

**PUBLIC UTILITY COMMISSION OF OREGON
STAFF REPORT
PUBLIC MEETING DATE: February 13, 2020**

REGULAR X **CONSENT** _____ **EFFECTIVE DATE** _____ **N/A** _____

DATE: February 6, 2020

TO: Public Utility Commission

FROM: Marc Hellman

THROUGH: Michael Dougherty and JP Batmale **SIGNED**

SUBJECT: PACIFIC POWER:
(Docket No. UM 1910)
Pacific Power Resource Value of Solar and Compliance Filing in
Response to Order No. 19-021.

STAFF RECOMMENDATION:

The Public Utility Commission of Oregon (Commission) should accept Pacific Power's (PacifiCorp) July 18, 2019, Compliance Filing inclusive of January 7, 2020, responses to Staff's data requests and direct PacifiCorp to:

1. Annually update its RVOS estimates and file those estimates no later than July 1 of each year stated in that year's dollars.
 - a. Include in the estimates values for high, medium, and low distribution costs consistent with PacifiCorp's definition used in the locational distribution classification.
2. Post on its website, by April 1, 2020, substation-level information for capacity deferral values in preparation for potentially posting hosting capacity data, as part of UM 2005.

In addition to adopting Staff's recommendation for next steps for PacifiCorp in this RVOS docket, Staff has more general recommendations for the Commission itself:

- A. Consider using the RVOS framework for other regulatory purposes such as developing the value of other types of resources.

- B. Consider directing PacifiCorp to develop locational rates to match with RVOS results showing locational cost differences in various solar and other distributed resources.

DISCUSSION:

Issue

Whether the Commission should accept PacifiCorp's March 18, 2019 and July 18, 2019, Compliance Filings to Order No. 19-021.

Applicable Rule or Order

In Order No. 19-021, issued January 22, 2019, the Commission stated:

In this order, we complete Phase II of the resource value of solar (RVOS) proceeding, and adopt the final methodologies that PacifiCorp, dba Pacific Power, will use to produce its initial set of RVOS values. We direct PacifiCorp to develop revised RVOS calculations consistent with this order, and file them in this docket by March 18, 2019. We also direct PacifiCorp to file additional information regarding avoided transmission and distribution, generation capacity, and line loss values no later than July 18, 2019.¹

Analysis

Background

This docket, along with companion dockets UM 1912 for Portland General Electric (PGE) and UM 1911 for Idaho Power Company (IPCo) are designed to analyze the resource value of solar. The PacifiCorp specific RVOS Order No. 19-021 provides a useful background for RVOS as well as a discussion on the framework for analysis.

As noted above, PacifiCorp was directed to make compliance filings to Order No. 19-021, on March 18 and July 18, 2019. Following the utilities compliance filings on July 18, 2019, Staff held a workshop with the utilities and stakeholders to gather input on the compliance filings.

At the October 29, 2019, Special Public Meeting in docket UM 1930, the Commission requested an informational update on the status of the resource value of solar proceedings. On October 31, 2019, the OPUC Hearings Division Administrative Law Judge, Alison Lackey, issued a memorandum requesting that Staff provide a

¹ Order No. 19-021, p. 1.

presentation summarizing the compliance filings, addressing the status of the compliance filings, and outlining any next steps. The presentation was initially scheduled for the January 14, 2020, Public Meeting, but in a communication dated December 23, 2019, was rescheduled to the February 13, 2020, Public Meeting instead.

Discussion

On December 16, 2019, Staff issued several data requests to PacifiCorp to both confirm PacifiCorp's compliance to Commission Order No. 19-021, as well as better understand the context of PacifiCorp's prior March 18 and July 18 Compliance filings.

Table 1 summarizes Staff's view of the status of PacifiCorp's compliance to Order No. 19-021.

Element	Determination	Compliance?	2020 \$/MWH
Energy	PacifiCorp's approach adopted, with the following changes: PacifiCorp is ordered to use uncapped EIM data for price shaping. 12 x 24 expression of value required.	Yes. March 18, 2019 Compliance filing, page 2.	21.09
Generation Capacity	PacifiCorp's standard PURPA approach adopted, but pricing must be shaped across 12x24 blocks to express temporal value of system generation capacity need, rather than levelized and spread equally over estimated total solar generation. PacifiCorp must use a 2021 deficiency date for application of this value.	Yes. March 18, 2019 Compliance filing, page 2.	25.32
T&D Capacity Deferral	Staff's recommendation is adopted. PacifiCorp should use its latest Marginal Cost of Service Study for calculating T&D Capacity deferral. PacifiCorp should shape this value over 12 x 24 blocks to express temporal value of system T&D capacity need. PacifiCorp is ordered to begin development of rudimentary locational pricing that will begin to identify areas with high, average, and low T&D capacity deferral value relative to system average value.	Yes. July 18, 2019 Compliance filing, pages 2-5. PacifiCorp January 7, 2020 response to OPUC Data Request 29.	3.02
Line Losses	PacifiCorp's value and approach adopted. PacifiCorp should express these values in 12 x 24 blocks rather than levelized via solar performance assumptions.	Yes. March 18, 2019 Compliance filing, page 2.	1.46
Integration	PacifiCorp's value adopted.	Yes. No update required.	-0.66
Administration	PacifiCorp's value adopted as a proxy; value to be developed according to individual program implementation costs.	Yes. No update required.	-2.07
Market Price Response	PacifiCorp is ordered to use E3's price elasticity model, in the middle of the provided range at -0.0015%. This approach should take into account the short or long positions of PacifiCorp.	Yes. March 18, 2019 Compliance filing, page 3.	-0.04
Hedge Value	PacifiCorp's value adopted.	Yes. No update required.	1.06
Environmental Compliance	PacifiCorp's value adopted as a proxy; value to be developed according to individual program implementation needs.	Yes. No update required.	4.33
RPS Compliance	Staff's recommendation adopted. PacifiCorp is ordered to use values from its RPS compliance reporting to calculate this value as a proxy.	Yes. March 18, 2019 Compliance filing, page 3.	0.63
Grid Services	PacifiCorp's value is adopted, until such time as additional investigation identifies grid service benefits.	Yes. No update required.	0.00
RVOS Total Value			54.13
Utility Scale Proxy (2017 IRP OR Solar Resource)			45.57

Based on PacifiCorp's responses and Staff's final analysis, Staff provides additional comments and clarifications below to place a broader context on PacifiCorp's compliance, identifies near-term improvements that could be made, and provides an overall view on the status of RVOS.

- In PacifiCorp's January 7, 2020, response to OPUC Data Request 24, PacifiCorp stated its July 18 compliance filing was expressed in 2018 dollars and to convert to 2020 dollars those July 18 values would simply need to be escalated by inflation of 2.22 percent per year for two years.² PacifiCorp also noted that the July 18, 2019, Compliance filing had the values for Market Price Response and RPS Compliance switched in the PacifiCorp-provided summary table.
- In the January 7, 2020, response to OPUC Data Requests, PacifiCorp clarifies that a LOLP study is used to identify the month and hours where there is a risk of unserved load; and, that the LOLP Study does not identify when new capacity is required. Staff finds this clarification very helpful in understanding the capacity 12 x 24 matrix. In addition, Order No. 19-021 directed for capacity values, PacifiCorp to assume a 2021 need for capacity date.³ In the absence of such Commission direction, PacifiCorp states that a thermal resource would not be needed prior to 2028.

Staff does not think the RVOS forum is the appropriate forum for determining the need for capacity, as that would be more appropriately addressed in both PacifiCorp avoided cost filings as well as IRP reviews. For greater transparency, perhaps a "marriage" of the LOLP analysis and avoided cost/IRP reviews would be useful in the sense that the LOLP analysis would identify which month(s) of the year PacifiCorp would need capacity and the avoided cost/IRP filings would identify what year additional capacity is required. The RVOS would translate that information into discounted values, to the extent necessary, reflecting the difference in time between the applicability of the RVOS and the timing of need for a new resource.

- In response to OPUC Data Request No. 25, PacifiCorp stated that the, "...solar template includes hourly loss of load probability (LOLP) values based on PacifiCorp's 2017 Integrated Resource Plan. The sum of the hourly values for the year is 100 percent. If any resource is available at its maximum output in each of the hours with an LOLP value greater than zero, it would receive 100 percent of the generation capacity value, i.e. equal to the capacity cost of the assumed simple cycle combustion turbine."

² The summary values provided in the furthestmost right column of Table 1 are derived by taking the values provided in PacifiCorp's July 18 compliance filing and multiplying them by 1.0222 squared.

³ Order No. 19-021, p. 5.

Staff is not sure this is the correct approach for pricing of capacity and would like more discussion on this topic. For example, is it really necessary for a solar provider to provide power during all non-zero LOLP hours to earn a full capacity payment? The typical LOLP standard of one day in ten years means that it could be acceptable to operate a system with a LOLP of less than one day in ten years, such as say ten hours of unserved load over ten years. Meaning capacity might not be added in that circumstance. In addition, for instance, if a solar resource were to provide capacity during the times of greatest LOLP values, would this allow delaying the acquisition of potential capacity resources that would otherwise be purchased? On the other hand, if a solar did not provide capacity during the times of greatest LOLP values but did provide capacity during other substantive non-zero LOLP values, should perhaps some capacity payment consideration be made? These are questions that could be explored from a pricing standpoint. The LOLP tables and 12 x 24 matrix can convey when capacity is needed. Solar resource developers can determine whether they have resources that can provide power during those times as well as perhaps add other facilities such as storage to provide capacity when needed.

Another concept that could be considered in the context of capacity is distinguishing between a resource that happens to provide power during months and hours of capacity need and the ability for utilities to plan for capacity needs based on the availability of certain resources. This could be thought of as one of the distinguishing differences between a dispatchable versus non-dispatchable resource. It would seem sensible that capacity payments are made relative to the ability of a utility to change its plans for acquiring capacity based on the availability of different types of resources including solar resources. Related to that, is a distinction between the ability to plan for output at certain hours for a single non-dispatchable resource as compared to a large set of non-dispatchable resources potentially located in varying regions. A utility might not be prudent in changing its plans to acquire a resource because of the availability of a single solar array panel as compared to a large number of solar panel installations. Given that broad nature of these questions, Staff is not recommending they be taken up in the RVOS forum. To the extent these questions are relevant, perhaps they could be taken up in the capacity docket UM 2011.

- With respect to transmission and distribution, PacifiCorp provided a summary table in its July 18, 2019, compliance filing identifying by county those counties with high, medium, and low projected distribution costs. The level of information provided in the July 18 filing is described by PacifiCorp as being the result of discussions with OPUC staff; and, PacifiCorp notes that, "While substation-level data is more accurate, targeting individual substations may be challenging and

administratively burdensome if locational value is ultimately used in a tariff or program.”

Staff views substation level detail as necessary for compliance with the Commission Order. The July 18, 2019, compliance filing did not provide that detail in its written submission. There was substantially more information included in the confidential work papers submitted with the filing. To gain better detail in summary format, Staff requested such detail in OPUC Data Request 29. PacifiCorp’s response to OPUC Data Request 29 received on January 7, 2020, is sufficient for purposes of this docket.

Staff believes providing detail at the county level in PacifiCorp’s July 18, 2019, Compliance Filing was insufficient given that Order No. 19-021 states that the Commission, “want to encourage resource development in locations that provide system benefits, we emphasize the need to continue to improve the locational granularity of this value.”⁴ This Commission statement supports looking at distribution at the substation level rather than county. Staff understands this may be a different viewpoint than was communicated to PacifiCorp in its preparation of its July 18, 2019, Compliance filing. For example, in OPUC Data Request 29, Staff asked PacifiCorp if, “within a county designated as “Low”, that there may be individual substations designated as “High”? PacifiCorp responded, “Yes”.

The drawback of a county-level classification of distribution costs could mask the existence of a substation within that county that has a potential high level of distribution costs. In reviewing the Attachment to the response to OPUC Data Request 29, there are no counties designated as low that have a higher need at the substation level. That is, all substations within the county are also designated as low. This level of consistency is not true for the counties designated as average. For example, while Multnomah is designated as average, the Russelville substation has a “High” designation. And, there are several substations within Multnomah that are designated, “Low”.

- OPUC Data Request 29 asked PacifiCorp to provide information for each of its Oregon substations. PacifiCorp provided that information and Staff views PacifiCorp as complying with Commission direction in Order No. 19-021.
- In OPUC Data Request 27, Staff asked PacifiCorp where on PacifiCorp’s website such locational information is, or could be, made available to inform solar developers. In PacifiCorp’s response the company stated, “The company presently does not have plans to make locational information as it relates to the

⁴ Order No. 19-021, p. 16.

resource value of solar available on its website. If and when locational value becomes a factor in a program or retail tariff in which customers may participate, the company will at that time evaluate the best area on its website to include this information.”

Staff recommends the Commission direct PacifiCorp to post on its website, by April 1, 2020, the substation level information for capacity deferral values in preparation for potentially posting hosting capacity data, as part of UM 2005.

Given the locational information, it makes sense for RVOS cost estimates to be identified by the high, medium, and low distribution classification. This information would be valuable in guiding whether to require utility tariffs and programs being offered by cost of location. As PacifiCorp notes, there are increased administrative costs associated with this construct.

- A separate issue is raised by a requirement on page 14 of Order No. 19-021, “Accordingly, we order that in expressing T&D capacity value, PacifiCorp do so through 12 x 24 blocks that do not assume solar performance.” As relatively new to the RVOS investigation, this statement has two potential meanings that are both plausible. One meaning is as the information has been filed. That is, provide fundamental utility cost information, that shows utility costs by month and hour, and do not base the values assuming likely output times of solar. This then would provide a matrix informing solar and other developers when it is most valued by the utility to supply energy. Such information would also provide incentives to find ways to reshape solar power to when it is most needed such as through batteries.

This information and matrix could also be applied to other applications such as avoided costs, other renewable resource types, alternative rate design, and demand control pilots, for example. The RVOS construct has broad applicability and Staff recommends the Commission consider applying this construct elsewhere to establish a consistent framework by which to evaluate resources.

Yet there is also another interpretation of the order’s language. The language could be read to mean that the facilities should be evaluated as if no solar facilities were actually loaded on the substations. If without the solar facilities substation investments would be required, then the existing solar facilities should be credited for that cost savings. This assumes that solar facilities increase the capacity to serve based on solar facilities providing energy during peak times. Whether or not this is true would be analyzed through the assumption of not including solar performance. To the extent that this alternate interpretation has merit, it too could be analyzed in the UM 2011 capacity investigation docket.

Basically, the issue is whether existing third party projects should be paid for capacity if but for that capacity the utility would need to add its own capacity even with the understanding that the utility is currently capacity surplus.

- Staff has one other comment that arose in the context of preparing this compliance review. The issue is Market Price response. Order No. 19-021 discusses the E3 proxy method and characterizes the method as an elasticity value of -0.0015 percent. In looking over the background materials, the E3 analysis has that market prices decrease by -0.0015 \$/MWH for every additional MWH of renewable energy. That is, the -0.0015 is not expressed in percentage terms and is not strictly an elasticity as discussed in standard economic texts. The E3 analysis takes into account several studies and seems more like a placeholder valuation than a clear conclusion.

One other comment on the market price response. The notion of the market price response is that as renewable power increases that tends to depress the wholesale market price for power. Is that a good thing or bad? I believe the answer depends on whether you are a buyer or seller of electricity. Assuming the utilities in this case are buyers of electricity, lower wholesale market prices are a good thing. That means the Market Price response should increase RVOS not decrease it, meaning it should not be negative. The wholesale market response factor is negative, but a negative in this case is a positive for RVOS. Given that the Market Price Response element has a small absolute value in the compliance filings submitted by the utilities, this incorrect sign effect is very small.

Other non-compliance matters

There are three other recommendations Staff offers for Commission consideration. These recommendations are:

- Direct PacifiCorp to annually update its RVOS estimates and submit a filing by July 1 of each year with the estimates stated in that year's dollars.
- Consider using the RVOS framework for other regulatory purposes such as the value of other types of resources.
- Consider directing utilities to develop locational rates to match with RVOS results showing locational cost differences in various solar and other distributed resources.

Each of these will be discussed in turn. It would be useful to have the RVOS estimates updated each year. All elements of RVOS should be updated to reflect the most recent information the company has available. For some element estimates, like

administration, the update could simply be to restate the value for inflation if there is no improvement in precision that the company can identify as useful to incorporate. The July 1 date recommendation reflects comments from PacifiCorp that the RVOS filing be coordinated with the standard avoided cost filing. PacifiCorp noted that the QF filing typically occurs around April 30, with rates effective 30 days later. PacifiCorp also noted that it updates its avoided costs 30 days after an IRP is acknowledged. Updating would inform the Commission whether and to what extent RVOS has changed. Also, to the extent the utility purchases solar power through various programs such as, for example, Community Solar, to the extent the amount “paid” for that solar power differs from RVOS, that would represent a better understanding of the level of subsidy being contributed towards that program.

The second recommendation is a general one in that the RVOS framework seems like a good approach that should have general applicability. The RVOS approach starts with identifying the utility costs for specified elements and then maps those elements as applicable to the resource. This certainly appears that it could be applied to other resources, power acquisition including QFs. The benefit of applying the RVOS to other resources has the benefit of helping to ensure consistency in evaluation. Therefore Staff recommends the Commission consider applicability to other arenas. Such direction could be for the utilities and Staff to use the RVOS methodology in other arenas along with whatever method the utility chooses to use for its filing.

The third recommendation is to consider directing the utilities to develop locational rate offerings for solar and resources reflecting the locational cost differences the RVOS studies have illustrated. The RVOS study for PacifiCorp shows that transmission and distribution capacity deferral costs are a substantive component of overall costs of 3.02 \$/MWH. Presumably, areas with surplus substation capacity, along with transmission, would have costs closer to 0\$/MWH. Therefore there are substantive cost differences. Consideration should be made on this recommendation with regards to the administrative costs of handling locational prices, but clearly this should be a forward looking goal that will improve economic efficiency.

Conclusion

The PacifiCorp second amended compliance filing, inclusive of PacifiCorp’s responses to OPUC data requests dated January 7, 2020, complies with the Commission Order No. 19-021.

PROPOSED COMMISSION MOTION:

Approve PacifiCorp's July 18, 2019 Compliance Filing inclusive of January 7, 2020, responses to Staff's data requests and direct PacifiCorp to:

1. Annually update its RVOS estimates and file those estimates no later than July 1 of each year stated in that year's dollars.
 - a. Include in the estimates values for high, medium, and low distribution costs consistent with PacifiCorp's definition used in the locational distribution classification.
2. Post on its website, by April 1, 2020, substation-level information for capacity deferral values in preparation for potentially posting hosting capacity data, as part of UM 2005.

In addition to adopting Staff's recommendation for next steps for PacifiCorp in this RVOS docket, Staff has more general recommendations for the Commission itself:

- A. Consider using the RVOS framework for other regulatory purposes such as developing the value of other types of supply-side resources.
- B. Consider directing PacifiCorp to develop locational rates to match with RVOS results showing locational cost differences in various solar and other distributed resources.