

BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

UM 1452

In the Matter of:)	
)	CLOSING COMMENTS
Investigation into pilot programs)	of ENERGY TRUST OF
to demonstrate the use and)	OREGON
effectiveness of volumetric incentive)	
rates for solar photovoltaic energy)	
systems)	

Energy Trust of Oregon, Inc., (Energy Trust) submits the following closing comments in this proceeding in response to several of the questions posed by the Commissioners.

Net Metering Incentives

The net metering approach proposed by Staff could potentially create an incentive for owners to increase their electricity consumption in order to benefit from the VIR payments if the generation from their PV systems exceeds their on-site consumption. This problem already exists today to a lesser extent under net metering which discourages customers from further reducing their energy consumption below the annual generation of their PV systems. This problem appears, however, to be insignificant today because very few PV systems generate close to 100% of the site's energy consumption. This is partly due to the fact that net metering encourages undersized systems, so it's possible that the problem could be exacerbated with the addition of VIR payments. But it is

also due to the fact that most owners lack sufficient roof area or sufficient financial resources to be able to install a PV that supplies 100% of their annual electricity needs.

It seems reasonable to assume that Staff's net metering approach will continue to encourage undersized systems, but to monitor and evaluate system owners' electricity consumption before and after installation. If the VIR proves to alter consumption behavior, a system size cap could be considered in the future.

Ideally, DOJ will continue to seek a solution that is not subject to FERC authority and that would allow utility customers to be paid a VIR for all kilowatt-hours generated by their PV systems, regardless of electricity consumption.

Pilot Testing

We strongly support the suggestion in the draft rules that surveys be conducted to "understand participant decision processes in choosing between the volumetric incentive rate program and the existing net-metering program (with tax credits and Energy Trust incentives)." This type of qualitative assessment will be necessary in order to determine how the 15-year VIR payments are affecting the market compared to the up-front Energy Trust and tax incentives. A purely quantitative comparison between the programs will not tell the whole story. Installation data collected from the two programs will be inherently different for the following reasons:

- The annual capacity installed under the VIR program is likely to exceed the annual capacity installed under the existing program, especially in

Pacific Power territory, assuming the 25 MW VIR pilot goal is achieved. In 2009 Energy Trust funded 4.65 MW, and our program budget is not expected to increase during the pilot period. Staff has proposed annual VIR capacity targets that increase from 5.15 MW to 7.5 MW.

- Energy Trust's incentive rate structure was designed and is periodically adjusted to keep market demand at a level that the program budget can support. As Energy Trust's program budget has become increasingly constrained in Pacific Power territory, we have applied an incentive cap and a rate structure that encourages small and medium sized systems less than 100 kW. Therefore, we have very few large-sized Pacific Power systems to compare to the VIR.
- The capacity distribution that occurred in Energy Trust's program in 2009 (28% small, 43% medium, 29% large) differs from the capacity allocations proposed by Staff (50% small, 30% medium, 20% large) and other parties. RNP's coalition proposal (25% small, 50% medium, 25% large) appears to be most closely matched to Energy Trust's program distribution.

Carve-outs and/or Rate Differentials

Energy Trust offers higher incentives for PV systems installed on nonprofit/government facilities. We consider nonprofits and government entities desirable participants in our solar program because they often have large constituencies and tend to promote awareness of their PV systems, which furthers our goal of building a long term solar market in Oregon.

For reference, in 2009 21% of all non-residential PV systems funded by Energy Trust were installed on nonprofit/government facilities. Of the 26 nonprofit/government systems installed in 2009, half were owned by the nonprofit/government entities themselves and averaged 15 kW in size. The other half were owned by third party entities and averaged 75 kW in size.

Energy Trust's higher nonprofit/government incentives are available only for systems directly owned by the nonprofit/government entities. As of November, 2009, we no longer provide higher incentives for third party-owned PV systems on nonprofit/government host facilities since the third party owners are able to claim the tax credits.

It is often difficult for churches and other small nonprofits to finance PV systems because (i) they are often too small to attract third party investors, which typically seek projects at least 100-200 kW in size, and (ii) Energy Trust's higher incentive does not replace the entire 30% federal tax credit, which nonprofits are unable to claim.

Rate Calculations – methods and results

The Matching Incentive approach is intended to set a VIR equivalent to the current Energy Trust incentive plus state tax credit. The Cost Model approach sets a VIR that will fully pay for certain costs associated with a PV installation. The two approaches result in very different VIRs because the current incentives (Energy Trust plus state tax credit) were not established using the Cost Model.

Energy Trust incentive levels are limited to the “above market cost” of a PV system, and are set at a level just high enough to encourage solar installations at a rate that can be sustained throughout the year by our limited budget. The rate of installation activity is influenced by system cost, but also by market demand for the environmental and other non-energy benefits resulting from on-site solar generation. In order to manage our budget, Energy Trust takes into consideration consumers’ willingness to pay for those non-energy benefits. As a result, the current incentives (Energy Trust plus state tax credit) are less than Staff’s proposed VIR which was developed using the Cost Model.

For homeowners, the VIR proposed by Staff is approximately 50% higher than the current incentives from Energy Trust on a net present value basis. For businesses, depending on system size, the VIR is 10-30% higher than the current incentives on a net present value basis.

The large discrepancy between the different Cost Models presented by Staff and OREP results from the different assumptions about which project costs should be included in the model. Although all of the cost elements included in OREP’s model are legitimate project costs, and are costs that Energy Trust includes in our above market cost calculations to determine the maximum incentive we can pay for a project, the value of the VIR proposed by Staff is significantly higher than the current incentives with strong potential to motivate to consumers to participate.

Because the 15-year VIR payment stream provides a very different payback model than the current up-front incentives, it is reasonable for the value

of the VIR payments to begin with a higher value than the current incentives. In Energy Trust's experience, when a new incentive is introduced into the market, it needs to be high enough to attract the attention of the consumers and project developers. In 2003 we launched our program with a rate that we believed offered a reasonable payback for the consumer, but it proved to be too low. The market did not respond until we raised the incentive to a more attractive level, gained attention for the program and created a sufficient level of activity to support market acceptance.

System Quality

Energy Trust recommends that the VIR program incorporate some form of system quality assurance. In our experience, customers look to Energy Trust for this assurance and will likely look to the utilities for this assurance under the VIR program.

We recognize that a VIR removes risk of poor quality from the utilities, which will pay only for kilowatt hours actually delivered. The risk will instead be borne by the consumer.

Consumer protection and consistent industry practice have been significant parts of the success of Energy Trust programs. The solar market is still young and consumers do not yet have the knowledge necessary to ensure they are getting a quality installation. Further, there are many inexperienced contractors entering the Oregon solar market every month, and with the launch of the VIR program, the number will increase. Energy Trust currently has 172

contractors enrolled to participate in our PV incentive program, 80 of which joined in the last 7 months. Of the 172 enrolled contractors, only 60 installed a PV system under our program in 2009.

Energy Trust's approach to quality assurance has been to enforce minimum installation standards that promote system performance and longevity. To do this we established uniform standards and guidelines, hired independent contractors to review and approve system design prior to installation and then conduct post-installation inspections. Solar contractors may transition to random inspections after demonstrating consistently high quality installations. New installers have used the inspection process to learn and improve. The quality control increases consumer acceptance and allows new entrants to effectively compete sooner.

Energy Trust also requires that contractors set reasonable customer expectations for energy generation and provide customers with 2-year full-system warranties covering parts and labor. This approach has been successful, resulting in common, verifiable information and PV systems that generate the amount of energy predicted (99% on average).

An alternative approach that could be used with the VIR program is to require contractors to provide customers with multi-year performance guarantees (minimum 3 years, e.g.). The guarantee must be meaningful for customers, but not overly burdensome for the contractors. Guarantees should be based on common calculations of expected performance. It would encourage high-performing installations and help ensure that contractors provide their customers

with accurate estimates of energy generation. Do-it-yourself installations by homeowners would require the homeowner to assume all the risk.

With either approach to quality assurance, we recommend adopting a standardized calculation that all contractors will use to estimate how much energy a system will generate annually for the VIR program. We encourage adoption of the methodology used by both Energy Trust and Oregon Department of Energy which multiplies three factors: 1) "Total Solar Resource Fraction" which indicates losses due to shading and suboptimal tilt and orientation, 2) "Local Production Capacity" which indicates the maximum photovoltaic kWh generation expected for a given location, and 3) photovoltaic system size in WattsDC.

Rate Adjustments

Setting incentives is not a perfect science, and the levels may need to be reexamined after the market responds. Energy Trust has chosen to retain flexibility in how we adjust our solar program incentives in order to be able to manage market demand and thereby operate within our limited annual program budget.

Declining incentives will trigger last-minute pushes to ensure the higher rate. This creates a sales tool that can aid the success of the success of the effort. A predictable, hard-wired declining incentive schedule can be successful if the increments of time or capacity that trigger an incentive reduction are small.

All industries work best with market stability, and Energy Trust has experienced that such stability is created not only by the predictability of incentive

levels, but by the consistent availability of those incentives. It has been preferable for our program to offer lower incentives that remain available all year long than to offer higher incentives that generate such demand that the program budget becomes exhausted early in the year. A boom and bust pattern will not build a lower-cost, sustainable industry.

DATED this 12th day of February, 2010.

By: Kacia Brockman
Kacia Brockman, Sr. Solar Program
Manager, Energy Trust of Oregon

CERTIFICATE OF SERVICE

I, Kacia Brockman, hereby certify that on this day I served a copy of the Opening Comments of Energy Trust of Oregon upon all persons indicated on the attached service list via electronic mail, and also by first-class mail to those who have not waived paper service.

Dated this 12th day of February, 2010, at Portland, Oregon.

By: Kacia Brockman

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