

**PUBLIC UTILITY COMMISSION OF OREGON
STAFF REPORT
PUBLIC MEETING DATE: May 16, 2023**

REGULAR X CONSENT EFFECTIVE DATE May 17, 2023

DATE: May 9, 2023

TO: Public Utility Commission

FROM: Ryan Bain

THROUGH: Caroline Moore and Scott Gibbens **SIGNED**

SUBJECT: OREGON PUBLIC UTILITY COMMISSION STAFF:
(Docket No. UM 2000)
Proposal to Establish an Interim Solar + Storage Standard Avoided Cost Rate.

STAFF RECOMMENDATION:

Staff recommends that the Commission adopt Staff's proposal for a solar plus storage standard avoided cost rate and direct Portland General Electric (PGE), Idaho Power Company (IPC), and PacifiCorp (PAC) to each file solar plus storage standard avoided cost rates by July 31, 2023, using the methodology and process described in Attachment 1.

DISCUSSION:

Issue

Whether the Oregon Public Utility Commission (Commission) should adopt Staff's proposal and methodology to calculate a standard avoided cost rate for solar plus storage qualifying facilities (QFs) and direct PGE, IPC, and PAC to each file standard avoided cost rates for solar plus storage QFs by July 31, 2023, using the methodology and process described in Attachment 1.

Applicable Rule or Law

18 C.F.R. § 292.304(c) requires the Commission to establish standard rates for purchase from QFs 100 kW and smaller and gives the Commission discretion to

establish standard rates for larger QFs. The Commission currently requires that utilities offer a standard rate to solar QFs three MW and smaller.

18 C.F.R. § 292.304(c)(3)(a) specifies that standard rates may “differentiate among qualifying facilities using various technologies on the basis of the supply characteristics of the different technologies.” Currently, the Commission requires utilities to offer different standard rates based on the capacity contributions to peak of four different resource types. The different resource types are fixed solar, tracking solar, wind, and baseload.

Analysis

Background

On February 14, 2019, the Commission opened Docket No. UM 2000 to tackle PURPA implementation issues related to avoided costs, contracts, interconnection, and planning. In November 2022, Staff initiated the last phase of this investigation focused on avoided cost methodology and planning for QFs. In scoping this last phase, QF stakeholders indicated that establishing a solar plus storage standard avoided cost rate was an important near-term priority. In response, Staff initiated an expedited process to establish an interim solar plus storage standard avoided cost rate. The process began with parties circulating written proposals for the methodological changes needed to establish a solar plus storage standard rate, which was followed by a workshop. Based on this input, Staff circulated an initial proposal for establishing an interim solar plus storage standard avoided cost rate. Parties provided feedback in a workshop and Staff’s final recommendations are provided in Attachment 1.

Participants in this process included PGE, IPC, PAC, the Community Renewable Energy Association (CREA), Northwest & Intermountain Power Producers Coalition (NIPPC), The Renewable Energy Coalition (REC), NewSun Energy, and the Oregon Solar + Storage Industries Association (OSSIA).

Staff appreciates the amount of progress made in a short amount of time through collaboration. The remainder of this memorandum summarizes the elements of Staff’s final proposal and explains Staff’s perspective on key elements that remain contested.

Overview of Staff's Proposal

Staff's proposal for an interim solar plus storage rate relies on the existing methodology for the standalone solar rate with several key changes required to capture the capacity provided by the inclusion of storage. The interim rate is intended to provide administrative simplicity, while sending meaningful signals for QFs to bring more value to the system. Staff recognizes that solar plus storage technology is somewhat novel and aims to provide a reasonable path forward to allow this technology to start delivering benefits to ratepayers with minimal risk. This expedited approach may not reflect the complexity of pricing methods that will be considered in future phases of UM 2000 or the range of operational opportunities that storage technologies could provide. The changes needed to the existing standalone solar methodology proposed by Staff are described in detail in Attachment 1 and summarized below.

Table 1. Summary of Key Changes to Standalone Solar Methodology and Process

Element	Standalone Solar Methods	Solar Plus Storage Methods
QF Eligibility Requirement	Up to 3 MW solar resource	Up to 3 MW solar resource; 4:1 – 1:1 solar to storage ratio; 2 – 4 hour battery
Proxy QF Resource	3 MW solar resource modeled in IRP	3 MW solar resource modeled in IRP with 1:1 storage ratio and 4-hour battery
Capacity Contribution	LOLP/ELCC Model based on expected generation	LOLP/ELCC Model based on expected generation and storage dispatch during premium peak hours when possible
Peak Hours	6 AM – 10 PM Mon-Sat	4 Hours/Day per month for each year of the contract based on LOLP need
Capacity Payment	\$/MWh payment for generation in On-peak hours after sufficiency period	\$/MWh payment for generation in Premium Peak hours after sufficiency period
Peak Hour Update Process for Existing QFs	None	May file to update Premium Peak hours for new and existing contracts 30 days following IRP or IRP Update acknowledgement
Availability	No cap	50 MW Tranche
<p><i>Note: Many elements are not listed above because they are not proposed to change from current practices for standalone solar. This includes elements such as the May 1 and post-IRP updates, energy pricing methods, avoided capacity resource identification, and sufficiency/deficiency period delineation. To the extent that parties identify further changes when rates are filed in July 2023, Staff will seek to make recommendations that balance the desire for QFs to incorporate storage with the risks these novel price streams may pose to ratepayers.</i></p>		

Staff's proposal focuses on compensation for the additional capacity provided by storage in hybrid resources, as well as, associated eligibility and update requirements to strike a reasonable balance. Under Staff's proposal, ratepayers will only pay for capacity provided during four premium peak hours per day. These premium peak hours

are determined by identifying the four highest loss of load probability (LOLP) hours in each month for the respective utility, and are designed to properly signal the QF to dispatch in alignment with the utility's capacity needs. By focusing on four hours a day, and compensating for energy delivered during those same four hours, Staff's proposal addresses issues surrounding dispatchability, accuracy, valuation, and proper compensation. The full details of Staff's recommendations are described in Attachment 1 and summarized below.

- **QF Eligibility Requirements:** QFs up to 3MW of solar capacity with collocated storage with a capacity between 25 and 100 percent of the capacity of the solar resource and two to four hours in duration are eligible.
- **Premium Peak Hour Determination:** Utilities will select four hours each month that represent the hours of greatest capacity need based on the month's LOLP. For months with negligible LOLP, the utility may either interpolate the hours of capacity need between months with some LOLP, or they may determine the premium peak hours based on expected market prices.
- **Capacity Contribution Methodology and Proxy QF Resource Assumptions:** Utilities will model the ELCC of a proxy solar plus storage resource of 3MW solar capacity and 3MW storage capacity of four hour duration.
- **Payment Methodology and Dispatch:** QFs will receive capacity payments under a volumetric rate (\$/MWh) for delivering during premium peak hours. Dispatch will be controlled by the QFs and energy payments are made following existing methodology for other resource types.
- **Capacity Available in Tranches:** Except for projects 100 kW or smaller in size, no standard interim contracts are allowed after a utility has reached 50 MW total capacity of solar plus storage QF using interim standard rates until the Commission conducts a review of the interim rate.
- **Contractual Provisions:** Staff's proposal requires no amendments to standard contracts, but recognizes that new definitions and/or otherwise immaterial but germane contractual provisions may need be needed in order to implement Staff's proposal.
- **Initial Implementation:** Staff proposes that each utility file a standard solar plus storage avoided cost rate by July 31, 2023 for approval at a public meeting by September 21, 2023.
- **Ongoing Implementation:** Utilities will update standard solar plus storage rates, including premium peak hours, alongside other standard rates during annual May 1 updates and post-IRP updates. For QFs with existing contracts for solar plus storage interim rates, the utilities may request updates to the premium peak hours following acknowledgement of an IRP or IRP Update. The updates must be justified by IRP analysis.

Outstanding Issues

The path to Staff's proposal was a collaborative process resulting in many areas of agreement among stakeholders. However, parties did not reach agreement on a limited set of important elements. Staff describes these outstanding issues and explains the balance struck by its final recommendations below.

Staff also notes that, initially, PAC and PGE questions whether a reasonable rate could be established on an expedited basis. Following that, both utilities provided methodology proposals and engaged in constructive discussion about reasonable interim methods. For the purposes of this memorandum, Staff focuses on disputed elements of Staff's recommendations and not the establishment of a solar plus storage standard rate generally.

Eligibility/Configuration. Staff recommends the QFs have flexibility to configure their storage within a limited range. The utility parties propose to limit eligibility for the standard solar plus storage rate to QFs with batteries of the same duration and solar to storage ratio as the proposed proxy resource. The utilities argue that limiting QFs to the proxy resource configuration is needed to avoid the risk of overcompensation if the QF's capacity contribution differs from the proxy QF. Staff shares the utilities' desire to mitigate risk to ratepayers, but believes that the recommended capacity payment structure allows QFs to make economic decisions about project design within a limited range of configurations while protecting ratepayers from overpaying. This is because volumetric payments during a limited number of high value hours will provide a reasonably smaller capacity payment for QFs with smaller batteries. The flexibility of Staff's recommendation is also balanced by the 50 MW availability tranche and the ability to disaggregate and adjust premium peak hours during the contract.

Updating Premium Peak Hours. Staff recommends allowing the utility to update the Premium Peak hours for both new and existing QFs following an acknowledged IRP or IRP update. The benefit of energy storage is its ability to shift energy output to the times of greatest need. As the utilities have argued, the times of greatest capacity need are likely to change over the course of a QF's contract as the utility's overall resource mix and demand evolves. CREA, NIPPC, and REC recommend against allowing the premium peak hours to change over the course of the standard contract, citing challenges with uncertain revenue if premium peak hours are moved to key solar generation hours. The QFs assert that allowing the peak hours to change over the course of the contract is inconsistent with the requirement of 18 C.F.R. § 292.304(d) that QFs have the option to provide energy or capacity pursuant to a legally enforceable obligation for the delivery of energy or capacity over a specified term, based on avoided costs calculated at the time the obligation is incurred.

Staff does not believe the QFs' legal objection is supportable because the price of capacity and energy will be determined at the time of contracting, as required by FERC's regulation. Allowing the hours to vary over the course of the contract will not alter these aspects of the prices established at the time of contracting.

Furthermore, the underlying rationale for creating a specific standard rate for solar plus storage QFs is that the QFs can control the dispatch of the battery. Assuming QFs are in fact able to control the dispatch of the battery, changing the peak hours over the course of the contract does not impact the QFs' ability to earn the contracted prices over the course of the contract. The Commission, Staff, and stakeholders will have the opportunity to examine any proposed changes to premium peak hours and ensure that QFs are not adversely impacted.

Staff is open to QF parties making proposals to limit the extent to which hours can be shifted when the utilities file rate proposals in July. This will allow consideration of the actual premium peak hours proposed, their overlap with daytime hours, and the differential between premium peak and off-peak prices.

50 MW Cap on Capacity under the Interim Rate. As the interim solar plus storage standard rate is designed with administrative simplicity and efficiency in mind, and in recognition of the use of novel technology and capacity payment structures, Staff proposes an initial 50 MW cap per utility on new QFs contracted under the interim standard rate. Once a utility has reached 50 MW of contracted standard rate solar plus storage capacity on its system, the utility will not be required to offer the solar plus storage standard rate until a review has been completed by the Commission. This standard rate availability limit does not apply to QFs up to 100 kW.

This provision is supported by the utility parties and conditionally supported by three of the QF parties, CREA, NIPPC, and REC. OSSIA and NewSun Energy oppose this provision, arguing it is not necessary because any infirmities with the rate can be corrected in the pending investigation of standard rates in future phases of UM 2000.

Given the trade-offs with the expedited process to establish an interim rate, Staff believes the protection of the 50 MW cap is warranted. Staff notes that solar plus storage QFs should not be materially harmed by the cap because they would retain the ability to negotiate a contract that takes into account the value of storage even if the cap is triggered.

Staff believes the potential risks of contracts with 100 kW facilities at the interim solar plus storage rate is not so material as to require application of the 50 MW cap.

Conclusion

Staff's approach to establishing an interim solar plus storage standard avoided cost rate, as outlined in Attachment 1, strikes a reasonable balance in its aim of encouraging QFs to provide more system value through the use of storage technology without overburdening ratepayers. This proposal provides flexibility to interested QF parties of varying configurations, while requiring flexibility on their part in allowing premium peak hour updates to best utilize these novel storage resources.

PROPOSED COMMISSION MOTION:

Adopt Staff's proposal and direct PGE, IPC, and PAC to file standard avoided cost rates by July 31, 2023, using the methodology and process described in Attachment 1.

Attachment 1 - Staff's Updated Proposal for the Phase 0 Interim Standard Solar Plus Storage Rate in UM 2000

QF Eligibility Requirements

The standard interim solar plus storage rate will be available to new QFs utilizing solar plus collocated battery storage with a capacity of up to three MW AC measured in accordance with Docket No. AR 631, OAR 860-029-0045(4).¹ The storage facility must only be charged by the on-site solar resource and be collocated with the generating solar resource behind the point of interconnection. Staff does not propose limitations on whether the storage resource is connected on the AC or DC side of the QF's inverter(s), so long as it meets the other criteria. The storage resource must also be no less than 25 percent and no greater than 100 percent of the capacity of the generating solar resource. For example, a three MW solar resource may have anywhere between a 0.75 MW to a three MW storage resource. Finally, the battery may be of no less than two hours and no more than four hours in duration.

Premium Peak Hour Determination

Four daily 'premium peak' hours per month will be set by each utility and determined so as to coincide with each month's four hours with the greatest loss of load probability (LOLP). For months with no LOLP, the utility may choose to interpolate the premium peak hours between months with some LOLP probability or may otherwise set the premium peak hours based on expected market prices. Following acknowledgement of an Integrated Resource Plan (IRP), or IRP Update, premium peak hours may be updated. These updates will apply to new and existing QFs on the interim standard rate. While changing the premium peak hours will in no way alter the capacity payment available to a contracted QF, these updates will keep the QF aligned with the utility's greatest capacity needs. Additionally, the four premium peak hours per day do not have

¹ OAR 860-029-0045: Eligibility for Standard Avoided Cost Prices and Purchase Agreements

(1) Solar qualifying facilities with a Nameplate Capacity Rating of 3 MW and less, and all other qualifying facilities with a Nameplate Capacity Rating of 10 MW and less, are eligible for standard avoided cost prices.

(2) All qualifying facilities with a Nameplate Capacity Rating of 10 MW and less are eligible to enter into a standard power purchase agreement.

(4) The determination of Nameplate Capacity Rating for purposes of determining whether a qualifying facility meets the size criteria in sections (1) and (2) is based on the cumulative Nameplate Capacity Rating of the qualifying facility seeking the standard avoided cost prices or power purchase agreement and that of any other Facilities owned by the same person(s) or affiliates(s) located on the same site.

to be contiguous, but they may not constitute more than two separate periods of premium peak hours per day.

Capacity Contribution Methodology and Proxy QF Resource Assumptions

To determine the capacity contribution of a representative solar plus storage proxy resource, the respective utility must use a methodology consistent with the methods used in its IRP. The representative solar plus storage proxy resource should be modelled assuming a three MW solar facility with a three MW storage resource of four-hour duration that is not dispatchable by the utility and unable to engage in grid charging, but is assumed to dispatch whenever possible during the four 'premium peak' hours set each month as determined by the utility. The solar portion of the proxy should match the solar proxy currently approved in avoided cost rates to the extent practicable. The resulting effective load carrying capability (ELCC) or alternative capacity contribution value from the proxy resource that provides capacity to the extent possible during the four premium peak hours will then be utilized in a similar manner as in other avoided cost calculations.

Payment Methodology and Dispatch

The solar plus storage QF contracting at the standard rate will be paid for the energy provided based on the approved methodology for other renewable resources. For capacity compensation, these QFs will be paid a volumetric rate (\$/MWh) for delivery during the four hours of premium peak pricing per day, except on Sundays, upon entering the utility's deficiency period. This will appropriately incentivize discharge of the storage resource during those times of need as determined by the utility and is a reasonable interim mechanism in lieu of direct utility control of dispatch.

Staff understands the importance of maintaining consistent treatment between the capacity contribution calculation and the capacity compensation framework for all QFs. However, because of the complexity of utility controlled QF storage dispatch and the potential disconnect between a conventionally modelled storage resource and the true capacity contribution of non-utility dispatchable QF storage, Staff finds a deviation from previous practices is necessary for solar plus storage QFs. Staff believes that the best option is to identify the four highest hours of need for each individual utility each month and model the storage assuming it will dispatch during these hours when it can. By compensating these resources for the actual capacity provided during these same four

hours, a close approximation of the actual capacity contribution and value is achieved in a relatively simple manner.

The calculation of capacity payment will closely follow existing methodology for other QF types. The capacity contribution value of the solar plus four-hour storage facility to the utility will be compared to the avoided capacity resource used for calculating avoided cost rates. The avoided capacity costs of the avoided resource, in \$/kw-year, are proportionately attributed to the solar plus four-hour storage facility based on the relative capacity contribution values of each resource. For example, if the avoided resource's capacity contribution value is 100 percent and the solar plus storage resource provides a 90 percent capacity contribution value, then the solar plus storage resource provides 90 percent of the capacity value of the avoided resource in \$/kw-year.

The capacity contribution value for the solar plus four-hour storage facility may be derived from the utility's acknowledged IRP and will otherwise be derived from the ELCC of the resource to the utility as modelled by the utility, subject to review by stakeholders and approval by the Commission.

Once the capacity contribution value and avoided capacity costs are determined for the solar plus four-hour storage resource, the volumetric rate may be calculated by uniformly spreading those annual avoided capacity costs across the specific premium peak hours determined by the utility. This final step deviates from existing methodology by spreading the capacity payment across the limited premium peak hours as opposed to spreading the payment over all annual on-peak hours.

Energy payments to the solar plus storage resource will follow existing methodology. Additionally, negotiated solar plus storage contracts must be priced by adjusting the pricing in the interim solar plus storage standard contract, as is performed for other QF resource types and in following with OPUC Order No. 07-360.

Capacity Availability in Tranches

As the interim solar plus storage standard rate is designed with administrative simplicity and efficiency in mind, and in recognition of the use of novel technology, no new QFs may be contracted under the interim standard rate once a utility has reached fifty MWs of contracted standard rate solar plus storage capacity on its system until a review has been completed by the Commission to investigate the appropriateness of the interim

standard solar plus storage rate. This will effectively create a first fifty MW 'tranche' of capacity available to be met by solar plus storage QFs on the interim standard contract, and guard against the possibility of a 'land rush' before possible unanticipated effects may be evaluated and corrected through rate design. A QF that is otherwise eligible for the interim rate standard contract may still negotiate a non-standard contract if the cap has been reached and the interim rate is under review. Projects 100kW or smaller in size will be guaranteed an interim solar plus storage standard rate contract during a review period triggered upon reaching the cap.

Contractual Provisions

Staff believes that this proposal as currently composed would not require any material revisions to existing standard contracts. PAC commented that new definitions and some amendments to existing definitions in their standard contract may be needed in order to implement the Commission's decision, and this could include additional amendments resulting from the Commission's final order in Docket AR 631. As such, Staff invites the utilities to request revisions to their standard contracts in their July 31 filings, should the utilities determine that they are needed. Under the interim solar plus storage standard rate, the solar plus storage resource will be treated as a solar resource for purposes of the mechanical availability guarantee.

Initial Implementation

The initial process for approval of the interim solar plus storage rate will not occur in conjunction with the May 1 filing of updated avoided cost rates for other QF types. Pending approval of this proposal by the Commission at the May 16, 2023 Public Meeting, utilities will file their solar plus storage rates on July 31, 2023. After filing, rates will be reviewed with an opportunity for comment and workshop discussion before being brought before the Commission on September 21 for approval. The July 31 rate submission deadline is intended to allow adequate time for utilities to model the capacity contribution of the proxy resource to their system, should they not already have a relevant value from a recent IRP.

Ongoing Implementation

Updates to the interim solar plus storage standard rate avoided costs will be required to be filed annually on May 1 during the pendency of UM 2000, as well as after the

acknowledgement of an IRP. This rate will be in effect and updated annually, as with rates for other QF types, until the conclusion of UM 2000 or until the first tranche of capacity is fully contracted, upon which a review of the rate will be undertaken, and no standard contracts for the interim rate will be offered during this reevaluation to projects above 100 kW.

Utilities can propose updates to the premium peak hours for existing contracts following an acknowledged IRP or IRP Update if the modification in peak hours is justified by the analysis of the IRP or IRP Update.