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Via Electronic Mail

Steven V. King
Executive Director and Secretary
Washington Utilities & Transportation Commission
1300 S. Evergreen Park Drive S. W.
P.O. Box 47250
Olympia, Washington 98504-7250

Re: Docket No. UE-160799 - Comments of Avista Utilities: Electric Vehicle Supply Equipment

Dear Mr. King,

Avista Corporation, dba Avista Utilities (Avista or Company), submits the following comments in accordance with the Washington Utilities and Transportation Commission's (Commission) Notice of Opportunity to Submit Written Comments (Notice) issued in Docket UE-160799.

The Commission established Docket UE-160799 "to assist the Commission in determining whether to open a rulemaking or issue a policy statement" relating to utility investment in Electric Vehicle Supply Equipment (EVSE) pursuant to RCW 80.28.360. The Commission's notice, dated June 24, 2016, is seeking written comments in this newly established Docket.

As referenced in the notice Avista filed a tariff on January 14, 2016, in Docket UE-160082, seeking approval of an EVSE pilot program in which the Company would install 265 AC Level 2¹ charger port connections and seven DC fast chargers². On April 28, 2016, the Commission issued Order 01 approving Avista's EVSE pilot program subject to certain conditions. Through the proceeding several policy questions were raised relating to RCW 80.28.360 and how utilities may implement EVSE programs. As a result the Commission noted in Order 01 that it intended to initiate a policy workshop process to address the questions raised, which it has now done.

Avista appreciates the opportunity to provide the following comments in response to the Commission's specific policy questions regarding utilities' EVSE programs:

- 1. RCW 80.28.360 authorizes the Commission to allow an incentive rate of return on investment on capital expenditures for electric vehicle supply equipment under certain circumstances. In addition to being installed after July 1, 2015, the law identifies several criteria for the capital expenditures to qualify for the incentive rate of return. How should an electrical company demonstrate that capital expenditures for EVSE meet each of the following criteria in the law:**
 - a) The capital expenditures do not increase costs to ratepayers in excess of one-quarter of one percent,**
 - b) The EVSE investments are pursued on a fully regulated basis similar to other capital investments behind a customer's meter, and**
 - c) The projects are installed and located where electric vehicles are most likely to be parked for intervals longer than two hours.**

Response: a) How should an electrical company demonstrate that capital expenditures for EVSE do not increase costs to ratepayers in excess of one-quarter of one percent? Electrical companies should demonstrate that capital expenditures for EVSE do not increase net costs to ratepayers in excess of one-quarter of one percent, for the purposes of the incentive rate of return, for investments when seeking recovery of such expenses within a General Rate Case or other proceeding. In Avista's pilot program mentioned above it did not seek pre-approval of the capital

¹ AC Level 2 chargers operate at approximately 220 volts AC (alternating current), and typically result in 11 to 22 miles of driving range gained per hour of charging.

² DC (direct current) fast chargers provide electricity at high voltage (usually delivering power at 50 kW or more) and typically result in total charging time as low as 15 minutes.

expenditures at that time, and rather will seek recovery of the expenditures in a future proceeding similar to any other capital investment.

When an electrical company seeks recovery of the capital expenditures for EVSE, the company should provide supporting testimony and/or evidence of the prudence of such expenditures. The company would provide the necessary information to determine if the net impact to customers is above or below one-quarter of one percent.

b) How should an electrical company demonstrate that EVSE investments are pursued on a fully regulated basis similar to other investments behind a customer's meter? Prior to 1995, Avista capitalized expenditures for rebates on customer equipment behind the customer's meter within its Demand Side Management program, up until the tariff rider for recovery of DSM expenses was adopted on January 1, 1995. Similarly, in Docket UG-152394, the Commission approved deferred accounting for expenditures related to the excess natural gas line extension allowance. In this program, customers can apply any excess portion of their natural gas line extension allowance towards the purchase of high efficiency space and water heating equipment. As proposed and approved by the Commission in Order 01, Avista will defer the costs associated with the excess natural gas line extension allowance program for the opportunity for future recovery.

Because RCW 80.28.360 allows an electrical company to own EVSE behind a customer's meter, it is Avista's recommendation that capital expenditures for EVSE be treated similar to all other utility capital investments.

c) How should an electrical company demonstrate that projects are installed and located where electric vehicles are most likely to be parked for intervals longer than two hours? Electric companies should demonstrate that projects are installed and located where electric vehicles (EVs) are most likely to be parked for intervals longer than two hours by providing information about the location of each specific charger. For home and workplace installations, it is likely that vehicles will be parked for intervals longer than two hours, unless the workplace

space is reserved for customers or guests. For public EVSE this may not be the case, thus providing more information about each public location would be necessary to determine the duration of parking time. In order for EVSE to be valued by EV users and utilized to its maximum extent, it is in the utility's best interest to install EVSE at locations that are easily accessible, highly visible, and near shopping, dining, or other entertainment venues and attractions. Reasonable proximity to shopping, dining, and entertainment should serve as the basis for whether or not an EV is likely to park for longer than two hours. It is Avista's recommendation that reasonable proximity be considered within walking distance from shopping, dining, or entertainment venues.

- 2. What real and tangible benefits to ratepayers should electrical companies be required to quantify and demonstrate in order for the Commission to:**
- a) make a prudence determination, and**
 - b) authorize an incentive rate of return?**

Response: a) What real and tangible benefits to ratepayers should electrical companies be required to quantify and demonstrate in order for the Commission to make a prudence determination? Per the Commission's prior guidance on the determination of prudence³, the determination should be made based on the information available at the time the decision is made to move forward with the program or investment. Prudence determinations should be based on investments and operating costs compared to reasonably established benefits that EVs provide customers as a whole on Avista's system. The benefits that should be identified and, to the extent possible, quantified, would include but not necessarily be limited to the following:

- (1) Reduced carbon emissions;
- (2) Lower toxic air pollutants;
- (3) Operational cost savings resulting in macro-economic benefits;

³The test the Commission applies to measure prudence is, what would a reasonable board of directors and company management have decided given what they knew or reasonably should have known to be true at the time they made a decision. This test applies both to the question of need and the appropriateness of the expenditures. The company must establish that it adequately studied the question of whether to purchase these resources and made a reasonable decision. Using the data and methods that a reasonable management would have used at the time the decisions were made. Order No. 12, Docket UE-031725, Washington Utilities and Transportation Commission v. Puget Sound Energy, Inc. April 7, 2004. At page 8.

- (4) Net contributions to electric rates (billed revenue from EV charging, net of costs to deliver power);
- (5) Reduced line losses resulting from higher voltage supply (e.g., to the extent the program results in higher voltage equipment being used than otherwise would occur absent the program);
- (6) Value provided to participating customers by providing cost-effective, trustworthy EVSE products and services, alleviating informational and first-cost barriers; and,
- (7) Providing a basic level of reliable and available EVSE infrastructure, thereby elevating electric driving range confidence and the adoption of EVs.

These determinations should be made as a function of the type and number of EVSE installed with respect to the state of EV adoption in a given utility's service territory, and with a reasonable time horizon for investments in EVSE to result in increased EV adoption and resulting benefits to ratepayers. In other words, the prudent number of EVSE investments of each type should be tailored to the needs of each particular market. Modeling by the Electric Power Research Institute (EPRI) indicates that, at most, fifteen AC Level 2 EVSE port connections may be needed in public locations for every 100 EVs on the road. The EPRI model notes that at any given time approximately 27% of vehicles are parked at work, however a more detailed assessment of the prudent number of workplace AC Level 2 EVSE port connections is a function of the number of vehicles commuting to a given workplace and the commute distance and electric range of each EV. For example, the driver of a PHEV with an electric range of 20 miles and a round-trip commute distance of 40 miles, must have workplace charging available to recharge the 20 mile battery pack and make the return trip driving on electric power, whereas a BEV driver with an electric range of 80 miles could conceivably charge mostly at home and would only need to charge at work when making the occasional longer trip.

In addition, the benefits that EVs accrue to electric ratepayers and the degree to which EVSE supports the adoption of EVs and resulting benefits should be considered in any prudence determination. For example, the U.S. Department of Energy showed that twenty times as many employees drove EVs when charging was made available at the workplace, compared to the

average employee. For utility-owned residential EVSE, in addition to more efficient charging at higher voltage and the benefit of removing information and first cost barriers for the customer, the ability to cost-effectively shift on-peak charging to off-peak loads with EVSE capable of demand response, can result in greater utilization and lower total lifecycle costs of grid infrastructure that benefits all customers.

A certain number of DC Fast Chargers are also needed to enable EV adoption, provide convenience quick charging in areas of higher EV adoption, and enable longer distance EV travel along major corridors. Once the ability to travel along major corridors is established with DC Fast Chargers approximately every 40 miles (WADOT West Cost Electric Highway), Electric Power Research Institute (EPRI) research indicates one DC fast charger is needed for every 200 EV drivers on the road, as a convenience and assurance to enable hassle-free local driving. As DC Fast Chargers are an essential EVSE component that must be addressed to achieve EV adoption and associated benefits to ratepayers, investments should be evaluated alongside other types of EVSE or within an EVSE program in its entirety.

In summary, an appropriate number of all EVSE types should be considered for a given area, as the lack of any one type can stymie adoption of EVs. Furthermore, prudence determinations for EVSE investments should be influenced by established net benefits of EVs which follow from the enabling EVSE infrastructure. Studies which include critical variables and sensitivity analyses could provide insight on the relative magnitude of different effects and establish a reasonable baseline for the net benefits that EVs and EVSE provide to ratepayers.

b) What real and tangible benefits to ratepayers should electrical companies be required to quantify and demonstrate in order for the Commission to authorize an incentive rate of return? The incentive rate of return in RCW 80.28.360(2) is contingent on installation locations where EV drivers will park for 2 hours or more. It appears that this was intended to direct AC Level 2 EVSE investments proportionately more toward locations where vehicles are parked for longer periods of time, such as at homes, workplaces, and attractive public locations. This is because 90% or more of EV charging can be accomplished at home and workplace locations where

the cost of EVSE installations is typically much lower than in public locations, and to avoid poor siting of AC Level 2 installations in public locations where cars may be parked for only short periods of time, or not at all given desired travel patterns. The incentive rate of return should be applicable to installations at residences, at workplaces, and in public locations within walking distance to shopping, restaurants, parks, and entertainment venues where the EV driver could be expected to spend two hours or more while their car is parked.

In addition to the location of the EVSE, the Commission should consider the same benefits outlined in the response to question 2(a) above.

3. Should the incentive rate of return authorized in RCW 80.28.360(2) apply to EVSE investments that serve the public at large, or only to investments in infrastructure that serve the company's electric customers?

Response: The incentive rate of return authorized in RCW 80.28.360(2) should apply to EVSE investments for the public at large and those that serve the company's electric customers. There are two primary types of EVSE that companies will invest in as part of an EVSE program for light-duty passenger vehicles: AC Level 2 and DC Fast Chargers. AC Level 2 EVSE serves several purposes including home charging, workplace charging, and public charging. All EVSE investments should be considered together as an EVSE program, because all are necessary in influencing the purchase decision of a consumer buying an EV and in the overall adoption of EVs. Research studies show that the primary charging location for EV drivers is at their home, and next at their workplace. Public EVSE are necessary to enable longer distance traveling and in reducing "range anxiety".

In order to increase EV adoption it is important for utilities and others to invest in each type of EVSE. The greater the adoption of EVs, the greater the benefit to a utility's electric customers and society at large. It is for this reason that Avista believes investments in EVSE should be looked at as a whole rather than individually by EVSE type.

4. While EVSE increases electrical load, existing tests used by the Commission to determine the cost-effectiveness of energy efficiency investments may be applied or adapted for EVSE. Is the Total Resource Cost (TRC) an appropriate measure of whether EVSE investments provide benefits to ratepayers?

Response: The TRC takes a much broader view of costs and benefits beyond those experienced by ratepayers. As the TRC is normally used, it may not be an appropriate measure of whether EVSE investments provide net benefits to ratepayers since the primary benefit calculated with the TRC is typically through avoided energy and capacity costs. Although EVSE at higher voltages result in some efficiency gains from reduced line losses which would be captured by the TRC, it would be offset by additional energy consumption and it ignores other significant benefits as described in Response 2(a) above. Also see Avista’s response to Item 5 below.

5. What, if any, modifications to traditional cost-effectiveness tests are necessary or appropriate to use for investments in EVSE?

Response: A number of different tests could be used to gauge the cost-effectiveness of utility EVSE investments. A study conducted by Energy and Environmental Economics: E3 on behalf of ICF International provides many examples that could be utilized as a starting point. This study is included as an attachment, “California Transportation Electrification Assessment – Phase 2: Grid Impacts”. The chart below is an excerpt from this study that shows the monetized costs and benefits to the state for each PEV over its lifetime (a TRC test), and an expansion to include environmental and societal benefits that are not monetized but still provide quantifiable benefits (an SCT test).

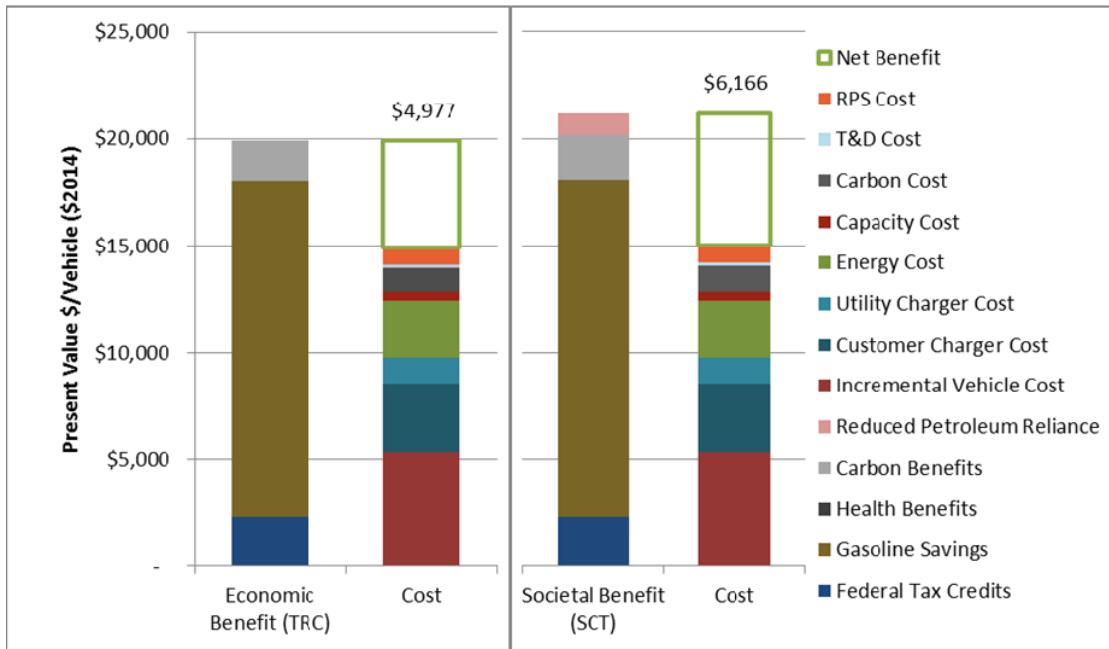


Figure 1. Regional Monetized and Societal Benefits

The Ratepayer Impact Measure (RIM) test, which more narrowly gauges the net effects on electricity rates, is also covered in this study. However, the RIM test will not capture all of the benefits associated with EVs and should not be used as the primary cost-effectiveness test. At a minimum, appropriate cost-effectiveness tests must also take into account the net operational cost savings of driving electric instead of gasoline, and reductions in air pollution and greenhouse gas emissions.

With regard to the cost effectiveness of EVSE, the appropriate time horizon to use in assessing the accumulation of benefits is important because investments required to support and encourage EV adoption may not result in immediate benefits, but rather may accumulate over time as adoption increases, technologies improve, and costs are reduced. Another important consideration is to what degree investments in various EVSE result in increased adoption levels and the accumulation of benefits. For example, even with low utilization, the availability of public EVSE, including DC fast chargers, has a positive influence on EV purchase decisions.

- 6. What policies should the Commission consider to improve access to, and promote fair competition within the market? Please comment separately on how the Commission should address the following:**
- a) Improve access to EV charging as a regulated public service**
 - b) Ensure that the utility procurement process for charging equipment is fair and competitive**
 - c) Allow a competitive market for charging services to develop**

Response: The Commission should consider policies that allow utilities to own and operate public EVSE, including ownership of premises wiring from the transformer to the meter and the EVSE. As outlined in the Company's EVSE Pilot Program, utility ownership of EVSE allows the utility to learn and understand the impacts of EV charging and EV adoption on the utility grid, in addition to the ability to try demand response experiments and initiatives that shift on-peaking charging when necessary or beneficial. Utilities are uniquely situated to be able to centralize control of back-office network software that uses open communication protocols, allowing for an open platform and flexibility to utilize various EVSE from a number of different manufacturers that also utilize open communications protocols, and which enable demand-response capabilities and EVSE to be located across its service territory. In addition, electric utilities have a vested interest in EVSE, especially as it relates to areas of their system that can support EVSE without additional distribution upgrades. Utilities are also best situated to implement strategies that make EVSE an asset to the grid.

Regarding the procurement process of EVSE, policies should direct utilities to follow established Request for Proposals (RFP) processes in order to select the products and services that provide the most value to its customers and the public at large.

One important component to consider when discussing how the Commission should address the competitive market for EVSE is customer preference. When equipment is installed on the customer's side of the meter some customers want a say in the type of equipment being installed. The Commission should include within its policies a directive that customers may have the option to select EVSE installed at their location, but procured and owned by the utility, provided that the EVSE has proven functionality with a utility's network using open communication protocols. The utility should be allowed to require the customer to pay a portion of the cost of the EVSE if the

unit they choose exceeds a certain threshold. By directing utilities to allow for the utilization of equipment from multiple EVSE manufacturers, it will provide for a competitive market to continue to develop and progress as demand and technology advances.

7. Considering RCW 80.12.020 when would it be appropriate for an electrical company to “gift” EVSE to a customer, as provided in RCW 80.28.360(4)? What notice should be given?

Response: As described in RCW 80.28.360(4), Avista believes it is appropriate to gift EVSE to the property owner on which the EVSE is located when the capital investment has been fully depreciated, or at such other time that economics or other circumstances would warrant. If a utility maintains ownership of the EVSE they will likely have to pay for ongoing maintenance and operations expense of the equipment. Gifting the equipment after its depreciable life and/or other circumstances may not alter the impact of the benefits associated with greater EV adoption as the equipment will likely continue to be used.

RCW 80.12.020(1) states “No public service company shall sell, lease, assign or otherwise dispose of the whole or any part of its franchises, properties or facilities whatsoever, which are necessary or useful in the performance of its duties to the public.” Avista believes there is no conflict with this statute and RCW 80.28.360. As discussed, there are benefits to a utility’s electric customers with greater adoption of EVs. Gifting EVSE infrastructure will not impact these benefits.

In terms of notice, Avista would recommend that a utility’s policy for gifting of EVSE be described within its tariff for an EVSE program or described prior to the installation of EVSE. Providing notice each time a single EVSE would be gifted would be inefficient.

8. Considering RCW 80.28.320, what other factors should the Commission consider in order to approve investor-owned utility proposals to own and operate EVSE as a regulated service?

Response: As discussed during the proceedings of Docket UE-160082, Avista’s EVSE pilot program, Avista believes it is important to look at investments in EVSE as a program rather than individual assets. Each different type of EVSE, home, workplace, and public (both Level 2 and

DC Fast Charging), is necessary to enable travel with EVs and to support a greater adoption of EV purchases. For example, Public Level 2 and DC Fast Chargers are imperative to an EVSE program as they eliminate range anxiety for consumers when making a purchase decision. On their own the utilization of these assets may be low for a period of time, however, without a complete EVSE infrastructure in place fewer people will purchase EVs.

The Commission should also consider EVSE programs beyond light-duty passenger vehicles. As discussed in the intent of House Bill 1853, transportation is the largest contributor to greenhouse gas emissions. This includes all forms of transportation, not just passenger vehicles. Fleet and mass transit electrification are two additional opportunities that may make sense for an electric company to pursue.

Lastly, the Commission should consider alternatives to traditional rate design when considering the rates to be charged at utility-owned public EVSE. Rates for public EVSE must be competitive with the market. If they are not, it may impact a consumer's purchasing decision and have the negative effect of choosing their gasoline powered vehicle instead of an EV for longer trips, which negates the benefit of an EVSE network. Along with the design of the rate, the Commission should consider policies or provisions that allow rates to be changed quickly to align with the market without necessarily requiring approval via a tariff filing. For example, a banded rate design could be an option to allow utilities to adjust the rates at public EVSE within a specified range without seeking approval from the Commission each time the rate needs to be changed.

House Bill 1853 and RCW 80.28.360 have directed utilities to participate in the electrification of the transportation sector in Washington because of their understanding and engineering of the electric grid. In order to do this, utilities need the policy direction and support of the Commission to operate successful EVSE programs.

Avista appreciates the opportunity to provide these comments, and we look forward to participating in the workshop scheduled for September 13, 2016. If you have any questions regarding these comments, please contact me at 509-495-2782 or by email provided below.

Sincerely,

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