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November 9, 2010

Filing Center
Public Utility Commission of Oregon
550 Capitol Street, NE
Suite 215
PO Box 2148
Salem, Oregon 97308

**Re: *In the Matter of Public Utility Commission of Oregon Solar Photovoltaic Program
Draft Report Comments and Recommendations;*
Docket No. UM 1505**

Dear Filing Center:

Enclosed for filing please find Staff's Solar Photovoltaic Program Draft Report.

Thank you for your attention.

Very truly yours,

Stephanie S. Andrus
Senior Assistant Attorney General
Of Counsel for Staff of the Public Utility
Commission of Oregon

Enc.

c. UM 1505 Service List

BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON
UM 1505

In the Matter of
PUBLIC UTILITY COMMISSION OF
OREGON
Solar Photovoltaic Program Draft
Report Comments and
Recommendations.

SOLAR PHOTOVOLTAIC PROGRAM DRAFT REPORT

November 9, 2010

Executive Summary

In the 2009 Legislative session, House Bill 3039 (HB 3039) directed the Public Utility Commission of Oregon (Commission) to establish a pilot program to demonstrate the use and effectiveness of volumetric incentive rates and payments for electricity delivered from solar photovoltaic energy systems within Portland General Electric (PGE), PacifiCorp, and Idaho Power service territories.¹ The Commission established the pilot program, which became effective July 1, 2010, in which the cumulative nameplate capacity of the qualifying systems enrolled in the program is not to exceed 25 megawatts.

In compliance with ORS 757.365(13) through Sec. 7 the Commission submits this report to the legislature and discusses the following topics:

- Overview of the Commission adopted solar pilot program;
- The merits of paying incentive rates compared to existing incentive programs;
- The estimated cost of the program to retail electricity consumers;
- Recommended legislative changes to improve implementation of the pilot program; and
- Regulatory policy considerations

A component of this report will discuss the relative merits of paying incentive rates under the Commission established solar pilot program as compared to incentive programs such as those provided by the Energy Trust of Oregon (ETO) or Oregon state residential or business tax credits for a qualifying system. However, this report does not attempt to provide a quantified or qualitative evaluation of whether or not one program is more "successful" than another program. In order to provide this type of assessment, broad assumptions would have to be made with regard to an individual's personal discount rate, risk appetite, or tax status.

One of the primary considerations the Commission must evaluate is the solar pilot programs' ability to increase the use of photovoltaic (PV) systems in Oregon, make them more affordable, reduce the cost of incentive programs to utility customers, and promote the development of the solar industry in Oregon. The Commission firmly believes that its solar pilot program is successful in promoting the use of PV systems in Oregon. With regard to reducing the cost of the systems, reducing the cost to utility customers, and promoting the solar industry in Oregon, we believe it is too early in our program to draw any conclusions. However, the Commission's pilot program did adopt a requirement to survey program participants in order to learn the cost of the systems, individual perceptions of the program, ease of use, and many other factors that will be taken into consideration going forward.

¹ HB 3039 is codified in ORS 757.365 (2009), as amended by House Bill 3690 (2010).

Due to the fact that the open enrollment periods only recently occurred—within the last six months—we have not had an opportunity to receive and compile feedback from these surveys at this time. The Commission will report back in the 2013 legislative report with a more meaningful analysis of customer feedback, system costs, and other pertinent information.

This report provides the estimated cost of the pilot program to retail electricity consumers and discusses the relative percentage increase of each electricity company's revenue requirement. HB 3039 gave the Commission the discretion to limit the nameplate capacity for any electric company so that the pilot program would not exceed .25 percent of the revenue requirement for a specific class of customer in any given year. Assuming the capacity enrollment periods of the pilot project are fully subscribed and in service, PacifiCorp, PGE, and Idaho Power project a revenue requirement impact greater than .25 percent for all customer classes by 2012.

With regard to recommended legislative and regulatory policy considerations, the Commission will discuss the recent Federal Energy Regulatory Commission (FERC) ruling on feed-in tariffs, and provide a summary of interested parties' comments on increasing the development of the solar industry in Oregon.

Solar Pilot Program

After a six-month process the Commission established a solar pilot program using net metering for consumers with small-scale and medium-scale PV systems and competitive bidding for all consumers with large-scale PV systems. A small-scale system is defined as a qualifying system with a nameplate capacity of less than 10 kW, medium scale systems are defined as qualifying systems with a nameplate capacity of greater than 10 kW and less than or equal to 100 kW, and large systems run from 100 kW up to 500 kW. The Commission found that the net metering option was "the best approach to demonstrate the use and effectiveness of Volumetric Incentive Rates (VIR) for electricity produced by PV systems under the pilot programs required by ORS 757.365 and meet our other statutory responsibilities to ratepayers."²

For large-scale systems the Commission adopted a competitive bidding option. This option was selected due to concerns associated with jurisdictional issues and a belief that competitive bidding would minimize rates to be paid for electricity produced by the large-scale systems.

The Commission adopted an average small-scale system VIR of \$.60/kWh and \$.55/kWh for medium-scale systems. In order to maximize the potential to learn from the use of VIRs to encourage the development of PV systems the Commission opted to ration the 25 MW of capacity over a four-year period (6.25 MW per year) and adopted eight allocation windows within those four years. This longer rationing period, with biannual allocations, provides the added benefit of allowing the Commission and

² See UM 1452, Order No. 10-198 at 9.

interested parties the ability to adjust the pilot project as needed in order to minimize program costs. The capacity for large-scale systems is allocated on a yearly basis.

The allocation among the electric companies, based on their share of 2008 retail sales revenue, is as follows:

PGE	14.9 MW
PacifiCorp	9.8 MW
Idaho Power	0.4 MW

The Commission chose to allocate 80 percent of the program capacity, 20 MW, to two classifications – 12 MW to small-scale, 8 MW to medium-scale—and 5 MW to large-scale projects. This allocation was adopted in order to generate greater levels of participation by all classes of customer and therefore provide the most information for evaluating the VIR approach.

Incentive Rates and Estimated Rate Impact

The Commission is charged with evaluating the “effectiveness” of paying incentive rates under the Commission established pilot program as compared to incentive programs provided by ETO and state tax credits. The primary difference between these programs is that the solar pilot program is based on the production of the facility and is a fixed rate per kWh for a fifteen year period. In comparison, the existing incentive programs under ETO and state tax credits provide a lump sum upfront payment to the residential or business customer who has installed the system.

The relative risks of the individual programs vary significantly. The solar pilot program participant bears many risks, including but not limited to: underperformance of the panels, degradation of the solar panels over time, weather, damage, annual maintenance, and relocation of the resident. In addition, the solar pilot program participant must bear the full upfront cost of the system (minus the federal tax credit), and incur greater carrying costs or realize greater opportunity costs, depending on the individual’s financing arrangements, as compared to a lump sum upfront payment.

Because of the difference in risks between the two approaches, some customers (who are risk averse and have high discount rates) will prefer the up-front payment of the ETO incentive and BETC tax credit, while others (who are willing to take more risk and have low discount rates) will prefer the volumetric incentive rates and payments in the pilot program. Higher VIR rates would lead more customers to favor the pilot program.

The Commission believes that the pilot program is effective in the sense that it has received excellent participation and the allotted capacity has been fully allocated in the open enrollment periods to date.

The following table shows the first two reservation periods for PacifiCorp, PGE and Idaho Power, capacity allotment, estimated annual kWh, VIR, and estimated annual payments.

Total System Small and Medium Sized Systems					
PacifiCorp					
Capacity Enrollment Periods	Capacity Enrollment Window	Capacity Allotment in kW DC	Est Annual kWh	Levelized VIR \$/kWh	Annual Payments
1	July 1, 2010	768	1,006,848	0.586	\$590,013
2	October 1, 2010	1,537	2,015,007	0.527	\$1,062,715

PGE					
Capacity Enrollment Periods	Capacity Enrollment Window	Capacity Allotment in kW DC	Est Annual kWh	Levelized VIR \$/kWh	Annual Payments
1	July 1, 2010	1,168	1,227,802	0.610	\$748,980
2	October 1, 2010	2,337	2,456,654	0.549	\$1,348,684

Idaho Power					
Capacity Enrollment Periods	Capacity Enrollment Window	Capacity Allotment in kW DC	Est Annual kWh	Levelized VIR \$/kWh	Annual Payments
1	July 1, 2010	235	206,118	0.550	\$113,365

Large Capacity Sized Systems					
Company	Capacity Enrollment Window	Capacity Allotment in kW DC	Est Annual kWh	Levelized VIR \$/kWh	Annual Payments
PacifiCorp	July 1, 2010	576	755,136	0.350	\$264,298
PGE	July 1, 2010	877	921,902	0.390	\$359,542

As stated previously, the Commission set up the pilot program to allocate the 25 MW of capacity over eight open enrollment windows. The first open enrollment window, available July 1, 2010, achieved its full capacity allocation in less than fifteen minutes for all three utilities at an average VIR of \$.60/kWh.³ The second open enrollment window, available October 1, 2010, achieved its full capacity allocation in less than ten minutes at an average VIR of \$.55/kWh. The large size capacity projects, those projects sized between 100 kW to 500 kW, also achieved a significant level of participation with a winning bidder for PGE and PacifiCorp. The average bid price for PacifiCorp and PGE was \$.35/kWh and \$.39/kWh, respectively.

³ The average VIR is a weighted average of all three electric companies' small and medium size systems and the varying rate by county.

The following table shows the estimated cost of the program for each electric company for calendar years 2011 through 2015 for all size categories.⁴

PacifiCorp		
Program Years	Yearly Program Costs	Est. Retail Impact
2011	3,867,247	0.340%
2012	5,521,684	0.471%
2013	7,176,122	0.595%
2014	6,936,122	0.558%

PGE		
Program Years	Yearly Program Costs	Est. Retail Impact
2011	2,715,929	0.239%
2012	5,025,691	0.429%
2013	7,062,745	0.585%
2014	9,255,131	0.745%

Idaho power		
Program Years	Yearly Program Costs	Est. Retail Impact
2011	210,883	0.568%
2012	210,883	0.568%
2013	210,883	0.568%
2014	210,883	0.568%

HB 3039 allows the Commission to establish generator nameplate capacity limits for an electric company if the rate impact exceeds .25 percent in any given year for a specific customer class.⁵ Given the fact that these rate impacts are currently estimates, the Commission does not intend to change the existing generator nameplate capacity allocation for the individual electric companies at this time. We will continue to monitor the annual customer class retail rate impact and make program changes as needed in the future, in order to achieve a cost-effective solar pilot program that does not unduly burden any one utility.

Policy Considerations

On October 21, 2010, the FERC issued an order attempting to clarify the extent of states' flexibility to tailor avoided cost rates for purchases of certain types of energy under the Public Utility Regulatory Policy Act (PURPA). Under PURPA, energy utilities must purchase energy and capacity from small generators and co-generators that are

⁴ The estimated cost of the program by year assumes full capacity reservation in each allocation window, immediate installation, and immediate rate impact. This analysis does not take into consideration any regulatory lag or deferred accounting treatment.

⁵ See HB 3039 Section(2)(7).

“qualifying facilities” (QFs) at rates not in excess of the “incremental cost to the electric utility of alternative electric energy” (aka “avoided cost rates”). PURPA defines the incremental cost of alternative energy as “the cost to the electric utility of the electric energy which, but for the purchase from [the QF], such utility would generate or purchase from another source.”

As a general matter, states determine the avoided cost rates for electric utility purchases from QFs, but in accordance with rules adopted by FERC. FERC has previously stated that when setting avoided cost rates, states must take into account all costs from all sources of energy from which a utility can acquire energy,

“[w]hether a benchmark process alone, a bidding process alone, or a combination benchmark-bidding process is used to establish the actual price paid for QF power, [a state] must take into account all sources, i.e., all technologies and all types of sellers.”

Using all sources of energy to determine rates for QF purchases would not necessarily result in rates that are commensurate with costs incurred by a renewable energy generator. This is because the Commission must consider the costs a utility would incur if it purchases from resources that generally have lower costs than renewable resources when calculating the QF rates.

In its October 21, 2010 order, FERC clarified that states need not consider costs from all sources when determining QF rates when the circumstances are such that only certain sources of energy are “available” to the utility:

[A previous FERC opinion] supports the proposition that, where a state requires a utility to procure a certain percentage of energy from generators with certain characteristics, generators with those characteristics constitute the sources that are relevant to the determination of the utility’s avoided cost for that procurement requirement.

In other words, the October 21, 2010 FERC Order clarifies that if the state were to require electric utilities to acquire a certain amount of energy generated by Solar PV generators, the state regulatory commission would be authorized to set rates for Solar PV QFs that are based only on the costs a utility would incur to purchase or generate energy from a Solar PV facility. These rates would likely be higher than QF rates based on all the costs of sources of energy generally available to the utility.

Some parties in the 2009-2010 OPUC proceedings to implement HB 3039 asserted that the Commission should rely on its authority under PURPA to determine the volumetric incentive rates for participants in the Solar Pilot Programs. The Commission declined to do so, concluding that QF rates based on all sources of energy available to the utilities would not be sufficient to incent Solar PV generation. Under the October 21, 2010

FERC Order, it is more likely that the Commission could establish QF rates that will incent Solar PV generation.

At this time, it is not necessary for the Commission to substitute a PURPA-based program for the current net metering and competitive bidding Solar Pilot Programs. In fact, one of the benefits of the Commission's net metering approach is that it allows for more participation in the pilot due to the fact that it constrains system size to the projected usage of the home. The fact that the current solar pilot program has more participants, due to its net metering structure, provides the Commission an opportunity to better learn the appropriate cost structure and potential bidding strategies to encourage the most cost-effective manner of implementing a solar feed-in tariff program.

Parties Recommendations and Considerations

In a recently held workshop, interested parties had the opportunity to provide additional comments and concerns to Commission staff associated with possible legislative policy considerations. Some of the concerns and desired legislative clarity cited by these parties are as follows:

- Taxation issues and concerns, primarily the treatment of the solar pilot program income;
- Lengthy permitting process for zoning requirements;
- Local issues with Covenants, Conditions and restrictions (CC&R); and
- The Significant Environmental Concern for Scenic View permits.

1 **CERTIFICATE OF SERVICE**

2 I certify that on November 9, 2010, I served the foregoing Staff Report upon the parties
3 in this proceeding by electronic mail and by sending a true, exact and full copy by regular mail,
4 postage prepaid, or by hand-delivery/shuttle, to the parties accepting paper service.

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