

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UM 1930

In the Matter of

PUBLIC UTILITY COMMISSION OF
OREGON,

Community Solar Program Implementation.

ORDER

DISPOSITION: ALTERNATIVE BILL CREDIT RATE FOR COMMUNITY
SOLAR ADOPTED

In this order, we memorialize our decision, made and effective at the April 24, 2018 Regular Public Meeting, to adopt the Simple Retail rate proposal as described by Staff in the April 10, 2018 Staff Report for the initial 25 percent of each electric company's first Community Solar program capacity tier, while reserving 25 percent of that initial capacity to projects of up to 360 kW in size. The Staff Report is attached as Appendix A.

I. BACKGROUND

At the March 5, 2018 Special Public Meeting, we found good cause to adopt an alternative bill credit rate for Oregon's Community Solar program. We found that utility Resource Value of Solar (RVOS) rates were unlikely to be finalized by a date likely to facilitate a timely launch of the Community Solar program. We also found that rates needed to facilitate Community Solar development at the lowest possible cost to non-participants. At that meeting, we directed Staff to provide three alternative rate options for us to consider in April. We also explored the value associated with projects sited close to load, and recommended that Staff take the system value associated with smaller sized projects sited near load into account.

II. ALTERNATIVE RATE OPTIONS AND STAKEHOLDER COMMENT

On April 10, 2018, Staff filed its alternative rate options and guiding principles for the development of an interim rate. Staff proposed three separate rate options: (1) a Simple Retail rate option; (2) an Adjusted Retail rate option; and (3) an Adjusted RVOS option. For guiding principles, Staff proposed: simplicity, accessibility, the minimization of

cost-shifting, locational value, and ease of transition to an RVOS-based rate. Staff also proposed that any alternative rate apply to 50 percent of the first tier of Community Solar program capacity.

The Simple Retail rate option as proposed by Staff is the standard volumetric residential retail rate, set per each utility. The Adjusted Retail rate builds off of the Simple Retail rate, applying several adjustments factors to reflect the guiding principles. The Adjusted RVOS rate adds adjustment factors to proposed utility RVOS values to align the final rate with the guiding principles.

Stakeholders issued comments on Staff's proposal. All non-utility commenters supported a form of the Simple Retail rate with suggested changes. The Bonneville Environmental Foundation (BEF), Renewable Northwest, the Oregon Solar Energy Industries Association (OSEIA), the Coalition for Community Solar Access (CCSA), Spark Northwest, The Environmental Center, and Sustainable Northwest all recommend the addition of some form of escalator to the Simple Retail rate. These stakeholders argue that projects may not prove economic to pursue without an escalator.

Idaho Power Company; PacifiCorp, dba Pacific Power; and Portland General Electric Company recommended adoption of a form of the Adjusted RVOS rate. PacifiCorp suggests that the Adjusted RVOS rate be modified, reducing or eliminating several elements. Idaho Power supports the Adjusted RVOS as proposed by Staff, but suggests limiting the applicability of rate to 25 percent or less of the first tier of Community Solar program capacity. PGE also supports a rate built on RVOS values.

Additionally, several stakeholders suggested the addition of low-income financial support. BEF, OSEIA, CCSA, Spark Northwest, The Environmental Center, Sustainable Northwest, Viridian, the Community Action Partnership of Oregon, the City of Portland, The Northwest Energy Coalition, Climate Jobs PDX, and 350 PDX all support some form of incentive or adder to be made available to low-income customers.

OSEIA and CCSA highlight the importance of a smooth transition between an interim alternative rate, and the ultimately adopted RVOS. Many non-utility commenters assert that cost savings for customers are essential to a functioning community solar program that garners third-party participation, and that voluntary program participation can be distinguished from the kind of customer commitment necessary for community solar program participation.

Finally, several commenters proposed a separate capacity tier from smaller customer-sited projects, of a 360 kW size or less.

III. DISCUSSION

We adopt Staff's Simple Retail rate proposal for an interim bill credit rate for Oregon's Community Solar Program. In doing so, we act to establish that rate for the first 25 percent of each electric company's initial capacity tier. We reserve 25 percent of that quarter of capacity for small/medium projects of up to 360 kW. We do not at this time adopt any bill credit rate for the remaining 75 percent of the initial Community Solar Program tier.

We find that while the Adjusted Retail rate option as proposed by Staff is compelling and reflective of important principles and values, it provides for too much complication. We found good cause to adopt an interim rate in part because of a need to move quickly, and the development of a more complicated interim rate would not be consistent with this rationale. We decline to adopt the Adjusted RVOS option for the same reason. Additionally, we find that adoption of an RVOS-based interim rate could endorse, in even a limited way, the filed RVOS values, which are the subject of active evidentiary hearings. We emphasize that the development of RVOS values in those evidentiary proceedings should not be influenced one way or another by our decision here. Similarly, our use of a Simple Retail rate as an interim measure in the Community Solar program does not suggest that the retail rate appropriately reflects the value of Community Solar projects to the utility system.

The Simple Retail rate proposal will result in bill credits that are higher than the utility's published and approved avoided costs. Though we recognize that the values reflected in avoided cost pricing are not the same as those we would seek to incorporate in RVOS values, the fact that the Simple Retail rate proposal will result in bill credits significantly higher than published and approved avoided costs indicates to us that the use of this interim rate should be limited, until such time as we have more information with which to judge its reasonableness.

Accordingly, we limit its applicability to 25 percent of the initial capacity tier instead of Staff's 50 percent proposal, or the proposal of some stakeholders to apply it to the full first tier of capacity. Our objective is to balance the need to provide a rate that will result in projects being developed while doing so with the lowest possible shifting of costs to non-participants. We are convinced that because the retail rate has been utilized successfully in other jurisdictions, it is likely to result in projects that will ultimately offer subscriptions to customers. Even under this more limited 25 percent capacity tier, we anticipate the possibility of robust participation and extensive development activity. For example, Staff has estimated that the 25 percent capacity of the first tier could produce 27 360kW projects and 9 large 3 MW projects.

We are persuaded that there is important value to the establishment of a capacity reservation for smaller projects. We recognize the value that smaller, distributed projects may bring to the system and wish to ensure that some of the initial program capacity is devoted to these projects. We recognize that goals for community solar are multi-faceted, and include objectives associated with opening solar access to a wide range of communities, citizen groups, and income levels. We find that a capacity reservation for smaller projects may serve to help achieve community solar access goals. Additionally, this reservation will have the effect of providing information on the viability of a residential retail based bill credit rate for smaller projects.

This type of data, along with information about participation and uptake with regard to larger projects is an important goal of our decision. We expect Staff, stakeholders, and the program administrator to use the information we gain from market reaction to the adopted bill credit rate to help refine and improve future bill credit rates, either prior to or after the finalization of utility RVOS values. We view this decision as effectively creating a pilot program within our Community Solar program, which we can use to develop learnings that will aide in the finalization of future bill credit rate determinations. Oregon's Community Solar program includes many goals and objectives, we expect the interim bill credit rate we adopt in this ruling to help us understand how these goals and objectives can be best achieved and balanced in the future.

We appreciate and agree with the comments by stakeholders that we should consider support for low-income participants by stakeholders. Though we do not adopt any specific low-income participation support mechanism as part of our decision, we expect Staff to work with the selected Program Administrator and Low Income coordinator to bring low-income participation support concepts to us for review and consideration in the future.

We note that this interim rate will need to incorporate a transition to an RVOS based value, and that we expect it to serve as an important "check-in" to review the viability of our program and learning from initial activity. We do not establish a transition plan at this time, and this "check-in" should not be considered a suspension of the program. Staff, working with stakeholders, should review transition options for consideration at a later date, and should keep us informed of important transition questions and issues as they emerge.

We emphasize that the timing of and planning for this transition is a critical issue that will ideally be transparent and orderly, so that participating or planned project

representatives can anticipate program changes, expected project economics and deadlines. Similarly, we do not address the impact of our adopted interim credit rate on project queue issues; Staff working with stakeholders should propose queue policies and procedures, either as part of the development of the Program Implementation Manual, or if needed at point prior to the development of the Program Implementation Manual.

IV. ORDER

IT IS ORDERED that:

1. An initial bill credit rate for the first 25 percent of each electric company's Community Solar Program initial capacity tier is set at the Simple Retail rate as recommended by Staff.
2. Twenty-five percent of the capacity subject to the initial bill credit rate is reserved for projects of up to 360 kW.
3. Staff shall present a status update for Community Solar Program implementation at a public meeting in July.

Made, entered, and effective MAY 23 2018.

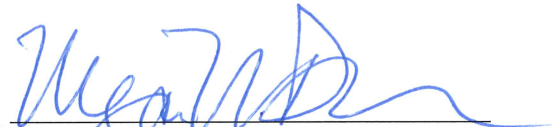


Lisa D. Hardie
Chair



Stephen M. Bloom
Commissioner





Megan W. Decker
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.

PUBLIC UTILITY COMMISSION OF OREGON
STAFF REPORT
PUBLIC MEETING DATE: April 24, 2018

REGULAR X CONSENT EFFECTIVE DATE N/A

DATE: April 10, 2018

TO: Public Utility Commission

FROM: Caroline Moore *CM*

THROUGH: *JPB* Jason Eisdorfer and *JPB* JP Batmale

SUBJECT: OREGON PUBLIC UTILITY STAFF: (Docket No. UM 1930) Interim
Alternative Bill Credit Rate Proposals for Community Solar.

STAFF RECOMMENDATION:

Consider adoption of one of three interim alternative bill credit rate proposals.

DISCUSSION:

Issue

Whether the Commission should consider adoption of one of Staff's proposed interim alternative bill credit rates:

- Simple Retail Rate
- Adjusted Retail Rate
- Adjusted Resource Value of Solar (RVOS)

Applicable Law

Section 22 of Senate Bill (SB) 1547, effective March 8, 2016, directs the Public Utility Commission of Oregon (Commission) to establish a program that provides electric customers with the opportunity to share the costs and benefits of solar generation (hereinafter referred to as "Community Solar Program", "Program" or "CSP"). Community Solar Program participants bear a portion of the cost to construct and operate a solar facility and receive a bill credit from their electric company for their portion of the solar facility's output.

SB 1547, sec. 22(6)(a) specifies that electric companies shall credit CSP participants for their proportional shares of CSP project generation "in a manner that reflects the resource value of solar" and directs the Commission to determine the resource value of

UM 1930
April 10, 2018
Page 2

solar energy (RVOS). However, sec. 22(6)(b) provides that the Commission may adopt a rate for an electric company to use in crediting a participant's electric bill that does not reflect the resource value of solar "if the Commission has good cause to adopt the different rate." The legislation also provides the Commission authority to suspend the program for good cause.¹

On June 29, 2017, the Commission adopted formal rules for Oregon's Community Solar Program through Order No. 17-232. That order adopted Division 88 of Chapter 860 of the Administrative Rules, which includes the following directive to establish the bill credit rate based on the RVOS:

Unless otherwise determined by Commission order, the bill credit rate for a project will be based on the resource value of solar applicable to that project at the time of pre-certification and will apply for a term no less than the term of any power purchase agreement entered into pursuant to OAR 860-088-0140(l)(a).²

In Order No. 18-088, the Commission determined there is good cause to develop an interim alternative bill credit rate, due to issues of timing and value associated with the application of RVOS as the initial CSP bill credit rate.

Analysis

Background

At the January 30, 2018 Public Meeting, the Commission determined that it is necessary to accelerate consideration of an alternative CSP bill credit rate, and requested a Commission workshop to discuss the possibility of an alternative bill credit rate. The Commission additionally directed Staff to report on bill credit rate issues in preparation for the workshop. Staff reported that considerations for establishing an alternative CSP bill credit rate are based on whether the timing and/or value of the RVOS will support an effective program launch. In addition, Staff found that a wide range of approaches to establishing a value for solar generation exist and can be applied to meet different program objectives, such as opportunity, fairness, participation, project development, and project diversity.

Stakeholders responded to Staff's report with written and oral comments at the March 5, 2018 workshop. Stakeholder comments coalesced around a few central points:

- Utility stakeholders noted concern with consideration of an alternative rate that does not reflect RVOS, particularly before the RVOS is finalized. In addition, utility stakeholders urged for minimal cost shift if an interim alternative rate is established.
- Stakeholders from the solar industry, environmental groups, consumer protection groups, local governments and a range of additional interests advised that an alternative bill credit rate is required for a successful program launch. These

¹ Senate Bill 1547, Section 22 (2)(c).

² Oregon Administrative Rules 860-088-0170 (1)(a).

UM 1930
April 10, 2018
Page 3

stakeholders expressed concern that waiting for RVOS will cause untenable delays and suggested that third-party project development will not occur at rates reflecting the initial utility RVOS estimates provided in Docket Nos. UM 1910-12. Several stakeholders additionally suggested that project development is not possible without a rate high enough to provide participant bill savings.

- Several stakeholders suggested that the residential retail rate provides a quick and familiar solution, but could not confirm whether the value would be sufficient to support project development in Oregon.
- The Energy Trust of Oregon stated that establishment of an alternative rate may be iterative and require a certain level of experimentation.

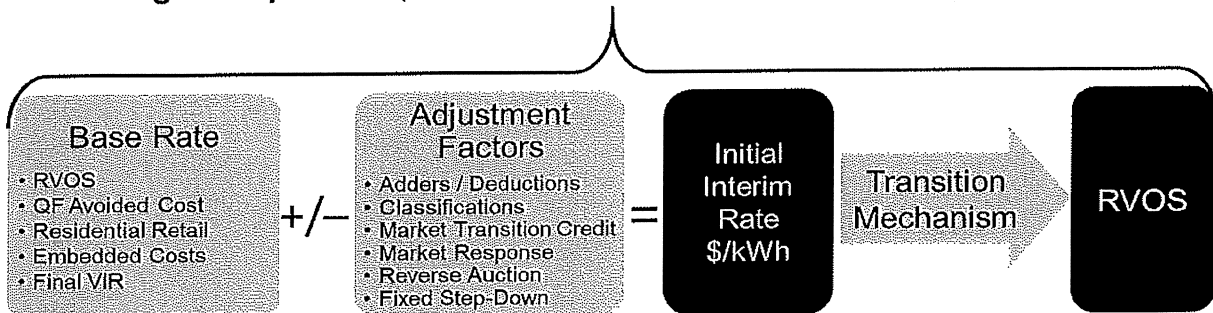
Following the workshop, the Commission issued Order No.18-088, finding good cause to consider the adoption of an interim alternative CSP bill credit rate (interim alternative rate) based on issues of timing and value.³ The order directs Staff to provide the Commission with no less than three interim alternative rate proposals through a report filed no later than April 10, 2018.⁴

In this report submitted in compliance with Order No. 18-088, Staff analyzes a range of rate options and presents three interim alternative rate proposals for Commission consideration.

Evaluation Framework

Order No. 18-088 outlines several objectives and considerations for developing an interim alternative rate. Staff identified three rate components and evaluated each component's alignment with the Commission's guidance. No available rate aligns seamlessly with all principles; therefore, Staff proposes three rates designed to strike an optimal balance across the Commission's objectives and considerations.

Guiding Principles: Simple, Accessible, Minimize Cost-Shifting, Locational, Transitional



The figure above illustrates Staff's process to develop three proposed interim alternative rates. The process begins with a Base Rate that is modified with Adjustment Factors to establish an Initial Interim Rate. A Transition Mechanism is applied to each of the three

³ Order No. 18-088, p.2.

⁴ *Ibid*, p.4.

UM 1930
April 10, 2018
Page 4

Initial Interim Rates, allowing the rate to revert to the RVOS in the long run. Every component is informed by Staff's Guiding Principles.

Guiding Principles

Staff's framework for evaluating rate options is based on five Guiding Principles. A description of each principle and how Staff applied it in its evaluation are provided below.

1. **Simple:** The Commission cites timing as grounds to consider an interim alternative rate, and finds that, "[i]n order to facilitate a potential Community Solar program launch in 2018, stakeholders have consistently expressed to us it is important to have bill credit rates established and known as early in the year as possible; ideally, the rates would be established no later than the end of April 2018."⁵

In addition, the Commission states that the interim alternative rate, "presents an imperfect temporary solution, and it may be rough and less sophisticated than the permanent bill credit rate methodology due to the fact that we have identified delay as an outcome we wish to avoid."⁶

Finally, the Commission acknowledges that, "[t]hough Staff should not feel bound by the precedent of other jurisdictions in the development of its options, Staff may wish highlight or base proposals on the rates set by other states."⁷

To assess simplicity, Staff evaluated how readily each rate would be available. To the extent that it promotes simplicity, Staff also considered whether other jurisdictions have adopted that rate for similar programs.

2. **Accessible:** The Commission also cites the values presented in utilities' initial RVOS filings in Docket Nos. UM 1910-12 as grounds to consider an interim alternative rate. The Commission finds, "that our responsibility is to strive to stand up a functioning Community Solar program, which results in active project development and the availability of subscriptions for customers."⁸

To evaluate accessibility, Staff considered the likelihood that potential rates will result in active project development. Order No.18-088 does not discuss the likelihood that a rate will result in the development of diverse project types. Therefore, project diversity is not considered in Staff's evaluation framework. This report does note the expected impact of certain rate components on project diversity when relevant.

⁵ *Ibid*, p. 2.

⁶ *Ibid*, p.5.

⁷ *Ibid*, p.4.

⁸ *Ibid*.

UM 1930
April 10, 2018
Page 5

3. **Minimize cost-shifting:** The Commission qualifies the need to stand up a successful program with the need to minimize cost shifting, stating that accessibility, "should be achieved at the lowest cost possible to non-participants in order that cost shifting is minimized."⁹

Staff evaluated whether potential rates were designed to provide the lowest cost possible in order to minimize cost-shifting.

4. **Locational:** The Commission advises Staff to "strive to take into account that the rate may be scaled to provide higher levels of financial support to projects at the distribution level, and lower levels to projects farther from load that provide fewer system benefits."

Staff evaluated considers whether rate options account for proximity to load or interconnection to a distribution feeder.

5. **Transitional:** The Commission intends for the interim alternative rate to be temporary such that the program transitions to an RVOS-based rate for the long term.¹⁰

Staff evaluated whether rates included a mechanism to transition to RVOS.

Base Rates

The Base Rate is the foundation or starting point for determining the interim alternative rate. Staff identified five Base Rates, based on solar valuation models used in other Oregon solar programs and by other states' community solar programs. The table below summarizes Staff's assessment of each Base Rate using the evaluation framework.

⁹ *Ibid*, p.4.

¹⁰ *Ibid*, p.3.

UM 1930
April 10, 2018
Page 6

Base rate	Simple <i>Is it readily available and/or used elsewhere?</i>	Accessible <i>Is it likely to result in active project development?¹¹</i>	Minimizes Cost-Shifting <i>Is it designed to provide the lowest cost possible?</i>	Locational <i>Does it recognize the difference in project types?</i>	Transitional <i>Does it transition to RVOS?</i>
Initial RVOS <i>A single rate per utility based on values provided in Phase 2 of UM 1716</i>	Y	Y/N	Y	N	Y/N
QF Avoided Cost <i>Current real levelized non-renewable standard QF avoided cost rate, set per utility</i>	Y	Y/N	Y	N	N
Residential Retail Rate <i>Standard volumetric residential retail rate, set per utility</i>	Y	Y/N	N	N	N
Embedded cost <i>Estimated break-even point for participants based on a generic project LCOE, set statewide</i>	N	Y/N	N ¹²	N	N
Final VIR <i>Lowest VIR for small/medium projects in the last tranche before the program ended, ~\$0.16/kWh, set statewide</i>	Y	Y/N	N	N	N

Y = Supported by the base rate alone

N = Not supported by the base rate alone

Y/N = Possibly supported by the base rate alone or unknown

¹¹ Staff does not have sufficient data to predict how successful any of the Base Rates will be in spurring project development in Oregon.

¹² Analysis provided by Energy Trust of Oregon suggests that the embedded cost may range from an estimated \$0.06/kWh to \$0.29/kWh. The average cost of different system types, based on project size, location and use of tracking, range from \$0.09/kWh to \$0.22/kWh. Staff does not find that the majority of embedded cost values modeled minimize cost-shift. See Attachment A for a summary of Energy Trust's cost analysis.

UM 1930
 April 10, 2018
 Page 7

Staff finds that no Base Rate satisfies all of the principles; however, two rates appear to provide the most balance.

- **Residential Retail Rate:** A very simple option, utilized in multiple jurisdictions,¹³ which represents a midpoint in value between accessibility and minimizing cost-shifting relative to the other Base Rates considered.
- **Initial RVOS:** The Base Rate with the greatest opportunity to minimize cost-shifting that is best positioned to transition to RVOS. While a final RVOS is not available, initial rate options are readily available through the UM 1716 and UM 1910-12 records. A value of solar-based rate is also used in other jurisdictions.¹⁴

Adjustment Factors

Adjustment Factors modify the value and application of the Base Rate to better align with the Guiding Principles. Together, the Base Rate and Adjustment Factors will comprise the Initial Interim Rate. A single modifier can be applied to a Base Rate or modifiers can be combined to better balance associated trade-offs. Staff identified and evaluated several Adjustment Factors, based on its survey of other Oregon solar programs and community solar models across the country.¹⁵

- **Adders/Deductions:** Projects receive cumulative adders and/or deductions to the Base Rate based on characteristics that align with or diverge from the Guiding Principles. Examples include whether or not:
 - The project is located on the distribution feeder (Locational).
 - All participants are located in same county as the project (Locational).
 - The project exceeds the minimum residential and small commercial participation level, which increases participation costs (Accessible).
 - The project exceeds the minimum low-income participation requirements, which increases participation costs (Accessible).
 - The project is owned by a non-profit, which increases project costs by removing access to the Federal Investment Tax Credit (Accessible).
- **Market Transition Credit (MTC):** The MTC is a universal adder intended to promote accessibility for all projects. A fixed step-down in the adder responds to the market as it stabilizes. In New York, the MTC is a utility-specific adder based on the difference between the Base Rate and the residential retail rate. Other methods for establishing the MTC could include:

¹³ For example, California, Colorado, Massachusetts, Minnesota, and Rhode Island have based their community solar bill credit rate on iterations of the retail rate. See Staff's February 26, 2018 report and comments filed by OSEIA-CCSA, pp. 13 - 16, for discussion of other jurisdictions.

¹⁴ For example, New York and Minnesota have adopted community solar rates based on an iteration of the value of solar. See Staff's February 26, 2018 report and comments filed by OSEIA-CCSA, pp. 13 - 16, for discussion of other jurisdictions.

¹⁵ See Staff's February 26, 2018 report for a survey of solar programs in Oregon and other states.

UM 1930
 April 10, 2018
 Page 8

- An adder based on the estimated incentive required for project development.
- An adder that raises the Base Rate up to the maximum acceptable rate impact.
- An adder that supports the unique economic proposition for low income customers.
- **Classifications:** Generic project characteristics determine how rates are assigned. Classification examples include:
 - Project size i.e., provide a simpler rate for less sophisticated projects or a higher rate for projects with lower economies of scale, to improve the economic proposition.
 - Geographic zone i.e., assign higher rates to projects with lower solar potential to improve the economic proposition.¹⁶ Facilitating project development in lower solar potential areas has a secondary effect of limiting the total rate impact by reducing the total megawatt-hours ratepayers bear at the interim alternative rate.
- **Market Response:** Adjust the rate up or down based on whether applications exceed or fall short of a pre-determined tranche and timeframe.
- **Reverse Auction:** Project Managers bid for pre-certification capacity at a bill credit rate specified by the bidder. The Base Rate or an adjusted base rate can be used as a ceiling on bids. Classifications may be applied to help ensure project type and Project Manager diversity due to the increased level of sophistication required to bid.
- **Fixed step-down:** Adjust the rate down on a fixed schedule that is expected to align with the market development. Step-down examples include:
 - Adjust the rate down at pre-determined MW tranches.
 - Adjust the rate down when rate impact thresholds are reached.
 - Set a calendar schedule to adjust the rate down.¹⁷

The table below summarizes Staff's evaluation of each component. As with Base Rates, each Adjustment Factor has trade-offs. In the context of these trade-offs, Staff finds that many Adjustment Factors are appropriate to be considered in its proposed interim alternative rates.

¹⁶ This is how Oregon's Solar Incentive Program assigned volumetric incentive rates (VIR) to small and medium projects. See Staff's February 26, 2018 report for a description of the VIR.

¹⁷ Washington State's solar incentives incrementally step down per calendar year. See Staff's February 26, 2018 report for a description of the Washington solar incentives.

UM 1930
April 10, 2018
Page 9

Adjustment Factors	PROS	CONS
Adders/ Deductions	<ul style="list-style-type: none"> Adders can help spur project development (Accessible) Deductions can control cost-shift (Minimize Cost-shift) Tailoring adders to only apply to specific projects can help control cost-shift (Minimize Cost-shift) Can be responsive to different project types (Locational) 	<ul style="list-style-type: none"> Will require up front analysis to select adders and establish values (Simple) Deductions can deter project development (Accessible) Establishing a rate for each project may increase administrative costs (Minimize Cost-shift) Adders are not designed to provide the lowest rate possible (Minimize Cost-shift)
Market Transition Credit	<ul style="list-style-type: none"> Designed to spur project development (Accessible) Increases certainty for Project Managers (Accessible) Step-downs help control cost-shift (Minimize Cost-shift) 	<ul style="list-style-type: none"> Will require up front analysis to establish (Simple) Will increase cost-shift over the Base Rate (Minimize Cost-shift) Not responsive to different project types without other Adjustment Factors (Locational)
Classifications	<ul style="list-style-type: none"> Can be simpler than project-specific adders/deductions (Simple) Tailoring rates to specific project-types can help control cost-shift (Minimize Cost-shift) Responsive to different project types (Locational) 	<ul style="list-style-type: none"> Will require up front analysis to establish (Simple) Less control over individual projects' cost shift than adders/deductions (Minimize Cost-shift) Less responsive to different project types than adders/deductions (Locational)
Market Response	<ul style="list-style-type: none"> Does not require initial analysis to establish the value (Simple) Focused on finding the lowest rate that spurs project development (Accessible, Minimize Cost-shift) 	<ul style="list-style-type: none"> Will require up front analysis to establish adjustment tranches or timeframe (Simple) Less certainty for potential Project Managers (Accessible) May increase administrative costs (Minimize Cost-shift) Not responsive to different project types without other Adjustment Factors (Locational)
Reverse Auction	<ul style="list-style-type: none"> Does not require initial analysis to establish value (Simple) Focused on finding the lowest rate that spurs project development (Accessible, Minimize Cost-shift) 	<ul style="list-style-type: none"> Less certainty for potential Project Managers (Accessible) Likely to increase administrative costs (Minimize Cost-shift) May result in additional cost shifting if a cap on bid price is not established. Not responsive to different project types (Locational)
Fixed Step-down	<ul style="list-style-type: none"> Can increase certainty for Project Managers (Accessible) Step-downs help control cost shift (Minimize Cost-shift) 	<ul style="list-style-type: none"> Pre-set step-downs may not correspond to market needs when in place e.g., step-downs based on time (Accessible) Not responsive to different project types (Locational)

Transition Mechanism

A final modifier is required to align the Initial Interim Rate with the need to ultimately transition to RVOS. The Transition Mechanism controls the gross level of cost-shifting, while allowing the program to launch quickly and reach stability under the Initial Interim Rate. Staff considered several Transition Mechanisms based on the Guiding Principles:

UM 1930
 April 10, 2018
 Page 10

- **Capacity Tier:** Begin using RVOS when the Capacity Tier set forth in OAR 860-088-0080 is reached to promote accessibility (per utility).
- **Initial Capacity Threshold:** Transition to RVOS when the market has developed to a pre-determined MW threshold prior the Capacity Tier, to balance accessibility and cost-shifting (per utility).
- **Availability of RVOS:** Transition after the Commission adopts a final RVOS to minimize cost-shifting.
- **Sunset:** Select a date by which the market should be stable enough to transition to promote simplicity.
- **Rate Impact Cap:** Begin using RVOS when the average annual rate impact reaches a maximum cost-shifting threshold to minimize cost-shifting.

Staff finds that an Initial Capacity Threshold provides the most balanced Transition Mechanism. The MW cap allows the program to demonstrate a level of stability before transitioning to RVOS, while controlling the amount of cost-shifting created within the Capacity Tier.

Establishing a Transition Mechanism may incentivize a "gold rush" prior to transition, meaning that Adjustment Factors, such as classification or adders/deductions, should be considered to help different project types access the Initial Interim Rate. In addition, the Transition Mechanism may trigger an evaluation of whether the program is ready to transition to RVOS, rather than an immediate transition to RVOS.

Interim Alternative Rate Proposals

Staff assembled three interim alternative rate proposals, which present different approaches to balancing Commission objectives.

1. **Simple Retail Rate:** Emphasizes simplicity by foregoing Adjustment Factors. The rate relies on the residential retail rate's value relative to the other Base Rates and the Transition Mechanism to balance accessibility and minimizing cost-shifting.
2. **Adjusted Retail Rate:** Builds upon the Simple Retail Rate, applying several Adjustment Factors to increase alignment with the Guiding Principles.
3. **Adjusted RVOS:** Focuses on correcting the issues of timing and value associated with the application of RVOS to the CSP. A readily available RVOS-based Base Rate helps correct issues of timing and Adjustment Factors help align that value with the Guiding Principles.

Staff notes that it is challenging to consider a CSP bill credit rate in isolation of the rate participants will pay to subscribe or own a project. Staff's analysis focuses on the best available information and the Guiding Principles.

UM 1930
April 10, 2018
Page 11

Rate Proposal	Simple Retail Rate	Adjusted Retail Rate	Adjusted RVOS
Base Rate	Residential Retail	Residential Retail	Initial RVOS
Adders/ Deductions	--	<ul style="list-style-type: none"> Small/medium projects: 5% deduction.¹⁸ Large projects: Deduction to the midpoint between residential retail and QF avoided cost.¹⁹ 	<ul style="list-style-type: none"> MTC adder: \$0.04²⁰ Distribution feeder adder: \$0.01²¹
Classifications	--	<ul style="list-style-type: none"> Small/medium projects = ≤ 360 kW²² Large projects = > 360 kW 	
Market Response	--	<u>Small/medium projects only:</u> <ul style="list-style-type: none"> Open pre-certification for 5% of the Capacity Tier.²³ Adjust rate down if pre-certification applications exceed initial tranche in first 12 months. Adjust rate up if pre-certification applications fall short of initial tranche in first 12 months. Continue in $\leq 5\%$ Capacity Tier increments until transition to RVOS (based on remaining capacity). 	Adjust MTC up if no third-party pre-certification applications are received in 12 months of initial launch and/or the MTC step-down.
Reverse Auction	--	<u>Large projects only:</u> <ul style="list-style-type: none"> Open pre-certification for 15% of the Capacity Tier. Bids are capped at the large project Adjusted Retail Rate. Bids with the lowest bill credit rate are awarded capacity until the tranche is full. Adjust cap up if tranche is not met within auction window. Continue in $\leq 15\%$ Capacity Tier increments until transition to RVOS (based on remaining capacity).²⁴ 	
Fixed Step-Down	--	--	MTC steps down by 50% (\$0.02/kWh) at 25% of total Capacity Tier (~40 MW) ²⁵
Transition Mechanism	At 50% of Capacity Tier, evaluate whether to transition to RVOS or continue with interim rate.	At 50% of Capacity Tier, evaluate whether to transition to RVOS or continue with interim rate.	At 50% of Capacity Tier, evaluate whether to transition to RVOS or continue with interim rate.

¹⁸ Reflects the value of the start-up costs covered by all ratepayers and that the energy from these projects is not directly offsetting the participants' load as in net metering.

¹⁹ Based on Staff's finding that large community solar projects are a hybrid of a residential distributed solar project and a QF solar farm. The real, levelized standard QF rate is used in this analysis.

²⁰ Access to the Federal Investment Tax Credit appears to create an approximate \$0.04/kWh difference in the levelized cost of energy based on the modeling tools used by ETO. Staff used this value as a proxy for the level of incentivization a solar project requires.

²¹ Based on PGE's initial UM 1912 testimony, which valued T&D at \$0.008/kWh and line losses at \$0.00148/kWh.

²² OAR 860-088-0150 threshold to register in WREGIS, which signals developer sophistication.

UM 1930
April 10, 2018
Page 12

Estimated Bill Credit Rate (\$/kWh)	Simple Retail Rate		Adjusted Retail Rate		Adjusted RVOS ²⁶		
				Sm/Med.	Large		
	PGE	\$0.1103	PGE	\$0.1048	≤\$0.0761	PGE	\$0.0899 - \$0.0999
	PAC	\$0.1005	PAC	\$0.0954	≤\$0.0716	PAC	\$0.0728 - \$0.0828
	IPC	\$0.0880	IPC	\$0.0836	≤\$0.0707	IPC	\$0.0416 - \$0.0516
							\$0.0699 - \$0.0799
							\$0.0528 - \$0.0628
							\$0.0216 - \$0.0316

Trade-offs

Order No. 18-088 directs Staff to weigh the pros and cons, costs and benefits, and trade-offs of proposed rates. The following table provides Staff's assessment of the trade-offs associated with each proposed interim alternative rate, including the ability to balance Commission guidance and the estimated incremental impact to ratepayers.

	Simple Retail Rate		Adjusted Retail Rate		Adjusted RVOS	
PROS <i>How does the proposed rate better align the Base Rate with the guiding principles?</i>	<ul style="list-style-type: none"> Most readily available, very simple. Most likely to spur active project development relative to other proposed rates. Transitions to RVOS. Meets four of five Guiding Principles. 		<ul style="list-style-type: none"> Adjustment factors are based on simple analysis and readily available values. Most likely to balance active project development while providing the lowest cost possible relative to other proposed rates. Classifications are responsive to project size, which can reflect distribution-level benefits. Transitions to RVOS. Meets five out of five Guiding Principles. 		<ul style="list-style-type: none"> Adjustment factors are based on simple analysis and readily available values. MTC increases likelihood of active project development and certainty. RVOS and fixed step-down control cost shift. Adders are responsive to distribution-level benefits. Transitions to RVOS. Meets five out of five Guiding Principles. 	
CONS <i>Which trade-offs are associated with the proposed rate?</i>	<ul style="list-style-type: none"> Least control of cost-shift of proposed rates (only through Transition Mechanism). Not responsive to distribution-level benefits. 		<ul style="list-style-type: none"> Requires establishment of deductions, classifications, reverse auction process, tranches, and a new rate if initial rate is too low or high. Possibility of higher administrative costs. Less certainty for Project Managers. 		<ul style="list-style-type: none"> Requires establishment of the MTC, the distribution adders, step-downs, and a new rate if the initial and/or step-down rate is too low or high. Least likely to spur active project development relative to other proposed rates. Possibility of higher administrative costs. 	
Est. Rate Impacts²⁷	PGE	\$58,816,624 (0.12%)	PGE	\$38,325,680 (0.08%)	PGE	\$35,865,347 (0.08%)
	PAC	\$42,588,656 (0.13%)	PAC	\$30,945,807 (0.09%)	PAC	\$30,801,605 (0.09%)
	IPC	\$1,379,565 (4.33%)	IPC	\$930,421 (2.92%)	IPC	(\$470,089) (-1.47%) ²⁸

²³ Each 5% tranche allows ~12 - 186 PGE projects, 8 - 129 PAC projects, and ≤ 4 IPC projects (25–360 kW).

²⁴ Each 15% tranche allows ~4 - 38 PGE projects, 3 - 26 PAC projects, and 0 IPC projects (<360 kW).

²⁵ 25% of the Capacity Tier allows ~7 - 931 PGE projects, 5 - 646 PAC projects, and ≤ 22 IPC projects.

²⁶ The range represents the \$0.01/kWh difference between a distribution and transmission project's rate.

²⁷ Staff's estimate assumes that the program is fully subscribed up to the Transition Mechanism (~80 MW) for 20 years (the minimum PPA term for CSP projects). Estimated rate impacts are in real 2018 dollars gross over 20 years. Percentages represent the gross rate impact as a percentage of revenue requirement from 2018 - 2037. Adjusted Retail Rate assumes that small/medium projects comprise 20 percent and large projects comprise 30 percent of the Capacity Tier, the initial rates are not adjusted up or down, and all large projects are awarded at the cap. The Adjusted RVOS assumes an average rate between the adder and non-adder rate.

²⁸ Idaho Power's initial RVOS (\$0.00161/kWh) is lower than the Company's standard QF avoided cost rates, such that the adjusted RVOS provides a net benefit to ratepayers over 20 years.

UM 1930
April 10, 2018
Page 13

The estimated rate impacts represent the incremental cost to ratepayers for purchasing the output from CSP projects at each of the Interim Initial Rates, over the cost to purchase the output at the real levelized standard QF avoided cost rate. The QF avoided cost rate is the best reflection of both the costs and the value of solar generation currently available i.e., QF avoided cost represents a break-even point, over which the rate will reflect the generation's costs in excess of the generation's value. Staff notes that RVOS would be a better reflection of the breakeven point if Commission adopted RVOS values were available.

Conclusion

Order No. 18-088 establishes good cause to develop an interim alternative bill credit rate for Oregon's Community Solar Program, directs Staff to propose a minimum of three interim alternative rates, and outlines several Commission objectives and considerations for developing an interim alternative rate proposal.

Staff identified three components of the interim alternative bill credit rate and evaluated options for each component based on the Commission's guidance. Staff did not find a rate concept that aligns seamlessly with all Guiding Principles, but proposes three approaches to balancing the Guiding Principles for program success.

Rate Proposal	1. Simple Retail Rate	2. Adjusted Retail Rate	3. Adjusted RVOS
Base Rate	Residential Retail Rate	Residential Retail Rate	Initial RVOS
Adders/ deductions		X	X
Classifications		X	
Market response		X	X
Reverse auction		X	
Fixed-step down			X
Transition Mechanism	X	X	X
Rate (\$/kWh)		Sm/Med. Large	Pre-step down Post step down
PGE	\$0.1103	\$0.1048	≤\$0.0761 \$0.0899 - \$0.0999 \$0.0699 - \$0.0799
PAC	\$0.1005	\$0.0954	≤\$0.0716 \$0.0728 - \$0.0828 \$0.0528 - \$0.0628
IPC	\$0.0880	\$0.0836	≤\$0.0707 \$0.0416 - \$0.0516 \$0.0216 - \$0.0316
Est. Rate Impacts			
PGE	\$58,816,624 (0.12%)	\$38,325,680 (0.08%)	\$35,865,347 (0.08%)
PAC	\$42,588,656 (0.13%)	\$30,945,807 (0.09%)	\$30,801,605 (0.09%)
IPC	\$1,379,565 (4.33%)	\$930,421 (2.92%)	(\$470,089) (-1.47%) ²⁹

The three proposals represent Staff's best recommendation; however, the Commission can apply the various modifiers to any Base Rate to balance the Guiding Principles. If

²⁹ Idaho Power's initial RVOS (\$0.00161/kWh) is lower than the Company's standard QF avoided cost rates, such that the adjusted RVOS provides a net benefit to ratepayers over 20 years.

UM 1930
April 10, 2018
Page 14

the Commission elects to adopt a configuration that differs from Staff's proposals, Staff provides the following suggestions:

- Be iterative. Provide opportunities for adjustment and/or evaluation at or prior to reaching the transition to RVOS.
- Consider transition to RVOS prior to the Capacity Tier to balance cost-shifting and accessibility.
- Consider classifications to prevent less sophisticated projects from accessing interim alternative rates prior to step-down or transition to RVOS.

PROPOSED COMMISSION MOTION:

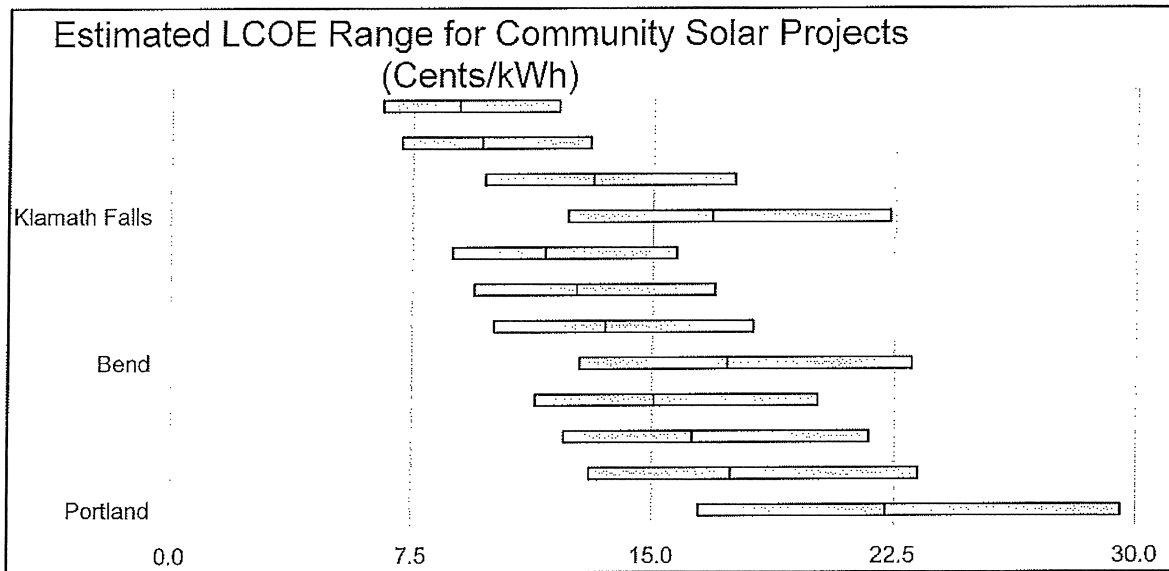
Consider adoption of one of three interim alternative bill credit rate proposals.

UM 1930 Interim Alternative Rate Proposals for Community Solar

UM 1930
April 10, 2018

Attachment A
Embedded Cost Modeling

The estimated cost ranges below were generated by Energy Trust of Oregon using a range market assumptions. The variation in cost between locations is due to geographic differences in solar insolation, while the cost variation across system sizes reflects economies of scale achieved by larger projects. For a given project size and location, Energy Trust used a wide range of cost assumptions for key model inputs, including: equipment, labor, development, customer acquisition, ongoing customer management, financing and O&M. The resulting analysis is a high-level estimate of potential project costs which may or may not reflect actual community solar project costs



Location	System type	Size	Low (\$/kWh)	Average (\$/kWh)	High (\$/kWh)
Portland	Fixed	Extra Small	\$0.165	\$0.223	\$0.296
		Small	\$0.131	\$0.175	\$0.233
		Medium	\$0.123	\$0.163	\$0.218
		Large	\$0.114	\$0.151	\$0.202
Bend	Fixed	Extra Small	\$0.128	\$0.174	\$0.231
		Small	\$0.101	\$0.136	\$0.182
		Medium	\$0.095	\$0.127	\$0.170
		Large	\$0.088	\$0.117	\$0.158
Klamath Falls	Fixed	Extra Small	\$0.124	\$0.169	\$0.224
		Small	\$0.098	\$0.132	\$0.176
	Tracking	Medium	\$0.072	\$0.097	\$0.131
		Large	\$0.066	\$0.090	\$0.121