June 7, 2017

VIA ELECTRONIC FILING

Public Utility Commission of Oregon
201 High Street SE, Suite 100
Salem, OR 97301-3398

Attn: Filing Center

RE: UM 1716 — PacifiCorp’s Post-Hearing Reply Testimony

PacifiCorp d/b/a Pacific Power encloses for filing in the above-referenced docket its Post-Hearing Reply Testimony.

If you have questions about this filing, please contact Natasha Siores at (503) 813-6583.

Sincerely,

Etta Lockey
Vice President, Regulation

Enclosures
BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON

PACIFICORP

Reply Testimony of Rick Link

June 2017
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Q. Are you the same Rick Link who previously submitted testimony in this proceeding on behalf of PacifiCorp d/b/a Pacific Power?

A. Yes.

PURPOSE OF TESTIMONY

Q. What is the purpose of your testimony?

A. My testimony includes a rebuttal of the parties’ opening testimony regarding the resource value of solar (RVOS) and specifically new issues raised at the January 31, 2017 hearing (Hearing), as well as the straw proposal attached to Order No. 17-085 (Straw Proposal). I respond to the testimony presented by Mr. Mark Bassett on behalf of Public Utility Commission of Oregon Staff (Staff), Mr. Michael O’Brien on behalf of Renewable Northwest, the NW Energy Coalition, Northwest Sustainable Energy for Economic Development, and the Oregon Solar Industries Association (collectively, the Joint Parties), Mr. Bob Jenks on behalf of the Citizen’s Utility Board (CUB), and Mr. Eliah Gilfenbaum on behalf of The Alliance for Solar Choice (TASC).

Q. Please summarize your testimony.

A. First, my testimony provides further recommendations for Phase II of this docket, the goal of which I believe should be to result in approved RVOS calculations for each utility. Second, my testimony includes specific responses to suggestions and recommendations made by other parties made for each RVOS element.
Q. Please summarize the recommendation made in your opening testimony.

A. I recommended separate compliance filing dockets for each utility for the first calculation of utility-specific RVOS values using the inputs in Order No. 17-085. I recommended that, consistent with the Straw Proposal issued by the Commission in Order No. 17-085, the market price response, hedge value, and security, resiliency and reserves elements should not be included in these initial calculations. I also recommended that the environmental compliance cost only be included in the calculation to the extent there are actual or imminent environmental compliance costs avoided.

Q. Have any of these recommendations changed?

A. No.

Q. In Staff’s testimony, Mr. Bassett proposes a process for Phase II. Do you agree with Mr. Bassett’s recommendation?

A. No, for a number of reasons. First, Mr. Bassett’s testimony appears to envision that each utility’s RVOS calculation will be filed in the same docket. As noted in my opening testimony, this is inappropriate because each utility’s filing will be different based on each utility’s circumstances and each filing is likely to contain confidential information that would be inappropriate to share amongst the utilities. Second, I disagree with Mr. Bassett’s recommendation that a value for market price response and hedge value be included in Phase II values regardless of whether the parties agree on a methodology. It is simply premature to mandate that these values be calculated.
when it is not settled that appropriate methodologies are even available or can be
developed. The Public Utility Commission of Oregon (Commission) should await the
outcome of the technical workshops on these elements before mandating that a value
be included in the RVOS. Third, I disagree with Mr. Bassett’s recommendation that
at the conclusion of the evidentiary phase for each utility’s RVOS calculation, the
Commission will issue a Phase II order “finally determining the methods each utility
should use” to determine an RVOS.² My understanding is that Phase II should result
in the approval of utility-specific RVOS values. Staff’s recommendation appears to
result in the final determination of a methodology rather than utility-specific RVOS
values.

Q. In his testimony, CUB witness Mr. Jenks states that “the proposed
methodologies are at such a high level (conceptual methodologies), that there will
be several additional steps required to produce actual values.”³ Do you agree?
A. No. Based on the directives in the Straw Proposal, PacifiCorp has sufficient guidance
from the Commission to calculate RVOS values.

Q. Mr. Gilfenbaum recommends expanding the scope of this docket in Phase II to
incorporate an accounting of the value of distributed storage.⁴ Do you agree
with this?
A. No. This docket has already undergone significant process and it would be
inappropriate to modify the entire scope at this time. Incorporating an accounting of
the value of distributed storage raises many broad questions such as defining the

² Id. at 5-6.
³ CUB/100, Jenks/1.
⁴ TASC/300, Gilfenbaum/12.
capacity, storage volume, efficiency/losses, and dispatch control capabilities that have not been scoped in this docket. Phase II should remain focused on calculating utility-specific RVOS values.

**RVOS ELEMENTS**

**Energy**

Q. A number of witnesses, including Staff’s expert witness Mr. Olson, call for the Commission to mandate the use of hourly energy values to estimate avoided energy costs. Do these recommendations raise any additional issues?

A. Yes. As noted in my opening testimony, using more granular data will increase the administrative burden and it is important to ensure that this burden actually results in a more precise result. Seemingly contradicted by his recent written testimony, Mr. Olson stated in hearing that the use of monthly average prices is effectively equivalent to hourly modeling. In addition, the use of hourly data raises confidentiality concerns— if the Commission mandates the use of hourly data it is even more critical that the Phase II calculations are completed in utility-specific dockets.

Q. Mr. Gilfenbaum and Mr. O’Brien both question the use of the Public Utility Regulatory Policies Act (PURPA) avoided cost framework as a basis for establishing the RVOS. How do you respond?

A. The RVOS is fundamentally setting a rate for the production of third-party energy delivered to the utility. As a threshold matter, though legal issues will be addressed

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5 Staff/502, Bassett/1.

6 UM 1716 Hearing Transcript (TR) 14, lines 12-17 (Olson).

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elsewhere, my understanding is that depending on the use of the RVOS—for example, if the utility is required to purchase the output of the third-party generation—there may be legal constraints preventing the Commission from setting wholesale energy prices under anything other than a PURPA avoided cost or net metering framework. As I stated in my opening testimony, PacifiCorp’s method for non-standard avoided costs currently estimates the marginal avoided cost of energy on an hourly basis and accounts for the specific characteristics of the proposed resources and PacifiCorp’s system. This method is thus reasonable and appropriate for determining the energy value under consideration in this docket.

Q. Do you agree with Mr. Gilfenbaum’s argument that the more appropriate framework for the RVOS is one similar to how utilities evaluate the cost-effectiveness of demand side resources?7

A. No, as noted in my opening testimony, the RVOS is a valuation of the output of third-party generation to the utility system. Energy efficiency and demand response represent reductions in energy use. While energy efficiency always reduces a customer’s usage of the system, distributed generation is simply the substitution of generation by customers for generation by the utility. With distributed generation, the same amount of electricity is required to meet customer needs. The electricity is simply supplied by different resources. Thus, the use of avoided cost pricing is a better and more efficient benchmark of RVOS than using cost-effectiveness analysis traditionally used for energy efficiency programs.

7 TASC/300, Gilfenbaum/5-8.
Q. Due to regulatory uncertainty associated with PURPA, Mr. O’Brien recommends that the RVOS should be specific, separate and distinct from PURPA and its associated dockets. Do you agree?

A. No. There is ongoing activity at the Commission around PURPA avoided costs, however many issues and elements that the Commission addresses in the PURPA context also need to be addressed in the RVOS context. Fundamentally, RVOS and avoided costs are both valuing energy generated by a third party and delivered to the utility. To avoid inconsistencies and potential gaming among solar developers, to the extent the Commission adopts policies for the RVOS that deviate from settled avoided cost doctrine, there should be a stated rationale for doing so.

Q. Mr. O’Brien goes on to argue that if the PURPA framework is adopted, utilities should be required to use their standard avoided cost pricing methodologies rather than their non-standard methodologies. He notes that PacifiCorp is proposing to use a non-standard avoided cost methodology. Why do you think that the use of the non-standard avoided cost methodology is appropriate?

A. PacifiCorp’s standard avoided cost pricing methodology uses simplified assumptions to produce a generic estimate of avoided costs for a given resource type while the non-standard methodology uses specific characteristics of the proposed project. To the extent the two values differ, the non-standard methodology is a more accurate estimate of energy value at any given point in time. While PacifiCorp is obligated to publish standard avoided cost pricing for small qualifying facilities (QFs), it is not obligated to do so for resources that are not QFs. Therefore, use of the non-standard

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8 RNW, OSEIA, NWEC, NW SEED/300, O’Brien/3.
9 Id. at 3-5.

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avoided cost methodology is warranted to ensure that the RVOS methodology applied is the one that will generate the most accurate result.

**Generation Capacity**

**Q.** Both Staff expert witness Mr. Olson and Mr. O’Brien recommend that for purposes of the RVOS, incremental solar should NOT be included in the load forecast when calculating the resource sufficiency/deficiency demarcation.¹⁰ Do you agree?

**A.** PacifiCorp’s load and resource planning should account for all contractual obligations. To the extent incremental solar resources are being paid for capacity, their capacity should be included in PacifiCorp’s planning, either as an offset to load, or as a resource. This capacity should be included through the end of the solar contract period. To the extent a capacity payment extends into the future, PacifiCorp’s planning should continue to incorporate the resource to avoid over-procuring capacity.

**Q.** Mr. O’Brien suggests that the generation capacity element should be equal to fixed O&M in years where a utility is capacity sufficient and should not be zero.¹¹ Do you agree?

**A.** No. By definition, fixed O&M is not affected by the PacifiCorp’s resource position. Even if dispatchable resources are used less, the fixed (as opposed to variable) cost of maintaining those resources is unchanged.

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¹⁰ Staff/502, Bassett/2; RNW, OSEIA, NWEC, NW SEED/300, O’Brien/6.
¹¹ RNW, OSEIA, NWEC, NW SEED/300, O’Brien/7.
Transmission & Distribution (T&D) Capacity

Q. Mr. O’Brien suggests that PacifiCorp’s 2016 Annual Smart Grid Report indicates that location-specific data may already be available for use in calculating location-specific T&D capacity values. Do you agree with this assessment?

A. For the initial calculation of the RVOS in Phase II, I continue to recommend the use of a system-wide average value to estimate the avoided or deferred costs of expanding, replacing or upgrading T&D infrastructure attributable to incremental solar penetration. Though they may be useful for this purpose, the tools referenced in the 2016 Annual Smart Grid Report were not developed specifically for the purpose of valuing T&D deferral value. Therefore, while I agree with Mr. O’Brien that these tools could be helpful in determining more granular location-specific values, additional discussion and workshops are warranted before PacifiCorp would be able to apply these tools for this purpose. The Commission should decline to impose a locational value requirement at this time and instead maintain the approach in the straw proposal to use system wide average values initially while exploring ways to generate more location-specific values over time.

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12 RNW, OSEIA, NWEC, NW SEED/300, O’Brien/8.
Line Losses

Q. Staff expert witness Mr. Olson suggests that utilities should ideally calculate marginal line losses on an hourly basis. Mr. O’Brien also suggests that the use of an average value to estimate avoided line losses would undervalue the RVOS. Do you agree with the approach of using marginal line losses to estimate the RVOS?

A. Yes. Marginal line losses can be either higher or lower than average line losses. In general, behind-the-meter solar resources will avoid all of the losses associated with that meter. However, when the solar resource exceeds the load on that meter, there will be incremental losses on the distribution system. If solar resources exceed the load on a distribution system, there will be incremental transmission losses. As a result, an hourly analysis that ignores PacifiCorp’s system conditions will not provide a more accurate result.

Avoided Hedge Value

Q. Staff expert witness Mr. Olson suggests using a proxy value equal to 5 percent of energy to capture the hedge value effect, which he describes as the risk premium associated with customer preference for stable prices. Do you agree with the use of a 5 percent proxy value?

A. No. In the Straw Proposal, the Commission directed Staff to convene technical workshops to discuss potential methodologies to determine avoided hedge value. The Commission should let this process commence before deciding on an arbitrary proxy value. As noted in my opening testimony, I conceptually agree that there is some

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13 Staff/502, Bassett/3.
14 Staff/502, Bassett/5.

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long-term hedge value associated with solar resources but I believe that this value will be very close to zero and very difficult to establish.\textsuperscript{15} Furthermore, due to the correlation with other solar resources, there is significant potential for declining long-term value from solar resources. Already, marginal costs in the energy imbalance market (EIM) drop significantly in response to high levels of solar output. PacifiCorp’s ability to take advantage of low-cost solar resources available in the EIM is diminished as incremental solar is added to its system.

**Integration and Ancillary Services**

**Q.** Do you agree with Mr. O’Brien’s analysis that increased solar penetration is unlikely to impact contingency reserve requirements but that regulation reserve and following reserve requirements are likely to be impacted?\textsuperscript{16}

**A.** Not necessarily. Under the current North American Electric Reliability Corporation (NERC) standards, behind-the-meter generation does not impact contingency requirements. Contingency reserve obligations are applicable to that portion of the generation which is in excess of load. Because PacifiCorp has reduced visibility of behind-the-meter loads and resources, reserve requirements can be greater than for equivalent amounts of load and solar resources metered separately.

**Q.** How does Mr. Gilfenbaum describe the proposal from Staff’s consulting firm to evaluate the avoided cost of ancillary services?

**A.** Mr. Gilfenbaum points out that the consulting firm used by Staff, E3, has proposed evaluating the avoided cost value of ancillary services by “estimating the proportion of energy costs typically spent on these services, and assuming that the benefit of...
reducing the need to procure those services is a similar proportion of avoided energy

costs” and argues against assuming a zero value for avoided ancillary services.17

Staff expert witness Mr. Olson recommends measuring the reduction in ancillary

service requirements by multiplying energy value by 1 percent.

Q. **Do you agree with this approach?**

A. No. PacifiCorp’s 2017 Integrated Resource Plan includes a detailed analysis of the
cost associated with maintaining flexible resources to compensate for deviations in
load, wind, solar and other resources. While the study found declining marginal
requirements as wind and solar capacity increased, the overall obligation continued to
increase. As a result, reserve requirements are anticipated to continue to increase.
PacifiCorp is not aware of any ancillary services that solar resources are expected to
provide which would allow the company to avoid procuring ancillary services.

**CONCLUSION**

Q. **Does this conclude your reply testimony?**

A. Yes.

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17 TASC/300, Gilfenbaum/11.