



UM 1461 – Electric Vehicle Charging Rates and Infrastructure

Straw Proposal

July 22, 2010

Background

The Public Utility Commission (OPUC or Commission) initiated Docket No. UM 1461 in December 2009. The purpose of the investigation is to determine appropriate roles for electric utilities in the development of electric vehicle (EV) charging infrastructure and to consider appropriate rate structures for electricity used for EV charging. An EV infrastructure development firm, Ecotality Inc., has chosen Oregon as a test state for a study on EV use. Ecotality will install nearly 1,200 publicly available charging stations and will gather data on the driving and charging habits of 900 participating EV owners. Idaho National Laboratory will present this data from Oregon and other test markets in a published report. The study will begin in November 2010.

Staff Straw Proposal and its Purpose

On June 22, 2010, Staff circulated a list of potential issues and held a public workshop with interested parties to discuss the scope of this proceeding. Based on input received during the workshop and our judgment of a reasonable scope for the proceeding, Staff has developed the attached straw proposal. The straw proposal should not be interpreted as an initial Staff position on the issues in this proceeding. Instead, the straw proposal is a tool to help facilitate and focus the comments of all parties to this proceeding. The straw proposal provides parties with an organized framework that they can use, and simple descriptive policy proposals that they can react to, in their Opening Comments. In Opening Comments, parties are encouraged to indicate their support or opposition to the proposed policies, propose modified policies, or recommend new policy proposals. Parties should provide the rationale and justification for their policy recommendations.

Legal Issues

Essential to the straw proposal is an understanding of certain legal and jurisdictional issues. Staff has identified legal questions that are key to the policy decisions that the Commission will make.

The straw proposal lists key legal questions but is not a legal analysis. The policy suggestions in the straw proposal are based on a particular premise regarding PUC jurisdiction over EV charging service providers. That premise is not a legal position but only a basis for discussion. In listing legal questions and policy suggestions, Staff's intent is to encourage other parties to draft their own legal analyses.

Organizational Issues

Acknowledging that there are many issues surrounding EV charging, the straw proposal focuses on three broad issues listed below:

- a. Public EV charging infrastructure: EV's have limited range and the public may not buy EV's if there is not adequate public charging infrastructure. Alternatively, public charging infrastructure may not be built if there is not sufficient demand for charging services. In the short run, investment incentives may be needed to jump start the development of public charging infrastructure. Questions regarding who will be making the investments in charging infrastructure and related distribution upgrades and how those investments will be recovered all flow from this issue.
- b. At Premise Charging: EV owners will include homeowners, multifamily building residents, businesses and fleet owners. Regardless of the user type, Staff anticipates that a large amount of EV charging will occur at an owner's premise. This charging can affect the utilities' load profile. The goal of managing the impacts of at premise EV charging on the utility load profile gives rise to questions regarding rate structure, investments in metering and local distribution modifications, and smart charging. In the straw proposal, Staff identified possible Commission policies to address these questions.
- c. Potential for EV's to provide ancillary services: In the future and in combination with Smart Grid development, EV batteries may become a tool for using existing generation more efficiently during off-peak periods and for integrating renewable generation. Although this potential may not be realized for several years, the straw proposal includes some broadly stated suggestions.

Further Discussion and August 6, 2010 Workshop

A public workshop is scheduled for August 6, 2010. The purpose of this workshop is to discuss the straw proposal. Staff will answer questions about the purpose and use of the straw proposal as well as specific policies in the straw proposal.

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I. Goals and Objectives

The Commission needs a clear statement of the overall goals and objectives of its electric vehicle regulatory policy. These goals and objectives will guide and inform the Commission's decisions on specific policies and guidelines. Staff has identified three potential goals that the Commission could use to guide development of specific regulatory guidelines:

1. Enable the development of both privately owned and publicly available "Electric Vehicle Service Equipment" (EVSE) infrastructure in a way that is flexible and keeps all options open to different "electric vehicle" (EV) charging business models as the market matures.
2. Manage the impact of EV charging on utility load profiles and infrastructure by encouraging charging at off peak periods, and anticipate the potential for EV's to provide ancillary services.
3. Ensure no undue shifting of Electric Vehicle related costs onto non participating ratepayers.

II. Legal Issues

The Commission needs a firm legal foundation upon which to build its electric vehicle regulatory policy. Staff has identified the following legal questions that must be addressed to provide a firm legal foundation:

Note: For the purposes of these questions, "selling or providing charging services" means an EVSE selling or providing power for the purpose of charging EV's.

1. What federal or state laws apply when an entity buys power from a public utility and sells or provides EVSE charging services to the public?
 - a. In answering question (1), discuss whether such an entity would be a "public utility" under ORS 757.005 subject to PUC regulation when it buys power, for the purpose of providing or selling EVSE charging service, either: (i) from a public utility at the PUC-regulated rate or (ii) on the wholesale market. For question (1)(a)(i), discuss any federal or state laws that may apply when an EVSE service provider buys power from a public utility at the PUC-approved retail rate and sells it at a different price for the purpose of EV charging.
 - b. In answering question (1), discuss whether an entity that sells or provides power as described in question (1)(a) would be an "Electric Service Supplier" (ESS). In responding to this question, consider the implications, if any, of Commission Order 08-388.

2. If there are laws that apply to an EVSE service provider who buys power and sells or provides EVSE charging services to the public, could the EVSE service provider avoid the application of any applicable laws by adopting pricing models such as:
 - a. Memberships where the EV driver pays a flat monthly fee;
 - b. Implementing a convenience charge where the driver pays a flat fee for the EVSE charging service regardless of kwh's used;
 - c. Offering other services such as having an attendant;
 - d. Offering free EVSE charging service with validation by a local business; or
 - e. Other?

The suggested regulatory policies and guidelines described in section III of this straw proposal do not include an analysis of the Legal Issues. The policies described in the section III are based on the premise that EVSE service providers are not public utilities and are not ESS's. This premise is a basis for discussion and is not based on legal advice.

III. Regulatory Policies and Guidelines

A. Policies related to developing public charging infrastructure

In this section, staff addresses EVSE stations located in public places such as shopping centers, gas stations, community centers, places of worship, or curbsides. Staff refers to these as “publicly available EVSE stations.” They are available for the use of any EV driver, either for a price or free of charge.

1. **Rate Schedules for Publicly Available EVSE Stations:** Public utilities shall propose a rate schedule solely applicable to publicly available EVSE stations. This rate schedule shall reflect differences in the utility's cost of serving EV charging loads by time of day, day of week, and month of year. The rate schedule shall include an option that allows EV charging customers to opt for a mix of power that includes a higher percentage of low or zero carbon generation at a rate that reflects cost of service.
2. **Cost of Distribution Upgrades or Reconfigurations:** Existing policies stated in public utility rate schedules governing cost allocation for distribution upgrades or reconfigurations, including but not limited to line extensions and new connections (e.g. “PGE Rule I”), shall apply to new infrastructure requirements for publicly available EVSE service. All distribution system expansions or reconfigurations needed to serve publicly available EVSE service load shall be treated in the same manner as any other distribution system expansion or reconfiguration. Reasonable costs associated with the implementation of separate rate schedules for EV charging, including separate metering, billing, data collection or other EV related administration costs, shall be recovered from all the utility's customers.
3. **Utility Ability to Dispatch EV Charging:** Public utilities shall also propose a separate tariff or an option within the tariff developed under III.A(1) that gives the public utility the ability to actively control the charging rate during peak load periods. Such control may include the right of the public utility to reduce or interrupt power flow for EV charging.

4. **Information on emissions to customers:** Public utilities shall provide all publicly available EVSE customers with information on the typical generation resource mix and CO2 emissions rates using the same time differentiation used in the EV charging rate schedule described in III.A(1).
5. **Utility Ownership and Operation of EVSE Stations:** Public utilities may install and operate publicly available EVSE stations. Costs, including but not limited to the design, installation, operation or maintenance of publicly available EVSE stations shall not be recovered in rates. Power supply to any utility owned publicly available EVSE station shall be charged at the same PUC approved rate as would apply if the publicly available EVSE station were independently owned.

B. Policies related to private charging

In this section, “private charging” refers to EVSE stations installed at homes, multifamily dwellings or places of business solely for residents or employees to charge their own EV’s.

1. **Rate Schedules for Private EV Charging:** Public utilities shall propose rate schedules solely applicable to private (at-home and at-premise) EV charging. The rate schedule shall reflect differences in the public utility’s cost of serving EV charging loads by time of day, day of week, and month of year. The rate schedule shall include an option that allows EV charging customers to opt for a mix of power that includes a higher percentage of low or zero carbon generation at a rate that reflects cost of service.
2. **Costs of Distribution Upgrades or Re-configurations:** Existing policies stated in public utility rate schedules governing cost allocation for distribution upgrades or reconfigurations, including but not limited to line extensions and new connections (e.g. “PGE Rule I”), shall apply to new infrastructure requirements for private EV charging. All distribution system expansions or reconfiguration needed to serve private EV charging load shall be treated in the same manner as any other distribution system expansion or re-configuration. Reasonable costs associated with implementation of separate rate schedules for EV charging, including separate metering, cost of billing, data collection, or other EV related administration costs shall be recovered from all the public utility’s customers.
3. **Utility Ability to Dispatch EV Charging:** Public utilities shall also propose a separate rate schedule, or an option within the rate schedule developed under III.B(1) above, that gives the public utility the ability to actively control the charging rate during peak load periods. Such control may include the right of the public utility to reduce or interrupt power flow for EV charging.
4. **Information on emissions to customers:** Public utilities shall provide private EV charging customers with information on the typical generation resource mix and CO2 emissions rates using the same time differentiation used in the EV charging rate schedule in III.B(1).

C. EV’s as a provider of Ancillary Services

Staff has identified the following Integrated Resource Planning guidelines to address the potential for EV's to provide ancillary services for the integration of renewable generation.

1. **Forecast the Demand for Flexible Capacity:** The electric utilities shall forecast the balancing reserves needed at different time intervals (e.g. ramping needed within 5 minutes) to respond to variation in load and intermittent renewable generation over the 20 year planning period.
2. **Forecast the Supply of Flexible Capacity:** The electric utilities shall forecast the balancing reserves available at different time intervals (e.g. ramping available within 5 minutes) from existing generating resources over the 20 year planning period.
3. **Evaluate Flexible Resources on a Consistent and Comparable Basis:** In planning to fill any gap between the demand and supply of flexible capacity, the electric utilities shall evaluate all resource options, including the use of EV's, on a consistent and comparable basis.

Dated at Salem, Oregon this 22nd day of July, 2010



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CERTIFICATE OF SERVICE

**UM 1461
Straw Proposal**

I certify that I have this day served the foregoing document upon all parties of record in this proceeding by delivering a copy in person or by mailing a copy properly addressed with first class postage prepaid, or by electronic mail pursuant to OAR 860-13-0070, to the following parties or attorneys of parties.

Dated at Salem, Oregon, this 22nd day of July, 2010.



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UM 1461
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