

December 19, 2013

Public Utility Commission of Oregon
3930 Fairview Industrial Drive SE
Salem, Oregon 97302-1166

Attn: Adam Bless

RE: UM 1673
Public Utility Commission Legislative Report to Comply with HB 2893 Solar Incentives

PacifiCorp, d/b/a Pacific Power (PacifiCorp or Company), submits these informal comments to the parties in this proceeding at the request of Public Utility Commission of Oregon Staff.

I. INTRODUCTION

On April 11, 2013, the 77th Oregon Legislative Assembly approved House Bill 2893. The bill increased the allowed cumulative nameplate capacity of qualifying solar photovoltaic (SPV) energy systems enrolled in certain pilot programs established by the Commission. The bill also directed the Commission to study the effectiveness of programs that provide incentives for use of solar photovoltaic energy systems. The Commission is required to report the results of the study to the interim committees of the Legislative Assembly on or before July 1, 2014. The Commission opened docket UM 1673 to examine the issues raised by HB 2893. The Commission held stakeholder workshops in docket UM 1673 on October 8, 2013 and November 5, 2013. On November 21, 2013, Staff circulated to parties to UM 1673 a list of questions—developed in response to the October and November stakeholder workshops—intended to represent issues the Commission wants to consider in its report to the legislature. As noted by Staff in the cover letter accompanying the questions, the questions are not prescriptive or mandatory, but are intended as guidance to parties wishing to provide input to the Commission. Below are the Company's informal responses to the questions posed by Staff. PacifiCorp

anticipates that, as the report develops and the docket progresses, it may have more specific or in-depth responses to the preliminary issues identified by Staff and therefore reserves the right to modify, rescind, or otherwise provide additional responses as necessary.

II. COMMENTS

A. General Questions

1. What is the primary goal of the legislature when they passed HB 3039 to promote solar?

The primary goal of the legislature when passing House Bill 3039 that created the Oregon Solar Incentive Program (OSIP) was to investigate the costs of solar development at small and large scales. The small-scale pilot program was designed to test the effectiveness of a feed-in tariff or a pay-per-production model over 15 years. This is a new and different model than the Energy Trust of Oregon (ETO) utilizes, which provides up-front incentives for small-scale renewable projects.

House Bill 3039 also provided an avenue for solar to be used to comply with Oregon's renewable portfolio standard (RPS). Due to the high costs of solar compared to other eligible renewable resources, House Bill 3039 included a provision allowing utilities to double count renewable energy credits for energy associated with the utility-scale mandate established by House Bill 3039.

2. What is the proper role of the utility in developing solar?

PacifiCorp does not have an opinion at this time regarding the proper role of the utility in the development of solar. However, traditionally, the role of the utility in developing solar has been to facilitate customer participation in solar programs by, for example, providing customers with access to information necessary to understand how to take advantage of solar programs. To that end, PacifiCorp has a website

dedicated to the programs available for customers to understand the options available to them: <http://www.pacificpower.net/env/nmcg.html>.

In Oregon, the utility role in developing solar has also been to implement legislative mandates for the development of solar, such as the OSIP, which requires PacifiCorp, Portland General Electric (PGE) and Idaho Power to invest in a total of 20 megawatts (MW) of capacity from solar technologies by 2020.

3. *What are the solar incentive programs under evaluation?*

The Company believes that the goal of the Commission's report should be to fully inform the legislature of the costs and cross-subsidies created by solar incentive programs currently offered in Oregon. PacifiCorp believes understanding the costs and cross-subsidies of solar incentive programs is a critical first step to evaluating what additional steps, if any, are needed to further incentivize development of solar in the state of Oregon. The Company believes that the Commission should focus on examining the four incentives currently offered in Oregon: the Volumetric Incentive Rate (VIR), the Residential Energy Tax Credit, ETO funding for renewable projects, and the subsidy/cost shifting created by net metering via (1) the fixed costs of serving a net metering customer which are neither borne by the net metered customer nor avoided by the utility; and (2) the inherent assumption that the value to other customers (i.e., the utility's system) of each kWh of net metered production is always equal to the utility's regulated bundled service rate.

The Company recognizes that other incentive programs and methodologies exist in other states, but given the short time frame within which the Commission must complete its report, the Company believes the most valuable use of the Commission's

time is to focus on existing solar incentive programs in Oregon rather than conducting comprehensive studies of alternative programs and methodologies.

4. How should solar incentive programs be evaluated?

The Commission's evaluation of solar incentive programs should include the following analytical steps:

- 1) What is the objective of the incentive program?
- 2) How are results or success of the incentive program measured?
- 3) Is an incentive necessary to achieve the identified objective of the incentive program?
- 4) If an incentive is necessary, how should the program and the incentive be structured to achieve the objectives at the least cost and in the most efficient manner?
- 5) Who appropriately bears the cost of the incentive?
- 6) How will each stakeholder be impacted (e.g., technology to be influenced, utility, utility system, taxpayers, non-participating customers)?
- 7) Do the benefits of the incentive exceed negative impacts, if not, return to step three.

As represented by step five above, should an incentive be provided, determining who bears the cost of the incentive is a critical step in the process. As the Commission evaluates solar incentive programs, the evaluation should be very clear regarding the cost of a program and the appropriate party to bear those costs.

The primary concern of the utility is to fully understand the cost of these incentive programs, and to understand how these costs are shared across rate groups, and within

rate groups between participating and non-participating customers. In situations where policy makers establish a mandate, the goal should be to accomplish the mandated target at the lowest cost possible and to share the cost equitably across all customers. In doing so, the report should attempt to quantify the subsidy and also determine how to appropriately spread the subsidy across ratepayers or taxpayers.

B. Questions related to Resource Value (HB 2893 (4)(1)(a))

5. *In UM 1559, the Commission chose not to require utilities to report certain elements of resource value, such as avoided CO₂, fuel price volatility, integration, and transmission and distribution costs.¹ Should we calculate them now? If so, how should we do so with the data available?*

Not at this time, as explained below. In the Commission's order in UM 1559, issued October 18, 2012, the Commission noted that they were not ready at that time to require the utilities to report estimates of components of resource value. Only one year has passed since that order was issued. Although the Commission's order contemplated that, with respect to this particular solar photovoltaic pilot program, the quantification of values might not occur until the end of the 15 year contracts, other states are currently developing methodologies for quantifying the value to the utility system of distributed generation, including solar. The Commission and the parties within the next three years will have calculation information and methodologies available to consider from other states studying valuation such as California, Texas and Minnesota.

¹ See Order 12-396 at 5.

6. *How does the resource value of distributed solar compare with utility scale solar?*

To make this comparison, what factors do we take into account, and what data would be needed?

The Company has not made a comparison between distributed solar and utility scale solar. To make this comparison, various factors should be considered including dispatchability, comparisons of respective production curves with system load curve, the characteristics of the two types of installations, and the impact (positive or negative) of each facility on the system's delivery infrastructure.

C. Questions related to costs and benefits of programs and their distribution among retail electricity customers (HB 2893 (4)(1)(b))

7. *How does cost effectiveness match up with the overall goal of promoting solar energy in question 1?*

Cost effectiveness was not an objective or requirement of the legislated program, which resulted in the need to limit the program. The pilot program was designed to demonstrate the use and effectiveness of volumetric incentive rates and payments as compared to other means of incenting solar. As noted by the Commission in Order 12-396, “[a]ll parties agree that the resource value does not exceed the incentive payments, regardless of what method we adopt.”²

8. *How are the benefits of incentive programs distributed among non-participating retail customers?*

² See *In the Matter of Public Utility Commission of Oregon Investigation into the Appropriate Calculation of Resource Value for Solar Photovoltaic (PV) Systems*, Docket UM 1559, Order 12-396 at 4 *Oct. 18, 2012) (“Order 12-396”).

At the current and previous levels of incentives, the incentive program results in net costs, not benefits. Because the program as structured is not cost effective on a system-wide basis, for PacifiCorp the costs are assigned situs to Oregon. These costs are allocated among all customer rate groups through the rate spread approved as part of the Company's general rate cases.

9. Can those benefits be quantified? If so, how? What studies would need to be done and what data would be needed?

Benefits of the incentive programs can be quantified as the value less the cost, but in doing so a number of assumptions must be made that are subject to debate. In Order 12-396 in docket UM 1559, the Commission noted that although avoided transmission and distribution costs, avoided integration costs, avoided fuel price volatility, and avoided CO₂ costs are legitimate components of the resource value of SPV systems, they were not ready at the time of Order 12-396 to report estimates for these components. In other words, the Commission did not address some of the components that would be used to value solar given it is not necessary at this early stage of the program and therefore benefits have not yet been quantified.

10. What available studies on benefits of SPV (national or from other states) might be applicable to Oregon, and how would the results be adjusted so that the dollar value of the benefits is realistic for Oregon?

As noted in response to question five, the California Public Utilities Commission, pursuant to the mandate of AB 327 passed in 2013, is beginning an evaluation of a replacement for net metering that is expected to involve a quantification of the value to the utility's system of third-party-owned (including customer-owned) solar

photovoltaic systems. Efforts are also underway in Texas and Minnesota to assess the value to the utility's system of third-party-owned solar photovoltaic systems. Once those assessments are completed, they should be reviewed for applicability to Oregon.

11. Do incentive programs create cross subsidies?

- a. Who pays them?*
- b. Are some ratepayer classes more affected than others?*
- c. How are low income ratepayers protected?*
- d. Do some types of programs create less of a cross subsidy than others?*

Yes, incentive programs result in cross-subsidies. As noted in response to question number eight above, cross-subsidies are created by the mere fact that the costs of incentive programs exceed the benefits. Incentive programs with a higher cost, such as Oregon's VIR program, increase the costs of the cross-subsidy. Cross subsidies are created for other customers as a result of (1) paying for the customer-generators' excess electricity at a rate that exceeds the value, and (2) the cost shift that occurs as a result of customer-generators avoidance of paying for fixed costs necessary to serve them that are embedded in energy rates. Currently, all customers bear the burden of these additional costs with increased incremental energy charges. This burden falls heaviest on those customers who have not reduced their energy use through the installation of their own distributed generation systems. Currently, there are no special protections in Oregon for low income customers related to these cross-subsidies other than the current electric low-income bill payment assistance programs.

12. Do VIR and net metering participants pay their full share of fixed costs of maintaining the grid? How are fixed costs recovered and how should they be recovered?

No. VIR and net metering participants do not pay their full share of fixed costs of maintaining the grid. A significant portion of the fixed costs of maintaining the grid—both infrastructure and the cost of maintaining the infrastructure—are recovered through incremental energy charges. As VIR and net metering customers reduce their usage, in some cases to the point of simply paying the monthly basic charge, the percentage of the fixed costs that these customers pay declines. This reduced percentage does not correspond to any reduction in the impact these customers have on the grid. Unlike a traditional energy efficiency measure where the load and impact on the grid will predictably be reduced by the implementation of the efficiency measure, customers that install distributed generation have the same, or in many cases, an increased impact on the local distribution facilities. Frequently the Company is forced to modify the distribution network in order to effectively minimize negative impacts to the grid. Even in cases where actual upgrades are not required, customer generators feed energy back through transformers and onto the grid causing increased wear on the equipment.

13. At what level of penetration does the impact on utility revenue become a significant factor?

The Company has not quantified a specific threshold at which the impact could be considered “significant”. Currently the number of customers participating in VIR and net metering programs is relatively small as compared to total customers; therefore,

the impact on utility revenues is relatively small. The Company believes, however, that it is important for the Commission (1) to act as soon as possible to minimize the shifting of fixed costs and (2) to act as soon as applicable valuation methodologies have been identified to better match compensation of solar output to system value.

**D. Questions about forecast costs associated with solar photovoltaic systems in Oregon
(HB 2893 (4)(1)(c))e**

14. What are sources of forecasts of solar panel prices? How big is the range of estimates?

The Company has found that the SEIA “U.S. SOLAR MARKET INSIGHT REPORT: Q2 2013: Executive Summary “provides useful forecasts for the pricing of solar installations. The Company recently referenced this report when providing reply comments on its 2013 Integrated Resource Plan filed in docket LC 57.

15. How much of SPV system costs are soft costs (interconnection, permitting, code compliance, other)?

The Company suggests that the Commission review two recent reports published by the National Renewable Energy Laboratories (NREL). The first was released in early December 2013, “Benchmarking Non-Hardware Balance-of-System (Soft) Costs for U.S. Photovoltaic Systems, Using a Bottom-Up Approach and Installer Survey – Second Edition”. The second report was also published by NREL in October 2013 and takes a deeper look into the third party financing model and the costs associated with that model, “Financing, Overhead, and Profit: An In-Depth Discussion of Costs Associated with Third-Party Financing of Residential and Commercial Photovoltaic Systems.”.

16. What initiatives are underway to lower soft costs? Is the trend in soft costs going down at the same pace as panel costs? Do soft costs create a “floor”?

Refer to the response to 15. Also, the Company is currently participating in Northwest Solar Communities project jointly organized by NW Seed and the Oregon Department of Energy. Funding for the project is coming from the US Department of Energy. The group will be holding organizational meetings during the middle of December.

E. Questions about Barriers within the programs to providing incentives (HB 2893

(4)(1)(d)

17. List perceived barriers within the incentive programs in Oregon.

- a. Barriers that could be reduced by modifying the incentive program.*
- b. “Barriers” that are really measures intended to minimize cost shifting or abuse.*

The Company is not aware of any specific barriers.

18. List “other” barriers unrelated to incentive programs (e.g. local permitting, building codes, other).

The engineering issues due to increased solar penetration levels on PacifiCorp’s distribution circuits depends on a myriad number of factors such as the electrical loading on the circuit, operational characteristics, nature of loads connected, location of generation, and the associated load factors, etc. A significant amount of solar generation on distribution circuits might potentially cause voltage stability issues which are a concern for the company and industry, in general. Typically, if the combined solar generation on the circuit exceeds 15 percent of the circuit peak load it

might lead to voltage excursions that could cause power quality concerns for other customers connected to the circuit. More studies need to be performed on this topic.

F. Questions about Future Development of Solar Energy

19. At what penetration does solar energy affect local distribution reliability?

The Company does not have a response at this time, but reserves the right to provide further comments or guidance as the legislative report develops.

20. What initiatives are in place to prepare for greater solar penetration, and what initiatives might be considered?

The Company in conjunction with other MidAmerican Energy Holdings Company subsidiaries is assessing the entire area of third-party-owned generation, including solar. No conclusions or initiatives are available at this time.

The Company does urge caution before developing mandates for studies and extensive mapping. Projects like those proposed in other states where the utility is asked to do circuit by circuit analysis and publish the results have a significant cost and are of limited benefit.

21. Looking forward, what initiatives are in place to reduce solar integration costs, and what initiatives should be considered?

Please refer to the response to 20.

22. What business model would best meet the overall goals in questions 1 and 2?

The Company does not have a response at this time, but reserves the right to provide further comments or guidance as the legislative report develops.

III. CONCLUSION

The Company appreciates the opportunity to provide these responses on the effectiveness of programs that provide incentives for use of solar photovoltaic energy systems. The Company looks forward to providing further comment and guidance to the Commission as the report develops.

All inquiries may be directed to Gary Tawwater, Manager, Regulatory Affairs, at (503) 813-6805.

Sincerely,

A handwritten signature in black ink that reads "William R. Griffith/GWT". The signature is written in a cursive style with a large initial 'W' and a stylized 'GWT' at the end.

William R. Griffith
Vice President, Regulation

Enclosures

cc: Service List—UM 1673