS: JASON R. SALMI KLOTZ

# PUBLIC UTILITY COMMISSION
# OF
# OREGON

## STAFF EXHIBIT 101

## Witness Qualifications Statement

## May 24, 2017

**WITNESS QUALIFICATIONS STATEMENT**

NAME: Jason R. Salmi Klotz

EMPLOYER: Public Utility Commission of Oregon

TITLE: Principle Executive Manager
Energy Resources and Planning Division

ADDRESS: 201 High Street SE. Suite 100
Salem, OR. 97301

EDUCATION: University of Montana – Missoula
Bachelor of Arts conferred May 1999

Vermont Law School
Masters of Studies in Environmental Law conferred 2003

Vermont Law School
Juris Doctor Conferred 2006

Admitted to Oregon State Bar 2012

EXPERIENCE: Vermont Public Utility Commission
Legal Analyst – 2003 – 2005

Federal Energy Regulatory Commission
Office of General Counsel 2005

California Public Utility Commission
Public Utilities Regulatory Analyst 2006 – 2009

Bonneville Power Administration
Smart Grid Project Lead 2009 – 2010

Northwest Energy Efficiency Alliance
Senior Policy Advisor 2010 – 2013
Oregon Public Utility Commission
Senior Analyst – Climate Change 2013 – 2017

Oregon Public Utility Commission
Principle Executive Manager- Climate Change Lead
2017 – Present

University of Oregon School of Law
Adjunct Professor of Energy and Law
2015 - Present

CASE: UM 1810
WITNESS: JASON R. SALMI KLOTZ

# PUBLIC UTILITY COMMISSION
# OF
# OREGON

## STAFF EXHIBIT 102

## Exhibits in Support
## Of Reply Testimony

## May 24, 2017

**OPUC Data Request 5**

What efforts to promote home time-of-use rates will Pacific Power undertake under its proposal? Does Pacific Power intend to promote an EV owner specific TOU residential rate or any other rates?

**Response to OPUC Data Request 5**

The Company proposed through the Education and Outreach pilot program to seek to educate customers on rate options, including Schedule 210 Portfolio Time-of-Use (TOU) Service, and the benefits to the electrical system of vehicle charging during off-peak hours. The Company also hopes to procure a tool through the Self-service Resources component of the program that will allow customers to assess the cost of plug-in electric vehicle ownership on different Company rate schedules based on expected charging patterns. This may include an analysis of separately metering vehicle charging through Schedule 5.

The Company has no current plans to offer or promote a new residential TOU rate that would only be available to customers with electric vehicles.

Despite PacifiCorp's diligent efforts, certain information protected from disclosure by attorney-client privilege or other applicable privileges or law may have been included in response to these data requests. Accordingly, PacifiCorp reserves its right to seek the return of any privileged or protected materials that may have been inadvertently disclosed, and respectfully advise that any inadvertent disclosure should not be considered a waiver of any applicable privileges or rights. PacifiCorp respectfully requests that you inform PacifiCorp immediately if you become aware of any such materials in these responses.

**OPUC Data Request 7**

Must Pacific Power deploy all 7 charging pods sites in order to learn enough about charging behavior to determine attribution and effectiveness of charging infrastructure investments? Please explain why all 7 charging pod sites are necessary.

**Response to OPUC Data Request 7**

Not necessarily. The Company's supplemental application considers installing *up to* seven charging pods in order to retain flexibility as the pilot rolls out. Having this flexibility will allow the Company to explore partnership opportunities with a variety of local communities across Pacific Power's Oregon service area to understand what factors may lead to optimal siting, increased costs, and station utilization. The Company envisions launching three pods in 2018 and an additional four in 2019, however it is possible that the Company will learn lessons from the first few developed pods that obviate the need for additional stations. In its 2017-2018 progress update to the Public Utility Commission of Oregon, targeted for Q1 2019, the Company will apprise the Commission on its plans to install additional charging pods.

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**OPUC Data Request 8**

Is it possible for Pacific Power to identify a universe of viable sites for the proposed charging pods at this juncture in time? Please explain why or why not, and identify what information Pacific Power will rely on to identify the most effective sites.

**Response to OPUC Data Request 8**

The Company cannot identify the universe of viable sites at this time. As stated in the supplemental application, the Company intends to work with local governments to site charging pods in the public right-of-way, if possible. While Pacific Power has received significant support from local governments for its proposed pilot programs,[1] the Company has been awaiting feedback from parties on the proposed program before beginning discussions of potential sites in local communities.

Please refer to Table 6 on page 38 of the supplemental application for a list of considerations in selecting charging pod sites.

[1] See Exhibit PAC/101 to the direct testimony of Mr. Morris.

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**OPUC Data Request 9**

Pacific Power points out in its proposal the unique nature of their service territory. Can Pacific Power identify categories or characteristics that make some parts of its service territory more viable for charging investments than others given the research questions that Pacific Power intends to explore?

**Response to OPUC Data Request 9**

In the short-term, areas of the service territory with relatively high concentrations of plug-in electric vehicles are likely to be the most viable for charging infrastructure that maximizes utilization and minimizes costs. Based on Figure 7 on page 12 of the supplemental application. Initial efforts to find viable sites for Company-owned charging infrastructure are likely to focus on cities along I-5, I-84, and US 101 and in central Oregon. These locations have the potential dual benefit of supporting local drivers and enabling long-distance travel along major corridors.

Ensuring accessibility and visibility of Company-owned charging infrastructure is a primary objective of the proposed pilot program and the viability of specific sites in the areas mentioned above will be dependent on the Company's ability to work with local communities and customers to identify suitable locations, particularly in the public right-of-way. The Company has not yet begun outreach to communities to explore these opportunities.

Despite PacifiCorp's diligent efforts, certain information protected from disclosure by attorney-client privilege or other applicable privileges or law may have been included in response to these data requests. Accordingly, PacifiCorp reserves its right to seek the return of any privileged or protected materials that may have been inadvertently disclosed, and respectfully advise that any inadvertent disclosure should not be considered a waiver of any applicable privileges or rights. PacifiCorp respectfully requests that you inform PacifiCorp immediately if you become aware of any such materials in these responses.

**OPUC Data Request 14**

How many chargers situated at different types of sites (urban, rural, suburban) are necessary to inform Pacific Power about additional potential investments and the viability of those investments?

**Response to OPUC Data Request 14**

The Company believes the seven pods proposed through the Public Charging Pilot will provide sufficient information to begin to understand differences in utilization at different types of locations. At this time, the Company does not know whether urban, rural, and suburban will be a meaningful distinction. Utilization may be driven more by proximity to highways, commuter corridors, or local attractions, the number of plug-in electric vehicle owners who live near the pod, or other factors.

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**OPUC Data Request 15**

Is Pacific Power willing to place a condition on EVSE grant funding such that the value of all Clean Fuels Program credits or a percentage of said credits are returned to Pacific Power to offset the cost of the grant?

**Response to OPUC Data Request 15**

The Company is open to a condition that recipients of Demonstration and Development grant funding return all or a share of Clean Fuels Program credits to Pacific Power. This is in line with other Company funding programs, such as the Blue Sky funding program, which requires funding recipients to allocate a share of the project's renewable energy certificates to participants in the Blue Sky program.

However, the Company cautions that this requirement may create additional barriers to developing charging projects either through the added administrative burden placed on funding recipients to register and transfer credits to Pacific Power, or by preventing the project from utilizing credit value to offset ongoing costs to operate the charging equipment and network.

Despite PacifiCorp's diligent efforts, certain information protected from disclosure by attorney-client privilege or other applicable privileges or law may have been included in response to these data requests. Accordingly, PacifiCorp reserves its right to seek the return of any privileged or protected materials that may have been inadvertently disclosed, and respectfully advise that any inadvertent disclosure should not be considered a waiver of any applicable privileges or rights. PacifiCorp respectfully requests that you inform PacifiCorp immediately if you become aware of any such materials in these responses.

**OPUC Data Request 16**

How does Pacific Power intend to assess the potential on-going role, if any, for the Company in the public charging market place? What are the market indicators that Pacific Power will be looking for from the market in order to make their assessment of success?

**Response to OPUC Data Request 16**

The Company plans to use the pilot to assess a potential ongoing role in the public charging market place based on two primary factors:

1. Whether pilot or future stations are likely to generate a net benefit for Pacific Power customers, and
2. The amount of public fast charging infrastructure available in Pacific Power's Oregon service area.

The sites proposed through the Public Charging Pilot will allow the Company to test the costs and benefits of public charging infrastructure to determine whether these or potential additional stations can generate a net benefit for customers. The planned pricing structure will also allow the Company to test the effectiveness of time-varying rates at encouraging drivers to perform charging during off-peak hours.

During the pilot period, the Company will monitor the development of additional public charging infrastructure owned by other entities in its service area. Some of this infrastructure may be a direct result of grant funding through the proposed Demonstration and Development Pilot, but other infrastructure may be deployed because electric vehicle charging providers and site hosts see a more viable business case as plug-in electric vehicle adoption increases.

Despite PacifiCorp's diligent efforts, certain information protected from disclosure by attorney-client privilege or other applicable privileges or law may have been included in response to these data requests. Accordingly, PacifiCorp reserves its right to seek the return of any privileged or protected materials that may have been inadvertently disclosed, and respectfully advise that any inadvertent disclosure should not be considered a waiver of any applicable privileges or rights. PacifiCorp respectfully requests that you inform PacifiCorp immediately if you become aware of any such materials in these responses.

**OPUC Data Request 18**

What is the depreciable life of the EVSE equipment Pacific Power wants to invest in? Is this period more or less than the industry accepted anticipated life of the infrastructure? Can a net benefit to ratepayers be captured over the depreciable life of the investment?

**Response to OPUC Data Request 18**

The Company proposes to depreciate the equipment over a 10-year period. Given the relative nascence of fast charging equipment, a robust body of work on the expected useful life of public vehicle charging equipment does not exist. The Company believes that a 10-year depreciable life is appropriate, given uncertainty around the future role of utilities in providing electric vehicle charging services and expected evolution in vehicle charging technology. The results of the pilot program will help inform whether a net benefit to ratepayers is likely to be captured over the depreciable life of the equipment.

Despite PacifiCorp's diligent efforts, certain information protected from disclosure by attorney-client privilege or other applicable privileges or law may have been included in response to these data requests. Accordingly, PacifiCorp reserves its right to seek the return of any privileged or protected materials that may have been inadvertently disclosed, and respectfully advise that any inadvertent disclosure should not be considered a waiver of any applicable privileges or rights. PacifiCorp respectfully requests that you inform PacifiCorp immediately if you become aware of any such materials in these responses.

**OPUC Data Request 20**

Pacific Power, on page 46 of the proposal, states that the West Coast Highway utilization ranges from two charging events per month to 118 per month. Is this an upward, increasing trend? Has this trend been hampered by charger down times? Please explain.

**Response to OPUC Data Request 20**

To clarify, the numbers of charging events per month cited on page 46 refer to two different charging locations during the same time period, not a trend over time. However, to answer the question posed, the Company reached out to the Oregon Department of Transportation (ODOT) for information on trends over time. ODOT indicated that utilization has increased over time, on average. Note, some stations show cyclical usage patterns, such as higher usage during summer months.

ODOT informed the Company that charger uptime is typically around 97-98 percent, but decreased to 94-95 percent this past winter due to a technical problem associated with upgrading the wireless communications platform. The Company does not know whether down time has hampered the trend in utilization.

Despite PacifiCorp's diligent efforts, certain information protected from disclosure by attorney-client privilege or other applicable privileges or law may have been included in response to these data requests. Accordingly, PacifiCorp reserves its right to seek the return of any privileged or protected materials that may have been inadvertently disclosed, and respectfully advise that any inadvertent disclosure should not be considered a waiver of any applicable privileges or rights. PacifiCorp respectfully requests that you inform PacifiCorp immediately if you become aware of any such materials in these responses.

**OPUC Data Request 27**

Please explain in detail the cost recovery proposal and mechanism Pacific Power intends to employ. Please provide a spreadsheet showing year anticipated recovery amount requests by program.

**Response to OPUC Data Request 27**

Please see pages 53, 78 and 101 of the supplemental application. Pacific Power proposes to implement a surcharge to contemporaneously recover the operating costs of the pilot programs through its existing Schedule 95 Pilot Program Cost Adjustment. The Company further proposes to use a balancing account to track the actual costs and surcharge collections. A tariff advice filing will be made to implement this proposed surcharge at the completion of this proceeding, expected to be in the fall of 2017. The Company will review the balancing account periodically to determine if changes to the surcharge are necessary. The Company proposes to provide annual reporting of the activity in the balancing account to provide an opportunity for prudency reviews of incurred costs.

The following table summarizes the total three-year pilot program costs outlined in the supplemental application and the average annual amount expected to be recovered in rates which was used to calculate the estimated average percentage rate impact of the program over the pilot period:

| **Pilot Program** | **3-yr Estimated Total Costs** | **Expected Average Annual Amount in Rates** |
|---|---|---|
| Public Charging | $1,850,000 | $361,000* |
| Outreach & Education | $1,105,000 | $368,000 |
| Demonstration & Development | $1,685,000 | $562,000 |

*For capital related costs, Schedule 95 will be used to recover the annual revenue requirement (i.e., return on, and depreciation expense).

Despite PacifiCorp's diligent efforts, certain information protected from disclosure by attorney-client privilege or other applicable privileges or law may have been included in response to these data requests. Accordingly, PacifiCorp reserves its right to seek the return of any privileged or protected materials that may have been inadvertently disclosed, and respectfully advise that any inadvertent disclosure should not be considered a waiver of any applicable privileges or rights. PacifiCorp respectfully requests that you inform PacifiCorp immediately if you become aware of any such materials in these responses.

**OPUC Data Request 28**

Please provide a spread sheet showing how Pacific Power estimated the program proposal rate impact.

**Response to OPUC Data Request 28**

Please see Attachment OPUC 28.

Despite PacifiCorp's diligent efforts, certain information protected from disclosure by attorney-client privilege or other applicable privileges or law may have been included in response to these data requests. Accordingly, PacifiCorp reserves its right to seek the return of any privileged or protected materials that may have been inadvertently disclosed, and respectfully advise that any inadvertent disclosure should not be considered a waiver of any applicable privileges or rights. PacifiCorp respectfully requests that you inform PacifiCorp immediately if you become aware of any such materials in these responses.

**Attachment OPUC 28**

Pacific Power
State of Oregon

Staff/102
Klotz/12

UM 1810 OPUC Data Request 28

| Pilot Program | Expected Average Annual Amount in Rates | Present Annual Net Revenues | Estimated Rate impact over pilot period |
|---|---|---|---|
| Public Charging* | $ 361,000 | $ 1,277,952,000 | 0.03% |
| Outreach & Education | $ 368,000 | $ 1,277,952,000 | 0.03% |
| Demonstration & Development | $ 562,000 | $ 1,277,952,000 | 0.04% |
| Total | $ 1,291,000 | | 0.10% |

*For capital related costs, Schedule 95 will be used to recover the annual revenue requirement (i.e., return on, and depreciation expense).