

August 10, 2016



Via Electronic Filing

Public Utility Commission
Attn: Filing Center

PUC.FilingCenter@state.or.us

Re: UM 1758: Report to the Legislature on Incentives for Development
and Use of Solar Photovoltaic Systems. Open via House Bill 2941

Attached for filing please find Energy Trust's comments to the draft
report filed on July 28, 2016 in the above-referenced docket. Please do
not hesitate to contact me if you have any questions regarding this filing.

A handwritten signature in black ink, appearing to read "Debbie Menashe", with a long, sweeping flourish extending to the right.

Debbie Menashe
General Counsel
503 445 7608
Debbie.menashe@energytrust.org

Attachment

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UM 1758

| | | |
|---|---|-------------------------|
| In the Matter of |) | |
| |) | |
| PUBLIC UTILITY COMMISSION OF |) | ENERGY TRUST'S WRITTEN |
| OREGON |) | COMMENTS IN RESPONSE TO |
| |) | DRAFT REPORT |
| |) | |
| Report to the Legislature on Incentives for |) | |
| Development and Use of Solar Photovoltaic |) | |
| Systems. Open via House Bill 2941 |) | |

Dated: August 10, 2016

Thank you very much for the opportunity to comment on staff's draft report to the Oregon legislature submitted pursuant to Oregon House Bill (HB) 2941. HB 2941 required the Oregon Public Utility Commission (the Commission) to review Oregon programs that incentivize the development of solar photovoltaic energy systems and to recommend the "most effective, efficient and equitable approach" to incentivizing such development. Commission staff filed a draft report on July 28, 2016 (the Draft Report), and invited public written comment. These written comments are intended to clarify factual aspects of the Draft Report. These written comments also include a request for clarification of the recommendation to modify Energy Trust's use of the public purpose charge. Energy Trust staff is happy to answer any questions regarding these clarifying comments. Energy Trust staff will be present at the stakeholder workshop scheduled for August 15, 2016, and will be prepared to discuss these clarifying comments at that workshop as well.

Draft Report, pages 2-3 referencing decreases in solar costs:

Energy Trust comment: Solar costs vary by project size and market segment. A full examination of solar costs across size ranges is available in Lawrence Berkeley National Lab's (LBNL) most recent annual report on solar costs, *Tracking the Sun VIII*¹. A comparison of median costs by size category is on page 15 of LBNL's report. While costs have come down across all sizes, the costs for large solar projects are

¹ Barbose, Galen L., and Naim R. Darghouth. *Tracking the Sun VIII: The Installed Price of Residential and Non-Residential Photovoltaic Systems in the United States*, Edited by Dev Millstein, Michael Spears, Ryan H. Wiser, Michael Buckley, Rebecca Widiss and Nick Grue., 2015.

significantly lower than for small-scale rooftop solar projects which are served by the programs evaluated in this report.

Draft Report, page 4:

Third, in determining the future landscape of solar incentives, we must recognize the relative maturity of the solar energy business. Many of the incentives discussed in this report were created at a time when there was little solar energy development and solar PV systems were among the most expensive forms of generation. That is no longer the case today, as the installation of solar arrays continue to grow and costs of solar PV systems continue to fall. Solar incentives should adapt and evolve with this changing landscape.

Energy Trust comment: Energy Trust's incentive management methodology responds to changes in market conditions. Energy Trust collects cost information from all projects that apply for incentives and uses this information to update above-market cost trends. When above-market costs (AMCs) fall and demand grows, Energy Trust lowers incentives. This is done regularly to keep up with cost changes and to manage budget. Energy Trust publishes a Solar Incentive Status Report that is updated weekly to provide information about the different incentive rates and levels depending on the market segment for solar photovoltaic, reflecting the different conditions and costs within the solar photovoltaic market in Oregon. Residential costs and drivers are different than those for commercial customers. Energy Trust accounts for the fact that one segment of the market will have different AMCs than another (e.g. residential vs. commercial).

Draft Report, page 8:

First, these programs are from mixed funding sources, that is both taxpayers and ratepayers contribute to projects to make them happen. Second, while the impact of combining incentives may make more projects occur, there is no way to determine the individual impact of each program; this is most prevalent in the overlap between the Energy Trust solar program, NEM and RETC. Due to different data tracking systems, individual projects cannot be cross-referenced to understand the effect of an individual incentive has on the project.

Energy Trust comment: As part of Energy Trust efforts to reduce soft costs, we collaborated with the Oregon Department of Energy to create an integrated application system that allows a single application to be used for both a RETC and the Energy Trust incentive. This became effective January 1, 2015, which allows projects

since that date to be easily cross-referenced. Energy Trust can provide information to the OPUC regarding the integrated application system referenced above.

Draft Report, page 15: Figure 7 and statement that “If the trend projected in Figure 7 continues, there may no longer be above-market cost of residential solar installations for Energy Trust to fund as early as 2018.”

Energy Trust comments: Our first comment is that in moving the chart from its source (an Energy Trust document) to the draft report, several labels are missing or were moved, making the chart difficult to understand. We have added labels in the chart below.

Second, the chart does not show that there may no longer be above-market cost for residential solar as early as 2018. The chart shows the opposite. The above-market cost is the space indicated with red arrows that have been added to a copy of the chart below. The forecasted above-market cost in 2018 is significantly larger under both high and low solar cost projections than the current above-market cost due to the scheduled expiration of the RETC.

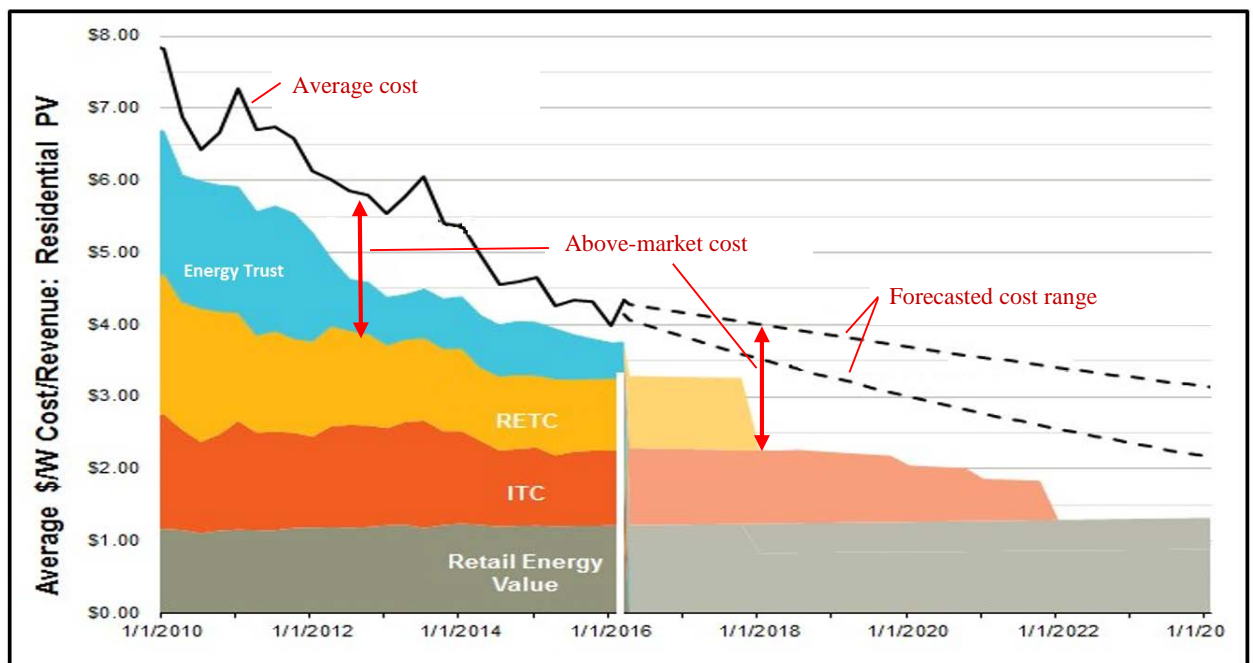


FIGURE 7: Residential Solar PV Project Historical Cost and Sources of Funding Source: Energy Trust Presentation, Renewable Energy Advisory Council, March 2016. The first (blue) section represents the amount of incentive provided by Energy Trust, the second the incentive provided by RETC, the third the incentive provided by the federal investment tax credit and the last the compensation received from the sale of electricity, likely under a net-metering agreement.

It should also be noted that the chart was built incorporating a set of assumptions, including the RETC expiration. It assumes that there are no changes to net-metering and therefore no changes to the retail value of solar. If the retail value decreases, above-market cost would be higher still.

Third, the chart identifies above-market cost scenarios in the residential solar market. Residential solar is one of several solar markets in Oregon. Energy Trust offers standard incentives for three broad categories of solar projects in both PGE and Pacific Power territories: direct-owned residential, third-party-owned residential, and commercial projects. Within those categories, there are several market segments such as small, medium and large commercial; government/non-profit; multifamily; and low-income. Each has its own above-market cost trajectory and would therefore look different from Figure 7. Energy Trust can provide this information on request.

Draft Report, page 15: Statement that as “above-market costs of solar have come down”.

Energy Trust comments: While it is true that above-market costs for solar generally have come down, above-market cost is still present for all segments of the solar market, with the possible exception of utility-scale solar². Above-market cost can go and up down. Whether there will be above-market cost and how much it will be for market segments other than utility-scale in the coming years depends on several factors including, but not limited to, the status of the RETC, the retail value of the energy produced by the system, and the rate at which solar prices fall. These factors are all uncertain. Energy Trust actively monitors all of these market factors in order to evaluate above-market costs, set incentive levels, make decisions about when and how to reduce incentives, and determine when incentives are no longer needed for a given market segment.

Draft Report, page 15: recommendation that “Energy Trust use of the public purpose charge should be modified to target only solar PV applications that provide unique benefits to the utility system or help to reduce the “soft costs” of solar energy.”

Energy Trust comments: For Energy Trust planning purposes, it would be helpful if, in the final report or through the stakeholder process, the following two issues were clarified:

² Above-market cost for large utility-scale projects depends on what rates are provided in the power purchase agreement with an off-taker. Energy Trust has examined and declined to fund several proposed projects that did not have above-market cost.

First, is the recommendation to prioritize projects with high value to the utility system over other projects, or that funding be strictly limited to such projects over time?

Second, is the recommendation that the above market cost test be replaced at some point by one based on utility-system value?

Thank you again for the opportunity to provide comments. We look forward to continuing to participate in the discussion of the report and its recommendations. Energy Trust is happy to work with the Commission and stakeholders provide additional information regarding its programs.