

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UM 1452

In the Matter of)	REPLY COMMENTS OF
)	OREGONIANS FOR RENEWABLE
PUBLIC UTILITY COMMISSION)	POLICY REGARDING SOLAR PROJECT
OF OREGON)	INSTALLED COSTS
)	
Investigation into Pilot Programs to)	
Demonstrate the Use and)	
Effectiveness of Volumetric)	
Incentive Rates for Solar)	
Photovoltaic Energy Systems)	

Oregonians for Renewable Energy Policy (“OREP”) submits the following comments in reply to those submitted on April 9, 2010 regarding solar PV project installed costs to be used in the calculation of VIRs for Oregon's Feed-In Tariff pilot programs.

Which Installed Cost Data to Use?

Now that a spectrum of data has been submitted the question becomes, which data should be used to calculate recommended initial volumetric incentive rates?

The one thing on which all parties seem to agree is that costs for solar modules have declined. Renewable Northwest Project (“RNP”) states at page 2 of their supplemental comments that costs have decline 14 cents per watt from the fourth quarter of 2009 to the present day. The graphs at pages 3 and 4 of RNP’s supplemental comments seem so show that average solar PV costs for January and February of 2010 are between \$7.50 and \$8.00 per watt.

ETO Data

1. Incentive reservation date.

The Energy Trust of Oregon (“ETO”) submits three data sets. The first is a set of historical data sorted (as they explain at page 2 of their comments) by incentive reservation date,

rather than by installation date. This results in “newer” data than installation date cost figures, and thus may overstate the change in costs when compared to the installation date data used previously by the PUC staff in its calculation of initial volumetric incentive rates. This data shows average 0-10 kW system costs for Q4 2009 of \$7.35 and for Q1 2010 of \$7.26. This reflects a decline of 8.6% from Q3 2009. (These are further broken out by rate class on page 3 of ETO’s comments.) The 25th percentile system costs declined from \$6.99 in Q 3 2009 to \$6.74 in Q4 2009, then increased to \$6.80 in Q1 2010, for a net decline of 2.7%.

For systems sized 10-100 kW, with a much smaller sample size, average and 25th percentile costs decreased 7% to \$7.04 and 12% to \$6.14.

2. Solarize projects.

ETO next reports on the costs of the neighborhood “Solarize” bulk buy programs. “High-volume” and “low-volume” incentive reservation date data are set out for these bulk buy programs. What gross installed kilowatt figures constitute “high” and “low” is not specified, but the Solarize cost figures are strikingly lower than those reported by RNP or the ETO’s most recent historical data. Since the typical ETO solar PV installation historically has been 3.3 kW, and since the “approximate number of installations expected” in the different Solarize programs ranges from 50-250, the total installed capacity of the Solarize programs probably ranges from 165-825 kW.

While the Solarize projects are useful for putting larger numbers of solar panels on roofs, for creating demand and for helping drive down the cost of solar projects, OREP’s judgment is that the Solarize data should not be used as the basis for calculating VIRs for individual solar PV projects. The Solarize projects, which use one solar installer and a bulk purchase of system components, are more analogous to a large commercial system than to a typical 3.3 kW

residential solar project. VIRs based on Solarize cost data would be dramatically lower and would likely not be attractive or prove economical for potential owners of stand alone solar projects. OREP recommends that VIRs for Solarize projects be based on the total number of kilowatts in the entire Solarize project and its cost per watt, rather than the size of each individual installation.

To avoid the possibility of overcompensating small producers who choose to participate in a bulk purchase with a VIR that is meant to apply to stand-alone small projects, we recommend that OAR 860-054-0420 "Compliance with Pilot Program Requirements" be amended to require that program participants certify whether or not they are part of a bulk purchase arrangement (such as a Solarize project) and if so, specify the size of the bulk purchase in which they are participating (in total kW). The VIR that small producers participating in a bulk purchase receive would be determined by the VIR applicable to the size of the bulk purchase rather than the size of their individual project. For example, if a small producer (<10kW) is part of a 150 kW bulk purchase, he or she would be eligible to receive the VIR for large projects (100-500 kW).

3. Survey of solar contractors.

Thirdly, ETO sets out data from a survey of solar contractors. The data sources were self-selecting, as 54 valid responses were received from 193 surveys. This data shows that the 50th percentile for projects of <10 kW was in the \$7.00-\$7.49 range, while the 25th percentile was in the \$6.50-\$6.99 range. For systems 10-100 kW, the 50th percentile figure was \$6.00-\$6.49 and the 25th percentile was \$5.50-\$5.99.

OREP recommends using 50% percentile data rather than 25th percentile data. Staff is now using the most current cost data from a variety of sources. The risk of setting initial VIRs

too high, which was part of Staff's justification for using 25th percentile figures, has presumably been reduced by reopening the record to receive this new data, rather than using previous years' data. To launch pilot programs testing a new stimulus, with rates designed to prove uneconomic for 75% of the participants, seems to be betting against the initial success of the pilot programs.

Americans love a good deal; they like getting their rewards quickly. A renewable energy program which, unlike front-loaded tax credits and direct subsidies, takes fifteen years to pay for itself, needs to prove itself attractive; it needs to be, in the words of Thomas Friedman, "A no-brainer good deal." As noted by the authors of the UCLA study, "Most owners expect a reasonable rate of return on the solar investment of the entire life of the system . . . The long-term nature of a solar investment creates an economic risk profile that many potential owners are unable to bear."¹ "The benefits from solar ownership must not only be sufficient to cover the installation costs, but also predictable in order to facilitate external financing."²

The pilot programs should endeavor to facilitate cost-effective systems, but potential solar owners need to be given a fighting chance - 50/50 - not odds of three to one against having a system which will prove economic. For these reasons, initial VIRs should be based on 50th percentile or average installed cost data, not on 25th percentile cost data.

In addition, OREP recommends that staff not round the resulting VIRs to the nearest nickel, but recommend the resulting rate. We should be encouraging solar contractors and solar owners to be cost effective and sharpen their pencils. Publishing precise incentive rates will encourage that effort.

¹ p. 9, Designing an Effective Feed-in Tariff for Greater Los Angeles;
http://labusinesscouncil.org/online_documents/2010/Designing-an-Effective-Feed-in-Tariff-for-Greater-Los-Angeles-040110.pdf

² p. 8, supra.

With the exception of the Solarize cost data, the average and 50th percentile cost figures submitted by the parties are remarkably consistent; generally over \$7.00 per watt but less than \$8.00 per watt for systems 0-10 kW and from \$6.00 to slightly over \$7.00 for systems 10-100 kW. Of the data submitted, with RNP's figures being on the high end, and ETO Solarize data at the low end, OREP recommends a middle path of \$7.50 per watt for 0-10kW systems and \$6.50 for systems 10-100 kW.

ELAW's Comments on HB 36909

OREP endorses and joins ELAW's comments on the desirability of a feed-in tariff, rather than a bifurcated RFP and net-metering +VIR approach. It is important that we not lose sight of the larger objectives of these renewable energy pilot programs. The authors of the UCLA study observed that "Net metering seeks to reduce the amount of power each building consumes from the grid (by encouraging the owner to install only enough solar to off-set their own energy needs). These policies often cause solar owners to undersize their installations, leaving much usable roof and parking space without solar panels. In contrast, a well-designed feed-in tariff will create incentives for people to maximize the solar capacity of their roofs and parking lots by transforming them into solar power plants that supply Los Angeles with clean, green power."³

OREP feels that net metering +VIR would prove to be short-sighted both because it would tend to limit system size, rather than encourage solar owners to maximize renewable energy production, as well as for the perverse incentives which were discussed in workshops.

OREP opposes limits on the capacity of net-metered systems for the reason that electric cars are coming to market within the next year. As some have stated, driving an electric car which is powered by electricity generated from coal is merely moving the tailpipe from the car to

³ p. 3, supra.

the coal plant. These electric cars can be powered by electricity generated on rooftops, but electricity “consumption” of homes which have electric their vehicles will likely increase. Limiting system size based on historical consumption norms would deny electric vehicle owners the option of maximizing their solar potential so as to power their vehicles and their homes with renewable energy.

A further risk of the net-metering +VIR approach is that conservation and efficiency will be discouraged in favor of added solar PV capacity. The average Oregon residence consumes 11,660 kWh annually (2008 Oregon Utility Statistics). This average includes many homes that have electric baseboard heating and were built decades ago with less stringent energy codes. Current building codes prescribe significant energy savings over the average housing stock and are scheduled to progressively reduce future energy consumption.

With improvements in energy efficiency, annual household electricity consumption of less than 5,000 kWh is not uncommon. A roof in eastern Oregon with adequate space for a 5 kW system could produce a surplus of more than 2000 kWh annually, yet would be unable to maximize production under the current net-metering + VIR scenario.

The Oregon High Performance Homes tax credit program has been designed to benefit home that utilize 30% less energy than homes built to current building codes. A current Portland multi-unit project being built to these standards will have units that may consume less than 6000 kWh annually, yet produce over 7000 kWh/year of solar PV electricity. Under the current net metering +VIR proposal, these owners would forfeit nearly \$1000 per year in annual electricity payments. This annual surplus must be valued at a rate which avoids a perverse incentive for project owners to “consume it or lose it.”

OREP also supports ELAW's comments as they relate to competitive bidding. The California PUC filed a proposal for a Renewable Auction Mechanism in 2009. The UCLA study, p. 30, notes that criticisms of the proposal are that smaller market players who specialize in rooftop systems might be disadvantaged in a competitive process against more sophisticated and better capitalized developers; gaming of the auction could produce unpredictable results over time; industry collusion is a possibility and under bidding could occur, leading to high levels of contract failure.

OREP believes a Feed-In Tariff using a REC pricing mechanism would avoid these numerous problems and faithfully carry out the Legislature's intent.

Conclusion

Bulk-buy project participants should be eligible for a VIR based on the size of the bulk buy program, rather than by the size of each discrete installation within the bulk-buy project. Initial VIRs should be based on average or 50th percentile cost data that is historical, rather than 25th percentile costs or cost data that is projected into the future. Of the cost data submitted, OREP recommend a cost data figure from the middle, approximately \$7.50 per watt for systems 0-10 kW and \$6.50 for systems 10-100 kW, subject to variation by geographical rate class.

OREP supports ELAW's comments in their entirety and recommends a Feed-In Tariff program which places a price on the value of Renewable Energy Certificates, rather than a bifurcated competitive bidding and net metering + VIR approach.

DATED this 19th day of APRIL 2010.

OREGONIANS FOR RENEWABLE ENERGY POLICY

/s/Mark E. Pengilly

CERTIFICATE OF SERVICE

I certify that I have caused to be served the foregoing REPLY COMMENTS OF OREGONIANS FOR RENEWABLE ENERGY POLICY REGARDING SOLAR PROJECT INSTALLED COSTS, PUC Docket No. UM 1452, by electronic mail to the PUC Service list as of this date, and by US mail to the parties listed below who have not waived paper service.

Dated this 19th day of April, 2010.

/s/ Mark E. Pengilly

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