ORDER NO. 21-296

ENTERED Sep 15 2021

BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

UM 2118

SUNTHURST ENERGY, LLC, Complainant, vs. PACIFICORP, dba PACIFIC POWER, Respondent.	ORDER

DISPOSITION: COMPLAINT DISMISSED WITH PREJUDICE

I. SUMMARY

In this order, we address five remaining issues identified in Sunthurst's complaint. We deny the relief requested by Sunthurst for each of these five issues. Sunthurst's complaint is dismissed with prejudice.

II. FACTUAL, LEGAL, AND PROCEDURAL BACKGROUND

On September 29, 2020, Sunthurst Energy, LLC (Sunthurst), filed a complaint under ORS 756.500 against PacifiCorp, dba Pacific Power. Sunthurst's complaint regards the "reasonableness of the scope and cost of facilities" required to interconnect two photovoltaic generation sources to PacifiCorp's electrical distribution system in order to sell their net output under the Oregon Community Solar Program (CSP): Pilot Rock Solar 1, LLC (PRS1), a 1.98 megawatt (MW) project; and Pilot Rock Solar 2, LLC (PRS2), a 2.99 MW project. Sunthurst's PRS1 and PRS2 projects are qualifying facilities (QFs) under the Public Utility Regulatory Policies Act of 1978 (PURPA).[1]

Both projects requested interconnection to PacifiCorp's city feeder circuit (5W406) from the Pilot Rock Substation and were designated queue numbers: PRS1 was designated Queue No. 0666 (Q0666); and PRS2 was designated Queue No. 1045 (Q1045). Interconnection for QFs to PacifiCorp's system is subject to regulation by the Commission under PURPA, as well as Oregon's implementing statutes in ORS 758.505 to 758.555. The interconnection study process for PacifiCorp is governed by the Commission's small generator interconnection rules in OAR Chapter 860, Division 82.

[1] Public Utility Regulatory Policies Act of 1978 (PURPA) 16 USC § 824a-*et seq*., Pub L 95-617, 92 Stat 3117.

The purpose of an interconnection study for a small generator is to identify the requirements, including modifications and additions to the utility's system, which will be needed to interconnect a small generator to the utility's system in a safe and reliable manner. The requirements are individualized for the specific small generator's characteristics, the utility's system, and the interconnection situation, and must be reasonable not only with regard to cost, but also with regard to scope and technical standards, as well as nondiscriminatory in application. Sunthurst challenges certain requirements identified in the interconnection studies for PRS1 and PRS2 on these various bases. The relief that Sunthurst primarily seeks regarding the five remaining issues raised in its complaint is to have PacifiCorp remove requirements specified in the interconnection studies, or alternatively, to eliminate or mitigate costs for the requirements.

Sunthurst filed opening testimony and exhibits on December 15, 2020. On February 22, 2021, PacifiCorp filed response testimony and exhibits. The parties agreed to not cross-examine any witnesses and no hearing was held. On March 26, 2021, the parties filed simultaneous opening briefs. On April 13, 2021, the parties filed simultaneous reply briefs.

III. DISCUSSION

A. Overview

Sunthurst acknowledges and accepts that PacifiCorp made several corrections or adjustments to interconnection cost estimates during the course of these proceedings. These corrections and adjustments result in a net reduction of $128,694 to the PRS1 interconnection estimate, and a net reduction of $13,034 to the PRS2 interconnection estimate.[2] Total estimated costs for the interconnection of PRS1 and PRS2 have been reduced from $2,000,000 in early 2020 to approximately $860,000 (excluding approximately $75,000 for telemetry costs still at issue) as of the close of the record for these proceedings.[3] Although most of the changes were identified in PacifiCorp's opening testimony, PacifiCorp later agreed to remove approximately $39,000 for meter costs at the point of interconnection (POI) for PRS1 and PRS2. Sunthurst disputes only one change: PacifiCorp's $19,556 reduction in PRS1 costs for fiber installation, as further discussed in this order. Sunthurst also acknowledges and accepts credits by PacifiCorp for future interconnection engineering and management costs for Sunthurst's PI-111 annunciator panel design (quantified at $6,097.27). Sunthurst indicates that it also made several concessions during negotiations and dropped several issues.

As a result of all the concessions and adjustments, only five of the original issues identified in Sunthurst's complaint are still in dispute, and addressed in this docket. We resolve the five issues on their merits based on the evidence and arguments presented, as further discussed below.

[2] Sunthurst's Opening Brief at 4, fn 1 citing PAC/200, Patzkowski-Taylor-Vaz/42-43.
[3] Sunthurst's Reply Brief at 3, fn 2 citing PacifiCorp's Opening Brief at 12, line 19.

B. Cost Liability for Branch Regulators

1. Overview

PacifiCorp's interconnection studies specify branch regulators as a condition for the interconnection of PRS2. The branch regulators would be installed on two circuit branches at a cost of approximately $180,000.[4] Sunthurst challenges the requirement.

2. Sunthurst's Position

Sunthurst questions whether PacifiCorp demonstrates that "branch regulators are reasonable and necessary to interconnect PRS2,"[5] on the basis that they are not needed for safety or voltage maintenance. PacifiCorp does not assert that system safety requires branch regulators, Sunthurst states; indeed, there is evidence that Circuit 5W406 safely functions without voltage regulation (*e.g.*, Circuit 5W406 operated for at least thirteen days in 2019 without voltage regulation when the regulator control failed).[6] PacifiCorp also does not assert that branch regulators are needed to maintain voltage levels within acceptable ranges for service, Sunthurst states; PacifiCorp testified that: "[v]oltage analyses were completed for both PRS1 and PRS2 and it was determined that ANSI C84.1 Range A voltages can be maintained without the need for the line voltage regulator banks."[7] Sunthurst contends that branch regulators may be needed to redress an existing problem on PacifiCorp's system, noting that during a call on June 9, 2020, PacifiCorp indicated that existing voltages on Circuit 5W406 were then outside of ANSI Range A criteria.[8]

Sunthurst understands that PacifiCorp's primary reason for requiring branch regulators to interconnect PRS2 is to support Conservation Voltage Reduction (CVR). To determine the reasonableness of requiring branch regulators for efficiency reasons, however, the estimated costs and the expected benefits associated with the branch regulators requirement must be compared, Sunthurst observes, yet PacifiCorp did not attempt to quantify such, and provided no evidence that branch regulators would reduce losses.[9] Sunthurst acknowledges the orders cited by PacifiCorp that encourage CVR, but notes that they did not refute the need for economic study of the option, but instead encouraged its measurement and validation.[10] Sunthurst challenges PacifiCorp's repeated claim that PURPA's customer indifference standard means that there can be no system changes. When asked about the specific conditions triggering the need for voltage requirement, PacifiCorp stated that it was needed because of "the inability for the voltage regulator control in the substation to measure load on the feeder to enable the use of Line Drop

[4] *Id*. at 17.
[5] *Id*. at 14.
[6] Sunthurst's Opening Brief at 6, fn 8 citing Sunthurst/400, Beanland/10, lines 11-18.
[7] *Id*.at 7, fn 9 citing Sunthurst/401, Beanland/101 (Response to Sunthurst DR10.2(b)).
[8] Sunthurst's Reply Brief at 11, fn 17 citing Sunthurst/300, Hale/6, lines 18-20.
[9] *Id*. at 9.
[10] *Id*. at 14.

Compensation (LDC) settings."[11] Sunthurst responds, "[t]his standard is not really a standard because we don't know how much load on the circuit is too much for the voltage regulator control."[12] Sunthurst argues that *PacifiCorp's Engineering Handbook 1E.3.1-Distribution Planning Study Guide* (2015) supports Sunthurst's argument that voltage regulators are reasonably required only if economically justified.[13] This document also called for analysis of alternatives which PacifiCorp did not do, Sunthurst protests. Sunthurst further complains about PacifiCorp's documentation of the requirement because PacifiCorp disposed of studies that were conducted when preparing the System Impact Study (SIS) report for PRS2. PacifiCorp indicated that "detailed voltage drop and fault current analysis" for Q0666 and Q1045 is not available because the software used to perform the analysis was removed from Company computers.[14] Sunthurst also cannot determine any consistency regarding when branch regulators are required, noting confinement of the requirement to a small corner of PacifiCorp's Oregon service territory.[15] Although PacifiCorp uses LDC regulation on most feeders across its systems, Sunthurst only found three instances other than PRS2 in 27 Oregon Community Solar (CSP) SIS reports where PacifiCorp specified branch regulators, and two were in Umatilla County and one in the adjacent Wallowa County.[16]

3. PacifiCorp's Position

PacifiCorp states that it currently uses LDC settings on the company's voltage regulator controls to remotely regulate voltage to maintain a defined range (American National Standards Institute (ANSI) standard C84.1 range A), resulting in reduced energy use and system losses, thereby creating a more energy efficient system that lowers costs for customers.[17] As Sunthurst acknowledges, PacifiCorp observes, this process is called CVR, and we encourage its use.[18] Sunthurst does not deny that PacifiCorp uses LDC regulation across its system, PacifiCorp indicates.[19] Moreover, PacifiCorp indicates that LDC is currently used on the feeder that will interconnect PRS1 and PRS2 to implement CVR, and Sunthurst does not contest such. As the determination was already made to use LDC settings to implement CVR on Circuit 5W406 or whether LDC should be used, there is not currently an issue; instead, the issue is identification of requirements to interconnect PRS1 and PRS2 while maintaining current customer service.

---

[11] Sunthurst's Opening Brief at 11, fn 21 citing Sunthurst/401, Beanland/83 (response to Sunthurst Data Request 9.15(a)).
[12] *Id*.
[13] *Id*. at 9-10.
[14] *Id.* at 13, fn 30 citing Sunthurst/401, Beanland/7, lines 32.
[15] Sunthurst's Reply Brief at 16, fn 33.
[16] Sunthurst's Opening Brief at 12, fn 26 citing Sunthurst/400, Beanland/9, lines 1-7.
[17] PacifiCorp's Opening Brief at 14, fn 60 citing PAC/200, Patzkowski, Taylor, Vaz/20.
[18] *Id*. fn 62 (*See*, *e.g.*, *In re Portland Gen. Elec. Co*., *2016 Integrated Resource Plan*, Docket No. LC 66, Order No. 17-386 at 9-10 (Oct 9, 2017); *In re Idaho Power Co. 2014, Annual Smart Grid Report*, Docked No. UM 1675, Order No. 15-053, Apex A at 6-7 (Feb 23, 2015).
[19] PacifiCorp's Reply Brief at 7, fn 18 citing Sunthurst's Opening Brief at 12.

The addition of the PRS2 project at the intended feeder would increase peak load past the level that can be controlled with current LDC settings, PacifiCorp indicates, making CVR capability unavailable, and causing higher prices for customers.[20] For this reason, PacifiCorp argues, the voltage regulators are a necessary and reasonable interconnection cost for PRS2. PacifiCorp performed the voltage studies for PRS2 in 2018, but no longer has them because the vendor stopped supporting the underlying software and PacifiCorp had to remove it from company computers for cybersecurity reasons and to maintain certification with the California Independent System Operator.[21] However, the voltage studies are not needed, PacifiCorp asserts, because voltage regulators are required to continue using LDC settings at all (rather than to just maintain ANSI Range A voltages).

Whether other CSP interconnections require voltage requirements is irrelevant, PacifiCorp explains, because each interconnect request is unique. Countering Sunthurst's assertion that the voltage regulators are necessary to address an existing problem, PacifiCorp explains that the company previously paid for voltage regulators when the company already planned to install them, despite an interconnection request that would have also required regulators; PacifiCorp did so as the company recognized that the request did not trigger the need for voltage requirements, as opposed to the situation here where a request for interconnection triggers the need for branch regulators.

4. Resolution

PacifiCorp's preexisting use of LDC settings to implement CVR on the Circuit 5W406 is not contested here. As PacifiCorp observes, the decision to implement CVR on the Circuit 5W406 was a decision previously made and implemented by the company and is not at issue now. Rather, the issue we address here is whether it is reasonable for PacifiCorp to require branch regulators as a condition for the interconnection of PRS2 in order to maintain the LDC settings needed to maintain CVR and its benefits. We find that it is.

As PacifiCorp also points out, we encourage the utilities to implement CVR due to the system efficiencies and cost savings that it produces. When an interconnection request triggers the need for voltage regulators to maintain the LDC settings needed to implement CVR, we find that it is reasonable for PacifiCorp to require the interconnecting generator to pay for those voltage regulators. It is reasonable to require an interconnecting generator to pay for interconnection costs to ensure that system efficiencies remain in place and customer savings already in effect can continue. As a system-based cost/benefit analysis regarding operating CVR was previously made, we find it unnecessary to redo the analysis. We acknowledge that the trigger for a voltage regulator requirement may be a basic determination that an interconnection will increase peak load past the level that can be controlled with existing LDC settings, thereby making CVR capability unavailable, where CVR was previously implemented.

[20] PacifiCorp Opening Brief at 14.
[21] PacifiCorp Reply Brief at 11, fn 45 citing Sunthurst/401, Beanland/32.

C. Cost Liability for Fiber Optic Link

1. Overview

PacifiCorp requires a high-speed communication link between a recloser relay at PRS1/PRS2 and the company's Pilot Rock substation. Although the need for the high-speed communication is not in dispute, Sunthurst and PacifiCorp disagree about the type of high-speed communication link that should be used.

2. Sunthurst's Position

Sunthurst indicates that there are two high-speed communication link options currently used on PacifiCorp's system: 1) fiber optic cable strung on PacifiCorp poles from PRS1/PRS2 to the substation; or 2) dedicated spread spectrum, high-speed radio link that uses radio signals for communication.[22] Sunthurst points to two examples of community solar projects using radio links,[23] and objects to PacifiCorp's characterization of fiber optic as the "best practice."[24] Asserting that costs are lower with spread spectrum radio, and arguing that claims about the greater reliability of fiber optic cable are speculative, Sunthurst asks that PacifiCorp be directed to use spread spectrum radio, or alternatively, to cover any cost differential for fiber optic cable. While the high-speed communication link at issue would not be installed in the absence of the interconnection of Sunthurst's projects, that interconnection need not be a fiber optic cable, Sunthurst argues.

Sunthurst challenges PacifiCorp's contention that costs for fiber optic cable and spread spectrum radio are comparable. PacifiCorp initially estimated that fiber optic cable costs would be approximately $14,000 (based on an estimate of $60,000 per mile) more than a spread spectrum radio link.[25] With regard to PacifiCorp's revised estimate of $42,000 per mile, Sunthurst asserts that the "estimate is not based on sound methodology, but rather wishful thinking," and contends that PacifiCorp tries to justify a preference for fiber optic cable with an estimate not supported by evidence.[26]

Sunthurst further asserts that PacifiCorp favors fiber optic because it provides system benefits that spread spectrum radio does not—*e.g.*, allowing replacement of existing poles, and facilitating the use of telemetry. As PacifiCorp insists on using a 48-pair fiber-optic cable even though interconnection of Sunthurst's projects likely requires two fibers, PacifiCorp will own the additional fibers and may be able to lease them. Sunthurst argues that the underlying intent of the small generator interconnection rules (OAR 860, Division 82) is to prevent a utility from requiring a small generator to pay for a system upgrade that primarily benefits the utility.

---

[22] Sunthurst's Opening Brief at 15.
[23] *Id*. fn 32 (OCS045 (Sunthurst/403, Beanland/9) and OCS024 (posted online on PacifiCorp's OASIS website)).
[24] *Id*., fn 33 PAC/200, Patzkowski-Taylor-Vax/22, line 21-22.
[25] *Id*. at 16, citing PAC/200 Patzkowki-Taylor-Vaz/24, lines 13-17.
[26] *Id*. at 18, fn 42 Sunthurst/400, Beanland/3, lines 3-16.

3. PacifiCorp's Position

PacifiCorp argues that fiber optic cable links are more reliable than spread spectrum radio which can experience interference from other spread-spectrum users in a particular area. As the purpose of a high-speed communication link between the recloser relay at PRS1/PRS2 and the company's Pilot Rock substation is to facilitate monitoring and managing the company's electrical networks to ensure reliable power, the enhanced reliability of cable links makes using them a utility's best practice, PacifiCorp states, and the company has a nondiscriminatory policy that requires *all* interconnection requests to use fiber optic links. Regardless of whether the fiber optic link installed between the company's Pilot Rock substation and PRS1/PRS2 will provide any benefits to the company's system, that link would not be installed *but for* Sunthurst's interconnection requests, PacifiCorp asserts; for this reason, the interconnection costs for PRS1 and PRS2 are reasonable costs for Sunthurst, not other customers, to pay.

PacifiCorp disputes the claim that the cost of a fiber optic link for PRS1 and PRS2 is more expensive than a radio link. PacifiCorp initially estimated the cost to be approximately $60,000, or $14,000[27] more than the estimated cost of $46,000 for a radio link[28] The company typically estimates $42,000 per mile for a new distribution line, and $60,000 per mile for an existing distribution line; PacifiCorp ultimately amended the estimated cost for Sunthurst by using the $42,000 per mile cost multiplied by 0.9 miles for a total cost of $38,000. OAR 860-082-0035(2) does not require lowest cost, and both estimates are in a comparable range with a radio link, PacifiCorp indicates.

The 48-fiber cable that Sunthurst calls excessive is the company's standard cable used across its system, PacifiCorp indicates. The company uses standard equipment to facilitate more efficient design, procurement, and construction, PacifiCorp states. As PacifiCorp estimates that the special procurement of a 12-fiber count cable would increase installation, Sunthurst's projected savings of approximately $2,376 from using the 12-fiber count cable could be erased. PacifiCorp also refutes Sunthurst's contention that the company may monetize any excess capacity, stating that the company does not anticipate any opportunity for lease revenue.[29]

4. Resolution

Although a utility's best practices and company standards are not insurmountable justifications for interconnection requirements, they merit significant consideration when there is a request to set them aside. Based on the enhanced reliability measures of the technology, PacifiCorp asserts that fiber optic links are a utility's best practice and a company standard that is applied in a nondiscriminatory manner to all interconnection requests.

---

[27] PacifiCorp's Reply Brief at 18.
[28] *Id.*
[29] *Id.* at 21.

Contending that a spread spectrum, high-speed radio link can be used and may be less expensive than a fiber optic link, Sunthurst asks us to direct PacifiCorp to allow the use of spread spectrum radio as the communication link between the recloser relay at PRS1/PRS2 and the company's Pilot Rock substation. We find, however, that reducing Sunthurst's interconnection costs by an uncertain amount of money is insufficient justification for setting aside a standard that appears reasonable and justified to facilitate reliable power for all customers. We also note that Sunthurst fails to undermine PacifiCorp's credible claims that a fiber optic link is technologically more reliable than spread spectrum radio.

D. Liability for Telemetry-Related Costs

1. Overview

PacifiCorp uses telemetry to monitor, in real time, the status of componentry on its electrical system. A remote terminal unit (RTU) gathers and communicates project data (MW, MVAR, etc.) when telemetry is installed at a distributed energy resource (DER). PacifiCorp specified telemetry for PRS2, but not PRS1.

In the initial Facilities Report for PRS2, telemetry was a principal cost. Sunthurst asked PacifiCorp to eliminate the telemetry requirement for PRS2 and PacifiCorp agreed to remove over $525,000 in estimated costs for PacifiCorp-owned telemetry equipment, but did not remove potential costs to install telemetry equipment on Sunthurst's facilities. Sunthurst objects to these remaining costs.

2. Sunthurst's Position

Sunthurst argues that OAR 860-082-0070(2) controls on this issue, meaning that PacifiCorp is prohibited from imposing any charges related to telemetry on Sunthurst for either PRS1 or PRS2, as each facility is under 3 MW.[30] This rule is inapplicable only if the exception in OAR 860-082-0070(3)(b) is effective,[31] which it is not for PRS1 and PRS2, Sunthurst explains. Sunthurst asks us to direct PacifiCorp to either not charge or reimburse for any and all telemetry charges.

PacifiCorp's attempt to apply OAR 860-082-0025(4) is strained, Sunthurst contends. Sunthurst analyzes the provision in context of its last sentence of the rule's text, which PacifiCorp does not address, and argues that the rule provides that the small generator interconnection rules do not apply when multiple small generator facilities having a total nameplate capacity exceeding 10 MW are connected at a single point of

[30] Sunthurst's Opening Brief at 25, citing OAR 860-08-0070(2) ("Except as provided in subsection 3(b), a public utility may not require an applicant or interconnection customer with a small generator facility with a nameplate capacity of less than three megawatts to provide or pay for the data acquisition or telemetry equipment necessary to allow the public utility to remotely monitor the small generator facility's electric output.").
[31] *Id*.

interconnection.[32] As the combined nameplate capacity of PRS1 and PRS2 is well under 10 MW, the provision does not apply. In any case, Sunthurst argues, combining PRS1 and PRS2 is not reasonable when their interconnection applications were made more than three years apart.

Sunthurst also challenges the appropriateness of PacifiCorp relying on Policy 138, as revised on December 20, 2020. It is unfair that PacifiCorp did not advise Sunthurst of Policy 138's application prior to its brief, Sunthurst notes.

3. PacifiCorp's Position

PacifiCorp agrees that OAR 860-082-0070 generally prohibits a utility from requiring telemetry for projects that have a nameplate capacity of less than 3 MW, but notes that this rule must be read in context of all Commission-approved interconnection rules and policies. Because the applicant proposes to interconnect multiple generator facilities at a single point of interconnection, OAR 860-082-005(4) applies, and directs that the interconnection request be evaluated based on total nameplate capacity.[33] The company's Interconnection Policy 138 is consistent with these rules, PacifiCorp indicates, by requiring telemetry if multiple generating facilities exceed 3 MW and use a single POI.

While PRS1 and PRS2 are each under 3 MW, they have the same POI and a combined nameplate capacity of 4.97 MW, PacifiCorp states. For this reason, PacifiCorp argues, they should be jointly evaluated as a single 4.97 MW facility under the Commission's rules and Policy 138. Nevertheless, PacifiCorp agreed not to require Sunthurst to pay the costs associated with installing telemetry equipment on PacifiCorp's system, and removed over $525,000 from the cost estimates for the interconnection of PRS1 and PRS2.[34] However, should PacifiCorp install the telemetry equipment, PacifiCorp asserts that Sunthurst should pay any costs to install equipment on Sunthurst's facilities that would enable the installation of the telemetry equipment.

4. Resolution

OAR 860-082-0025(4) addresses the interconnection of multiple generator facilities at a single POI. The first and second sentences of the provision stand on their own, we find; to read the second sentence as Sunthurst suggests, it would be necessary to assume language not there—*i.e.*, an initial phrase such as "for purposes of determining whether the small generator interconnection rules apply, the public utility must evaluate applications based on the combined total nameplate capacity * * *."

---

[32] Sunthurst's Reply Brief at 22-23 citing OAR 860-08-0025(4) ("If the combined total nameplate capacity exceeds 10 megawatt, then the small generator interconnection rules do not apply.").
[33] *Id.*, citing OAR 860-082-0025(4) (when "an applicant proposes to interconnect multiple small generator facilities to [a] public utility's transmission or distribution system at a single point of interconnection," the public utility "must evaluate based on the combined total nameplate capacity.").
[34] PacifiCorp's Reply Brief at 21, fn 105 citing PAC/100, Bremer/10-11.

The first sentence directs a utility to jointly evaluate interconnection applications at the same POI. As PRS1 and PRS2 will have the same POI, the provision applies, and we find that PacifiCorp is correct to jointly evaluate their interconnection applications with regard to the system impact of the total energy, a nameplate capacity of 4.97 MW, that will flow through the POI. We note that the provision does not address the timing of the interconnection applications. We conclude that despite the three-year interval between applications, it is appropriate to jointly evaluate interconnection applications at the same POI when the opportunity presents itself; for this reason, we disagree with Sunthurst that OAR 860-082-0070(2) controls.

E. Cost Liability for High-Side Project Meters

1. Overview

The parties disagree about where the project meters should be sited. Sunthurst seeks permission to site meters on the "low side" of the transformer. PacifiCorp contends that metering must be done on the "high side" of the transformer, with the only exception being for Community Solar Projects less than 360 kilowatts.

2. Sunthurst's Position

The "low side" refers to the lower voltage on the DER side of the power transformer that interconnects with the PacifiCorp distribution system, Sunthurst states.[35] Arguing that low-side metering is less expensive, Sunthurst requests that we order PacifiCorp to: 1) allow low-side metering for the PRS1 and PRS2 projects; or 2) pay the incremental cost difference between metering on the high and low sides.

Sunthurst cites the 2016 edition of the *PacifiCorp Electric Service Requirements* manual as evidence that low-side metering can be used for 480V services up to 4,000 amps, about 3,300kW/kVA in capacity, and therefore for PRS1 (1,980kW) and PRS2 (2,900kW).[36] Sunthurst also identifies two instances during 2018 where PacifiCorp permitted solar generators similar in size to PRS1 and PRS2 to use low-side metering. In one instance, two adjacent 898 kW net metering installations (NMQ0032 and NMQ0033) were interconnected to PacifiCorp's Dorris substation in Dorris, California.[37]

In the other instance, two small, adjacent, generating facilities owned by PacifiCorp (Panguitch Solar and Panguitch Storage) are interconnected with the company's system in Utah by low-side metering. Sunthurst further explains that the 0.65 MW Panguitch Solar Project (Q0918) and the 1.00 MW Panguitch Storage Project (Q0919) are similar to PRS1 and PRS2, as PacifiCorp admits, being adjacent, interconnecting to a 12.5 kV distribution line at a common point, and having a meter on the high side (in addition to

[35] Sunthurst's Opening Brief at 29.
[36] *Id*. at 30-31, fn 71 citing Sunthurst/400, Beanland/18, line 16-19.
[37] *Id*. at 31, fn 74 citing Sunthurst/400, Beanland/16, lines 3-7.

the meter on the low side for each) that measures combined output at the change of ownership point (as is also specified for PRS1/PRS2).[38] Sunthurst argues that the Panguitch Solar/Storage projects demonstrate the reasonableness of specifying low-side meters for each of two adjacent DERs that interconnect at a common point along with a third meter on the high side that measures combined output at the change of ownership point. This third meter eliminates concerns about inaccuracies, Sunthurst indicates. The only significant difference between the PRS1/PRS2 projects and the Panguitch Solar/Storage projects is ownership, Sunthurst asserts, which is not a proper basis for dissimilar treatment.

For DERs like PRS1 and PRS2, Sunthurst asserts that low-side metering is generally less expensive.[39] The low-side of the power transformer is 480V; since utility meters can generally accept 480V input voltages directly at the meter, the need for a transformer to step down voltage is eliminated, Sunthurst explains. Moreover, the transformers required for low voltage metering are rated for 600V usage, making them simpler and less expensive to implement than transformers needed on the high side, particularly since they typically can be installed on the ground and do not require a pole. Sunthurst testifies that using low-side metering for PRS1 and PRS2 could result in savings of up to $20,000.[40] Arguing that low-side metering is an easy way to improve the economics for community solar projects in Oregon, Sunthurst notes that when approving low-side metering for generators that are 360 kW or less, we asked utilities to further explore accommodation of non-standard metering for community solar projects.[41]

Sunthurst rebuts PacifiCorp's contention that Sunthurst did not timely raise concerns about high-side metering. Although Sunthurst initially raised concerns about high-side metering in a letter to PacifiCorp, dated July 23, 2020, and in the complaint,[42] Sunthurst indicates the issue was dropped in opening testimony in reliance on PacifiCorp's statement "that 'no generator interconnecting today would be allowed to use a low-side metering configuration.'"[43] PacifiCorp's opening testimony regarding the Panguitch projects, however, led Sunthurst to investigate the issue more, and to address it in reply testimony, Sunthurst explains.

3. PacifiCorp's Position

PacifiCorp indicates that the company's standard metering practice for distributed generators such as PRS1 and PRS2 is to install meters on the high-side of the transformer

[38] *Id*. at 32-33, fn 81 citing PAC/200, Patzkowski-Taylor-Vaz/7, lines 17-19 ("PacifiCorp's merchant function submitted and ultimately constructed two small generating facilities (Q0918 and Q0919) in Utah with essentially the same configuration as PRS1 and PRS2.").
[39] *Id*. at 30.
[40] *Id*.
[41] Sunthurst Reply Brief at 27, fn 59 citing Order 19-392, Appendix A at 13-14 ("continue to explore additional one-off interconnection enhancements").
[42] *Id.* at 25.
[43] *Id*. fn 55 citing Sunthurst/401, Beanland/29.

where the company takes ownership of the electricity. High-side metering is consistent with current standard utility practice, a fact that Sunthurst does not dispute, PacifiCorp asserts. Low-side metering requires estimation of transformer losses, PacifiCorp indicates, causing inaccurate metering. PacifiCorp indicates that this is the reason that low-side metering is contrary to standard utility practice. We acknowledged such, PacifiCorp states, when we approved using low-side metering only in limited circumstances—*i.e.*, for small CSP generators that are less than 360 kW because losses are less material.[44]

PacifiCorp complains that Sunthurst denied PacifiCorp a full opportunity to address Sunthurst's claims, as Sunthurst's opening testimony on the issue was minimal, with comments about the issue made only in passing.[45] Reply testimony offered selective citations to the company's discovery responses in order to suggest that low-side metering is common across the company's system, PacifiCorp observes.[46] Sunthurst ignored the company's discovery response that provided a comprehensive census of low-side metered generators on its systems showing that except for one project, all PacifiCorp-owned renewable generators with low-side metering were installed between 1895 and 1962.[47]

PacifiCorp challenges the pertinence of Sunthurst's two examples where low-side metering was approved for distributed generation resources, distinguishing each from PRS1 and PRS2. PacifiCorp argues that Sunthurst's discussion of the NMQ0032 and NMQ0033 projects is inapposite as they are net metering projects and PacifiCorp placed the meter on the low side because the company takes ownership of the generation there.[48] Although Q0918 and Q0919 are not net metering projects, they are not the same as PRS1 and PRS2 for the purposes of low-side metering as low-side metering was the only viable option for them, PacifiCorp explains.[49]

Finally, PacifiCorp challenges Sunthurst's estimate that low-side metering would reduce costs by approximately $20,000. PacifiCorp asserts that Sunthurst could not substantiate that number, and revised the estimate to about $6,000, excluding labor costs.[50]

4. Resolution

Sunthurst does not dispute that high-side metering is a current standard for PacifiCorp and the utility industry. Rather, Sunthurst argues that low-side metering can, and should be done, for PRS1 and PRS2 to improve the projects' economics. Indeed, Sunthurst observes that allowing more low-side metering for community solar projects could

---

[44] PacifiCorp's Opening Brief at 28-29, citing Order No. 20-122 and fn 152 citing Order No. 19-392, App'x A at 13.
[45] *Id*. at 29, fn 155 citing Sunthurst/200, Beanland/33.
[46] PacifiCorp's Reply Brief at 23.
[47] *Id*.
[48] PacifiCorp's Opening Brief at 30.
[49] *Id*.
[50] PacifiCorp's Reply Brief at 24, fn 119 citing PAC/300 at 9.

generally improve the economics of these projects, and noted encouragement of exploration of enhanced interconnection options for CSP generators in Order No. 19-392.

While the Staff Report that was attached to Order No. 19-392 (entered in docket UM 1930) mentioned Staff working "with parties to continue to explore avenues for CSP generators and utilities to collaboratively consider additional one-off interconnection enhancements," the Staff Report envisioned ongoing collaborative work in conjunction with a request for information for third-party expert interconnection study review services and docket UM 2032 proceedings. Sunthurst asking on its own initiative that we make an exception and allow low-side metering for PRS1 and PRS2, two specific CSP generators that are sized well above the 360 kW limit we set in Order No. 19-392 for low-side metering for CSP generators, does not fall under the study and collaborative work anticipated by Staff in docket UM 1930

As we discussed above, a default standard for the utility industry and an individual utility should not be set aside easily. In this case, that bar is particularly high because we recently determined that the high-side metering standard should only be set aside for CSP generators less than 360 kW. Although PacifiCorp does not challenge the feasibility of low-side metering for PRS1 or PRS2, the company effectively explains why high-side metering is the company and industry standard, and undercuts the relevance of the two examples offered by Sunthurst as evidence that PacifiCorp has already allowed low-side metering for distributed generation resources similar to PRS1 and PRS2. Sunthurst also failed to clearly establish the amount of cost savings that would be associated with low-side metering for PRS1 and PRS2, with savings potentially being as low as $6,000 (plus some labor costs). As we held above, we find that uncertain cost savings for individual projects do not warrant setting aside a utility and industry standard.

F. Reasonableness of the Eight Percent Capital Surcharge

1. Overview

OAR 860-029-0010(9) allow utilities to charge interconnection customers for construction overhead expenses that are associated with the interconnection of a generation resource but cannot be directly charged.[51] PacifiCorp applies a capital surcharge, on a monthly basis, to all capital projects to apportion an appropriate amount of administrative and general costs that cannot be directly charged under FERC rules and the United States Generally Accepted Accounting Principles (GAAP). The capital surcharge percentage for projects with total costs of $10 million or less is 8 percent. Application of this 8 percent capital surcharge adds approximately $65,000 to estimated interconnection costs for PRS1 and PRS2.[52] Sunthurst challenges the reasonableness of the 8 percent capital surcharge.

[51] *See* OAR 860-029-0010(9).
[52] Sunthurst's Opening Brief at 35.

2. Sunthurst's Position

Sunthurst's opening testimony raises concerns that we never approved the 8 percent capital surcharge or its underlying methodology, and that Sunthurst's expert witness could not verify the surcharge's inclusion in the calculation of avoided costs.[53] Conducting additional discovery on the matter and receiving responses from PacifiCorp after the close of testimony, Sunthurst separately filed Exhibits 500 and 501, and addressed them in briefs. Based on these exhibits, Sunthurst contends that the capital charge is not equally applied due to exceptions that only benefit PacifiCorp's projects. Arguing that the capital surcharge should be a standardized rate, Sunthurst contends that the methodology should have been filed with PacifiCorp's standard Oregon small generator interconnection agreement for vetting and approval; Sunthurst asks that the capital surcharge not be applied until this is done.

Sunthurst indicates that PacifiCorp applies exceptions to the capital surcharge as follows: 1) turn-key transmission projects are charged one-fourth the surcharge rate, with projects over $10 million capped at 2.5 percent of the total cost; and 2) turn-key generation facilities are charged one-fourth the surcharge rate, capped at $500,000. Sunthurst's discovery indicates that PacifiCorp completed 16 projects over $10 million in 2019, spending a total cost of $873.6 million, with nine of those projects being windmill repowering projects having a total cost of $707.2 million (81 percent of the total amount spent on the 16 projects). The nine wind power projects were aggregated to apply the $500,000 cap despite not all not being located adjacent to one another. PacifiCorp spent $707 million to repower nine of its own generation projects in 2019. The total capital surcharge was $773,945. Dividing the total surcharge amount by the total cost indicates that the capital surcharge rate was only 0.109 percent.

Sunthurst contends that PacifiCorp's capital surcharge does not conform to FERC's Uniform System of Accounts (USOA) due to the identified exceptions which make the surcharge arbitrary.[54] Sunthurst also argues that the arbitrary nature of the exceptions are inequitable and discriminatory, in violation of FERC Rule 292.306(a) and OAR 860-029-0060, as PacifiCorp alone benefits from the exceptions, while all other projects pay a set 8 percent charge.

3. PacifiCorp's Position

The current capital surcharge applied to all capital projects, with a total cost of less than $10 million, across the company's six-state service territory, including to its own such projects, is 8 percent, PacifiCorp states.[55] PacifiCorp annually calculates this surcharge by dividing total construction support costs by the direct capital spending for the year.[56] PacifiCorp attests that this methodology is consistent with GAAP and the USOA, and

[53] Sunthurst/100, Hale/11.
[54] Sunthurst's Opening Brief at 40, citing Code of Federal Regulations 18, Part 101, Electric Plant Instructions 4 (A-C).
[55] PacifiCorp's Reply Brief at 12, fn 55, citing PAC/200, Patzkowski, Taylor, Vaz/37.
[56] *Id*., fn 56, citing PAC/200, Patzkowski, Taylor, Vaz/37.

argues that Sunthurst fails to provide any contravening evidence. Prior to performing this calculation, the company reviewed each cost center to verify and update amounts included in the capital surcharge assessment, with comparisons to the prior year and analysis of any organizational or role changes. PacifiCorp asserts that this rigorous process is not arbitrary. PacifiCorp further explains that capital surcharges are included in ratemaking, and resource cost assumptions used in the company's Integrated Resource Plan (IRP). Moreover, Commission-approved avoided cost prices include the same capital surcharge such that QFs are compensated for avoided construction overhead costs. Sunthurst's initial claims to the contrary are wrong, PacifiCorp asserts. Granting Sunthurst's requested relief would result in significant, unwarranted changes to PacifiCorp's established accounting practices across its six-state service area, PacifiCorp argues.

PacifiCorp rebuts Sunthurst's contention that the 8 percent capital surcharge is discriminatorily applied to favor the company's projects, pointing out that Sunthurst wrongly tries to compare the capital surcharge for large capital projects over $10 million to the capital surcharge for projects that are less than $10 million, such as PRS1 and PRS2.[57] PacifiCorp also notes that the two surcharges (for projects above and below $10 million) are calculated differently and explains that it should not be surprising that the surcharge percentage for a large capital project, such as a new natural gas-fired generating plant, is lower due to the significant involvement of outside contractors (that charge their own capital surcharges) rather than company personnel, PacifiCorp notes. Although the company did not have a proper opportunity to address Sunthurst's complaints that PacifiCorp discriminatorily treated repowering as a single project, PacifiCorp notes that there is nothing prohibiting PacifiCorp from doing so for surcharge purposes.

4. Resolution

We find that the 8 percent seems to be calculated on a reasonable basis, and decline to prohibit PacifiCorp from issuing this charge. It is not contested that: 1) our rules permit a utility to charge for overhead expenses incurred to interconnect a generation facility; 2) PacifiCorp will incur overhead expenses to interconnect PRS1 and PRS2; and 3) PacifiCorp generally uses the same capital surcharge methodology across its six-state service area. Although Sunthurst initially questioned whether inclusion of the 8 percent capital surcharge is in avoided costs, the concern was addressed by PacifiCorp's explanation that it is.

There is confusion regarding application of the 8 percent capital surcharge. PacifiCorp effectively rebuts Sunthurst's contention that the 8 percent capital surcharge is discriminatorily applied to favor the company's projects by explaining that the 8 percent capital surcharge only applies to projects that are less than $10 million, which includes PRS1 and PRS2, and not to projects that are more than $10 million, such as PacifiCorp's

[57] PacifiCorp's Opening Brief at 20, fn 95 citing Sunthurst/300, Hale, 10-11.

repowering projects. We do not find a basis here to determine that this division or treatment is unreasonable.

Sunthurst's remaining concern is that we have specifically not approved the 8 percent capital surcharge or its underlying methodology. We agree with PacifiCorp, however, that capital surcharges are included in numerous ratemaking, resource evaluation, and avoided cost rate proceedings. The fact that the 8 percent capital surcharge and its underlying methodology have never been specifically identified as needing individualized review does not mean that it is invalid. We decline to direct that it not be applied until further reviewed.

IV. ORDER

IT IS ORDERED that the complaint brought by Sunthurst Energy, LLC, against PacifiCorp, dba Pacific Power, is dismissed with prejudice.

Made, entered, and effective Sep 15 2021.

Megan W. Decker
Chair

Letha Tawney
Commissioner

Mark R. Thompson
Commissioner

A party may request rehearing or reconsideration of this order under ORS 756.561. A request for rehearing or reconsideration must be filed with the Commission within 60 days of the date of service of this order. The request must comply with the requirements in OAR 860-001-0720. A copy of the request must also be served on each party to the proceedings as provided in OAR 860-001-0180(2). A party may appeal this order by filing a petition for review with the Court of Appeals in compliance with ORS 183.480 through 183.484.