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GENERAL COUNSEL DIVISION

December 17, 2014

Attention: Filing Center
Public Utility Commission of Oregon
3930 Fairview Industrial Drive SE
P.O. Box 1088
Salem, OR 97308-1088

Re: *In the Matter of PACIFICORP, dba PACIFIC POWER, 2013 Annual Smart Grid Report*
PUC Docket No.: UM 1667
DOJ File No.: 330030-GN0342-13

Enclosed for filing with the Commission today are an original and five copies of the COMMENTS OF THE OREGON DEPARTMENT OF ENERGY in the above-captioned docket.

Sincerely,

Jesse Ostdiek for

Renee M. France
Senior Assistant Attorney General
Natural Resources Section

Enclosures
RMF:jrs/#6102162
c: UM 1667 Service list

BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

UM 1667

In the Matter of	)	
	)	
PACIFICORP, dba PACIFIC POWER,	)	COMMENTS OF OREGON
	)	DEPARTMENT OF ENERGY
2014 Annual Smart Grid Report	)	
	)	

Introduction

The Oregon Department of Energy (ODOE) appreciates the opportunity to provide comments on the 2014 Smart Grid Report filed by PacifiCorp on October 31, 2014. These comments are a follow-up to informal comments that ODOE submitted to PacifiCorp on September 16, 2014 as part of a stakeholder information exchange and review of the draft Smart Grid Report. ODOE offers five recommendations for consideration by the Commission; two related to decision-making on metering infrastructure and three related to preparing future smart grid reports.

First, require more transparency in the methodology used by PacifiCorp in deciding on metering infrastructure investment so that long-term system benefits are more fully evaluated. Second, require PacifiCorp in deciding on metering infrastructure to better address the specific information needs of customers to save money and increase energy efficiency by managing their energy usage, and to better participate in time-of-use pricing structures and demand response. Third, require future smart grid plans to examine a wider range of assumptions on electric vehicle penetration and the potential system benefits that

smart grid may bring to managing the impacts. Fourth, require that in future smart grid plans PacifiCorp analyze smart grid solutions relating to integration of distributed renewable generation instead of assessing the need for smart grid based on the energy potential of the variable renewable resources. Fifth, have PacifiCorp in future smart grid plans quantify the interdependencies of various smart grid solutions to avoid undervaluing the benefits.

1. Present transparent analysis of system-wide benefits in decision-making on metering infrastructure

PacifiCorp is engaged in a process of decision-making that will result in the installation of the next generation of meters. In 2014, several business cases were created by PacifiCorp to quantify costs and benefits of installing infrastructure to enable advanced metering. Three options have been presented for advanced metering: equipment capable of advanced meter reading (AMR), which typically has one-way communication; equipment capable of advanced metering infrastructure (AMI), which typically has two-way communication; and equipment that is AMR-capable upon installation and could be upgraded at some future date to AMI.

The decision on how, indeed whether, to proceed with advanced metering has profound implications on the potential for identifying further cost-effective smart grid opportunities, demand response, customer communications, and pricing programs. ODOE recommends that the Commission encourage PacifiCorp to place a high value on transparency in the decision-making process, the methodology behind analyzing costs and benefits, and to include long-term, system-wide benefits in the analysis when choosing between AMR, AMI, and the timing of installation. Costs are likely to be clear from the results of the RFP process currently underway. Potential system benefits identified in the

Smart Grid Report include an expansion of non-firm demand response (i.e., time-based rates); outage management; fault detection, isolation and restoration; and integrated volt/var optimization. The final proposal should evaluate each of these system benefits using a clear methodology and providing the basis for each of the assumptions.

The investment decision made in 2015 will set the stage for adoption or rejection of a variety of smart grid solutions in the years that follow. Picking a low-cost system now may create higher costs in the future.

2. Enhance customer communication with access to more granular data and then re-evaluate time-of-use pricing programs and demand response

Along with the system operator benefits of advanced meters comes the potential for benefits visible to the customer. ODOE recommends that the Commission encourage PacifiCorp to place higher value on the ability of customers to access their energy usage data in a variety of formats, and with the most granularity.

PacifiCorp currently only utilizes interval and advanced meters for a limited number of residential customers who meet specific program and access criteria. The narrow focusing of the application to a subset of customers minimizes PacifiCorp's ability to take advantage of advanced metering benefits and prevents the company from offering full disclosure of energy use information to residential customers. Access to granular customer data is critical for customers who seek to adjust their energy consumption for short term periods, take full advantage of renewable energy programs or reduce energy costs through participation in time-of-use rate programs. PacifiCorp currently offers all of these services but, with the exception of renewable energy programs, the company experiences low participation due, in part, to the fact that customers are not able to assess whether participation would be of

benefit to them before they participate. Customers need a price signal they can understand before they can choose to act.

ODOE asks the Commission to require PacifiCorp to evaluate the business case for AMI as part of a full comprehensive approach to providing transparent information to customers and reducing peak load growth across its system. PacifiCorp's current approach of analyzing each opportunity in isolation fails to give adequate consideration to the shared benefits of AMI, transparent customer information, and peak load reduction. The business case for AMI should include the increased enrollment in time-of-use pricing programs and demand response that would occur if PacifiCorp engaged with customers on these programs shortly after installation of advanced meters.

3. The Commission should require PacifiCorp to examine a wider range of assumptions on electric vehicle penetration

PacifiCorp recognizes on pg. 35 of the Smart Grid Report that plug-in electric vehicles are expected to become more widespread as technologies advance and vehicle purchase prices come into better alignment with gasoline vehicles. PacifiCorp further states that there has been slow growth in the usage of electric vehicles in its service territory and that it expects load growth due to electric vehicles to be "small and manageable" (pg. 36). As in the draft Smart Grid Report, PacifiCorp references the Energy Information Administration forecasts for 2030, which have downgraded predictions for sales of hybrid vehicles between the forecast published in 2007 and that published in 2014. PacifiCorp interprets this as a clear indication that electric vehicles will remain a small portion of the electric load in Oregon, and therefore investments in smart grid solutions for electric vehicle charging have little value.

The EIA forecasts are national averages. Currently, Oregon is in the top 10 states in terms of electric vehicle penetration[1] and the State of Oregon is working to increase utilization of electric vehicles within the state. The Oregon Department of Environmental Quality has adopted California's Zero Emission Vehicle program, which is likely to result in electric vehicles and plug-in hybrid electric vehicles making up 5 percent of new vehicle sales in 2018 and 13 percent of sales in 2025[2]. According to the US Energy Information Administration, Oregon now has about 4% of the nation's total public charging stations, despite having only about 1% of the nation's total light-duty vehicles. In the Northwest Power and Conservation Council's upcoming 7th Power Plan, the Council is assuming 15% electric load growth in the transportation sector in the coming two decades.[3] ODOE encourages the Commission to require PacifiCorp to include Oregon-specific electric vehicle penetration targets and forecasts in future Smart Grid Reports based on consultations with ODOE, ODOT and ODEQ.

4. Analyze smart grid solutions for the integration of distributed renewable generation

In the Smart Grid Report (pg. 33), PacifiCorp summarized the outcome of the "Smart Grid Solar Energy Study". This study evaluated the solar potential on a particular distribution circuit in Utah, including 356 structures. The study focused on solar insolation, best potential buildings for installation, cost to install solar panels, and required metering. The conclusion of the study was that a high-penetration solar resource was not well matched to the system peak and therefore did not have potential to cost-effectively defer transmission or distribution system investment.

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[1] http://www.evroadmap.us/sites/default/files/Pike_Research_Oregon_Utility_Webinar.pdf
[2] http://www.deq.state.or.us/aq/orlev/
[3] https://www.nwcouncil.org/media/7148586/p1.pdf

While this was a valuable study for the local service territory, the topics in the study are not the primary focus areas of utilities seeking smart grid solutions to high-penetration solar energy in the distribution system. In California the Electric Tariff Rule 21 has given rise to a Smart Inverter Working Group.[4] The working group includes representatives from industry and utilities inside and outside California. Technology and the accompanying standards currently can accommodate the power flows from systems with distributed energy resources, but do not optimize the distributed generation to support distribution system operations.

Recommended technical operating standards within Electric Tariff Rule 21 include objectives of other applications examined in the Smart Grid Report, e.g. anti-islanding, dynamic volt/var operations, controlling ramp rate, fixed power factor, and reconnecting by "soft-start". Some smart inverter functionality could overlap and enhance smart grid functionality in other applications, such as distribution automation, and upon implementation represent lower combined costs for greater system benefits.

In future Smart Grid Reports, PacifiCorp should focus on challenges and solutions in interconnection and system operations, including the potential role for technologies such as smart inverters, to increase integration of variable renewable generation. The Commission should require PacifiCorp to further explore these topics, which are mentioned on pg. 34 of the 2014 Smart Grid Report.

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4 http://www.energy.ca.gov/electricity_analysis/rule21/documents/recommendations_and_test_plan_documents/Recommendations_for_updating_Technical_Requirements_for_Inverters_in_DER_2014-02-07-CPUC.pdf

5. Better quantify the interdependencies of smart grid solutions

PacifiCorp has created a roadmap to the smart grid, focusing on six scenarios in which different combinations of seven smart grid applications were modeled. On pg. 38 the report states "Development of an objective roadmap must consider the economic value of individual components, the technology maturity, as well as the interdependencies." ODOE supports this approach to developing a roadmap. However, on pg. 39 the Smart Grid Report states "Each scenario generated independent costs, annual benefits, and the present value revenue requirement." There is little information in the report about how the interdependencies of the applications were evaluated. ODOE would like to better understand how the system benefits were calculated for the applications, and whether multiple system benefits from a given application were considered. As smart grid technology is more widely used, the underlying electric system has increased visibility and control and there is potential for multiplier effects in terms of benefits from an incremental investment. ODOE looks forward to a clearer analysis of such interdependencies in the next Smart Grid Report.

6. Conclusion

ODOE appreciates the opportunity to provide these comments to the Commission. We have offered five recommendations for consideration by the Commission. These include two recommendations related to metering infrastructure and subsequent program development; two recommendations related to the emerging technologies of electric vehicles and distributed solar; and one recommendation to emphasize the interdependencies of smart grid solutions so as not to understate the benefits.

PacifiCorp has undertaken a large body of work related to smart grid in 2014, and we commend the company for its wide-ranging analyses and dedication to task. ODOE looks forward to working with PacifiCorp, the Commission, and stakeholders to maximize the benefit of smart grid programs for all Oregonians.

Dated this 17th day of December, 2014.

Respectfully submitted,

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Of Attorneys for Oregon

CERTIFICATE OF SERVICE

I hearby certify that on December 17, 2014, I served the foregoing COMMENTS OF THE OREGON DEPARTMENT OF ENERGY upon all parties of record in this proceeding by electronic mail as all parties have waived paper service.

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(C)= Confidential

DATED this 17th day of December, 2014.

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