

**BEFORE THE PUBLIC UTILITY COMMISSION  
OF OREGON**

**UM 1758**

In the Matter of

OREGON PUBLIC UTILITY COMMISSION

Report to the Legislature on Incentives  
for Development and use of Solar  
Photovoltaic Energy Systems.

Renewable Northwest's Informal  
Comments on Commission's Draft  
Solar Incentives Report

**I. INTRODUCTION**

Renewable Northwest is grateful for the opportunity to comment on the Commission's Draft Solar Incentive Report (the "draft report"). These comments focus on the draft report's recommendations on solar net energy meeting ("NEM") and the Energy Trust of Oregon's ("ETO") Solar Incentive Program.

It is premature for the draft report to propose ending the current net-metering program. The draft report proposes to replace the current net-metering program with a value of solar tariff based on the resource value of solar ("RVOS"). However, the RVOS methodology and values are currently being worked through in UM 1716 (Investigation to Determine the Resource Value of Solar) Investigation 1, and the extent of cost-shifting, if any, between participating and non-participating solar net-metering customers will not be known until the conclusion of UM 1716 Investigation 2. Until UM 1716 concludes, it is difficult to make the case that there is a problem with net-metering in Oregon without making assertions. Furthermore, as noted in the draft report, the net-metering penetration level for both PacifiCorp and Portland General Electric ("PGE") is just over 1 % of the utilities' single-hour peak-loads. This level is far below the 5% penetration level that the National Association of Regulatory Utility Commissioners ("NARUC") suggests is appropriate in order to begin considering moving beyond net-metering to other rate designs.<sup>1</sup>

The draft report's recommendation to change the ETO's use of the public purpose charge is also premature given the current 2018 sunset date of the Residential Energy Tax Credit ("RETC") and the legislative review of the Oregon Department of Energy ("ODOE"). Furthermore, the case for this recommendation is based upon an incorrect interpretation of ETO's data.

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<sup>1</sup> NARUC, Manual on Distributed Energy Resources Compensation (Draft)—  
Prepared by the Staff Subcommittee on Rate Design, 2016  
<http://pubs.naruc.org/pub/88954963-0F01-F4D9-FBA3-AC9346B18FB2>

Renewable Northwest strongly encourages the Commission to consider reporting to the legislature that any recommendations on NEM would be premature given the ongoing investigation into the RVOS in UM 1716. Additionally, Renewable Northwest recommends that the Commission consider reporting to the legislature that any recommendations on the ETO's use of the public purpose charge for residential solar would be premature given the current uncertainty on the availability of the RETC post-2018.

## II. SOLAR NET ENERGY METERING

The draft report recommends that “[t]o address the potential for costs shifts in the NEM program” the NEM program for new customers would be replaced with a crediting of the system’s generation at the RVOS rate.<sup>2</sup> Such a recommendation is premature given the status of UM 1716 and the current level of net-metering penetration in Oregon.

### **Recommending to limit NEM is premature given the status of UM 1716**

Knowing the outcome of UM 1716 is vital to any recommendation regarding NEM. The draft report cites data from Reports (RE) filed by PacifiCorp (RE 39) and PGE (RE 40) to the Oregon Public Utility Commission which indicate that, as of the end of 2015, PGE’s NEM customers account for 1.05% and PacifiCorp’s NEM customers account for 1.36% of their respective historic single-hour peak-load.<sup>3</sup> The draft report notes this level of NEM participation in the context of the OPUC being able to limit a utility’s obligation to provide NEM once the cumulative generating capacity reaches one half of one percent of a utility’s historic single hour peak load. The draft report notes that the Commission has authority to do this under ORS § 757.300(6). ORS § 757.300(6) more specifically states:

After a cumulative limit of one-half of one percent has been reached, the obligation of a public utility [...] to offer net metering to a new customer-generator may be limited by the commission [...] *in order to balance the interests of retail customers.* (emphasis added)

However, the draft report does not make a case that net metering should be limited “in order to balance the interests of retail customers”<sup>4</sup>. The balance between the costs and the benefits of solar, which needs to be determined in order to ascertain whether a recommendation is in the interest of retail customers, is currently being explored in UM 1716. UM 1716 is not likely to conclude before sometime in 2017, at the earliest. Therefore, making a recommendation that limits net-metering based on

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<sup>2</sup> Draft Solar Incentives Report p 11

<sup>3</sup> Draft Solar Incentives Report p 10

<sup>4</sup> ORS 757.300(6) <http://www.oregonlaws.org/ors/757.300>

the Commission's authority under ORS 757.300(6) would be premature given that the balance of interests of retail customers cannot be fully determined until UM 1716 concludes.

Furthermore, the purpose and scope of UM 1716 was laid out in Commission Order 15-296. In Order 15-296, the Commission found that "there could be many potential policy and ratemaking uses for the resource value of solar, and in this order we are not prejudging potential future uses".<sup>5</sup> While Renewable Northwest acknowledges that UM 1758 is a separate docket, a report that includes a proposal to end the NEM program and replace it with a solar tariff based on the RVOS is clearly "prejudging potential future uses" of the RVOS before UM 1716 has been completed.

Interestingly, the fifth consideration of the draft report is that "in light of the programmatic review of ODOE and its incentive programs, the Commission offers no recommendations on the specific design of state incentives to boost solar PV installations."<sup>6</sup> Given this reluctance to make recommendations on state incentives during the programmatic review of ODOE, we are surprised that the draft report makes recommendations on net metering while the resource value of solar docket UM 1716 is ongoing.

### **Recommending to limit NEM is premature given the current level of NEM penetration**

Oregon's current level of NEM penetration does not warrant changes to the NEM program. NARUC's current draft of its Manual on Distributed Energy Resources Compensation<sup>7</sup> cites a paper from Lawrence Berkeley Lab's "Future Electric Utility Regulation" series<sup>8</sup>, specifically a distributed energy resources adoption curve (see Figure 1) that identifies three stages of activity: Grid Modernization (Stage 1), DER Integration (Stage 2) and Distributed Markets (Stage 3). States move into Stage 2 when DER adoption "reaches beyond about 5 percent of distribution grid peak loading system-wide".<sup>9</sup>

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<sup>5</sup> OPUC Order 15-296 <http://apps.puc.state.or.us/orders/2015ords/15-296.pdf>

<sup>6</sup> Draft Solar Incentives Report p 5

<sup>7</sup> NARUC, Manual on Distributed Energy Resources Compensation (Draft)—  
Prepared by the Staff Subcommittee on Rate Design, 2016  
<http://pubs.naruc.org/pub/88954963-0F01-F4D9-FBA3-AC9346B18FB2>

<sup>8</sup> "Distribution Systems in a High Distributed Energy Resources Future: Planning, Market Design, Operation and Oversight", Paul DeMartini and Lorenzo Kristof, Lawrence Berkeley Lab, Future Electric Utility Regulation, Report No. 2, October 2015

[https://emp.lbl.gov/sites/all/files/FEUR\\_2%20distribution%20systems%2020151023.pdf](https://emp.lbl.gov/sites/all/files/FEUR_2%20distribution%20systems%2020151023.pdf)

<sup>9</sup> "Distribution Systems in a High Distributed Energy Resources Future: Planning, Market Design, Operation and Oversight", Paul DeMartini and Lorenzo Kristof,

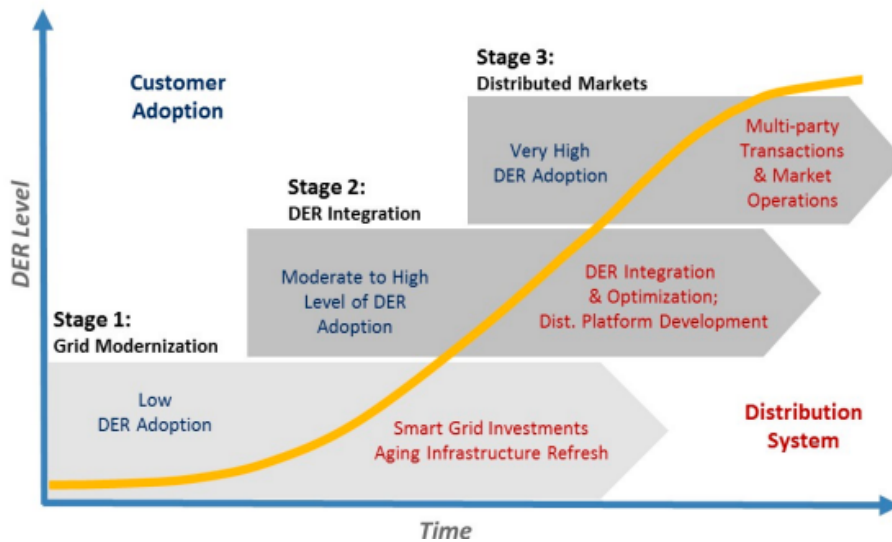


Figure 1—Distribution System Evolution<sup>10</sup>

Changing NEM in Oregon is not necessary given the state’s level of NEM penetration. The draft report cites data from PacifiCorp’s RE 39 and PGE’s RE 40 indicating that, as of the end of 2015, PGE NEM customers account for 1.05% and PacifiCorp NEM customers account for 1.36% of their respective historic single-hour peak-load.<sup>11</sup> Hence, the data in the draft report suggests that Oregon would be currently classified as a ‘Low DER Adoption’ state. The NARUC draft report recommends that for “jurisdictions with low DER and [policies to spur DER] growth, there is time to plan and take the appropriate steps and *avoid unnecessary policy reforms* simply to follow suit with actions other jurisdictions have taken” [emphasis added].<sup>12</sup> According to Chris Villareal, the Director of Policy at the Minnesota Public Utilities Commission, who also worked on the NARUC draft report, once a penetration level of 5% had been achieved “regulators may need to find other rate designs and means to compensate to reflect the impacts of DER at specific times and locations on the system.”<sup>13</sup> As a result, we suggest the draft report should not make a premature recommendation.

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Lawrence Berkeley Lab, Future Electric Utility Regulation, Report No. 2, October 2015 p 9

<sup>10</sup> “Distribution Systems in a High Distributed Energy Resources Future: Planning, Market Design, Operation and Oversight”, Paul DeMartini and Lorenzo Kristof, Lawrence Berkeley Lab, Future Electric Utility Regulation, Report No. 2, October 2015 p 8

<sup>11</sup> Draft Solar Incentives Report p 10

<sup>12</sup> NARUC, Manual on Distributed Energy Resources Compensation (Draft)—Prepared by the Staff Subcommittee on Rate Design, 2016 p 62

<sup>13</sup> <http://www.utilitydive.com/news/naruc-rate-design-manual-reignites-debate-over-cost-shift-value-of-solar/423586/>

### III. ENERGY TRUST OF OREGON SOLAR INCENTIVE PROGRAM

Renewable Northwest recommends that the Commission consider reporting to the legislature that any recommendations on the ETO's use of the public purpose charge for residential solar would be premature given the current uncertainty on the availability of the RETC post-2018. The draft report recommends that the ETO modifies its incentives to target only solar PV applications that provide unique benefits to the utility system. This recommendation is based on an incorrect interpretation of ETO data, as explained below. Furthermore, the extent of the ETO incentive is determined based on the availability of other programs such as the RETC. Given that the RETC is scheduled to sunset in 2018, and that the draft report declines to comment on the RETC given the review of ODOE by the Legislature, it seems premature to make a recommendation to modify the ETO's use of the public purpose charge.

#### **The draft report's analysis of ETO data is incorrect**

The draft report recommends:

“As the above market-costs of solar have come down, the Energy Trust use of the public purpose charge should be modified to target only solar PB applications that provide unique benefits to the utility system or help to reduce the “soft costs” of solar energy.”<sup>14</sup>

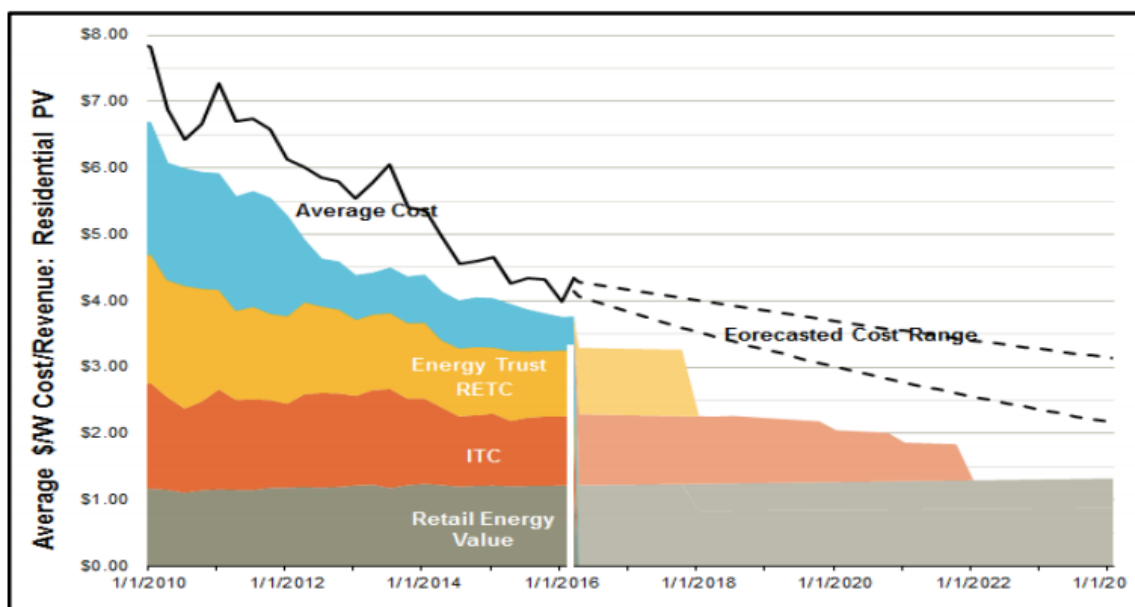
As a member of the ETO's Renewable Energy Advisory Council, I have witnessed how the Energy Trust has transformed, and is transforming, the market for renewable energy while constructing “its incentives to provide incents payments only on the above market costs of solar PV systems”.<sup>15</sup> In building the case for the recommendation that the ETO's use of the public purpose charge should be modified, the draft solar incentive report presents a graph of residential solar PV historical cost and sources of funding. That graph is reproduced below in its entirety—including the caption—as Figure 7 from the draft report.<sup>16</sup> The draft report does not state whether this is data from a single utility or an aggregation of all utilities.

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<sup>14</sup> Draft Solar Incentives Report p 15

<sup>15</sup> Draft Solar Incentives Report p 15

<sup>16</sup> Draft Solar Incentives Report p 15



**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.

Figure 7 shows average solar costs decreasing, not above market costs, and therefore cannot inform a recommendation on the ETO's use of the public purpose charge. The draft report states that Figure 7 "demonstrates the forecasted decline in above-market costs", adding that "[i]f 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".<sup>17</sup> This interpretation of the data is incorrect. The graph shows a forecasted decline in average costs (and then forecasted cost). However, the above market costs (the area above the color sections but below the average cost line) do not decline uniformly. Instead, they actually increase as the RETC and then the ITC sunset. The draft report argues that the above-market costs go to zero as early as 2018. However, that is true only if solar costs are on the lower end of the forecasted range, and even then the above market costs could dramatically increase if the RETC sunsets. Hence, to recommend that the ETO's use of the public purpose charge should be modified because of declining above markets costs when the extent of the above market costs could increase with the sunset of the RETC (a program the Commission declined to comment on given the programmatic review of ODOE<sup>18</sup>) seems especially premature.

<sup>17</sup> Draft Solar Incentives Report p 15

<sup>18</sup> Draft Solar Incentives Report p 5

**The RETC’s future is uncertain, so it is premature to change the ETO use of the Public Purpose Charge**

On August 4, 2016, Renewable Northwest sent a data request to the Energy Trust asking for a breakdown of their solar incentives from 2002–2015, breaking the number of projects out each year by residential, commercial and utility (see Appendix A). We received the response to the data request on August 5, 2016, which provides additional perspective on the data provided in the draft report in Figure 6 (Energy Trust of Oregon Solar Incentives from 2002–2015) and in Figure 8 (RETC tax credits from 2001–2015). As indicated in Figure 7, above, there is clearly an interaction between the ETO incentive and the RETC in terms of providing support for solar in Oregon.

The response to our data request allows the number of projects supported by the ETO each year to be disaggregated by customer class. For example, the draft report’s Figure 6 shows that the total number of projects in 2015 receiving an ETO incentive was 1,802, while the information in the response to our data request reveals that 1,689 of those were residential, 113 commercial, and zero utility-scale projects. Table 1 shows the parsed out ETO residential data by year, alongside the ODOE RETC data from Figure 8 in the draft report, and then the difference between the number of projects supported.

Row Labels	ETO Residential Projects	ODOE RETC	RETC – ETO
2002	0	35	35
2003	68	149	81
2004	101	153	52
2005	65	120	55
2006	115	227	112
2007	173	244	71
2008	152	221	69
2009	362	606	244
2010	1068	1173	105
2011	1200	1470	270
2012	1114	1037	-77
2013	839	1091	252
2014	1238	1362	124
2015	1689	32	-1657

Table 1—Comparing Residential Projects incented by the ETO and the RETC (it should be noted that the ODOE RETC data taken from Figure 8 of the draft report appears to be incomplete for 2015, with only 32 projects reported)

Table 1 shows that both the RETC and the ETO incentive work together to support residential solar in Oregon. An important consideration when looking at Table 1 is

that the RETC is available to customers of all Oregon utilities, not just investor-owned utilities. Table 1 indicates that, from 2010 onwards, a vast majority of projects are taking both the ETO incentive and the RETC, with the excess numbers taking the RETC possibly being due to customer-owned utility customers using the tax credit. Indeed, the ETO's calculation of the above market cost for residential solar projects is based on the assumption that a customer takes advantage of the other incentives available to them. Table 1 indicates that it is the combination of both the RETC and ETO incentive that supports residential solar in investor-owned utility service areas. Hence, the draft report's recommendation that the ETO should "target only solar PV applications that provide unique benefits to the utility system or help reduce the 'soft costs' of solar energy" could jeopardize Oregon's transitioning solar market.

#### IV. CONCLUSIONS

Renewable Northwest appreciates the opportunity to provide informal comments on the Commission's draft report into solar incentives. Renewable Northwest strongly suggests that the Commission considers reporting to the legislature that any recommendations on NEM would be premature given the ongoing investigation into the RVOS in UM 1716. Additionally, Renewable Northwest recommends that the Commission consider reporting to the legislature that any recommendations on the ETO's use of the public purpose charge for residential solar would be premature given the current uncertainty on the availability of the RETC post-2018.

RESPECTFULLY SUBMITTED this 10<sup>th</sup> day of August, 2016.

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## Appendix A—Energy Trust Solar Incentives 2002–2015 (Data Request 8/5/16)

Commercial						
Row Labels	Count	Incentives	Total System Costs	DC Capacity (kW)	Generation (kWh/yr)	
2002	1	\$ 167,000	\$ 267,000	22	21,500	
2003	8	\$ 169,608	\$ 822,757	134	147,479	
2004	18	\$ 440,804	\$ 1,492,071	253	312,919	
2005	30	\$ 327,399	\$ 975,851	159	185,478	
2006	37	\$ 298,824	\$ 1,872,431	249	287,356	
2007	52	\$ 935,606	\$ 5,258,949	599	662,623	
2008	104	\$ 4,506,068	\$ 27,963,534	3,455	3,622,940	
2009	117	\$ 4,799,374	\$ 27,941,471	3,802	3,761,966	
2010	130	\$ 5,035,162	\$ 29,767,157	4,211	4,367,761	
2011	129	\$ 3,492,070	\$ 21,586,773	3,720	3,886,660	
2012	127	\$ 4,576,463	\$ 25,410,426	4,538	4,641,492	
2013	42	\$ 1,289,305	\$ 6,654,866	1,479	1,437,204	
2014	54	\$ 2,192,253	\$ 7,594,849	2,155	2,381,642	
2015	113	\$ 5,074,050	\$ 18,908,205	5,781	5,891,280	
Grand Total	962	\$ 33,303,985	\$ 176,516,340	30,559	31,608,300	

Residential						
Row Labels	Count	Incentives	Total System Costs	DC Capacity (kW)	Generation (kWh/yr)	
2002						
2003	68	\$ 748,257	\$ 1,212,293	181	205,749	
2004	101	\$ 1,057,260	\$ 1,811,842	286	352,325	
2005	65	\$ 590,321	\$ 1,343,381	192	231,098	
2006	115	\$ 723,605	\$ 2,755,779	341	398,130	
2007	173	\$ 993,442	\$ 4,130,234	495	547,593	
2008	152	\$ 910,247	\$ 3,921,402	460	499,721	
2009	362	\$ 2,439,250	\$ 9,346,863	1,176	1,260,594	
2010	1068	\$ 5,486,912	\$ 20,669,940	3,163	3,117,444	
2011	1200	\$ 7,450,763	\$ 30,114,877	4,552	4,456,340	
2012	1114	\$ 5,508,179	\$ 26,052,859	4,630	4,502,666	
2013	839	\$ 2,929,745	\$ 20,466,049	4,327	4,280,005	
2014	1238	\$ 4,773,221	\$ 31,858,325	6,910	6,763,510	
2015	1689	\$ 6,367,761	\$ 41,203,519	9,596	9,361,172	
Grand Total	8184	\$ 39,978,962	\$ 194,887,363	36,308	35,976,347	

Utility						
Row Labels	Count	Incentives	Total System Costs	DC Capacity (kW)	Generation (kWh/yr)	
2002						
2003						
2004						
2005						
2006						
2007						
2008						
2009	3	\$ 1,062,131	\$ 7,025,762	1,118	1,167,856	
2010	7	\$ 2,333,913	\$ 14,083,369	2,406	2,955,029	
2011	2	\$ 3,278,880	\$ 17,407,842	2,840	3,197,976	
2012	3	\$ 7,298,500	\$ 42,239,414	10,018	17,024,450	
2013						
2014						
2015						
Grand Total	15	\$ 13,973,424	\$ 80,756,387	16,382	24,345,311	

Row Labels	Total Count	Total Incentives	Total Total System Cost	Total DC Capacity (kW)	Total Generation (kWh/yr)
2002					
2003	1	\$ 167,000	\$ 267,000	22	21,500
2004	76	\$ 917,865	\$ 2,035,050	315	353,228
2005	119	\$ 1,498,064	\$ 3,303,913	539	665,244
2006	95	\$ 917,720	\$ 2,319,232	351	416,576
2007	152	\$ 1,022,429	\$ 4,628,210	590	685,486
2008	225	\$ 1,929,047	\$ 9,389,182	1,094	1,210,216
2009	256	\$ 5,416,314	\$ 31,884,936	3,915	4,122,661
2010	482	\$ 8,300,755	\$ 44,314,096	6,096	6,190,416
2011	1205	\$ 12,855,988	\$ 64,520,465	9,780	10,440,234
2012	1331	\$ 14,221,714	\$ 69,109,492	11,112	11,540,975
2013	1244	\$ 17,383,141	\$ 93,702,699	19,186	26,168,608
2014	881	\$ 4,219,049	\$ 27,120,915	5,806	5,717,209
2015	1292	\$ 6,965,474	\$ 39,453,174	9,065	9,145,152
Grand Total	1802	\$ 11,441,810	\$ 60,111,724	15,378	15,252,452
	9161	\$ 87,256,371	\$ 452,160,089	83,249	91,929,957