BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON
UM 1716

In the Matter of
PUBLIC UTILITY COMMISSION OF OREGON,

Investigation to Determine the Resource Value of Solar.


June 2017
I. INTRODUCTION

Q. Please state your name, title, and business affiliation.

A. My name is Michael O’Brien, Research Director at Renewable Northwest. My business address is 421 SW 6th Avenue, Suite 975, Portland, OR 97204.

Q. Are you the same Michael O’Brien that filed testimony previously in this proceeding?

A. Yes, my testimony previously filed in this proceeding, marked as RNW, OSEA, NWEC, NW SEED/100, includes my qualifications.

Q. On whose behalf are you testifying?

A. This testimony is on behalf of Renewable Northwest, the Oregon Solar Energy Industries Association, the NW Energy Coalition, and Northwest Sustainable Energy for Economic Development.

Q. What is the purpose of your testimony?

A. I am responding to Opening Testimony filed in this UM 1716 proceeding on May 5, 2017.

Q. What does your testimony address?

A. My testimony addresses stakeholder testimony on the application of the resource values of solar (“RVOS”), putting stakeholders’ testimony in the context of the entire docket as it has unfolded since the beginning of 2015. Then I discuss potential pitfalls in the use of the Straw Proposal’s utility-scale solar proxy. This is followed by an exploration of the suitability of PacifiCorp’s Partial Displacement Differential Revenue Requirement (“PDDRR”) method for determining the energy value of solar resources under
consideration in UM 1716. Finally, I address testimony on the schedule for
Phase II.

II. APPLICATION OF THE RVOS

Q. Have future uses of the RVOS been considered before in this docket?
A. Yes, I addressed this question in my Cross Responsive Testimony from July 2016. In response to the question “Did UM 1716 anticipate future uses of the RVOS?” I answered:

UM 1716 is an ‘Investigation to Determine the Resource Value of Solar’ and neither anticipated nor ruled out a particular application of the RVOS methodology. In Order 15-296 the Commission “find[s] 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” [emphasis added]. This comports with Renewable Northwest’s recollection of the understanding developed amongst the majority of the stakeholders during the Scoping Workshops of May and June 2015.

Based on the Commission’s language, I concluded that in Order 15-296, the Commission made clear its intention to not prejudge potential future uses of the RVOS.

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1 RNW/200 O’Brien/2
2 OPUC Order 15-296
3 RNW/200 O’Brien/2
4 RNW/200 O’Brien/5

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Q. Why was this question considered during your Cross-Responsive Testimony almost one year ago?

At the time, Idaho Power had stated that “the definition and application of RVOS was intended by the Legislature to be limited to Solar PV Programs [also known as the volumetric incentive rate or solar pilot program]”. Also, in the context of discussing the increased penetration of net metered resources in Oregon, Pacific Power (or “PacifiCorp”) stated that if the RVOS is improperly valued, “the end result is a potential shifting of a utility’s fixed and other costs between customers deploying rooftop solar and those that are choosing not to deploy rooftop solar.”

Q. What concerned you about these statements at the time?

A. Both statements appear contrary to the Commission’s intent in Order 15-296. Idaho Power’s statement restricted the RVOS methodology to the volumetric incentive rate, thereby prejudging future uses of the RVOS methodology. PacifiCorp’s statement assumed that the RVOS would replace net-metering in some way, which also prejudgets future uses of the RVOS methodology.

Q. Why is this relevant to your current testimony?

A. In Portland General Electric’s (“PGE”) Direct Testimony in this docket, dated May 5, 2017, witnesses Darren Murtaugh and Jacob Goodspeed are asked, “Has there been any specific indication of how the Resource Value of Solar will ultimately be used?”, to which they answer, “Yes”.

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5 Idaho Power/100 Youngblood/8 lines 8-10
6 PAC/100 Dickman/2
7 PGE/300 Murtaugh-Goodspeed/3
Q. **Do PGE’s witnesses cite specific indications?**

A. Yes. PGE’s witnesses cite two specific indications:

   A specific application for the resource value of solar has been identified for community solar and was specified in the 2016 legislation, SB 1547. Additionally, in the UM 1758 Solar Incentives Report from the Commission to the Oregon Legislature, resource value of solar “should also be used for net metering...We will open a docket on examining the resource value of solar for net metering”.

Q. **Does SB 1547’s application of the RVOS to community solar suggest that the Commission is prejudging potential future uses of the RVOS?**

A. No, for two reasons. Firstly, in Order 15-296 the Commission stated “we are not prejudging potential future uses” for the RVOS. Indeed, the application of the RVOS to community solar was made by the legislature, not the Commission. Secondly, Senate Bill 1547 contains provisions for community solar projects in which “an electric company shall credit an owner’s or subscriber’s bill for the amount of electricity generated by a community solar project for the owner or subscriber in a manner that reflects the resource value of solar.” This legislative language merely states that a community solar subscriber shall be credited “in a manner that reflects” the RVOS, not necessarily by the RVOS directly.

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8 PGE/300 Murtaugh-Goodspeed/3
9 OPUC Order 15-296
10 Enrolled Senate Bill 1547 (SB 1547-B)
Q. In your view, does assuming the application of the RVOS to net-metering in UM 1716 prejudge potential future uses of the RVOS?

A. Yes. For the reasons outlined above, as also noted in my prior cross-responsive testimony. My understanding is that prejudging potential future uses of the RVOS would be contrary to Order 15-296.

Q. Did “Staff’s HB 2941 Solar Incentive Report to the Legislature” in UM 1758 prejudge potential uses of the RVOS?

No. In “Staff’s HB 2941 Solar Incentive Report to the Legislature” in UM 1758,11 filed November 1, 2016, the following recommendation was made:

Align the solar net metering program so that the compensation method used is the same as the compensation method used for Oregon’s Community Solar program under SB 1547.

I would like to make three observations about this statement. First: it is a recommendation to the legislature, not a statement of action, so it does not necessarily give an indication of how the RVOS will be ultimately used.

Second: SB 1547 states that a subscriber to a community solar project will be credited “in a manner that reflects the resource value of solar”, not necessarily the RVOS directly.12 Third: according to the OPUC eDockets page for UM 1758, the report in which this recommendation appears is “Staff’s”,

11 Date 11/1/2016, Action: Other Filing/Pleading, Description: Staff’s HB 2941 Solar Incentive Report to the Legislature, http://apps.puc.state.or.us/edockets/docket.asp?DocketID=19942
12 Enrolled Senate Bill 1547 (SB 1547-B)
and is therefore not a prejudgment of the future use of the RVOS by the
Commission.13

Q. Does Staff’s report in UM 1758 include any further commentary on this
recommendation?

Yes. “Staff’s HB 2941 Solar Incentive Report to the Legislature” in UM 1758
provides the following detail on the recommendation:

The same compensation method for solar generation should
be used for both solar net metering and Community Solar on a
going forward basis. Senate Bill 1547 (2016) requires that an
electric company credit owners or subscribers of a
Community Solar project with a rate that reflects the resource
value of solar. This value should also be used for net metering.
We are currently conducting an investigation to determine
the resource value of solar energy. Once we make this
determination, we will open a docket on examining the
integration of the resource value of solar for solar net
metering.

I observe that this Staff recommendation suggests that the same value
“should” be used for community solar, as for net metering, not that it will.
Furthermore, the report states that “we will open a docket on examining” the
integration of the RVOS into net-metering, which suggests an exploration of
the costs and benefits of such a move, and does not prejudge the outcome.

13 Date 11/1/2016, Action: Other Filing/Pleading. Description: Staff’s HB 2941 Solar Incentive Report to the Legislature, http://apps.puc.state.or.us/edockets/docket.asp?DocketID=19942
Q. Do other stakeholders address how the RVOS will be applied in their May 2017 testimony?

A. Yes. Rick Link, of PacifiCorp, testified:

PacifiCorp’s position, however, will ultimately be informed by how the RVOS is applied. While there appears to be some certainty that the RVOS will be used to determine compensation for some solar generation [cite: UM 1716 Hearing Transcript (TR) 28, lines 11-15 (Savage). Stating that compensation is one of the potential uses of the RVOS], it is still not clear the exact role the RVOS will play in, for example, setting the bill credit rate for the community solar program...¹⁴

I agree that the exact use of the RVOS, beyond informing how community solar subscribers will be credited, is not clear. Stakeholders have been able to approach consensus on many issues in this docket with the understanding that the uses of the RVOS—beyond determining the extent of cost-shifting, if any, in Investigation 2—have not yet been decided.

III. USE OF THE UTILITY-SCALE SOLAR PROXY

Q. What is the utility-scale solar proxy?

¹⁴ PAC/300 Link/3
A. In the presentation given by Arne Olson of Energy and Environment Economics (“E3”) during the Hearing on January 31, 2017, the idea of a “utility solar proxy” was discussed. Mr. Olson presented:

A utility scale solar resource should be used as the Reference Resource if its cost is less than the cost of conventional generation. The cost of the Solar Proxy resource replaces the Energy, Generation Capacity, Integration and Ancillary Services, Administration, Market Price Response, Hedge Value and Environmental Compliance elements [...] Utility solar proxy does not have line loss reduction or T&D deferral value but does have additional RPS compliance value.

Q. Have you raised concerns about the utility solar proxy before?

A. Yes. In my Response Testimony from June 2016, I raised concerns about Mr. Olson’s decision to “include functionality to calculate the RVOS using both a conventional [fossil] and a utility solar avoided cost proxy”. In prior testimony, Mr. Olson argued that this was appropriate given the rapidly declining costs of solar, a trend that we acknowledged. Mr. Olson stated that such a comparison between distributed and utility-scale solar could be plausible in the future when “the cost to the utility of serving load with

17 RNW, OSEA, NWEC/100 O’Brien/10-11
18 Staff/200 Olson/39 lines 12–17
19 Staff/200 Olson/39 lines 3–5
20 RNW, OSEA, NWEC/100 O’Brien/11

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conventional generating resources (either gas-fired resources or market purchases) may exceed the cost to the utility of acquiring a like amount of solar energy at utility scale”, i.e., when the avoided marginal resource is solar.\(^{21}\) In my Response Testimony of June 2016, I stated that I looked forward to such a day, but that I was concerned that E3’s methodology could be used to attempt to make the case that utility-scale solar is somehow “better” than distributed rooftop solar.\(^{22}\) In reality, utility-scale solar and rooftop solar are two different types of resources with different sets of values and costs, as acknowledged by E3.\(^{23}\) We recommend that the Commission take careful note of what conclusions stakeholders draw if they use the RVOS methodology with utility-scale solar as the avoided cost proxy.\(^{24}\)

Q. Have stakeholders drawn conclusions about using a utility-scale solar proxy?

A. Yes. Mr. Link of PacifiCorp states:

Mr. Olson proposed replacing certain RVOS elements—hedging, environmental compliance, renewable portfolio standards (RPS) compliance, energy generation, capacity integration and ancillary services, administration, market price response— with the cost of a utility scale solar resource built in a similar location [cite: TR 135–136 (Olson)]. Mr.

\(^{21}\) Staff/200 Olson/37 lines 1–4
\(^{22}\) RNW, OSEIA, NWEC/100 O’Brien/11
\(^{23}\) Staff/200 Olson/35 lines 15–21 and Olson/36 lines 1–2.
\(^{24}\) RNW, OSEIA, NWEC/100 O’Brien/11
Olson noted that Arizona and Nevada are moving towards using this methodology as their primary methodology, and not just as a check of another calculation [cite: TR 139 (Olson)].

Mr. Link then indicated his support for the proposal for utilities to produce an alternative estimate of RVOS using a utility-scale solar resource.

Q. **Do you have any information about methodologies in Arizona?**

A. In Arizona Public Service's (“APS”) latest rate case, a “Resource Comparison Proxy [RCP] Plan of Administration” was filed with the Arizona Corporation Commission (“ACC”). The RCP is a:

- Proxy for the avoided cost of providing electrical service that results when a distributed generator exports power to the grid. The RCP is calculated using: (i) a rolling historical five-year weighted average cost of grid-scale solar photovoltaic facilities that the Company owns or has rights to through a solar photovoltaic Purchased Power Agreement (PPA); and (ii) applicable Avoided Transmission Capacity Cost, Avoided Distribution Capacity Cost, and Line loses.

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25 PAC/300 Link/4
26 PAC/300 Link/5
Q. Is the Arizona RCP methodology appropriate for UM 1716 in Oregon?

A. No, I do not think so. Using an RCP-like method would be problematic in Oregon for at least two reasons. Firstly, the RCP is equating behind-the-meter rooftop solar to utility-scale solar plus the benefits from avoided transmission, distribution, and line losses. However, behind-the-meter solar is a customer choice, and comes with its own unique package of costs and benefits. The RCP logic would imply that if a customer had a wind net-metered system, then the customer’s compensation for excess generation should be based on utility-scale wind projects, when the only characteristic they have in common (like the comparison of rooftop solar and utility-scale solar) is the type of fuel they use.

Q. Do you have any information about methodologies in Nevada?

A. In Orders from 2015 and 2016, the Public Utility Commission for the State of Nevada (“PUCN”) ordered the utility, NV Energy, to change the way it compensated Nevadan net-metering customers for the excess energy their net-metered systems produced. The new rate of compensation was essentially the wholesale market rate “and a credit for reduced energy/line losses”.

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29 Net Metering Rates & Rules, PUCN, March 2016
http://puc.nv.gov/uploadedFiles/pucnv.gov/Content/Consumers/Be_Informed/Fact_Sheet_Net_Metering.pdf

30 Net Metering Rates & Rules, PUCN, March 2016
http://puc.nv.gov/uploadedFiles/pucnv.gov/Content/Consumers/Be_Informed/Fact_Sheet_Net_Metering.pdf

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Q. Is the Nevadan methodology for compensating net-metered customers for their excess energy appropriate for UM 1716?

A. No. The Nevadan methodology leaves out many of the costs and benefits that stakeholders have gradually come to a consensus on in UM 1716.

Q. Are you suggesting that the RVOS methodology cannot be adapted and used for larger, utility-scale projects, such as those that community solar program participants might subscribe to?

A. No. I believe elements could be adjusted and recalculated to allow the methodology to be used to determine a RVOS that could then be reflected in the bill credits received by, for example, community solar subscribers. I am arguing that a utility-scale solar proxy should not be used if determining the RVOS for behind-the-meter rooftop solar systems.

Q. So you see the RVOS being applied to rooftop solar?

A. Only to the degree that the RVOS for rooftop solar will need to be determined in UM 1716 Investigation 2, which will explore the extent of cost-shifting, if any, between participating and non-participating solar customers.

Q. What uses does Mr. Link propose for a utility-scale solar resource proxy?

A. Mr. Link testified that the “Utility scale solar resource costs could be an effective tool to establish a cap on the RVOS value […] At a minimum, an RVOS based on a utility scale solar resource would provide a valuable reference point for evaluating the reasonableness of the RVOS developed
under the methodology adopted by the Commission.” Mr. Link’s proposal that utility-scale solar resource costs establish a cap on the RVOS is problematic.

Q. Why is Mr. Link’s proposal problematic?

A. Using utility-scale solar resource costs to establish a “cap on the RVOS value” for, presumably, behind-the-meter rooftop solar would wrong. Utility-scale solar and rooftop solar would be compared to each other based solely on their fuel source. In fact, these technologies are two distinct classes of generation, selected by different types of entities for different reasons, each bringing their own set of costs and benefits to the system. Furthermore, using the utility-scale solar resource costs to establish a cap on the RVOS for behind-the-meter solar would falsely imply that the two were mutually exclusive, and somehow in competition with each other. This is clearly not the case. A customer could (1) have behind-the-meter solar, (2) be supplied with utility-scale solar from its host utility, (3) potentially subscribe to a future community solar program, or (4) be supplied with some combination of the prior three.

Q. Do other stakeholders agree with your position on the use of a utility-scale solar proxy?

A. Yes. Bob Jenks of the Oregon Citizens’ Utility Board (“CUB”) stated that while he agreed “conceptually” with the Commission’s Straw Proposal requirement

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31 PAC/300 Link/5

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“to produce an alternative estimate of RVOS using a utility scale resource”32, he testified that “this is not a Phase II issue, but should be part of the IRP evaluation of resources.”33 Eliah Gilfenbaum of The Alliance for Solar Choice (“TASC”) testified, “I am concerned that using this type of [utility scale solar] proxy approach is not well suited to assessing the value of resources with generation profiles that are different than utility scale solar”.34

IV. SUITABILITY OF PACIFICORP’S PDDRR METHODOLOGY FOR DETERMINING THE ENERGY VALUE OF SOLAR RESOURCES UNDER CONSIDERATION IN UM 1716

Q. Do you wish to reply to the testimony on the Element 1—Energy offered by any particular witness?

A. Yes. I wish to reply to the testimony of Mr. Link, witness for PacifiCorp.

Q. How do you characterize Mr. Link’s testimony on Element 1—Energy?

A. According to Mr. Link, the PDDRR method that PacifiCorp currently uses for non-standard Qualifying Facility (“QF”) rates is “reasonable and appropriate for determining the energy value of solar resources under consideration in this docket.”35

32 CUB/100 Jenks/4
33 CUB/100 Jenks/5
34 TASC/300 Gilfenbaum/14
35 Id. at ln. 13-14.
Q. **Do you have any general concerns about the use of methods that, like PDDRR, are used in the context of the Public Regulatory Policies Act of 1978 ("PURPA")?**

A. Yes. As I outlined in my May 5, 2017, testimony, a PURPA framework is not necessarily appropriate in the context of the RVOS methodology because it would tie the RVOS to the significant regulatory uncertainty associated with PURPA. For that reason, I recommended that the Commission adopt methods not directly affected by the regulatory uncertainty of PURPA.

Q. **Do you agree with Mr. Link that using the PDDRR method to calculate Element 1—Energy is reasonable and appropriate in the context of this docket?**

A. No. The PDDRR method does not appear reasonable or appropriate for estimating Element 1—Energy because the only known likely application of this RVOS methodology will require assessing the RVOS for solar systems that are smaller than non-standard solar QFs. The Commission currently allows PacifiCorp to use its PDDRR method in the context of non-standard avoided cost rates available to solar QFs larger than 3 MW.36 Currently, we know of two likely applications for the RVOS methodology that will emerge from this docket: (1) the community solar program under development in Docket No. AR 603,37 and (2) an investigation into the extent of cost-shifting, if any, from net metering (Investigation 2 of this docket). Both of these

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36 UM 1716, PAC/100 Dickman/12.
37 S.B. 1547 (2016), Section 22(6)(a) (Requiring that electric companies compensate community solar participants “in a manner that reflects the resource value of solar energy” unless the Commission has good cause to set a different rate)
applications require estimating the RVOS of solar systems ranging from a few kW up to 3 MW. As a result, if the Commission decides to rely on PURPA in this docket, estimating Element 1—Energy with methods used in the context of standard avoided costs is more reasonable and appropriate than using the PDDRR method.

Q. **Do you have any additional concerns with using the PDDRR method to calculate Element 1—Energy?**

A. Yes. In addition to the concerns I raise above, using PDDRR in the context of the RVOS does not seem reasonable or appropriate because the use of PDDRR in the context of non-standard avoided cost rates may not yet be settled.

The Commission opened Docket UM 1802 to explore “whether PacifiCorp’s non-standard avoided cost pricing should include a renewable price option, and if so, how that renewable price option should be calculated.” In that docket, Staff proposed an alternative approach to calculate the non-standard renewable avoided cost prices. If the Commission does not adopt Staff’s proposed method, Staff “supports reverting to the method adopted under Order No. 07-360 for pricing nonstandard QFs, both renewable and nonrenewable: adjusting standard nonrenewable avoided cost prices to account for a specific QF’s characteristics, based on the factors prescribed by FERC[.]” Should the Commission adopt that

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38 Staff’s Proposed Rules for community solar would cap individual projects at 3 MW.  
39 UM 1802, Order 16-429 at 1 (Nov. 09 2016).  
40 UM 1802, Staff/100 Andrus/17 at ln. 7-11.
recommendation, the PDDRR method would no longer be in use for non-
standard avoided cost rates.

V. PHASE II SCHEDULE

Q. Can you summarize the stakeholder positions on Phase II?

A. Yes. Phase II will result in the calculation of utility-specific resource values of solar. Both Idaho Power and PacifiCorp call for opening utility-specific dockets\(^{41}\) in order to avoid utilities sharing confidential information with each other. PGE also prefers “to propose values for each element through a compliance filing process”.\(^{42}\)

Staff proposed a full schedule for Phase II, giving utilities six months (as a placeholder) to develop values after Phase I is resolved by Order.\(^{43}\) In parallel, for the first three months, workshops would be conducted to develop methodologies “for valuing market price response and hedge value”.\(^{44}\) If methodologies for calculating these two elements can be agreed upon, the utilities would include these in their final calculations due at the end of the six-month period.\(^{45}\) If agreements cannot be reached, utilities would be required to use one of the values proposed in the workshop to value market price response, and would be required to determine a hedge value based on a methodology recommended by Staff. After utility values are circulated, Staff would hold workshops to discuss the utility proposals and

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\(^{41}\) Idaho Power/300 Youngblood/10 and PAC/300 Link/2.
\(^{42}\) PGE/300 Murtaugh-Goodspeed/11
\(^{43}\) Staff/500 Bassett/4
\(^{44}\) Staff/500 Bassett/4
\(^{45}\) Staff/500 Bassett/4

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allow parties to offer recommendations. This would be followed by a pre-hearing conference and a testimony schedule. Following testimony, there would be the opportunity for a hearing and briefing, after which the Commission will issue a Phase II order “finally determining” RVOS methods for each utility.

However, PacifiCorp clarified that while they supported “the treatment of the market price response, hedge value, and security, resiliency and reserves elements outlined in the Straw Proposal [...] these elements should not be include in the compliance filing calculations.”

**Q. Is agreement on a schedule for Phase II within reach?**

Yes. I believe that the Phase II workshops on elements without a methodological consensus will provide room for all stakeholders to focus on a specific issue and potentially come to an agreement. After these workshops, the extent to which these particular elements could/would be included in the utilities’ final calculations will be clearer.

Staff’s suggested schedule, subject to utility confidentiality concerns, seems reasonable.
VI. CONCLUSION

Q. Do you have any further comments?
A. No.

Q. Does this conclude your testimony?
A. Yes, thank you.