

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UM 1673

In the Matter of

OREGON PUBLIC UTILITY COMMISSION

Comments of Joint Interveners on "Draft Report to the Legislative Assembly: Investigation into the Effectiveness of Solar Programs in Oregon"

Joint Comments of City of Portland, Environment Oregon, Oregon Chapter of the Sierra Club, Oregonians for Renewable Energy Progress, Oregon Solar Energy Industries Association, Renewable Northwest, and Solar Oregon.

As Joint Interveners that were actively engaged in the working group that conceived and drafted H.B. 2893, we wish to thank staff for their work in preparing "The Investigation into the Effectiveness of Solar Programs in Oregon" and to thank the Commission for the opportunity to respond to the draft report. The Joint Interveners respectfully submit the following comments.

Solar and clean distributed energy is emerging as a critical element of the electrical system and is likely to play a central role in the years to come. Solar is pollution free and has no fuel costs and can be installed quickly in many locations throughout the electric grid. As a result, solar can provide tremendous value to the electric system. Oregon has made some progress, but has barely scratched the surface of solar energy's potential to provide tremendous benefits for Oregon's electric customers. As a result, we believe that it is critical for policy makers and regulators to fully and accurately assess the value solar provides for the electric grid, for consumers, and for society.

With regard to the development of this report, Section 4(1) of HB 2893 states that the "Public Utility Commission shall study the effectiveness of programs that provide incentives for the use of solar photovoltaic energy systems. As part of the study, the commission shall:

- (a) Investigate the resource value of solar energy;
- (b) Investigate the costs and benefits of the programs for retail electricity consumers and how those costs and benefits are distributed among retail electricity consumers;
- (c) Forecast the costs associated with solar photovoltaic energy systems located in Oregon;
- (d) Identify barriers within the programs to providing incentives for the development of solar photovoltaic energy systems; and
- (e) Make recommendations for modifying the programs or establishing new programs for the purpose of providing incentives for the development of solar photovoltaic energy systems in a manner that is cost effective and protects ratepayers, including ratepayers that do not participate in the programs."¹

¹ H.B. 2893, 77th Oregon Legislative Assembly (2013). Joint interveners also feel it is important to note that Section (2) of House Bill 2893 requires the Public Utility Commission to consult with the Oregon Department of Energy in

These comments address the report's response to each of these directives by turn.

(a) Investigate the resource value of solar energy.

Chapter V of the draft provides a brief summary of solar valuation studies performed in other parts of the country, pointing out that differences in methodologies and inclusion of different contributing components lead to a wide range of results. However, the report fails to make any critical analysis of the existing studies to illuminate what the value of solar energy might be in *Oregon*, leaving the question unanswered. A suggestion of what this value might be, or at least how such a value should be determined, would be a valuable inclusion in this report.

The legislature intended this report to help stakeholders work toward a consensus around potential methods to advance and adequately fund the development of solar energy in Oregon; a stronger understanding of the actual solar resource value in Oregon was a critical piece of information sought by both legislators and advocates during the 2013 legislative session.² As a result, this report was included as a requirement of H.B. 2893 and a discussion of solar resource value was first in the list of the report's objectives. The lack of a robust discussion of this topic prevents this report from achieving its legislative intent.

Despite the open question as to the value of solar in Oregon, there is an unsupported and pervasive assumption in the report that the solar resource value in Oregon is significantly below retail and shifts costs to other ratepayers.³ However, evidence in the report suggests otherwise. For example, Table 5.3 reports "low", "typical", and "high" estimates of the additional "soft" solar benefits found in studies outside Oregon. Summing the benefits in the "typical" column results in a benefit of about 4.5 cents/ kWh. Table 5.4 reports on the "hard" benefit of solar (from avoided energy, avoided investments in capacity, and avoided transmission line losses) for PGE

the development of this report, though the report neither identifies the Oregon Department of Energy as a co-author nor discusses the Department's involvement in the development of the draft. Oregon House Bill 2893 (2013). *See also* Staff Measure Summary, House Committee on Energy & Environment, HB 2893 A, 77th Oregon Legislative Summary (2013), available at <<https://olis.leg.state.or.us/liz/2013R1/Downloads/MeasureAnalysisDocument/18376>>.

² *See* Staff Measure Summary, House Committee on Energy & Environment, HB 2893 A, 77th Oregon Legislative Summary (2013), available at <<https://olis.leg.state.or.us/liz/2013R1/Downloads/MeasureAnalysisDocument/18376>>. *See also* H.B. 2893, 77th Oregon Legislative Assembly (2013).

³ *See e.g.*,

- "[T]hey [net metering participant savings] **do result in a cost-shift** to non-participating ratepayers." Draft Report to the Legislative Assembly, Page 28 (emphasis added).
- "As discussed below, net metering may shift some of the utility's fixed costs from program participants to other ratepayers. **This cost shift limits the economic potential for solar from net metering.**" *Id.* at 33 (emphasis added).
- "The potential for solar growth is greater for programs **with less cost shifting from participants to non-participants.**" *Id.* at 34 (emphasis added).
- "**These fixed costs are shifted to other ratepayers.** This impact is small now, because the amount of net metered solar capacity is a small fraction of total generation capacity. As solar installation costs decline, the impact of net metering on non-participating ratepayers could become more significant." *Id.* at 36 (emphasis added).
- "A key issue for solar projects that use net metering is the potential for cost shifting of utility fixed costs. A portion of each residential customer's electric bill pays for fixed utility costs of transmission and distribution. **Net metering customers enjoy a reduced electric bill, but in doing so they avoid paying some of these fixed costs. The utility must recover them from other ratepayers.**" *Id.* at 38 (emphasis added).

and Pacific Power, which range from 5.5 to 6.7 cents/kWh depending on the method used. If Oregon were “typical” we would add these benefits for a solar resource value of 10 to 11.2 cents/kWh, therefore meeting or exceeding the retail rate. We recommend that the report include this analysis and assumption. This view illustrates that non-participants may have benefited from the installation of PV systems statewide. Note that this still does not include any value for societal and economic benefits.

The report does not make any analysis to suggest why Oregon’s solar resource value should be different from typical. It is therefore unsubstantiated and misleading to suggest throughout the report that net metering systems create a burden on non-solar customers by cost shifting. There is plenty of information indicating that onsite solar provides tremendous value to the electric system and that all customers benefit from solar provided to the grid from net-metered customers. An objective analysis of these potential financial benefits to non-participants over time would make the report more useful.

(b) Investigate the costs and benefits of the existing solar incentive programs.

Without an estimate of the value of solar it is impossible to calculate the costs and benefits of existing programs. The need to know the benefits of solar programs, and to provide meaningful guidance to the Legislature, has been the driving motivation for studying the resource value of solar.

Furthermore, in this Draft Report, the cost analysis for the VIR Pilot Program is methodologically flawed. According to conversations with Staff, the incentive in the report is calculated as the full VIR, not taking into account that, in return for the VIR payment, the utility has purchased the energy produced. The customer-generator then pays retail rate to the utility to buy back the energy. The incentive amount is therefore VIR minus retail rate, not the full VIR. In the VIR Pilot Program, as the retail rate increases over time, the incentive payment decreases. The incentive in years 16 to 20 is zero. This fundamental accounting error has resulted in reported levelized costs of incentives that are 60% to 70% overstated and invalidates many of the conclusions within the report. Members of the Joint Interveners are happy to work with Staff in making corrections to the calculations.

Additionally, with regard to the identification of “PV incentive programs” on Page 6 of the draft, the Joint Interveners do not believe that the Renewable Portfolio Standard and Solar Capacity Standard comprise “incentive” programs—they are legal mandates and therefore should not be defined as “incentives.” It is also questionable if Avoided Cost Pricing for QF’s is an incentive program: by definition, this is not an incentive that pays higher than avoided cost.

(c) Forecast future costs for solar energy systems.

The draft report relies on old data that inflates the current available pricing (around \$3.25/Watt) by more than a dollar.⁴ The report also incorporates projections for the future cost of solar from the Department of Energy Sunshot Initiative, but does not actually use these projections to calculate what incentives would be needed to make solar installations attractive under this

⁴ See Draft Report to the Legislative Assembly, Page 13. Id at Appendix 1.

scenario, or to predict when incentives will become unnecessary because solar technology has become cost-competitive with traditional power production. The inclusion of this analysis is very important to make the report useful to policy makers. It would also provide a framework to develop “triggers” for adjusting incentive levels.

In addition to future reduction of costs, technology changes in the PV market offer opportunities for added benefits. Advanced inverter technologies currently required in some international markets provide a number of features valuable to utilities. This next generation of PV inverters can provide reactive power control, voltage and frequency ride-through, utility interoperability, and improved grid stability. These features may be available in US markets in the coming years based on changes to standards. A California PUC report⁵ found that “Advanced inverter functionalities may lend significant improvement to the stability, reliability, and efficiency, of the electric power distribution system.” The draft Oregon PUC report should note that advanced PV inverters can provide these additional services of value to the utility.

(d) Identify barriers to the development of solar energy systems.

The draft report evaluates the PV marketplace under existing local and State regulatory structures. While these structures have produced some solar energy installations, there are also barriers in Oregon not present in other markets. Additionally, the concept of cost as a barrier to solar is less significant that it once was because the costs involved with constructing and installing PV systems are declining rapidly. As a result, this report needs to identify and address other remaining regulatory and market barriers, including the following:

- 1) **Financing.** Even as solar may be cost-effective or nearly so, the access to capital funding will be a bottleneck to implementation at all levels. While third-party leasing is mentioned, Oregon has a shorter history of implementing this model than more mature markets, such as California.
- 2) **Ownership.** Ownership of solar in Oregon is somewhat constrained by the incentive and regulatory structure, as well as the PUC interpretations regarding meter aggregation and the customer-generator. Other states including California have reduced barriers to increased solar ownership by low-income customers, apartment dwellers, and community solar projects. The report should discuss programs and make recommendations that might address these barriers.
- 3) **Net-Metering Capacity Limit.** Currently Oregon has a statutory guidance that could be implemented by utilities restricting customer net-metered generation to no more than 0.5% of maximum load.⁶ This limit is altogether too restrictive. In many other states limiting caps are an order of magnitude higher or have been removed entirely⁷

⁵ See Advanced Inverter Technologies Report, Grid Planning and Reliability, Public Utilities Commission, State of California (January 18, 2013), available at <<http://www.cpuc.ca.gov/NR/rdonlyres/6B8A077D-ABA8-449B-8DD4-CA5E3428D459/0/CPUCAdvancedInverterReport2013FINAL.pdf>>.

⁶ "...After a cumulative limit of one-half of one-percent has been reached the obligation of a ...[utility]...to a new customer-generator may be limited by the commission or governing body in order to balance the interest of retail customers". ORS 757.300 (6).

⁷ See Figure 1.

- 4) Education. Given that solar can be applied on hundreds of thousands of homes and businesses in Oregon, each one with its own decision-maker, the PUC's report should discuss programs and recommendations to overcome the substantial information and education barrier.
- 5) Marketing. Given that the report is to recommend ways to *encourage* solar development (not merely neutrally accept solar), the PUC's report should discuss and recommend potential marketing tools and messages that could assist in encouraging citizens and businesses to take advantage of Oregon's solar resource.

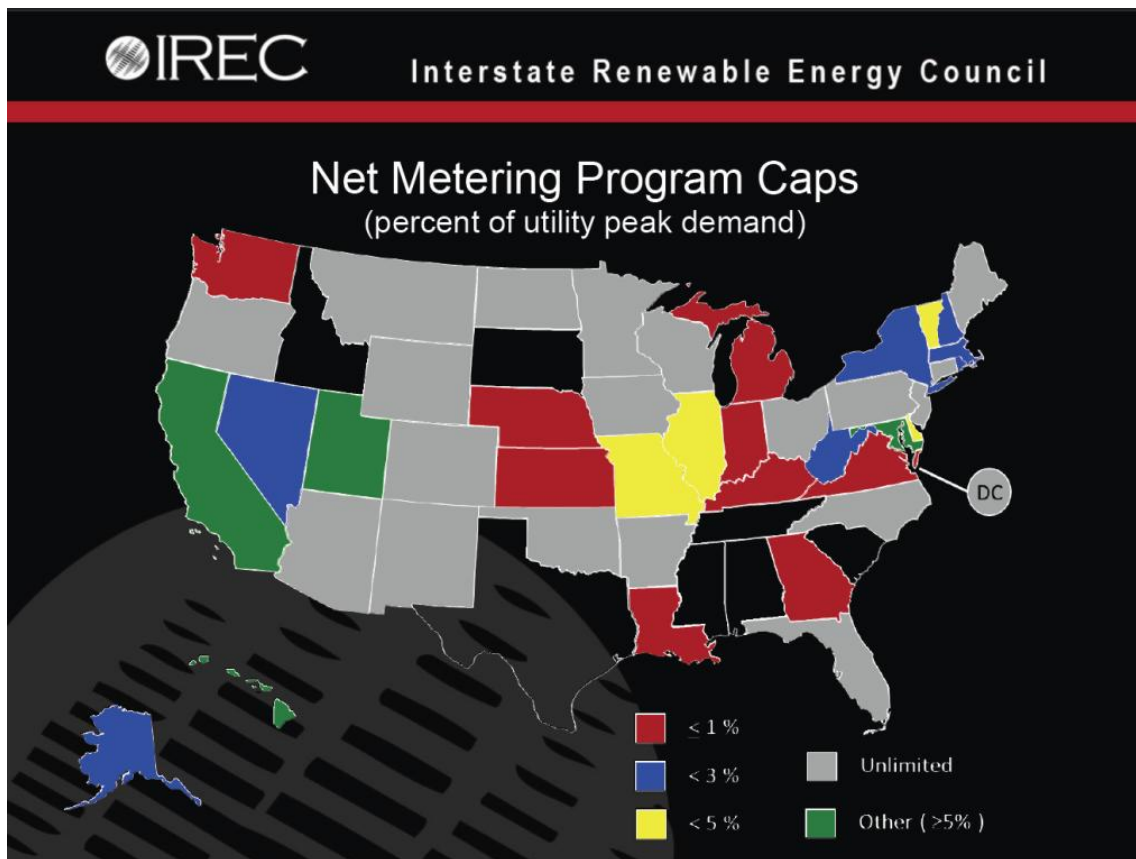


Figure 1. Net Metering Program Caps

- (e) **Recommend new programs or program modifications that encourage solar energy development in a way that is cost effective and protects ratepayers.**

The report makes no attempt to make recommendations or to provide the legislature with guidance in this area. This is a major and critical omission. We suggest that the Staff consult with professional solar and energy efficiency program developers and marketers to enhance their portfolio of recommendations to encourage solar development. These program recommendations will need to focus on further reducing the barriers that have been identified, and create a framework for the long-term encouragement of solar adoption.

Furthermore, scant information is given about programs being implemented elsewhere: only Community Solar and Value of Solar Tariff are included. No mention is made of programs such as voluntary green power purchase programs or advanced feed in tariffs (which account for the majority of solar PV installed globally to date.) It should be noted that the Pilot VIR Program is not an advanced feed in tariff.

The basis of programs that the Report recommends must be: *best* practices in photovoltaic installation; *lowest cost* systems available today, *future* predicted costs (SunShot), and exemplary cost-effective programs implemented elsewhere. Currently the report dwells substantially on *historical* data. However, with the fast pace of changes (pricing and products) in the solar market, this historical data based on old average system costs and wide ranges of installation costs is informative, but of limited use when designing programs to encourage solar in the *future*. The PUC's report should recommend programs that support such best practices and lowest-cost systems and installers, rather than relying on historical averages.

Conclusion

The Joint Intervenors encourage the Commission to correct errors in methodology and assumptions that bias the Draft Report's findings. The Joint Intervenors look forward to collaborating in this effort and making the Final Report internally consistent. The Joint Intervenors also found the *tone* of the report to be inconsistent with its directive to encourage solar development. An example might be the phrase "ambitious targets" when the report was defining lower predicted future costs. This should probably read "more realistic targets based on current trends." Finally, the Report's usefulness would be greatly enhanced by forward-looking analysis of the magnitude of incentives that are likely to be needed going forward, regardless of the mechanism.

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RESPECTFULLY SUBMITTED this DATED this 23rd day of May, 2014.



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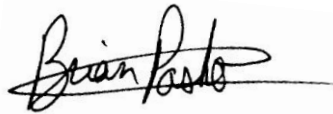
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UM 1673—CERTIFICATE OF SERVICE

I hereby certify that I have this day caused Comments of Interveners on "Draft Report to the Legislative Assembly: Investigation into the Effectiveness of Solar Programs in Oregon" to be served by electronic mail to those parties whose email addresses appear on the attached service list, and by First Class Mail, postage prepaid and properly addressed, to those parties on the service list who have not waived paper service from OPUC Docket No. UM 1673.

DATED this 23rd day of May, 2014.

Respectfully submitted,

A handwritten signature in black ink that reads "Brian Pasko". The signature is written in a cursive style with a horizontal line extending to the right.

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