BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

UM 1461

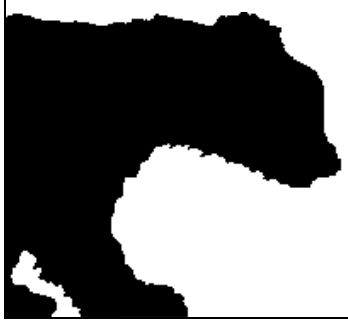
In the Matter of	)
INVESTIGATION INTO RATE STRUCTURES FOR ELECTRIC VEHICLE CHARGING	)

OPENING COMMENTS

OF THE

CITIZENS' UTILITY BOARD OF OREGON

August 27, 2010



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I. Introduction

Docket UM 1461 was initiated by the Oregon Public Utility Commission (PUC) in December 2009 to define the roles of electric utilities in developing the charging infrastructure for electric vehicles (EVs) and to evaluate the rate structure needed for EV charging. This endeavor is necessary to prepare Oregon utilities to deal with the rollout of new lines of EVs by several major automakers in late 2010 and early 2011. Oregon has also been chosen as a test state for a study on EV usage by Ecotality, Inc. This company has partnered with Nissan to install over 1,000 charging stations in public places and an additional 1,000 charging stations at the homes of purchasers of the Nissan LEAF EV. The study will commence in November 2010, providing a rough deadline for the policy guidelines from this docket to go into effect.

CUB encourages the Commission to use this process both to set guidelines that are applicable to the pilot program and its related study, and to set guidelines that are adaptable to future needs. There are some technological features of EVs, Electric Vehicle

Service Equipment (EVSE), and smart meters that Oregon utilities will not be able to fully utilize in the near term, but should be incorporated into the billing process for EVs in the future. While the Commission will certainly be able to alter the structure of rates for electricity for charging EVs at any point in the future, CUB feels that it is important to recognize impending innovations and carve out a place for them at the beginning of this process.

II. Legal Issues

While the bulk of CUB's opening comments will deal with the policy issues in Staff's straw proposal, I also wish to comment briefly on CUB's position as to the law. This will be addressed in greater depth by CUB's attorney at a later date, but I feel that an understanding of the law will help to put my policy comments in perspective. As noted in the straw proposal, several legal questions will need to be addressed in this docket. In particular, a discussion of the extent and nature of the regulation, to which public EVSE stations and third-party re-sellers will be subject, is in order. Not all of the possible legal issues will be addressed in these comments, but I will focus on whether or not a public EVSE station may be categorized as either a "public utility", as defined in ORS 757.005, or an "electricity service supplier" ("ESS") as defined in ORS 757.600. CUB does not believe such categorization is desirable or supported by Oregon law.

A. EVSE Providers Are Not Public Utilities.

CUB finds nothing in ORS 757.005 to suggest that providing or selling EVSE charging service, from power purchased from a public utility by persons or entities other than public utilities – at either the PUC-regulated rate or market rate – would subject an entity to being defined as a public utility themselves. ORS 757.005(1)(a)(A). Because

public EVSE stations would provide only connectivity and support, rather than production, transmission or delivery, they do not fall within the scope of the definition of "public utility". Moreover, ORS 757.005(b)(G) provides a specific exception for corporations, companies, partnerships, individuals or associations of individuals that furnish electricity to any number of customers for use in motor vehicles and do not furnish any utility service described in paragraph (a) of this subsection.[1]

CUB therefore encourages the Commission to find that EVSE providers are not public utilities. This is not to say that public utilities might not themselves also engage in the provision of electricity through EVSE charging stations; CUB believes that there is likely room for many kinds of EVSE ownership in the marketplace. Currently it is not clear what model of EVSE ownership will best provide the infrastructure needs of Oregon. CUB would, however, have concerns about a marketplace in which the utility is a service provider and there is a significant competitive market. A utility would have the ability to subsidize EVSE far beyond the rates it charges by sharing the costs of management, market intelligence, office space, and insurance with its regulated business. There are many opportunities in this type of market for a utility to use resources paid for by its regulated customers to subsidize a competitive business. As CUB has argued many times before, research and development are not things that utility consumers should be asked to subsidize. On the other hand, the public charging station infrastructure needs to be developed quickly. The Commission should therefore be planning for the long-term.

[1] ORS 757.005(b)(G) provides as follows:

> (b) As used in this chapter, "public utility" does not include:
> * * * * *
> (G) Any corporation, company, partnership, individual or association of individuals that furnishes . . . electricity . . . to any number of customers for use in motor vehicles and does not furnish any utility service described in paragraph (a) of this subsection.

In the future, a utility that chooses to compete in this marketplace with independent operators should be required to operate the competitive business through an affiliate. It may be too early to make a firm decision on this issue, but it is a topic that needs to be regularly re-examined by the Commission.

Regardless of how a rule of this sort is worked out, CUB does note that in order to induce the kind of price competition that will be beneficial to customers, it will be necessary for utilities to charge their own EVSE stations the same wholesale price for electricity as charged to privately operated, government operated, or anyone else operated EV stations. ORS 757.310(2); ORS 757.646. For the record, however, CUB does not believe that investments made by a public utility to enter the EVSE market should be recovered in rates. CUB also believes that the Commission will need to ensure that public utilities do not assess charges that put independent EVSE service providers at a competitive disadvantage.

B. EVSE Providers Are Not ESSs.

CUB further notes that ORS 757.600 provides separate definitions for "[e]lectric utilities" 757.600(13) and "[e]lectricity service supplier[s]" ORS 757.600(16). The provision of separate definitions suggests that the legislature contemplated nonutility entities in this arena, reinforcing the Commission's ability to refrain from categorizing the EVSE stations as utilities.

ORS 757.600(16) defines ESS in part as any person or entity that offers to sell "electricity services available pursuant to direct access to more than one retail electricity consumer." "[E]lectricity services" are in turn defined in ORS 757.005(15) as "electricity distribution, transmission, generation or generation-related services." As suggested

above, CUB does not believe that the connectivity and associated charging support services should be construed as distribution, transmission or generation-related services. Because EVSE services are not "electricity services" as defined, the labeling of EVSE facilities as ESSs would be inappropriate. CUB encourages the Commission to find that EVSEs are not ESSs.

Commission Order No. 08-388 further addresses the definition of an ESS, focusing on the "direct access" requirement, concluding that direct access requires both the ability of a retail electricity consumer to purchase electricity *and* ancillary services from the entity. [*Order 08-388 at 12*]. "Ancillary services" are defined in ORS 757.600(2) as those services "necessary or incidental to the transmission and delivery of electricity from generating facilities to retail electricity consumers, including but not limited to scheduling, load shaping, reactive power, voltage control and energy balancing service". While the examples provided in the definition of ancillary services are not exhaustive, CUB believes that the list reflects categories which differ significantly from the services provided by an EVSE station, suggesting that the legislature did not contemplate inclusion of this service type within the definition of ESS. Again, CUB encourages the Commission to find that EVSEs are not ESSs.

C. Current Tariffs Prohibit Resale of Electricity.

CUB agrees with Staff's analysis in its opening comments of the effect of current utility tariffs on the resale of electricity. CUB also agrees with Staff that in light of explicit exception in ORS 757.005(1)(b)(G) that (exempting entities which "furnish" electricity to any number of customers for use in motor vehicles from the definition of

utility), there is a strong argument that such tariffs do not apply to EVSE providers furnishing electricity to EV owners and that the tariffs should be revised.

D. FERC Jurisdiction.

Regarding FERC jurisdiction, CUB has only briefly reviewed this issue. CUB's brief review tracks with Staff's opening comments in this docket.

III. CUB's Responses to Staff's Straw Proposal Policy Issues

The PUC Commission Staff (Staff) authored a straw proposal for regulatory policies and guidelines in July 2010. CUB's policy responses to this straw proposal are detailed below:

A. Policies Related to Developing Public Charging Infrastructure

1. Rate Schedules for Publicly Available EVSE Stations

CUB supports the position of the straw proposal to establish a separate rate schedule that is solely applicable to publicly available EV charging stations. CUB also supports the position of the straw proposal that this rate schedule should have Time of Use (TOU) pricing and an option to purchase renewable energy credits at a rate that reflects the cost of service.

2. Cost of Distribution Upgrades or Reconfigurations

CUB agrees with the straw proposal's assertion that the current policies regarding distribution upgrades and infrastructure improvements should apply to infrastructure developed for EVSE service. Distribution infrastructure costs are currently recovered from all customers of a utility in the form of a monthly distribution charge on each customer's bill and a per-kWh charge, both of which varies by rate class. This is the format that should be followed for system costs associated with the charging of EVs.

CUB further suggests, however, that measures be taken to encourage utilities to take advantage of the technology that is already available onboard the upcoming generation of EVs. These vehicles have the capability to monitor and log their own consumption, including voltage, length of time of charging, and the time at which charging occurred. These vehicles are also able to communicate with smart electric meters and make the collected information available to the utility. CUB is aware that Oregon utilities are still in the process of implementing their smart meter infrastructure and are not yet in a position to take advantage of these features of EVs. Nevertheless, it is worth noting that technological advancements such as this may soon obviate the need for any separate metering infrastructure for EVs.

CUB encourages the Commission to direct Oregon utilities to work with smart meter and EV manufacturers to develop standardized information-sharing technology between these devices. Furthermore, CUB notes that the potential for this technology to develop quickly over the coming years may result in outdated or unneeded metering equipment. The Commission should be aware of this potential issue and make provisions for utilities to decommission and/or redeploy metering infrastructure as technologies mature.

3. Utility Ability to Dispatch EV Charging

CUB has reservations regarding the straw proposal's position of having utilities put forth a separate tariff for EV charging that gives the utility the ability to control charging rates during peak load periods. Such a tariff should not be made mandatory, as there are a number of situations in which it could be detrimental to the reliability of charging station availability. If a mandatory approach to the tariff is taken for publicly

available, commercial charging stations, there is the potential that motorists could be stranded without the ability to charge their vehicles. For example, if the power flow to EV charging stations along I-5 is interrupted during a critical peak, a motorist traveling from Eugene to Portland who needs to charge her vehicle may be stranded for the duration of the interruption until she can commence charging her vehicle. This type of interruption would likely happen during a high temperature day in the summer, and is therefore tantamount to the utility expressing a preference to serving air conditioning load over transportation load.

CUB urges the Commission to approach this issue cautiously, as the potential for power flow interruptions to publicly available charging stations could be viewed as a significant disincentive by many prospective EV owners. It is important for the Commission to avoid policy decisions that may deter adoption of this new technology. A tariff that allows for service interruptibility should therefore not be mandatory, but should be offered as an option that is available to parties who would find it beneficial for their particular needs.

4. Information on Emissions to Customers

While an admirable goal, providing accurate information on emissions to EVSE customers may prove to be quite difficult. The generation mix of a utility on an aggregate basis over the course of a month or a year is not difficult to calculate, and is somewhat easy to predict going forward. However, an overall average based on a period of that length would not accurately reflect the direct impact of an individual EV charging station on a utility's overall emissions.

If assessing the impact of each individual charging station is the goal, it will be necessary to calculate the real-time marginal resources that are allocated to providing the electricity for these stations. In that case, much of the charging that is done during peak periods will be adding marginal load that will be generated by natural gas turbines. Off-peak hours, especially at night, will likely be charging on base load generation, which is largely coal. The result of this type of real-time assessment may be emissions that are much higher than expected by environmentally-conscious consumers who have chosen EVs as a way to reduce their emissions and carbon footprint.

However, an analysis of emissions generated on the margin is not necessarily accurate, either, as it does not take into account the wind resources that are available to utilities on an intermittent basis. The technology exists, and will soon be able to be utilized by utilities, to send signals that encourage charging during periods of high wind generation. (This type of responsive charging is the flip side of the discussion of utility dispatch privileges discussed above in III.A.3.) EV charging could, therefore, be dispatched at times during which the marginal emissions (and costs) are near zero, resulting in a greatly diminished impact of EVs on both the grid and the atmosphere. Dispatchability may be more applicable for residential customers who will be more readily able to leave EVs plugged in to charging stations for longer periods of time, but there is the potential for its utilization by commercial charging stations as well. Both commercial and private charging station owners should also be able to purchase credits for renewable energy generation (see III.A.1 and III.B.I), which will further reduce the individual impacts of these stations.

As stated above, the selection of the formula used to calculate emissions is a difficult process, and important from the standpoint of providing consumers with accurate information. CUB is unfortunately unable at this time to recommend a specific formula for this calculation. Nevertheless, CUB encourages the Commission to consider the above concerns when developing a formula.

5. Utility Ownership and Operation of EVSE Stations

CUB is in favor of allowing utilities to install and operate EVSE stations that are available to the public. This support is tentative, however, and only reflective of the current, emerging marketplace. With the current dearth of EVSE stations, it is advisable that utilities help launch a system of charging infrastructure. As discussed in Section II, CUB has some significant concerns regarding the participation of regulated utilities in a competitive market.

If utilities do install and operate charging stations, it is important that the Commission stipulate that these stations must be self-funded, i.e. the costs of the stations cannot be passed through to ratepayers, but must be covered by fees charged to motorists who charge their EVs at the stations. EV charging infrastructure will not be used to provide a service to the general ratepaying classes, but instead will only be used by EV drivers. Furthermore, this is a common-sense measure that will ensure a level playing field for independent charging station operators. Along the same lines, utilities must also supply electricity to utility-owned charging stations at the same rate as that billed to charging stations that are independently owned and operated. Ultimately, however, if a truly vibrant competitive market develops then it will likely require this function to be transferred to an affiliate of the utility.

B. Policies Related to Private Charging

1. Rate Schedules for Private EV Charging

CUB supports the position of the straw proposal to establish a separate rate schedule that is solely applicable to private EV charging stations. CUB also supports the straw proposal's position that this rate schedule should have Time of Use (TOU) pricing and an option to purchase renewable energy credits at a rate that reflects the cost of service.

CUB does note that certain security measures may need to be taken to ensure that TOU rates are an effective means of encouraging off-peak charging. EV owners are likely to be a technologically-savvy group of consumers that will be able to adapt to conditions and potentially circumvent a separate metering structure for EVs if it is financially advantageous to do so. For example, a customer could use an adapter to plug an EV into a household dryer socket or standard 110V outlet to avoid higher rates during peak hours. While this type of consumer behavior may not be prevalent, it is worth recognizing. If TOU rates are too "punitive" during peak times, some customers will seek alternatives. It is also worth considering an optional whole-house TOU rate structure that would eliminate the incentive to charge an EV on the household meter rather than the EVSE station meter. This type of rate structure would also eliminate the need for a separate meter altogether, resulting in much lower costs of distribution infrastructure upgrades. CUB does not necessarily advocate for this approach, but does encourage the Commission to consider alternatives to requiring separate meters.

2. Costs of Distribution Upgrades or Reconfigurations

See discussion in Section III.A.2.

3. Utility Ability to Dispatch EV Charging

CUB has some reservations regarding the ability of utilities to control the flow of power to EVSE stations during critical peak periods, although these reservations are somewhat lower for residential charging stations than for public stations. Residential charging stations will tend to have greater flexibility for the time of vehicle charging, as EVs can be left plugged in overnight to achieve the optimal charging time, both in terms of TOU rates and utility demand management.

There will inevitably be customers who object to the utility being able to control the power flow to their EVSE station. CUB recommends that the Commission establish two rate tiers for residential EVSE stations – a rate that allows for critical peak management, and another, slightly higher rate that does not allow for critical peak management.

4. Information on Emissions to Customers

See discussion in Section III.A.4.

C. EVs as a Provider of Ancillary Services

CUB encourages the Commission to make provisions for the future enabling of load-balancing and other ancillary services by EVs. The battery capacity of EVs is an ideal source for utilities to tap for capacity during peak demand periods, and an ideal sink into which utilities can direct excess generation when demand is low. While the basic technology for utilities to remotely control and utilize EV batteries does exist, the IT infrastructure required to effectively use the technology in Oregon is not yet in place. To ensure that this valuable technological feature is useful once utilities have the necessary IT infrastructure in place, the Commission should advise utilities to conduct a forecast in

their respective 20-year integrated resource plans (IRPs). This forecast should calculate the balancing reserves (dispatchable ramping needed within five minutes) needed at different time intervals (hourly, weekly, monthly, quarterly) from existing generation over the course of the 20 year planning period. The IRPs should also include an estimate of the cost of IT and other infrastructure needed to make balancing loads from EV batteries realistic on a large-scale basis.

IV. Conclusion

There are several major points CUB would like to stress as being important to EV policy in Oregon. First, separate rate structures for publicly available and residential charging units should be created that incorporate an option for time of use rates. Second, efforts should be made to take advantage of the technology that is already built into the coming generation of EVs. And third, utilities should be allowed (and encouraged) to develop EVSE stations on a provisional basis, with the understanding that the management and ownership of this infrastructure will likely need to be transferred to an affiliate interest in the future to facilitate a more competitive marketplace for EV charging.

CUB appreciates the Commission's efforts in expediting the rulemaking process for EVs and EVSE infrastructure. There are numerous challenges ahead in ensuring a smooth transition towards electrified transportation. With the right approach to rulemaking, Oregon should be well-positioned to be a leader in adopting the next generation of clean-running EVs.

Respectfully Submitted,
August 27, 2010

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UM 1461– CERTIFICATE OF SERVICE

I hereby certify that, on this 27th day of August, 2010, I served the foregoing **OPENING COMMENTS OF THE CITIZENS' UTILITY BOARD OF OREGON** in docket UM 1461 upon each party listed in the UM 1461 OPUC Service List by email and, where paper service is not waived, by U.S. mail, postage prepaid, and upon the Commission by email and by sending an original and 1 copy by U.S. mail, postage prepaid, to the Commission's Salem offices.

(W denotes waiver of paper service)

(C denotes service of Confidential material authorized)

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