BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON
UM 1452

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

Energy Trust of Oregon submits the following information about recent costs being charged for photovoltaic installations in Oregon. This information is based on three datasets:

1) Energy Trust's confidential database of projects receiving Energy Trust incentives, including installed systems and installations still in progress;
2) Agreed-upon pricing being offered by contractors awarded bids for 2010 "Solarize" neighborhood bulk purchase efforts;
3) Results of a price survey conducted by Energy Trust of its solar electric trade allies and large scale solar developers.

The following comments summarize the information contained in each of those datasets.

1) <u>Energy Trust project database</u>

Staff's VIR recommendation was based on cost of systems *installed* in 2008 and 2009. However, projects may be installed up to one year after the incentive reservation is made, so the price of a system *installed* one day often does not match the price of a system *sold* that same day. In order to obtain the most recent cost information, Energy Trust included projects with pending reservations (but not yet installed) in the dataset. The system cost that a contractor enters on the Energy Trust incentive application form is typically a contracted price that will be paid regardless of when the system is installed.

In its review of recent price trends in Oregon, Energy Trust sorted projects by incentive reservation date, rather than installation date, and included active projects in addition to completed installations. The results for small and medium scale systems are summarized below. System costs are represented as dollars per WattDC, based on the PV system's rated capacity. The summary shows both the average cost and the 25th percentile cost.

For small scale systems, there is a clear decrease in costs each quarter since the beginning of 2009. For medium scale systems, there is no clear decrease over time, as the costs offered early in 2009 were very competitive in the marketplace.

Small scale systems 0-10 kW, all rate classes combined:

Incentive reservation date (by quarter)	Average system cost ($/WattDC)	25th percentile system cost ($/WattDC)	Number of projects
Q1 2009	$9.38	$8.00	33
Q2 2009	$8.42	$7.54	91
Q3 2009	$7.94	$6.99	150
Q4 2009	$7.35	$6.74	304
Q1 2010	$7.26	$6.80	109

Medium scale systems 10-100 kW, all rate classes combined:

Incentive reservation date (by quarter)	Average system cost ($/WattDC)	25th percentile system cost ($/WattDC)	Number of projects
Q1 2009	$6.67	$6.16	33
Q2 2009	$7.77	$7.46	11
Q3 2009	$7.58	$7.05	30
Q4 2009	$7.14	$6.50	61
Q1 2010	$7.04	$6.14	7

Staff's closing comments included four rate classes based on groupings of counties with similar solar resource. In order to show the most recent system costs, the tables below include projects for which Energy Trust received incentive applications in Q4 2009 and Q1 2010, grouped by rate class.

Incentive reservations in Q4 2009 and Q1 2010, small scale systems 0-10 kW:

Rate class	Average system cost ($/WattDC)	25th percentile system cost ($/WattDC)	Number of projects
1	$7.33	$6.80	317
2	$7.59	$6.46	18
3	$7.81	$6.90	39
4	$6.69	$6.35	40

Incentive reservations in Q4 2009 and Q1 2010, medium scale systems 10-100 kW:

Rate class	Average system cost ($/WattDC)	25th percentile system cost ($/WattDC)	Number of projects
1	$7.23	$6.47	46
2	$6.97	$6.12	8
3	$7.20	$6.52	11
4	$6.39	$5.98	3

2) Solarize bid pricing

"Solarize" is a neighborhood group-purchase initiative that originated in 2009 in Southeast Portland, in which multiple homeowners hire the same contractor and receive a discounted price. In the Solarize model, a community issues a Request for Proposal and contractors bid a range of prices for small scale systems based on total capacity of all the installations combined. The price offered is per-WattDC, regardless of system size. The community then selects a contractor(s) and recruits homeowner participation in order to receive the contractor's best volume pricing.

So far in 2010 the Solarize initiative is already being offered in four separate communities. The table below contains the prices being offered by contractors who have been awarded these 2010 Solarize efforts. Based on homeowner interest, Energy Trust expects high homeowner participation in these initiatives. Therefore, there will be a significant number of small scale systems installed in these initiatives at these prices in 2010, and it is likely that each community will achieve its high volume target and therefore receive the lowest price offered by the contractor (indicated in bold type in the table below.)

Solarize community	High volume price ($/WattDC)	Low volume price ($/WattDC)	Approximate number of installations expected
Northeast Portland	**$5.95**	$6.80	250
Southwest Portland	**$5.70**	$6.95	100
Pendleton	**$6.25**	$6.50	50
Southeast Portland (phase 2)	**$5.90**	$6.75	200

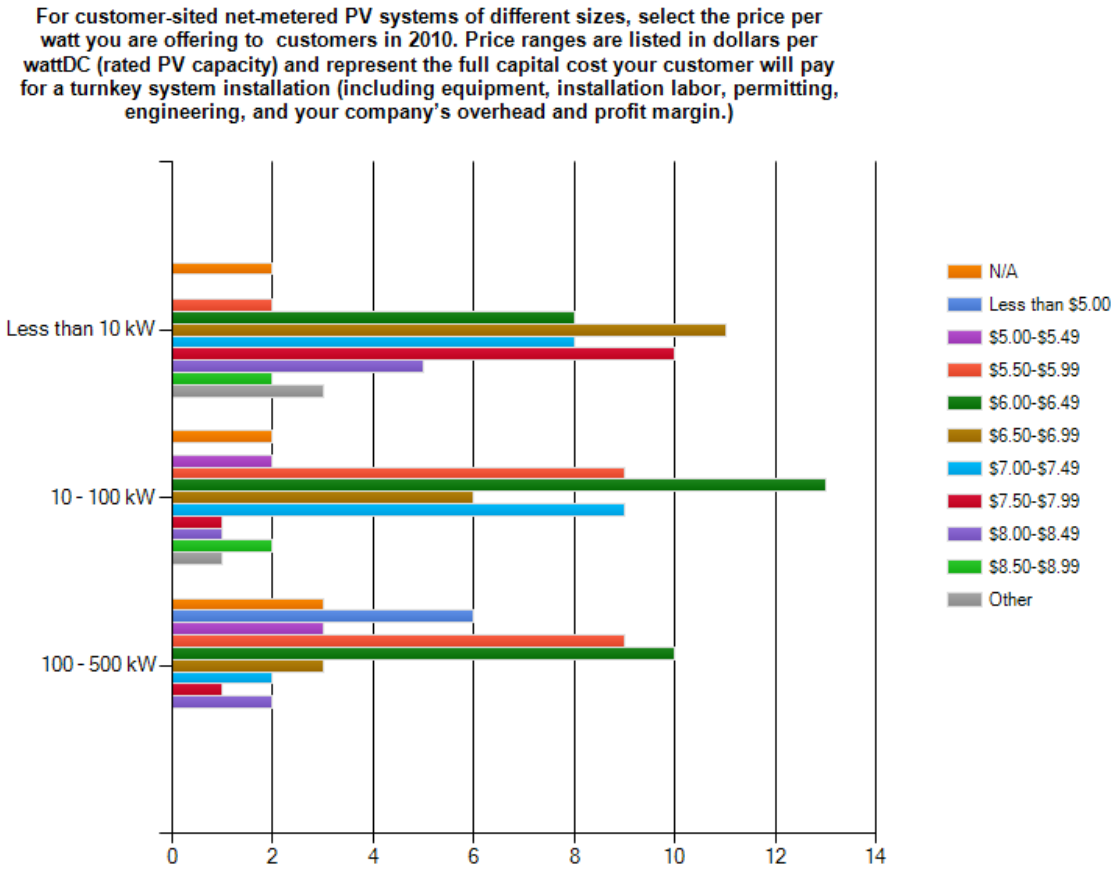
3) Contractor price survey

In an effort to gather additional forward-looking price data, Energy Trust conducted a survey of solar contractors and project developers. The survey offered contractors with a multiple-choice range of system costs in $0.50/watt increments, and asked them to identify the price range that they are currently offering to customers.

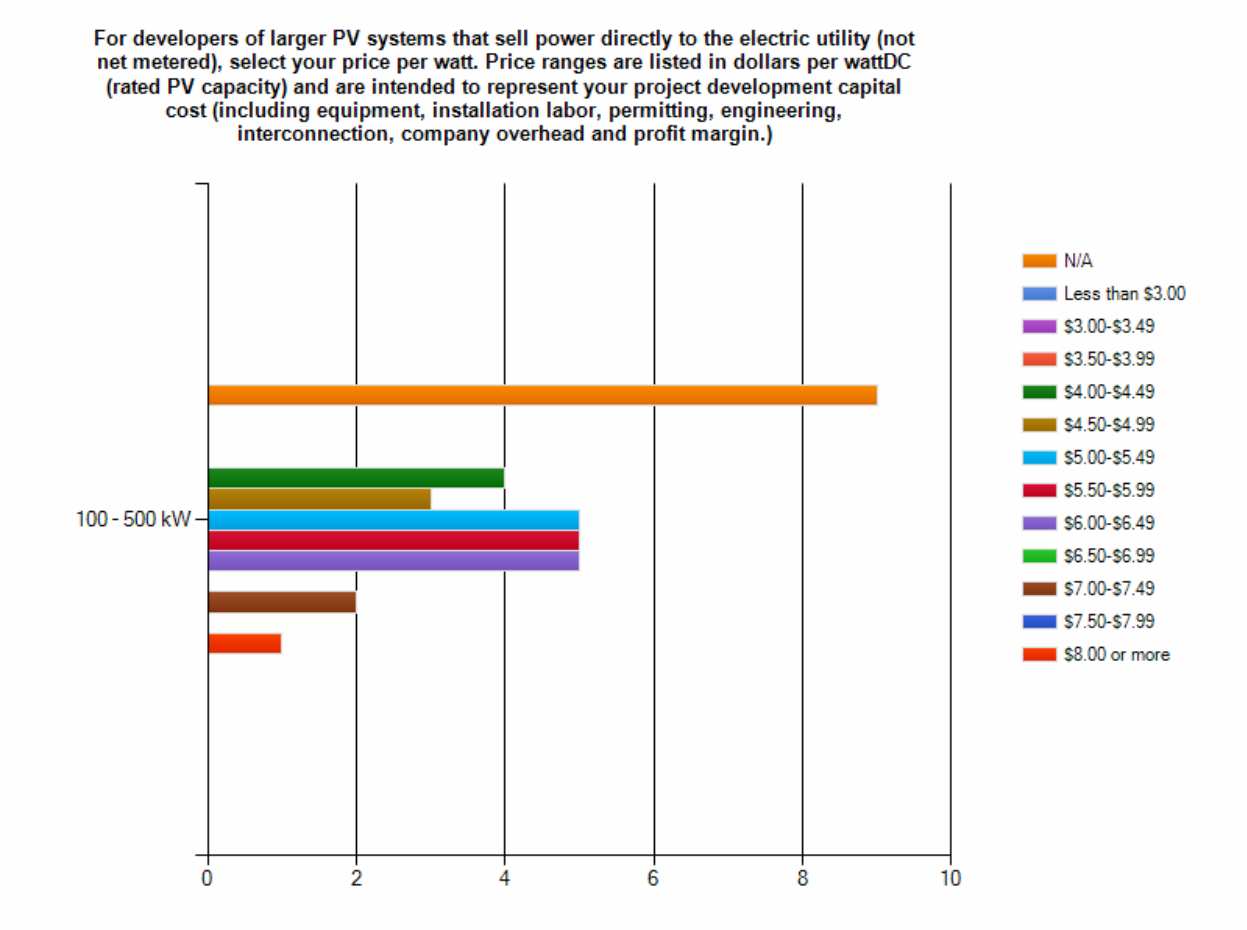
The web-based survey was emailed to 193 companies, including 175 eligible Energy Trust solar electric trade ally contractors and 18 large scale solar development companies. We received 65 responses to the survey, 54 of which included enough information to be considered valid, unique responses from different companies.

In addition to questions about price, we asked contractors to identify the number of projects they installed of each size category in the last 12 months. The survey respondents appear to be responsible for the vast majority of all photovoltaic installations completed in Oregon in 2009. Because there was no clear correlation between number of projects installed and price, we did not apply any weighting to the survey results. Each contractor's response carries equal weight in the results presented below.

The first question asked for the price of customer-sited, net-metered systems of the three size categories contemplated by the VIR: small (0-10 kW), medium (10-100 kW) and large (100-500 kW). Results are shown in the next graph. The horizontal axis shows number of respondents.



The second question asked for price of large (100-500 kW) scale systems that sell power directly to an electric utility. Results are shown in the next graph. The horizontal axis shows number of respondents.



For small (0-10 kW) scale systems, the prices reported by the contractors seem to match the prices Energy Trust has seen on recent incentive applications. The lower prices that will be available through the 2010 Solarize initiatives will likely continue to put downward pressure on the market price for small scale systems.

For medium (10-100 kW) scale systems, the prices reported by the contractors appear to be lower than the prices Energy Trust has seen on recent incentive applications. The rate of new Energy Trust incentive applications for medium scale commercial projects has slowed in Q1 2010, potentially due to uncertainty about availability of Oregon's Business Energy Tax Credit for renewable energy projects.

Energy Trust has funded very few large (100-500 kW) scale systems, so the contractor-reported pricing has value. A broad range of prices were reported, but generally large systems appear to be more cost-competitive than medium scale systems, with a significant number of respondents reporting prices under $5.00/WattDC.

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