

**BEFORE THE PUBLIC UTILITY COMMISSION OF OREGON**

**UM 1505**

In the Matter of	)	
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PUBLIC UTILITY COMMISSION	)	COMMENTS OF OREGONIANS FOR
OF OREGON	)	RENEWABLE ENERGY POLICY AND OREGON
	)	INTERFAITH POWER AND LIGHT (A PROJECT
Solar Photovoltaic Program Draft	)	OF ECUMENICAL MINISTRIES OF OREGON)
Report Comments and	)	REGARDING THE 2013 REPORT TO THE
Recommendations	)	LEGISLATURE ON THE OREGON SOLAR
	)	PILOT PROGRAM

Oregonians for Renewable Energy Policy (OREP) and Oregon Interfaith Power and Light (OIPL) thank the Commission for the opportunity to offer comments on the draft 2013 report to the legislature.

This report comes at the end of the third year of the four-year capacity-allocation phase of the program. Its purpose is to give legislators a comprehensive review the program to date. This information will be critical for legislators in making decisions about a successor standard-offer-contract, payment-for-power, renewable energy incentive program. For this reason it is important that the report be as detailed and correct as possible, and that any assumptions, uncertainties, and known biases be clearly noted.

Our comments begin with discussions about the data presented in the draft report, and then move on to some other observations and suggestions.

**1. Average Years to Payback Underestimated and IRR Overestimated**

Calculations in the draft report for the payback period and internal rates of return (IRR) for the VIR-based program are based on the initial cost of system (after the federal tax incentives) being paid back over time by payments equaling the contracted VIR times the energy produced. This simple approach leaves some legally required and significant costs to the producer out of the calculation, resulting in underestimated payback periods and overestimated IRRs, particularly for small systems. For accurate reporting, the calculations should take into account regular ongoing annual project costs as well as degradation corrected annual VIR payments. We note that other

costs such as inverter replacement and regular cleaning of the system may be incurred by the producer but would be difficult to quantify.

**Annual costs should include:**

1. The production meter fee: Every VIR project pays an additional \$10 a month for the production meter, for a total of \$120 per year and \$1,800 over the 15 year life of the program. This is a significant expense for small systems.
2. The million dollar umbrella policy: As per Commission Order 10-260, participants must carry a one million dollar umbrella policy. The cost of this coverage will vary but for typical homeowners is on the order of \$220 per year <sup>1</sup>or \$3,000 over the life of the program.
3. Additional homeowners insurance to protect the value of the system costs on the order of 0.2%- 0.3% of the system value per year. For a residential system this translates to \$50 to \$100 per year.

**Annual production income decreases over time:** Panel degradation reduces production and hence VIR payments as the system ages. Typical solar panel manufacturer specify up to  $\frac{3}{4}$  of a percent degradation per year. This maximum spec would result in 7% loss in VIR revenue by the tenth year; 10% by the 15<sup>th</sup> year.

The effect of these factors on payback time and return on investment is significant. For example, we estimate that including meter fees and insurance costs for PGE Spring 2010 and Spring 2012 Small System enrollments (see table on page 30) will yield corrected average IRRs of 8.2% (was 9.8%) and 1% (was 3.45%) respectively. Further inclusion of panel degradation (at the guaranteed maximum rate) will yield corrected IRRs of about 7.5% and 0.2% for the two enrollment periods respectively. Simple payback times will be increased accordingly.

We request that these additional factors be included in the calculations so as to give the most accurate information available.

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<sup>1</sup> Based on survey of five typical homeowners paying for annual coverage – note that a minimum home and auto policy must generally accompany the umbrella policy. A number of those interviewed would also need to increase their base policies first. Quoted annual costs: Ameriprise through Costco - \$150; State Farm - \$204; Farmers - \$195; AMICA - \$331; American Family - \$238.

## 2. Cost of Program and Rate Impact

### a. Report VIR and Administrative Impacts Separately

This report will be a significance resource to legislators as they work to enact further production-based incentives for renewable energy. They will want to use the information in the report to extrapolate costs to an extended and expanded program. The different contributions to the cost of such a program will scale differently with program size. The cost of incentive payments will scale linearly with both program size and with the value of the volumetric incentive rate. On the other hand, the administrative costs per kWh of a small, experimental pilot program should not be extrapolated to a larger program where stability of methodology and the larger scale will lead to lower cost per kWh to administer. For this reason, rate impacts of the incentive payments and of administrative costs should be identified separately in the body of the report (page 15).

### b. Rate Impact Estimate

**Reporting of Data:** For transparency and for the reasons stated above, components of costs and benefits to the host utilities should be reported separately. We appreciate the detail that PacifiCorps includes on page 2 of Appendix B in reporting *Estimated Cost of Oregon Solar Incentive Program – Nov 1, 2012*. Columns for “energy produced”, “VIR payments”, “enrollment costs”, “meter installation costs”, “ongoing costs”, “energy value per kWh”, “energy value”, and “meter revenue” allow the reader to quickly and easily assess the inputs to the rate impact calculation, both in magnitude and over time. We would ask that PGE present their summary data in a similar, all-in-one-place format.

**Administrative Costs:** Further detail in reporting utility administrative costs would be helpful for both PacifiCorps and PGE. One would expect to see the greatest annual administrative costs for the program during the formative years when rules were being refined, procedures being established, and software developed. Enrollment costs reported by PacifiCorps in columns (cc) *Enroll Cost*, were \$433,417 for 2011 and \$352,756 for 2012. On what basis does PacifiCorps anticipate increased enrollment costs (\$425,000) for 2013, given that the capacity enrolled will be the same as in 2012, and for 2014 (also \$425,000), when capacity allotted is expected to be very small? Likewise,

the projected ongoing costs (\$355,000 per year) of administrating the program from 2016 to 2029 seem high given that there is little extra cost in reading two meters at a site (production meter plus the utility revenue meter) instead of just one and that billing procedures will have been well-established and largely automated. PGE reports equally non-intuitive trends in its *Incremental Pilot Program Implementation Costs* (Appendix C page 2), where program costs reach their maximum during the stable period of the program – a time when nothing is changing and one would expect the reporting and billing to be streamlined. Reassessment of the contributing components and magnitudes of these costs is in order. We expect that on further analysis that administrative costs for the stable period will be found to be overestimated.

**Disparity in Energy Value Assumptions:** PGE estimates energy values based on Mid-C peak forward prices from the “11-15-2011 Monet model”, resulting in a value of **\$0.065/kWh** for 2012<sup>2</sup>. PacifiCorps bases its estimates on the “UE 227 2012 TAM Update”, and uses a value of **\$0.03171/kWh** to calculate rate impacts. This is less than half the value of the PGE number. How is this disparity to be explained? Is this a result of PacifiCorps using average or off-peak data instead of the appropriate on-peak prices? This is an issue to be resolved. If large disparities persist in the numbers, there should be some accompanying explanation included in the text of the report.

**Projections of Future Energy Values:** PacifiCorps assumes a constant energy value of \$0.0317 /kWh for all years from 2011 through 2029 (based on the average values for the 12 months of 2012 from the UE 227 2012 TAM update and including a dramatic dip in prices in May and June). Expecting energy costs to remain constant for the next 17 years is inconsistent with historical trends, at odds with IRP projections, and in no way a credible assumption. In contrast, PGE’s estimated energy values, based on the Mid-C Index, increase by a factor of two over the program time period (a reasonable annual increase of nearly 5% per year). Setting the value of energy as constant in time is a serious flaw in the PacifiCorps calculations and should be rectified before the final report. This assumption obscures and negates a major benefit to rate payers of a fixed VIR production incentive - that producers bear the risk of

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<sup>2</sup> back-calculate from data in Appendix C: value per kWh = estimated avoided energy value (page 5) divided by the estimated annual kWh (page 3)

inflation and increasing real energy costs while utilities benefit from a hedge against uncertainty, cost of energy increases, and future carbon taxes.

**Magnitude of Energy Values Not Fully Accounted For:** The value of the energy that is credited to rate payers who are paying for the Solar Pilot Program should be fully accounted for and subtracted from the cost of the program. The draft report makes reference to UM 1559 (page 9), a docket opened by the Commission to investigate the appropriate method for computing the value of distributed solar energy. While the docket is still on-going, it would be fair to state clearly in the report that: a) there are significant quantifiable benefits of producing energy from distributed solar arrays that have not been accounted for<sup>3</sup>; b) hence value of the energy has been oversimplified and underestimated; and c) hence the cost of the program and the ratepayer impact have been somewhat overestimated..

### 3. Other Comments and Editorial Suggestions

**Page 5 - *For each project, the Commission added loan financing costs, insurance costs, income taxes, and utility meter service charges to compute the total installed cost for each system.*** - It is our understanding that the commission did not actually considered income taxes in setting the VIR. The spreadsheet model used to determine the VIR did include input values for income tax rates but did not use the information in a way that affected the VIR output. The VIR was unaffected by the rate input because the model assumed 100% financing so that all profit was external to the model.

**Page 5 - *Given the correlation between solar radiation and energy output, the Commission also adopted different rates for four different geographic zones.***

It would be useful to include an explanation here that the different rates were adopted to ensure consistent financial viability of projects across the state, so that projects were not overpaid in the sunnier regions and/or would not pencil out in the cloudier, more populous areas.

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<sup>3</sup> Preliminary estimates by Idaho Power indicate a capacity value of about \$15/MWh and a T and D loss savings of 11%, or \$6.71/MWh. - Idaho Power – June 28<sup>th</sup>, 2012 Rebuttal Testimony of Randy Allphin. <http://edocs.puc.state.or.us/efdocs/HTB/um1559htb153131.pdf>

**Page 10 – VIR Rate History for Medium System** – The table showing VIR Rates for Medium-Scale systems does not note which allocations were made by bidding. What is the meaning of a commission-set VIR in the table for these enrollment periods in which there was not a fixed price offer?

We recommend leaving out prices for bidding allotment periods and changing the last column as follows

Oct 2011 Change Mechanism/Price Setting “BY BID” not “ORDER”

Apr 2012 Change Mechanism/Price Setting “ORDER” not “ARAM”

Oct 2012 Change Mechanism/Price Setting “BY BID” not “ORDER”

**Page 13 - “Bid History for PGE” table** – Please sort data in table by bid prices as in PacifiCorps bid history table.

Also, it would be helpful to denote in both tables which bids were accepted.

**Page 23 – Comparison of Solar Pilot Program and ETO/Tax Credit Incentives** –

The draft report provides a good discussion of the differences and strengths of the two programs. We suggest that Staff consider the use of a table to summarize the program differences and pros and cons discussed.

#### **Usefulness of Solar Pilot Program by Program for Non-profits**

Several nonprofit organizations applied for the Solar Pilot Program through the OIPL Solar Congregations Program when the VIR was high enough to work for community owned solar installations. Most did not win allotments due to the very limited capacity available relative to interest in the program. None won allotments in the medium scale. First Congregational Church in Salem applied for a medium size project in the October 2010 enrollment, was denied, and quickly turned around and applied for and won a small size capacity allotment for 9.8kW. Installation was approved by a vote of the congregation and the system was installed on the historic church’s roof, co-owned by congregants, generating energy for the facility’s use while visually expressing the congregation’s commitment to Creation to all passersby. This is just one example of systems installed under the Solar Pilot Program that had not been possible under the ETO/Tax Credit model.

It would be helpful to report percentage impact in this table with two significant figures.

#### 4. Summary of Substantive Comments

The analysis in the draft report:

- a. Overestimates IRR for program participants by not taking into account meter fees, insurance costs, and panel degradation.
- b. Underestimates value of energy to utilities by not including expected increase in energy costs over time (PacifiCorps), and by not accurately accounting for the additional utility benefits from distributed solar PV including those currently being investigated in UM 1559 (capacity value, incremental reductions in T & D losses, and the value of avoided fuel volatility.)
- c. Provides rather sketchy data on the administrative cost of program that does not reflect likely reductions in cost of administration in the middle 12 years of the program when all procedures and process are well developed, unchanging, and easily automated.

As a result of points b and c, it is very likely that the rate payer impact of the program is overestimated in the report. The text of the report should illuminate any known biases present in the final analyses.

OREP and OIPL thank Staff for their good work in pulling a large amount of information together in a cogent and readable report.

DATED this 5th day of December, 2012.

OREGONIANS FOR RENEWABLE ENERGY POLICY

/s/ Kathleen A. Newman