Oregon Solar Energy Industries Association

Via Electronic Mail

July 26, 2018

Public Utility Commission
Attn: Filing Center
PUC.filingcenter@state.or.us

Re: IDAHO POWER COMPANY, Resource Value of Solar.
Docket No. UM 1911

Dear Filing Center:

Enclosed is OSEIA's opening brief for the RVOS docket referenced above.

Thank you for your attention to this request.

Sincerely,
/s/ Jon Miller
Jon Miller
Executive Director, OSEIA

BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON
UM 1911

In the Matter of IDAHO POWER COMPANY, Resource Value of Solar.	OPENING BRIEF OF OSEIA

The Oregon Solar Energy Industries Association (OSEIA) respectfully submits this opening brief in the above-referenced docket. As an intervener, OSEIA is very concerned with the outcome of this RVOS docket as it will profoundly impact the future of distributed systems in Oregon, potentially affecting all net-metered solar PV and community solar systems. We have strived to present a rigorous approach based on R. Thomas Beach's over 35 years of experience in utility analysis, resource planning, and rate design, completed in many different states to refine a best practices approach to RVOS methods.

Oregon's contribution to this growing nationwide effort will provide another example for many other states in the future as they look at past efforts in the same way that Oregon did, starting with the Commissions review of Energy and Environmental Economics, Inc. (E3) work, presented as UM 1760 testimony to the Commission on June 1st, 2016. All three IOUs, as well as OSEIA responded in the June 25th, 2018 hearing to a Commissioners question affirming that E3's proposed approach was appropriate for evaluating RVOS in Oregon. We believe this uniform approach for all three utilities is essential to the success of any future use of the RVOS values.

It is with this in mind that we urge the Commission to adopt a uniform method of evaluating RVOS with all three IOU's to avoid confusion and misrepresentation of the essence of each RVOS element. For example, the well-accepted National Economic Research Associates (NERA) regression method used to calculate long-run marginal

distribution capacity costs provides a consistent method based on each utility's specific data that results in custom results unique to each utility.

We have provided testimony (OSEIA/100-102) on RVOS calculations for Oregon's three IOUs based on the RVOS methodology set forth in the Commission's Order 17-357. We have recommended a number of changes to the RVOS calculations that Portland General Electric (PGE), PacifiCorp (PAC), and Idaho Power (IPC) submitted in this docket. These modifications result in RVOS values that are more consistent with the direction that the Commission provided in Order 17-357, use more accurate methods, and are more up-to-date than what the utilities have proposed. For some of the RVOS components, the utilities themselves differ on the methods or assumptions that they have used; in these instances, where appropriate, we have used consistent methods and assumptions for all three IOUs.

Our recommendations for RVOS methods and calculations include:

- **Avoided Energy.** For all three IOUs we recommend using PAC's approach to the hourly shaping of forecasted wholesale energy prices, using hourly prices from the regional Energy Imbalance Market.
- **Generation Capacity.** To recognize accurately the shorter lead times and smaller capacity increments that distributed solar resources will provide, we recommend the IOUs follow the suggestion of Order 17-357 to advance by up to four years the "resource balance year" when each of the IOUs will need capacity. We also used the Capacity Factor method adopted in Order 16-326 to calculate solar's contribution to avoiding generation capacity costs.
- **Avoided T&D Capacity.** We recommend using consistent methods across the three IOUs to calculate the long-run transmission and distribution (T&D) capacity costs that distributed solar can avoid. For transmission capacity, we accept PGE's approach of using current FERC-approved bulk transmission rates as a reasonable proxy for marginal transmission costs, and recommend the other IOUs use the

same approach. For distribution, for PGE we recommend using the full set of capacity-related marginal distribution costs from its last marginal cost study. For PAC and IPC, we recommend using their marginal distribution capacity costs that use regressions of historical and forecasted distribution investments as a function of peak loads. Finally, we recommend using granular hourly data on the distribution substation loads of each utility to determine the ability of distributed solar to reduce the peak loads on the distribution systems of each IOU. These are the loads that drive marginal distribution investments.

- **Avoided Line Losses.** The utility RVOS calculations appear to understate the line losses avoided by solar DG, by using average line loss factors. To be more accurate, we recommend the use of marginal losses.
- **Administration.** PAC's administrative costs appear to follow the guidelines in Order 17-357 that limit administrative costs to incremental costs associated with a customer's decision to install on-site generation. PAC's administrative costs of about $2 per MWh are in line with those of other utilities in the West with active solar programs. We recommend using this value for all three utilities, as we see no reason why PGE and IPC cannot achieve similar efficiencies in administering their solar programs.
- **Market Price Response.** We accept PGE's calculations using the Aurora model of the market price response to increased solar deployment, and we recommend using PGE's results (about 4% of avoided energy costs) for all three IOUs. This MPR value is in line with other calculations of this benefit that have been made in the New England Independent System Operator's market.
- **Hedge Value.** Distributed solar displaces the marginal use of natural gas to generate power, and thus reduces ratepayers' exposure to volatile fossil fuel prices. This hedging benefit can be quantified using a method that Clean Power Research developed for the Maine Public Utilities Commission. This approach recognizes that the value of the hedge that a renewable resource provides is

equal to the cost that the utility would have to incur to fix the costs for its avoided natural gas burn for the life of the renewable resource. We recommend using this method for all three IOUs, and we recommend the use of the resulting values, as we believe the 5% hedge placeholder referenced in Order 17-357 significantly undervalues the hedge value that a 25-year solar resource offers.

- **Environmental Compliance.** It is reasonable to assume that any compliance regime for carbon emissions will apply to all utilities in Oregon. Accordingly, we recommend using the avoided carbon compliance costs in PGE's RVOS for all three utilities. These avoided costs are based on an assumption for a future regulatory regime that places a price on carbon emissions. Neighboring states and provinces already are subject to such a regime (California and British Columbia), or have one under active discussion (Washington).

Our previously submitted testimony (OSEIA/100-102) also comments on the alternative RVOS approach that uses the cost of utility-scale solar as a proxy for all of the RVOS elements except T&D capacity, administration, and line losses. This alternative RVOS is misleading and fails to capture important additional, quantifiable benefits of distributed solar. These include environmental benefits from reduced land use impacts, additional benefits when paired with storage (including enhanced reliability and resiliency), and the important benefit of increasing customers' ability to choose their source of electric energy. Both distributed and utility-scale solar should have central roles in the transition to a clean, sustainable, resilient electric industry.

Finally, our previously submitted testimony (OSEIA/100-102) shows how the resource value of solar may increase significantly when solar is paired with on-site storage. This is due principally to the ability of storage to shift a portion of solar output to the hours when it is most valuable to the system, thus increasing substantially the contribution of distributed solar to avoiding generation and T&D capacity costs. Storage

also may enhance the ability of solar resources to provide a range of grid services, benefits that the Commission should consider exploring in a subsequent phase of these dockets.

Using the methods outlined above and in our previous testimony, we generated the RVOS values shown in **Table 1**.

Table 1: *OSEIA Calculated RVOS Values (2018 $ per MWh, real levelized)*

RVOS Cost Component	**PGE**	**PAC**	**IPC**
Energy	26.27	27.63	27.77
Generation Capacity	24.11	20.87	20.70
T&D Capacity	13.92	23.94	25.72
Line Losses	2.33	4.18	3.55
Administration	(2.30)	(2.30)	(2.30)
Market Price Response	1.00	1.05	1.06
Integration	(0.83)	(0.63)	(0.56)
Hedge Value	22.75	18.14	20.69
Environmental Compliance	12.00	11.37	11.55
Total	**99.26**	**104.24**	**108.17**

Dated July 26, 2018

Respectfully submitted,
/s/ Jon Miller
Jon Miller
Executive Director, OSEIA