

Purpose

This proposal outlines the recommendations for three policy decisions required to implement Oregon’s Community Solar Program (CSP). Specifically, this proposal includes recommendations for 1) unresolved low-income program requirements, 2) the transition between start-up and ongoing costs, and 3) the bill credit rate. The issues covered in this draft proposal are the remaining portion of the four policy issues that the Commission must address prior to CSP implementation. Staff released its draft proposal for the first issue, CSP interconnection requirements, on June 19, 2019.¹ All four policy recommendations are made by Oregon Public Utility Commission (OPUC) Staff and informed by the CSP Program Administration Team (PA Team). This team is comprised of the Program Administrator (PA) and the Low-Income Facilitator (LIF).

The timeline and process for Stakeholder participation in these policy decisions is provided below. This draft proposal is intended to give interested parties additional time to prepare comments prior to the release of final Staff recommendations on October 4, 2019. As noted below, Stakeholders can provide initial comments prior to October 4th if desired; however, Staff may not be able to incorporate those comments into its final recommendation.

Date	Activity
Friday, September 13, 2019	Staff previews the PA Team’s proposal for bill credit, transition between start-up and ongoing, and low-income program policy issues, to provide Stakeholders sufficient time to develop comments on the October 1, 2019 memo.
Friday, October 4, 2019	Staff Memo with final recommendations for interconnection, bill credit, transition between start-up and ongoing, and low-income program policy issues.
Tuesday, October 15, 2019	Deadline for Stakeholder written comments on Staff memo. Please note: Stakeholders can submit initial comments in advance of the October 4 th proposal and final comments by October 15 th if desired. Staff may not be able to incorporate initial comments into its October 4 th final recommendations.
Tuesday, Oct. 22, 2019	Regular Public Meeting: Staff presents final policy recommendations and Stakeholders have the opportunity to comment.
Tuesday, Oct. 29, 2019	Special Public Meeting: Commission deliberate and decide policy issues.

Questions and comments can be directed to:

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¹ See Docket No. UM 1930, Staff’s Draft proposal for Community Solar Interconnection, June 19, 2019. <https://edocs.puc.state.or.us/efdocs/HAH/um1930hah13520.pdf>

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Background

On June 29, 2017, the Commission adopted administrative rules for the CSP.^{2,3} To account for continued learnings and insight from the to-be-selected PA and LIF The Commission recognized that certain program decisions would be best resolved later in the implementation process.. While the Staff is working with the PA Team to propose solutions for the majority of outstanding decisions in the program implementation manual (PIM), certain issues are significant and complex enough to warrant a separate Commission decision process. Decisions related to all four policy areas are critical inputs for Project Managers to prepare projects for pre-certification and must be resolved prior to pre-certification launch, which is scheduled for December 2019 (See Figure 1).

As noted in Staff's amended UM 1930 CSP implementation schedule, released August 23, 2019, the four policy issues addressed separately from the PIM include:

1. Interconnection: solutions to ensure that CSP interconnections are fair and functional.
2. Bill credit
 - a. Implementation of the Simple Retail Rate
 - b. Transition after the interim capacity tier
3. Low-income participation requirements
 - a. Minimum eligible low-income participants per project (%)
 - b. Requirements for low-income participation fees
 - c. Definition of eligible low-income participant
4. Transition between start-up and ongoing costs
 - a. Transition point
 - b. Administrative fee methodology⁴

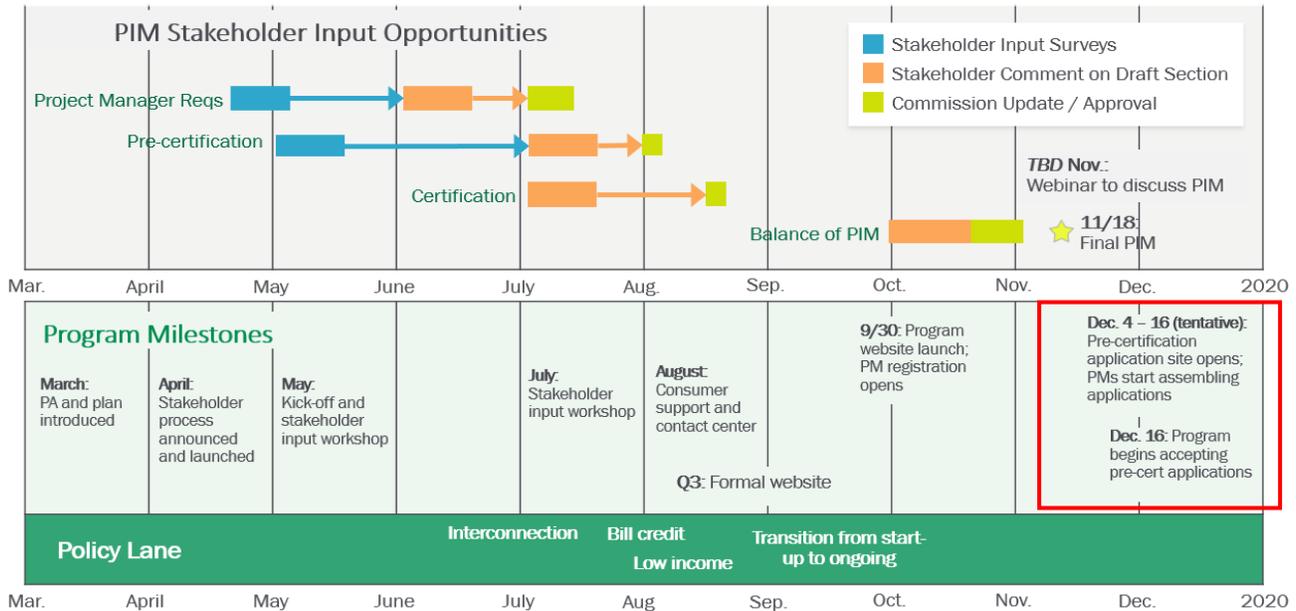
On June 19, 2019, OPUC Staff released a draft proposal related to CSP interconnections. This proposal addresses the remaining three policy areas. On October 4, 2019, the Staff will bring the four policy decisions together into a final recommendation for the Commission. Stakeholders will provide written comments on the final Staff's recommendation by October 15, 2019. Staff will present its final policy recommendations at the October 22, 2019 Regular Public Meeting. Stakeholders have the opportunity to comment at the Regular Public Meeting, and the Commission will deliberate and decide on the four policy areas at a Special Public Meeting on October 29, 2019.

² See Oregon Administrative Rules Division (OAR) 860, Section 88.

³ See Docket No. AR 603 In the Matter of Rules Regarding Community Solar Projects, Commission Order No. 17-232, June 29, 2017.

⁴ See Docket No. UM 1930, Staff's amended schedule, August 23, 2019.

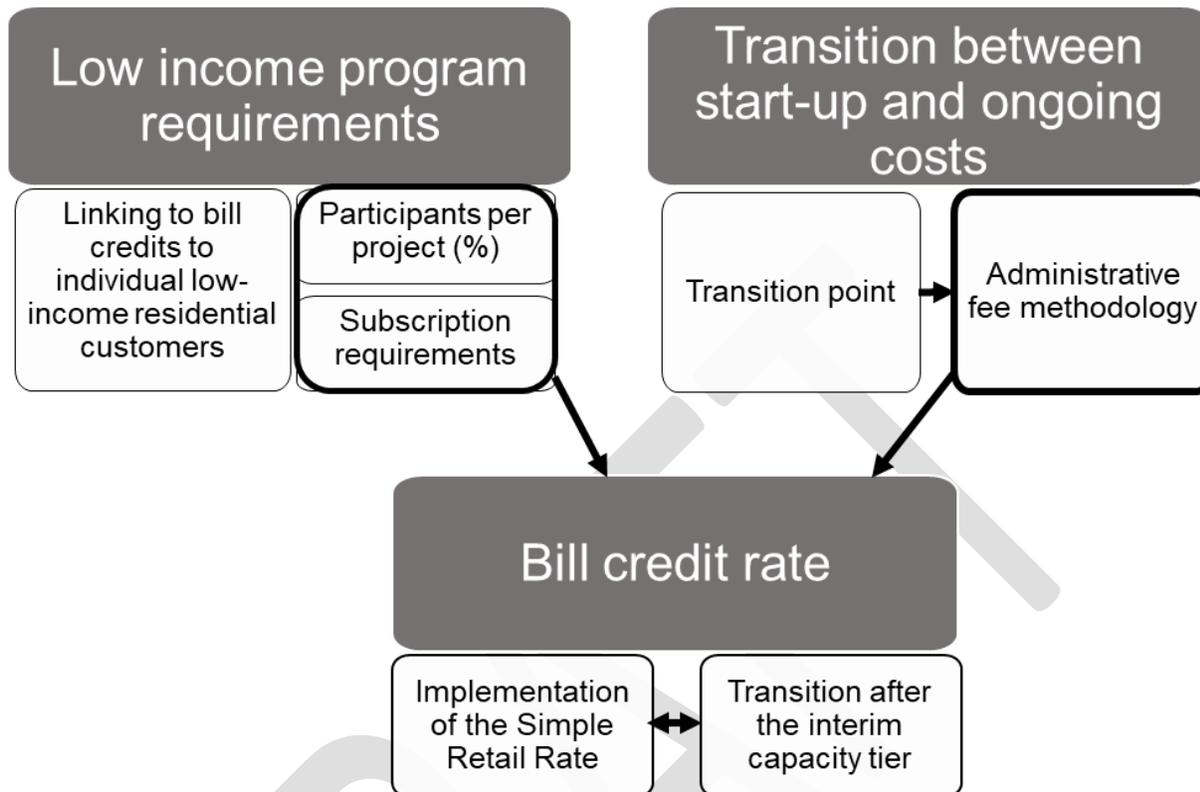
Figure 1 CSP Program Launch Timeline



Proposal Framework

The policy areas addressed in this Staff proposal are interrelated. Specifically, certain policy recommendations related to low-income requirements and the transition between start-up and ongoing costs are required inputs into Staff and the PA Team’s bill credit rate analysis. Therefore, Staff’s proposal provides recommendations for those two policy areas first, then incorporates the recommendations as assumptions in the bill credit rate analysis. Attachment A of this proposal provides several sensitivities to capture any the impact Staff’s proposals for low-income requirements and the transition between start-up and ongoing have on the bill credit analysis.

Figure 2 Summary of Policy Issues and Interactions Addressed in Staff's Proposal



Staff's analytical framework uses the following steps across all three policy areas addressed in this memo:

1. Articulate decision making criteria (e.g. baseline required CSP outcomes).
2. Identify the potential solutions that balance program outcomes.
3. Assess trade-offs across solutions.
4. Consider additional recommendations to maximize CSP outcomes.

The following sections will outline Staff's proposed decision-making principles, analysis, and policy recommendations for each issue.

Proposed decision making principles

While the legislature did not provide an overarching goal of the CSP program, it offered the following guidance to the Commission in establishing rules for the CSP:

- Incentivize electricity consumers to be owners or subscribers;
- Minimize the shifting of costs from the program to ratepayers who do not own or subscribe to a community solar project;
- Where an electric company is the project manager, protect owners and subscribers from undue financial hardship; and
- Protect the public interest.⁵

⁵ Oregon Revised Statute (ORS) 757.386(2)(a).

Given these directives, Staff has proposed a decision-making framework that will promote Staff's understanding of the overarching purpose of this program, while balancing additional required program outcomes. These elements are described below.

Overarching purpose – equitable opportunity

Staff proposes that the overarching objective of the CSP is to establish parity for consumers that have not been able to access solar customer generation opportunities and incentives.

Staff has thought at length about the role that CSP plays in the landscape of utility resource development and consumer options. Based on the direction from the legislature, and the Commission's mission and values, this consideration has focused on the unique costs and benefits that CSP projects provide ratepayers. As stated by the legislature, CSP projects create a new opportunity to share the costs and benefits associated with solar generation.⁶ While ratepayers have always shared in the costs and benefits of utility-owned or contracted solar, this program model allows a wider and more diverse set of ratepayers to experience the direct benefits of distributed and self-generation that the majority ratepayers historically could not access for geographic, economic, and other reasons.⁷

Staff also recognizes that CSP electricity generation is more expensive and requires incentivization above what ratepayers pay for other small generators, such as Qualifying Facilities, and market rate solar PPAs.⁸ For example, comments submitted by Oregon Solar Industries Association and the Coalition for Community Solar Access state that,

[T]here are incremental costs associated with community solar that separate it from standalone commercial and industrial (C&I) solar systems or qualified facilities (QFs). For a community solar project, developers incur marketing and customer acquisition costs in addition to ongoing administrative and technical costs associated with continued customer engagement and maintenance in addition to the O&M responsibilities for the system itself.⁹

Given the level of cost and risk placed on all ratepayers to stand up the CSP, Staff finds that CSP is best used as a tool to broaden participation in direct solar generation opportunities, but not as a vehicle for the acquisition of least-cost, least-risk resources. Additionally, Staff finds that CSP design is a valuable tool to prevent underserved communities from being left out of solar generation opportunities, but is not a particularly efficient means to relieve energy burden relative to mechanisms such as direct bill assistance and weatherization.

With this in mind, Staff believes that the CSP program design should focus on creating more equitable access to self-generation opportunities, including the incentives currently enjoyed by a relatively small portion of ratepayers. While all ratepayers have funded customer generation

⁶ Oregon Revised Statute (ORS) 757.386(1)(a).

⁷ Some of the major barriers to solar generation access in Oregon are described in Strategies for Increasing Solar Deployment in Oregon's Low- to Moderate-Income Communities. <https://lmi-solar-oregon.files.wordpress.com/2018/06/oregon-lmi-solar-strategies.pdf>.

⁸ Residential retail rates across the utilities are approximately \$0.08-\$0.11/kWh. Pricing from recent utility solar acquisitions, such as [Idaho Power](#), and industry data related to trends in solar PPA costs, such as [LBNL](#) and [Lazard](#), place solar PPA rates between \$0.02-\$0.05/kWh. This suggests that utilities could acquire four or more times as much solar generation for the same cost as CSP at the interim bill credit rate discussed further in this report.

⁹ See Docket No. UM 1930 comments submitted by OSEIA/CCSA on March 3, 2019, p.5.

incentives for decades, both as tax payers and utility customers, these opportunities have only been accessible to financially and geographically well-positioned property owners participating in net metering.¹⁰ With CSP, the state has the opportunity to provide a comparable opportunity to the majority of households that have paid into these incentive programs, but not had the resources or opportunity to participate (See Table 1).

Table 1 Comparison of existing customer solar generation and CSP Capacity Tier

	Net Metered Solar in Oregon – most recently reported installed capacity (MW)	Community Solar Capacity Tier (MW)
IDP	1.15 ¹¹	3.27
PAC	65.06 ¹²	64.60
PGE	76.31 ¹³	93.15
TOTAL	142.52	161.02

Additional requirements

As a complement to equitable access, Staff finds that the CSP must balance the following minimum requirements.

- **Low-income accessibility:** The CSP’s low-income participation targets are directly linked to the notion of equitable opportunity. To meet the program’s low-income targets in a way that provides meaningful opportunities for low-income participants, Staff proposes a minimum expectation that CSP participation makes low-income participants economically better off. This means the net impact of participation must result in a decrease of low-income participant bills but for CSP participation, both month-over-month and over the life of a CSP subscription.
- **Project availability:** Equitable opportunity also requires the market to produce CSP projects in which interested consumers can participate. Therefore, Staff identified minimum conditions for CSP project development, including consideration for projects that are driven from within the communities served by CSP. These conditions include:
 - **Project Manager value:** Staff understands that Project Managers must meet a minimum threshold for anticipated financial returns to move forward with project development. The PA Team worked with a range of solar developers and community-based organizations to review proprietary community solar pro formas and financial analyses. Based on this insight, the PA Team identified an 8% developer internal rate of return (IRR) as a proxy for project development.

¹⁰ Incentives referenced include, but are not limited to, net metering credits, Oregon’s residential and business energy tax credits, public purpose charge incentives, the volumetric incentive program, federal investment tax credits, and the 2019 Oregon House Bill 2618 solar rebate program.

¹¹ See Idaho Public Utility Commission Compliance Filing in Case No. IPC-E-12-27 Annual 2018 Net Metering Status Report, April 23, 2018, p. 2.

¹² See RE 39 – 2018 Net Metering Report for Oregon, Docket No. RE 39, April 1, 2019.

¹³ See PGE’s Division 39 Net Metering Annual Report, Docket No. RE 45, March 29, 2019.

- **Project Manager certainty:** Project Managers and lenders require a minimum level of certainty about key financial drivers in order to assume the upfront costs and risks to prepare a project for pre-certification. Staff's analysis assumes that Project Managers, at minimum, need to understand the likely range of bill credit rates and administrative fees that the PA will assign to the project. Certainty includes both the ability to anticipate the rate that the project will receive without knowing the project's place in the pre-certification queue, and the value of that rate over the life of the project.
- **Community-driven project certainty:** CSP projects led by non-profits, local governments, and other community-based organizations (CBOs) may take longer to prepare for pre-certification than professional solar developers. These projects may also be less equipped to tolerate risk when making investments to move projects toward pre-certification. Therefore, Staff finds it particularly important to ensure Projects Managers have certainty about key financial drivers further down in the pre-certification queue.
- **Ratepayer value:** Finally, these policy choices must represent the lowest cumulative ratepayer impact at which the other program requirements are achieved. CSP is one of a growing number of pilots, programs, and investments driven by the State's evolving needs and goals. Staff finds it important to consider the impacts of CSP in this context. Staff recognizes that there are costs required to stand up a successful program, but they must be balanced with the risks of over-incentivizing CSP and targeted to costs that will maximize ratepayer's return on this investment. For example, there are one-off investments that can reduce ongoing administrative costs e.g. automating the CSP Software Platform, reduce project soft costs, or remove other barriers to project development. Policy decisions should consider whether these upfront investments net a value for participants by reducing the need for long term bill credit rate incentives or accelerating the timeline in which the program is large enough to sustain its administrative costs without ratepayer support.

Analysis—Low-income program

Background on low-income program

ORS 757.386(9) requires that the Commission determine a methodology by which 10 percent of the total generating capacity of the community solar projects operated under the program will be made available for use by low-income residential customers of electricity. Further, the legislature directed the Commission to periodically review and adjust this percentage. When adopting the CSP rules, the Commission identified several important implementation issues related to the 10 percent low-income participation target, but recognized the need to bring the LIF on board to inform these decisions. Specifically, the Commission noted the following:

To allow flexibility to continue to evaluate how to implement this important component of the program...we modify the definition of low-income residential customer to indicate that we will later establish an eligibility threshold for these customers. We require under any implementation system, that the bill credits associated with the 10 percent allocation be linked in some direct manner to the electricity usage of individual low-income residential customers.

We adopt by order the requirement in the proposed rules that at least five percent of each project must be allocated for use by low-income residential customers, and at least an additional five percent of the total program must be allocated to serve

low-income residential customers. We recognize, however, that determining how to implement this important component of the program is challenging and will likely require further deliberation and input from the entities selected as program administrator and low-income facilitator...

Recognizing that financial incentives may prove appropriate or necessary to achieve the goal of participation of low-income residential customers, we add a new section providing that we may find cause to establish a funding mechanism to support the participation of low-income residential customers.¹⁴

Beginning in April 2019, the LIF engaged a broad range of experts to develop a low-income strategy that will meet the state's targets in a meaningful way. The PA Team has carried this strategy forward to propose answers to the key implementation questions described by the Commission above. The comprehensive low-income policy proposal from the PA Team is found in Attachment C and summarized with Staff's proposal below.

The minimum percentage of total project capacity that must be allocated for use by eligible low-income customers.

Since the Commission adopted the CSP rules, Staff and the PA Team's understanding of CSP economics, and the ratepayer support required to stand this program up, have evolved. This includes concerns that Project Managers will struggle to secure financing unless the bill credit rate is incentivized so that it's a guaranteed savings product for all participants.¹⁵ Staff finds it increasingly important to ensure low-income and traditionally underserved populations have broad access to these savings products, and equitable opportunity to receive the associated incentives. If an incentive rate will only be available on an interim basis, Staff finds it particularly important to ensure that the program's low-income participation targets are prioritized during this period.

Staff recognizes that the low-income target could be met in two ways: 1) a minimum ten percent requirement per project, and 2) a mix of projects that meet and exceed the five percent per project requirement adopted by the Commission to date. The former places risk on Project Managers and the LIF to recruit interested participants with meaningful opportunities. The latter places risk on ratepayers and/or other outside funding sources to incent Project Managers to voluntarily exceed the minimum per project requirement.¹⁶

Recommendation: Given the CSP's focus on providing financial benefits for all participants, it is imperative that Project Managers and other participants bring underserved communities along fully, and from the beginning. Therefore, Staff recommends a minimum 10 percent of each CSP project's nameplate capacity must be allocated exclusively for use by low-income residential customers. After pre-certification opens, the PA Team will gather data from CSP projects and monitor the performance of the CSP market. Staff can work with the PA Team to recommend an alternative per project or program goal if it determines that a different per-project amount can balance low-income accessibility and project availability at a lower cost to ratepayers.

¹⁴ Order No. 17-232, p. 11.

¹⁵ For example, see OSEIA-CCSA Comments filed by Charlie Coggeshall, March 2, 2018, p. 6.

¹⁶ The PA Team is aware of potential funding sources such as the Portland Clean Energy Fund and Portland General Electric's development funds. However, the PA Team is concerned about their geographically limited nature and does not have a clear understanding of the amount of additional low-income participation these funds will drive.

The minimum expectation for financial incentives associated with eligible low-income participation.

On July 3, 2019, the PA Team posted the draft Project Requirements PIM section for comment through the CSP stakeholder engagement site.¹⁷ This section included a requirement that Project Managers design low-income subscriptions such that participants do not experience a net increase in utility bills due to their participation in the program. In other words, the sum of the subscription/ownership costs (participation fees) and administrative costs cannot exceed the value of the bill credit. This recommendation aligns with the proposed principles of equitable access and low-income accessibility.

In the draft PIM, the PA Team flagged that additional requirements for the financial benefits of eligible low-income subscriptions were under consideration. For example, the Project Manager must set the subscription or ownership fees for eligible low-income participants at least X% below the value of the bill credit rate. In the draft PIM, the PA Team did not discuss how this elevated incentive requirement should be funded.

Staff's consideration of minimum financial benefits is rooted in low-income accessibility. The LIF's research indicates that a 20 to 50 percent estimated bill reduction is a valuable tool to minimize recruitment costs and make the program meaningful—rather than tokenizing—for low-income participants. Further, the LIF's discussions with potential community recruitment partner organizations finds that, 1) a baseline financial structure will help clearly explain the program opportunity to potential participants; and 2) a meaningful level of financial benefit is required to ensure the LIF's recruitment partners and those experiencing low incomes can dedicate resources to considering CSP participation among their other competing priorities and commitments.

However, setting a specific financial threshold with the current level of uncertainty over project financials and low-income recruitment outcomes also creates substantial risk. Research suggests there is a delicate balance between the level of low-income participant benefit and the availability of low-income participation opportunities—or any participation opportunities.¹⁸ If the minimum financial requirement is higher than is feasible for projects to bear, it could prevent Project Managers from bringing otherwise viable projects forward. This risk is even greater for community-based Project Managers that are likely to experience tighter margins and greater development risks. These projects may bring meaningful benefits to participants and added benefits of wealth building in underserved communities, but not quite reach the minimum financial benefit requirement.

While Staff agrees with the PA Team that a 50 percent subscription savings or greater is the preferred outcome for low-income financial benefits in the context of the CSP (See Attachment C), current financial models do not provide enough confidence that this is feasible (See Analysis—Bill credit rate and Attachment A.) Setting an infeasible minimum requirement poses a greater risk to both low-income accessibility and project availability, due to the difficulty and delays associated with course correction. Staff finds that it will be faster and more effective to course correct for low-income recruitment issues when there are projects moving forward with pre-certification and project data available. If the PA Team finds initial low-income interest is

¹⁷ See Requirements Chapter under Previously Posted Chapters, <https://orcspaunch.wordpress.com/resources/>

¹⁸ National Renewable Energy Laboratory, Low-Income Community Solar: Utility Return Considerations for Electric Cooperatives, p. 4-5. <https://www.nrel.gov/docs/fy18osti/70536.pdf>

limited by the financial benefits offered by projects in queue, it can analyze the level of benefit currently offered and the project financial data collected through pre-certification to identify the appropriate solution. Further, if low-income interest is limited, Project Managers will have an incentive to sharpen their pencils to ensure they can meet the certification requirements tied to low-income participation.

With limited confidence that a 50 percent subscription savings is feasible, Staff and the PA Team identified the following alternative options. These options could be adopted until more insight and data are available through pre-certification:

- Generalize the minimum requirement to state that low-income participants must receive some level of subscription savings from participation;
- Reduce the minimum subscription savings to a level that it is feasible under the current program; or
- Adopt a low-income bill credit adder that makes the 50 percent subscription savings feasible e.g., the other way to make it feasible for Project Managers to set participation fees 50 percent below the bill credit rate, is to raise the bill credit rate.

Recommendation: As demonstrated in the Analysis—Bill credit rate section, Staff finds that a 20 percent subscription savings to participants is likely feasible under the current program design (the sum of monthly fees associated with CSP participation must be at least 20 percent lower than the value of the bill credit rate). Staff recommends that the Commission adopt this 20 percent subscription savings requirement with the following additional requirements:

- The PA Team will list a 50 percent or greater subscription savings as a best practice in the PIM and CSP Project Manager training materials.
- The LIF will prioritize Project Managers with a 50 percent or higher low-income discount for low-income participant placement.
- Project Managers with a 50 percent or higher low-income discount will qualify for the Low-Income Project Designation.¹⁹
- Once pre-certification opens, the PA Team will monitor the actual subscription discounts offered by Project Managers applying for pre-certification and the relationship between low-income recruitment and financial benefit. The PA Team will work with Staff to assess whether additional financial benefits are required to facilitate low-income participation, how those can be achieved/funded, and, based on low-income participation data and project financial data, the appropriate level to set minimum low-income financial benefit.

Attachments A and C provide additional analysis of a low-income bill credit adder that could mitigate the risks associated with a 50 percent minimum threshold. Staff does not have enough certainty around project availability to recommend this additional ratepayer expense at this time.

¹⁹ See draft PIM Requirements section, p. 9, posted July 3, 2019.
<https://orcsplaunch.files.wordpress.com/2019/07/pim-chapter-x-requirements.pdf>.

Due to the difference in bill credit rate across utilities and the diverse range of potential project designs, Staff recognizes that the net benefit requirement may still be difficult for some Project Managers. To mitigate this and facilitate the ability to comply with the best practice subscription discount recommended above, Staff also recommends that eligible low-income participants be exempt from ongoing PA fees. Rather, these PA fees will be absorbed by the other program participants and/or Project Managers. Staff proposes this as a streamlined mechanism to improve the economics of low-income subscriptions that is socialized across all program participants equally. The PA will monitor low-income allocated capacity during pre-certification to ensure that this model does not pose a risk of administrative fee under collection.

The manner in which bill credits must be linked to the electricity usage of individual low-income residential customers.

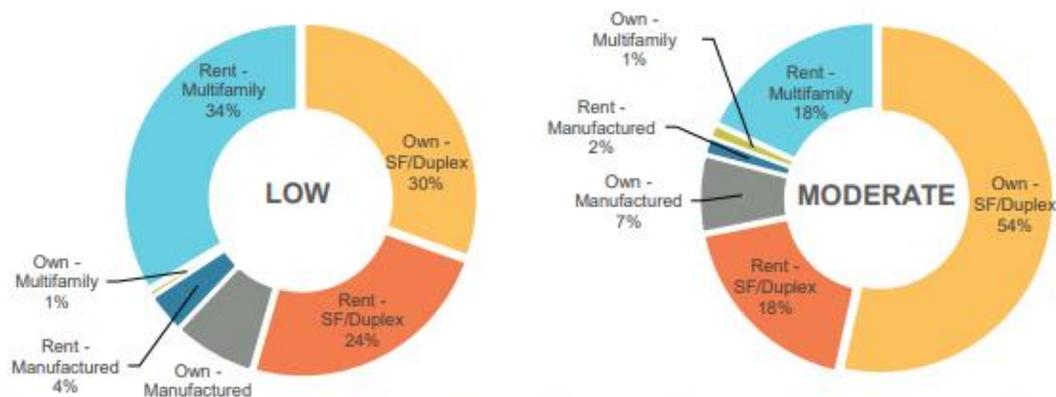
Providing equitable opportunity to diverse housing and income-types is a key benefit of the CSP. However, housing diversity adds complexity when ensuring that the eligible low-income households relied upon to meet the program's targets actually receive the benefits of the bill credit.²⁰ Because the entire CSP participant experience is managed on-bill, the Commission must determine eligibility if the housing provider holds the utility account on behalf of the tenant, and/or when the tenant's utility payment is included in computation of gross rent.²¹ For example, U.S. Department of Housing and Urban Development (HUD) explains the arrangements that some rent-assisted housing units:

Federal housing law directs that the resident's share of rent in federally assisted public housing should equal 30 percent of the household's adjusted monthly income. In interpreting the federal housing law, HUD has defined the Total Resident Payment for "rent" to include both shelter and the costs for reasonable amounts of utilities. The amount that a [Public Housing Agency] determines is necessary to cover the resident's reasonable utility costs is the utility allowance. Whether a household receives an allowance for a given utility service generally depends on the way the utilities are metered. Allowances are provided for individually metered or sub metered utilities, but not for master-metered utilities.²²

²⁰OAR 860-088-0080(2) requires that, "the respective bill credits associated with [the low-income] allocation must be linked to discrete low-income residential customers."

²¹ Depending on the requirements of an affordable housing provider's funding and the household's income, any net decrease in electricity costs due to CSP participation may not be reflected in the residential consumer's housing costs.

²² U.S. Department of Housing and Urban Development:
https://www.hud.gov/program_offices/public_indian_housing/programs/ph/phecc/allowances.

Figure 3 Low and Moderate Income Housing Type Distribution in Oregon²³

Source: American Community Survey 5-year Estimate, Census 2015 self-reported figures.

Staff identified three options to account for the complexity of affordable housing bill responsibility: 1) Change the requirement that low-income participation must directly benefit a low-income subscriber; 2) prohibit participation for affordable housing residents that do not directly pay their electric bills or receive a utility allowance; or 3) develop additional requirements for housing providers that hold eligible low-income subscriptions on behalf of residential households.

Staff finds that the first two options are in direct conflict with equitable opportunity and low-income accessibility. Further, Staff recognizes that affordable housing providers may serve as natural aggregators of interested low-income households, and can increase other low-income participant benefits by shouldering some of the burden of researching and committing to a CSP project.

Recommendation: Rather than develop specific requirements for every possibility across the breadth of housing arrangements across the state, Staff proposes additional guidelines to ensure that bill credits and other benefits of qualifying low-income participation are linked to discrete residential participants regardless of the housing type. Staff proposes that an eligible low-income subscription can be held by:

- A qualifying residential customer as defined in the PIM, that meets the income requirements set forth in the PIM, in addition to all other Subscriber eligibility requirements.
 - A residential utility account holder is considered eligible if they are unable to directly monetize the bill credit because of a utility allowance or other requirements of rent-assisted housing. This avoids unfair accessibility limits and recognizes the possibility that the participant will enjoy community solar benefits if they move into a different housing type.
- An affordable housing provider that directly pays for the residential electricity costs of tenants with household incomes that meet the income and other eligibility requirements set forth in the PIM. These subscriptions stay with the

²³ Energy Trust of Oregon, Strategies for Increasing Solar Deployment in Oregon's Low- to Moderate-Income Communities. <https://lmisolaroregon.files.wordpress.com/2018/06/oregon-lmi-solar-strategies.pdf>.

housing unit. Tenants that move out of the unit, but wish to retain CSP participation, can work with the LIF to find placement in a new project or on the waiting list. To qualify as an eligible low-income subscription, the housing provider must:

- Identify to the LIF the low-income customers, by name and housing units, on whose behalf they are participating (the "low-income beneficiaries");
- Share at least 75 percent of any financial savings that result from the Subscription with the low-income beneficiaries;²⁴
- Educate the low-income beneficiaries about community solar, the Project, how they benefit, and how to sign up with the Low-Income Facilitator for another Project if they move.

Staff recognizes that this treatment of affordable housing providers adds complexity to that PA Team's administrative responsibilities. And, that this recommendation leaves key implementation details to be determined, such as how housing providers can demonstrate that they have shared 75 percent of financial savings with tenants and how the PA Team will enforce it. This specialized support for a CSP element that many states find difficult is a key role of the Low-Income Facilitator. Therefore, Staff will continue to work with the PA Team to expand on these high-level requirements through the PIM development or other UM 1930 processes. After pre-certification launches, Staff and the PA Team will continue to monitor the impact of these requirements as they align with the principles described in this report, and recommend modification as required.

Analysis—Transition between start-up and ongoing costs

Background on transition between start-up and ongoing costs

OAR 860-088-0160(1)-(2) sets forth the requirements for CSP administrative costs, distinguishing between start-up costs incurred during the development or modification of the CSP and ongoing costs. OAR 860-088-0160(1) requires start-up costs to be reviewed and approved by Commission order, and 860-088-0160(2) specifies that the appropriate share of ongoing costs for each project will be allocated in the Program Implementation Manual or otherwise determined by Commission. If the PA over-collects administrative fees, the excess funds are applied to future costs. If the PA under-collects funds required to perform its duties, the Commission may suspend further pre-certification of projects until the funding shortfall is resolved.

On March 5, 2019, the State of Oregon executed a contract for PA and LIF services with Energy Solutions.²⁵ The contract covers a three-year term and includes not-to-exceed costs for start-up expenses and annual ongoing expenses over the contract period. The ongoing not-to-exceed costs include a total annual dollar amount and a maximum amount that can be collected from CSP participants as an administrative fee. Further, the contract statement of work includes a requirement that the PA work with OPUC Staff to develop a shared framework for identifying and executing a transition from start-up to ongoing costs.

²⁴ This recommendation draws on experience from other states' solar programs. For example, the California Solar on Multifamily Affordable Housing (SOMAH) program has a requirement that 51% of incentives have to be passed on to the tenants while the 49% is allocated to the housing provider in order to support the housing provider's investment in these programs on behalf of tenants. See California CPUC decision D.17-12-022.

²⁵ Energy Solutions has subcontracted the LIF services to Community Energy Project.

The PA Team continues to refine its understanding of administrative tasks and associated costs through PIM finalization, completion of the CSP Software Platform, and additional launch tasks. However, it recognizes that Project Managers require certainty of ongoing administrative fees to prepare projects for pre-certification. At the time of this proposal, the PA Team finds that administrative tasks are understood well enough to classify start-up and ongoing expenses and establish a methodology to translate those budgets into an initial administrative fee structure. Therefore, Staff's proposal addresses the following issues simultaneously:

- The point at which the PA/LIF administrative costs transition from start-up to ongoing;
- The initial ongoing administrative fee structure that will recover these administrative costs.

Transition point

The legislature and CSP rules provide the Commission flexibility to establish a transition point for administrative costs that will balance project availability and ratepayer value. While the transition points discussed in this proposal will apply to both PA/LIF and any Commission approved utility administrative expenses, Staff's current proposal focuses on establishing a methodology to establish PA Team fees. Staff will engage in a separate process to identify utility ongoing costs once the CSP software platform and data exchange protocols are in place.

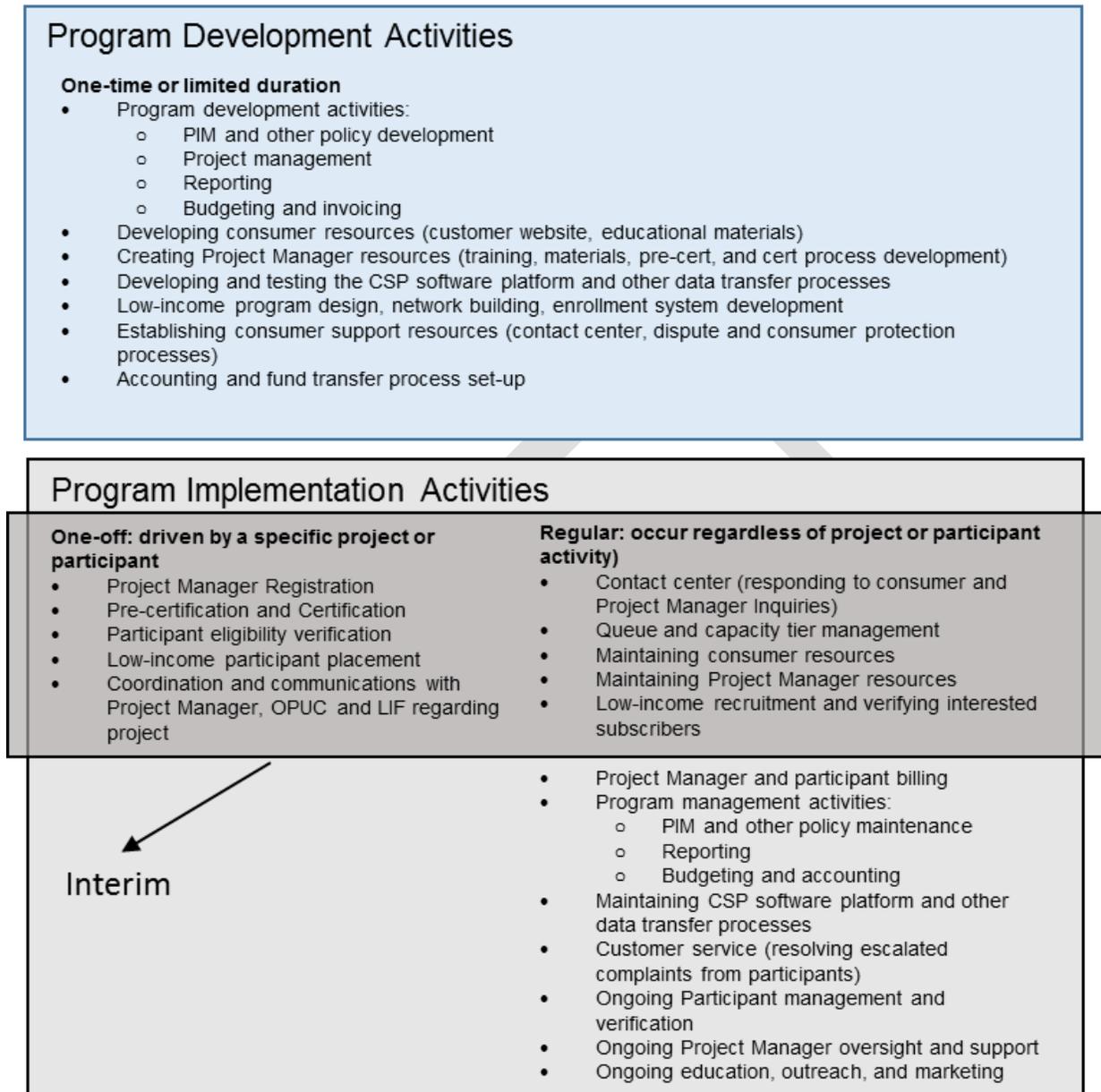
Staff has identified the following options for the transition point between start-up and ongoing costs:

- Task-based: The Commission designates specific administrative tasks as start-up activities. Only costs associated with these tasks are recoverable from ratepayers as start-up costs. Any other administrative costs are considered ongoing and borne by the program (project participants and/or Project Managers). Depending on the granularity of the task-based designations, start-up tasks may continue to occur after some ongoing tasks have begun. For example, the PA may continue finalizing the billing components of the software platform after pre-certification launches.
- Temporal: The Commission establishes a time-based start-up period during which all administrative expenses classify as start-up costs. Following that date, all administrative costs are borne by Project Managers and program participants.
- Capacity-Based: The Commission designates a capacity at which the program is self-supported. Once this level of program capacity is operational, subscribed, and billing participants, all administrative costs are borne by Project Managers and program participants.

To provide context to this discussion, Staff has identified three types of PA/LIF administrative activities, which are illustrated in Figure 4.

- Program development activities: Activities associated with building systems, developing policies, and establishing processes. These are one-off or limited duration activities and cannot be attributed to a specific project or participant.
- Program implementation activities: Activities that occur to implement the ongoing program's systems, policies, and processes. These activities can be one-off and driven by a specific project or participant, or can be regularly occurring over the life of the program and not attributable to a specific project or participant. For the purposes of establishing a transition point, Staff notes that there are certain interim activities that will begin once the systems and processes are in place, prior to any projects coming online and billing participants. These expenses could continue for up to 24 months before projects begin billing participants per the rules proposed in the PIM.

Figure 4 Summary of PA and LIF Activities



The ongoing administrative costs borne by CSP participants are an important driver of project economics. Therefore, Staff analyzed how the three transition options balance the risks to project availability and ratepayers as shown in Table 2.

Table 2 Transition point trade-offs		
Options	Project availability	Ratepayer value
Task-based	<ul style="list-style-type: none"> There's likely an interim period where there are no projects billing, but administrative costs being incurred Risk of deterring early project development i.e., the first project to come online would bear all program administrative costs) 	<ul style="list-style-type: none"> Minimizes the administrative tasks that can be borne by ratepayers Provides certainty for ratepayer costs Risk of limiting the value ratepayers get in exchange for the start-up costs, in terms of project development
Temporal	Some risk of deterring or burdening early participants if adoption is slow, but allows for projects to utilize the full certification timeframe	<ul style="list-style-type: none"> Risk of greater burden on all ratepayers if the program takes off quickly Ratepayer risk limited by the timeframe Timeframe provides some certainty for ratepayer costs
Capacity-based	Does not deter early project development	Highest risk of ratepayer burden if the program takes off slowly

Further, Staff notes that in a task-based transition, there will be a period of time between the conclusion of Program Development Activities and the time in which the PA will be able to collect fees from participants of operating projects. The current processes in the draft PIM allow this period to extend up to 24 months. These costs must be borne by the PA, Project Managers pre-certification application fees, or ratepayers.

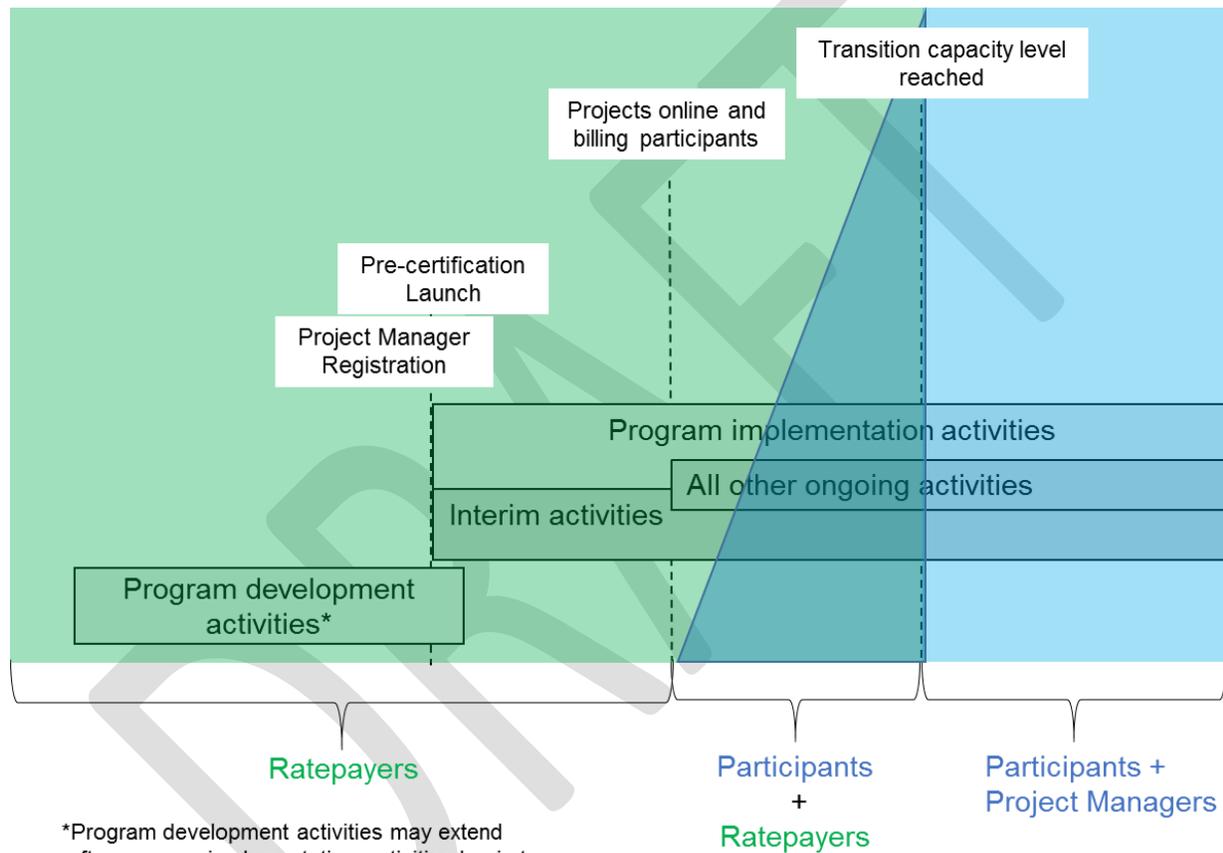
Recommendation: Staff finds that a task-based transition point is an important tool to minimize ratepayer impacts, and is most in line with the spirit of the law. However, Staff recognizes the risks of deterring early projects and the likelihood that there will be a period of time when there are no billing participants and, then, not enough participants to reasonably bear the ongoing costs. Therefore Staff proposes a hybrid approach to mitigate risks addressed in Table 2.

- Adopt a task-based transition point whereby Program Development Activities are considered start-up, and Program Implementation Activities are considered ongoing costs.
- To mitigate the risks to early adopters, establish a capacity-based point at which the size of the program can feasibly sustain the ongoing administrative fees. This level of capacity is herein referred to as “transition capacity level”.
 - Set the administrative fees at the level that would recover all ongoing costs when the program reaches the transition capacity level.
 - Begin billing participants at the determined participation fee from the time the first project energizes, regardless of program size.
 - All other unfunded ongoing costs are considered start-up costs until the program reaches the transition capacity level (the difference between what’s collected from participants and total ongoing costs). This means that the Commission will consider one-off interim tasks start-up costs until the program reaches the transition capacity level. Then, these costs can be recovered from Project Managers as pre-certification application fees or incorporated in participant fees.
- To mitigate risk to ratepayers if the transition capacity level is not quickly reached, establish a time-based off-ramp at 24 months following pre-certification

launch. If the transition capacity tier is not reached, the Commission will pause pre-certification and determine the appropriate next steps. Because this aligns with the end of the contract terms for PA services, this can be addressed in conjunction with analysis being performed for contract renewal.

Staff notes that a small number of tasks will occur without a clear distinction between start-up and ongoing, such as managing and reporting the program budget. Staff proposes that these tasks transition to ongoing when pre-certification opens, but receive the same capacity-based and temporal mitigation strategies described above.

Figure 5 Transition from start-up to ongoing



*Program development activities may extend after program implementation activities begin to finalize the billing system and utility data exchange.

Ongoing administrative fee methodology

Staff proposes the following methodology to translate the transition proposal into a fee structure for ongoing administrative costs.

- Project Manager application fees cover one-off activities: Set the per-project pre-certification application fee (\$/kW) to cover one-off ongoing activities driven by the pre-certification and certification process.
 - Consider one-off interim activities as start-up activities until the transition capacity level or 24 month off-ramp.
 - Regardless of timing, all projects are required to pay a \$5/kW non-refundable deposit that will be deducted from the full amount of the application fee.
- Participant fees cover regular ongoing activities: Set the project participant administrative fee (\$/kW/month) to cover the cost of regular ongoing activities at the transition capacity level.
 - The PA will begin collecting subscribers/owners' \$/kW/month fee when each project begins billing subscribers/owners, regardless of the level of program capacity that is operating and billing.
 - Consider any unfunded administrative costs as start-up costs until the capacity of participants billed reaches the transition capacity level.

Following the transition from start-up to ongoing activities, the PA Team will report annually on actual administrative spending and adjust its forecast for the following year's administrative spending. The PA Team will subtract any excess funds collected in a year from the following year's budget, and adjust the following year's administrative fees accordingly (both participant fees, project application fees, and the project non-refundable deposit). Similar to the Energy Trust of Oregon process, the PA will present its annual budget for Commission review and recommendations.

Staff proposes that participant fees cannot exceed \$2.46/kW/month per the contract for PA services, nor can the fee increase from the initial \$/kW/month applicable at the time project pre-certification launches. This means that a participant can see its fee adjusted down, but will not see a fee higher than that assigned to the project at the time of pre-certification. Project certification fees (\$/kW) can be adjusted up or down based on greater understanding of project financials and the actual costs associated with project certification as the program evolves over-time.

Staff proposes that the Commission adopt the annually adjusted PA fees by order. Once adopted, the PA Team will post the updated schedule on the CSP website and notify all registered Project Managers of the fee adjustment. Project Managers will be responsible for notifying participants of the change.

Fee assumptions for bill credit analysis

Based on the contract for PA Services, the PA Team forecasted the approximate administrative fees at different transition capacity levels (See Table 3). The PA Team adjusted the project certification fee to account for the fixed costs that are spread over the volume of applications at different capacity levels.²⁶ These values were used to model project economics in the bill credit analysis. To provide certainty for Project Managers and prospective participants, Staff proposes that the Commission adopt the initial administrative fees set forth in the bill credit

²⁶ The PA continues to refine its ongoing budget as program implementation details are finalized. The PA Team will provide detailed documentation and a final proposal for an initial fee schedule with the Staff report on October 4, 2019.

recommendation provided further in this report. However, Staff proposes that the PA Team reserve the right to adjust this scheduled prior to pre-certification launch if cost-efficiencies can be identified.

Approx. MW subscribed and billing across utilities	% Capacity Tier (for context)	General Participant Admin Fee (\$/kW/mo)	LI participant fee	Project Certification Fee (\$/kW)
40.3	25%	\$2.46	\$0	\$100*
80.5	50%	\$1.50	\$0	\$75
120.8	75%	\$1.00	\$0	\$50
161.0	100%	\$0.85	\$0	\$40

*Adjusted to recover administrative fees not recovered under the \$2.46/kw/month general participant administrative fee cap set forth in the contract for PA services.

Analysis—Bill credit rate

Background on bill credit rate

OAR 860-088-0170(a) required that, “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 OAR860-088-0140(l)(a).” When adopting this rule, the Commission recognized that the resource value of solar was still under development in other proceedings and explained that:

We agree with Staff that it is premature to adopt an interim rate. As discussed in this order, many steps remain in implementing this program. During the implementation process to follow, we direct Staff to work with the program administrator to monitor the progress of docket UM 1716 and to recommend appropriate action if it becomes apparent that delay in establishing a bill credit rate is delaying program launch.²⁷

When establishing the size of the program, the Commission further noted that,

Our intention in setting this initial limit is to launch the program at a size large enough to sustain the initial administrative costs while also ensuring that we have the opportunity to adjust all aspects of the program before proceeding to any farther expansion.²⁸

Following the adoption of the CSP rules, parties continued to monitor the progress of the resource value of solar (RVOS) proceedings.²⁹ Through these efforts, the Commission adopted the Simple Retail Rate (based on the residential retail rate) as an interim bill credit rate for first 25 percent of each electric company's initial program capacity tier.^{30,31} This decision was driven by two concerns: 1) that RVOS rates were

²⁷ Order No. 18-177, p.

²⁸ Order No. 17-232, pp 7- 8.

²⁹ Docket Nos. UM 1716, UM 1910, UM 1911, and UM 1912.

³⁰ See Order No. 18-177, May, 23, 2018.

³¹ Per OAR 860-088-0060, program capacity tier means the amount of total program capacity eligible for projects participating in an electric company's service territory, and is equal to 2.5 percent of the electric company's 2016 system peak.

unlikely to be finalized in time to facilitate a timely launch of the Community Solar program; and 2) the RVOS value would not result in subscription options being made available to customers.³² Further the Commission noted that:

Inherent tension exists in developing a program that encourages development and investment in Community Solar in a manner that creates fairness and equity for customers that do not have access to available net-metering solar opportunities or are low-income, with that of advancing fairness and equity by limiting cost-shifting to non-participants.

The Commission did not make a determination about the bill credit rate for the remaining 75 percent of the program capacity tier, but indicated that this interim rate will need to incorporate a transition to an RVOS based value. The Commission directed, “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.”³³

Since the Commission’s decision to implement an interim bill credit rate, Staff has monitored the development of RVOS and worked with the PA Team and industry experts, including the Energy Trust of Oregon, to expand its understanding of CSP project design and financials. A key learning from this work is that certainty over the bill credit rate is among the most important factors for a Project Manager to secure financing and take the risks associated with moving a project forward for pre-certification. Further, Staff and the PA Team learned that CSP project development carries additional costs that comparable solar projects with a single owner and/or single off-taker do not share. Finally, the RVOS dockets remain open and the utilities are still working to finalize values for application of the RVOS methodology.³⁴ This work is not specific to a CSP project.

Given these factors, Staff has developed a framework to evaluate:

- The specific value of the Simple Retail Rate (hereinto referred to as the “interim rate”) for the first 25 percent of the program capacity tier (hereinto referred to as the “interim tier”).
- The manner in which the CSP should transition to a rate based on RVOS after the interim tier.

Interim rate proposal

Staff finds that the interim rate has two pieces:

- Base rate: The value of the residential retail rate; and
- Adjustment: Whether that rate will remain fixed for the life of the agreement between the project and the utility to provide bill credits to participants, or float with the retail rate over that period of time.

Base rate proposal

Staff proposes the utilities calculate the base rate annually using the following methodology:

- The sum value of the rates for residential basic service, which includes transmission charges, distribution charges, the 1st 1,000 kWh energy charges, and system usage charges.

³² Order No. 18-177, p. 1.

³³ *Ibid*, p. 4.

³⁴ See Order Nos. 19-021, 19-022, and 19-023.

- For simplicity and consistency, Staff does not recommend that the base rate include the various adjustments that the utility may apply outside of the charges listed above, such as Low Income Assistance, surcharges for pilot programs, or funds collected for the Public Purchase Charge, because these elements can vary over time, between utilities, and even between customers of the same utility i.e. franchise fees.
- The PA will assign the interim rate to projects using the base rate applicable at the time that the project applied for pre-certification. This rate will be applicable for a term no less than the term of any PPA between the project and the utility.

To provide certainty for prospective Project Managers, Staff proposes that the Commission adopt the base residential retail rates in Table 4 for any project pre-certified in 2019 and 2020. Starting on January 1, 2021, until the Commission determines that it will no longer accept pre-certification applications at the interim rate, utilities will file an update to the base rate by January 1st of every year. The updated rate will be adopted by the Commission and posted to UM 1930 and the CSP website. Staff recommends that the PIM provide a description of this process and a directions to locate the most recently updated base rate.

Included charges	IPC		PAC		PGE	
	\$/kWh	Tariff	\$/kWh	Tariff	\$/kWh	Tariff
Transmission charge (\$/kWh)	-		\$0.00473	Schedule 4	\$0.00243	Schedule 7
Distribution charge (\$/kWh)	-		\$0.03598	Schedule 4	\$0.04662	Schedule 7
Energy charge (\$/kWh) - first 1,000 kWh	\$0.0848	Schedule 1	\$0.02927	Schedule 200	\$0.06329	Schedule 7
			\$0.02619	Schedule 201		
System usage charge	-		\$0.00072	Schedule 4 (system usage charge for sch 200)	-	
			\$0.00076	Schedule 4 (system usage charge for sch 201)		
Total Residential Retail Base Rate	\$0.0848		\$0.0977		\$0.11234	

Adjustment options

Staff identified the following two options for the adjustment:

- Flat: Participants in the project receive the nominal value of the base rate at the time of pre-certification for the duration of the project.
- Floating: Participants receive the contemporary retail rate over the life of the PPA between the project and the utility, which will change when the residential retail rate changes.
 - Staff proposes that the floating rate is estimated as a fixed escalator, rather than an actual real time adjustment over the life of the project. This benefits the modeling in this report and upholds the project managers' and participants' need for certainty.
 - A look at recent trends in residential rates across the three utilities indicates that 2% annual increase is the appropriate proxy for residential rate increases. Staff suggests that the same proxy rate escalator be applied consistently across utilities for administrative and consumer consistency.

Year	Residential Revenue per kWh (Oregon Average)	% annual increase
2013	10.75	2%
2014	11.40	6%
2015	11.55	1%
2016	11.43	-1%
2017	11.44	0%
5-year straight average annual rate increase		2%

The adjustment is one of many factors considered in Staff's bill credit analysis and proposal. These outcomes are summarized in Table 6.

Transition to RVOS

As stated previously, and noted by the Commission when adopting the CSP rules, the capacity of the program determines the administrative fees borne by participants. In turn, these fees directly inform project availability and low-income accessibility. The ability to reach the transition capacity tier, and quickly, then impacts overall ratepayer value. Therefore, Staff's bill credit rate analysis considers the feasibility of the two interim rate options if the program is at the current 25 percent interim capacity tier, as well as, 50, 75, or 100 of the program capacity tier. To measure the feasibility of transitioning to RVOS, the model also estimates program outcomes if participants are credited at the utilities' latest filed RVOS values.

Modeling outcomes

To measure the risks associated with different combinations of bill credit rate and program size, Staff worked with the PA Team to evaluate the balance between project feasibility and ratepayer impacts. To do this, the PA Team and Staff modeled the expected developer IRR and ratepayer impact of the bill credit over 20 years.

Staff recognizes that this is an entirely new solar model for Oregon and significant uncertainty exists around project design elements such as interconnection, financing, and subscriber acquisition costs. In addition, the PA and LIF are unique to Oregon and are expected to provide costs, benefits, and efficiencies not seen in other markets. Staff and the PA Team sought to model an average project based on industry experience and a review of five developers' pro forma (national and CBOs), but modeling outcomes are primarily intended to capture risk, considered imperfect, and subject to variation across actual CSP projects. Modeling assumptions are provided in Attachment B.

Table 6 Bill Credit Rate Modeling Outcomes						
Program Size	Bill Credit Rate	Project Manager 20y IRR	PGE Ratepayer Impact (% of Rev. Req.)	PAC Ratepayer Impact (% of Rev. Req.)	IPC Ratepayer Impact (% of Rev. Req.)	Gross 20y Ratepayer Impact (\$M)
25% (40.3 MW)	RVOS	N/A	0.006%	0.007%	0.006%	\$5.15
	Retail – fixed	4.11%	0.053%	0.043%	0.053%	\$39.18
	Retail – floating	6.54%	0.075%	0.063%	0.081%	\$56.16
50% (80.5 MW)	RVOS	(12.78%)	0.009%	0.009%	0.007%	\$6.91
	Retail – fixed	5.40%	0.102%	0.083%	0.102%	\$75.44
	Retail – floating	7.76%	0.147%	0.122%	0.158%	\$109.66
75% (120.8 MW)	RVOS	(9.55%)	0.008%	0.009%	0.006%	\$6.73
	Retail – fixed	6.03%	0.148%	0.119%	0.147%	\$109.03
	Retail – floating	8.36%	0.215%	0.177%	0.231%	\$160.10
100% (161.0 MW)	RVOS	(8.82%)	0.009%	0.009%	0.005%	\$6.96
	Retail - fixed	6.22%	0.195%	0.156%	0.193%	\$143.29
	Retail - floating	8.54%	0.284%	0.234%	0.305%	\$211.33

Modeling suggests that a program size of 40 MW poses substantial risk to project availability at any of the rates considered. In addition, adopting the fixed retail rate or transitioning to RVOS without additional subsidy pose substantial risk to project availability at any of the program sizes considered.

At the floating retail rate, project availability appears to cross the 8 percent IRR threshold before the program reaches 120 MW and is close to feasibility when administrative fees are spread across 80 MW.

At the same time, the model suggests that the rate and program size combinations that minimize project availability risk are associated with \$109 - \$211 million of ratepayer subsidy compared to the cost purchase the CSP projects' generation at avoided cost rates over the same period of time. These costs are material and should be carefully weighed against the risks of project availability, considerations for equitable access, and value of providing certainty at higher capacity levels for community-driven projects.

Recommendation: Staff recommends that the Commission adopt the floating retail rate as the interim rate, and establish the transition capacity level at 80 MW of subscribed capacity online and billing.³⁵ In addition, to ensure that there is enough Project Manager certainty and subscribed capacity to reach 80 MW of capacity online and billing within 24 months, Staff proposes that the Commission extend the interim rate to 75 percent of each utility's interim capacity tier. Without the headroom (i.e., if the interim rate were only applied to 50 percent of each utility's capacity tier) ratepayers will support the program administrative costs until each utility reaches its full capacity tier and all projects are 100 percent subscribed. Allowing up to 75 percent of each utility's capacity tier to receive the interim rate allows more flexibility for the 80 MW transition capacity level to be reached across utilities. In addition, the added certainty may help accelerate the speed at which Project

³⁵ As stated previously, 80 MW transition capacity level translates to \$1.50/kW/month participant fee and a \$75/kW application fee. Ratepayers will support unfunded ongoing costs until the program reaches the transition capacity tier or 24 months have passed since pre-certification launch.

Managers bring project forward for pre-certification and construction, further minimizing the administrative costs borne by ratepayers.

Staff's proposal is designed to walk a difficult line between standing up a stable program as quickly as possible, and prevent more ratepayer costs or risks than are necessary. This proposal creates a similar opportunity to that enjoyed by net metering participants to date, both in program size and bill credit value; it also increases certainty for all types of Project Manager without limiting the Commission's flexibility to monitor the market response before committing an incentive rate to the entire capacity tier. Staff finds that this flexibility is important given the remaining uncertainty around CSP project costs, the role of the PA team in reducing project costs, and the risk of extended ratepayer impacts if the program cannot reach stasis without ratepayer support.

In addition, Staff's proposal sets the transition capacity level such that the modeling outcomes are very close, but not quite above the IRR proxy for project availability. Spreading administrative costs over 80 MW represents a balance between project availability and ratepayer impact, given the need to provide additional headroom and the remaining uncertainties with project economics under this program model. As mentioned previously, Staff and the PA Team will continue to evaluate opportunities to drive efficiencies in ongoing costs as program design is finalized.

Finally, when RVOS values are finalized, Staff proposes to work with the PA Team to transition the interim rate such that it is based on RVOS. Specifically, the total interim rate value will remain the same, but it will be comprised of RVOS and a CSP incentive value. This will allow additional transparency into the incentive rate provided to CSP participants and simplify the process for the Commission to modify the CSP incentive value after 75 percent of a utility's capacity tier is allocated, based on actual market response and other data collected.

Other learnings and recommendations

Through its research and analysis, Staff and the PA Team identified new learnings, which facilitated additional recommendations to maximize the program outcomes without increasing ratepayer impact.

Simplify Crediting Rules: Staff and the PA Team attempted to model the month-to-month impact of the different CSP rates to ensure that there are no months where low-income participants' bills will be higher due to CSP participation. Staff and the PA Team found that the monthly kWh and volumetric caps are unnecessarily burdensome to low-income participants, while not affecting ratepayer impacts. These complex bill mechanics will be difficult for customers to understand, challenging to display clearly on bill, and increase the complexity and frequency of data calculations and exchanges between the PA, utilities, and Project Managers. To reduce technology and customer service costs, ease customer acquisition barriers, and protect low-income accessibility, Staff recommends that the Commission remove these requirements from the rules and provide the following bill mechanics:

- A participant's monthly total bill credit is calculated by multiplying the bill credit rate by the participant's share of total project generation in the month. This will be a dollar value referred to as the "total bill credit".
- If the value of the total bill credit exceeds the participant's total utility bill amount (in dollars), less any other on-bill repayment expenses, the excess bill credit amount (in dollars) is carried forward as a positive balance on the participant's account. This amount is referred to as the carry-over bill credit value.
- At the end of the annual billing cycle, any remaining carry-over bill credit value (in dollars) attributable to CSP participation must be donated to the low-income programs of the electric company serving the participant.

Small project carve out: In researching project economics and reviewing pro formas for different Project Manager types, Staff and the PA Team found that community driven projects (CBOs and government entities) still need to take advantage of economies of scale to pencil out. To preserve intent of this carve-out, Staff proposes that the Commission include both 360 kW and under projects, and projects with a non-profit or public entity as the Project Manager. Further, Staff proposes that the 25 percent carve-out apply for the entire amount of capacity allocated at the interim rate (i.e., 75 percent of each utility's capacity tier). This increases the maximum size of the carve-out from up to 10 MW of small and community-driven projects to up to 30 MW.

Utility	25 percent capacity tier (MW)	75 percent capacity tier (MW)
IPC	0.20	0.61
PAC	4.04	12.11
PGE	5.82	17.47
Total	10.06	30.19

Staff also proposes to use the definition of non-profit organization adopted by the Commission for the utilities' voluntary renewable energy grant programs:

For the purposes of voluntary renewable programs, the term non-profit shall include any mutual benefit corporation, public benefit corporation, religious corporation, municipal corporation, or Indian Tribe as defined by Oregon Law.³⁶

Staff proposes to work with the PA Team to monitor the usefulness of this carve-out and bring forward recommendations to amend or otherwise modify this carve-out based on actual project development data after pre-certification launches.

Support Project Manager acquisition costs: Staff finds that soft costs to acquire and maintain participants is among the areas where the most uncertainty and risk remain. Through start-up activities, ratepayers are investing in a Project Clearinghouse Website that allows prospective participants to review and compare CSP project options in a single, uniform venue. In an effort to drive down CSP project costs under the 80 MW transition capacity tier and maximize ratepayer value for this investment, Staff recommends that the utilities provide at least one communication per year that informs all customers of the CSP opportunity, and directs customer to the Project Clearinghouse and PA Team contact information to learn more about their options. The cost of these activities will be considered start-up costs until the capacity transition level is reached. At that point, Staff and the PA Team will work with utilities and stakeholders to determine if further support is required.

³⁶ See Commission Order No. 17-455, Docket No. UM 1020, November 8, 2017.

Staff proposes to work with the PA Team, utilities, and stakeholders to identify the specific consumer outreach actions that will best leverage greater program outcomes for a reasonable ratepayer costs.

Conclusion

On June 29, 2017, the Commission adopted administrative rules for the CSP. The Commission recognized that certain program decisions would be best resolved later in the implementation process to account for continued learnings and insight from the PA and LIF when selected. Staff, working with the PA, LIF, and the PA's partners continued to gather learnings on key policy decisions required for Project Managers to prepare projects for pre-certification through industry research and discussion with stakeholders. Given the PA Team's plan to launch pre-certification by the end of 2019, Staff finds it necessary for the Commission to resolve these outstanding questions at this time.

1. Bill credit
 - a. Implementation of the Simple Retail Rate
 - b. Transition after the interim capacity tier
2. Low-income participation requirements
 - a. Minimum eligible low-income participants per-project (%)
 - b. Requirements for low-income participation fees
 - c. Definition of eligible low-income participant
3. Transition between start-up and ongoing costs
 - a. Transition point
 - b. Administrative fee methodology³⁷

Staff identified the following decision making principles to guide its recommendations for key policy issues.

Overarching purpose – equitable opportunity: Staff proposes that the overarching objective of the CSP is to establish parity for consumers that have not been able to access solar customer generation opportunities and incentives.

Additional requirements: As a complement to the overarching purpose, Staffs finds that the CSP must balance the following minimum requirements.

- Low-income accessibility: Staff proposes a minimum expectation that low-income CSP participation makes low-income participants better off. This means the net impact of participation cannot result in an increase of low-income participant bills both month-over-month and over the life of a CSP subscription.
- Project availability: In addition, Staff identified minimum conditions for CSP project development to ensure that consumers will have access to opportunities to participate. These include:

³⁷ See Docket No. UM 1930, Staff's amended schedule, August 23, 2019.

- Project Manager value: An 8 percent developer IRR on the average project represents a proxy for project development.
- Project Manager certainty: Project Managers, at minimum, need to have a reasonable understanding of the administrative fees a project will incur as well as the bill credit rate that the PA will assign to the project (based on queue position and over time.)
- Community-driven project certainty: Community-driven projects may need additional certainty about the availability of capacity beyond the initial tier and the bill credit rate assigned to that capacity.
- Ratepayer value: Ratepayers need the lowest cumulative ratepayer impact at which the other program requirements are achieved.

Staff's based its proposals on these decision-making principles. The Staff proposal based on these principles is summarized in Table 8. These recommendations are provided in the order provided in this report.

DRAFT

Table 8 Summary of Staff Proposal	
Policy Issue	Staff's proposal
The minimum low-income participation per project	10 percent per project
The minimum financial benefit for eligible low-income participation	20 percent subscription discount with preference for projects that can exceed 50 percent subscription discount
The manner in which bill credits must be linked to the electricity usage of individual low-income residential customers.	<ul style="list-style-type: none"> • A qualifying residential utility account holder that meets the income and other requirements set forth in the PIM. • A residential utility account holder with a utility allowance or other requirements of rent-assisted housing. • An affordable housing provider that directly pays for the residential electricity costs of tenants with household incomes that meet the income requirements set forth in the PIM and additional requirements for direct tenant benefits.
Transition to ongoing costs	<ul style="list-style-type: none"> • Limit start-up costs to specific program development activities. • Set ongoing administrative fees as if 80 MW are subscribed and billing. Collect participant fees from the day the project begins billing. Collect pre-certification application fees when the transition capacity tier is reached. • Backfill unfunded administrative costs with ratepayer funds until 80 MW is subscribed and billing. • Provide an off-ramp to pause pre-certification to determine the appropriate next steps if the program has not reached the 80 MW subscribed and billing 24 months following pre-certification launch.
Interim bill credit rate	Floating retail (residential retail + 2% annual escalator)
Interim rate capacity	Extend the interim rate to 75 percent of each utility's capacity tier
Simplify crediting rules	Remove monthly kWh and volumetric credit caps. Net participants usage and CSP generation annually and donate excess to utility low-income programs.
Small project carve out	Allow non-profit and government entities serving as Project Managers to qualify for the 25 percent of interim capacity small project carve out. Extend the 25 percent carve out to apply to 75 percent of each utility's capacity tier.
Mitigating acquisition costs	Require utilities to perform a minimum level of consumer outreach to inform consumers about the CSP program and direct consumers to the Project Clearinghouse and PA Team contact information.

Attachment A - Sensitivities for policy recommendation assumptions

Sensitivity: 50% minimum subscription discount for low-income w/ 30% bill credit adder for low-income participants (10% low-income participation)						
Tier Size	Bill Credit Rate	Project Manager 20y IRR	PGE Ratepayer Impact (% of Rev. Req.)	PAC Ratepayer Impact (% of Rev. Req.)	IPC Ratepayer Impact (% of Rev. Req.)	Gross 20y Ratepayer Impact (\$M)
25%	Retail - fixed	4.37%	0.053%	0.043%	0.053%	\$39.34
	Retail – 2%	6.66%	0.075%	0.063%	0.081%	\$56.36
50%	Retail - fixed	5.63%	0.102%	0.083%	0.103%	\$75.78
	Retail – 2%	7.87%	0.148%	0.122%	0.159%	\$110.07
75%	Retail - fixed	6.26%	0.149%	0.120%	0.148%	\$109.53
	Retail – 2%	8.47%	0.216%	0.178%	0.232%	\$160.71
100%	Retail - fixed	6.44%	0.195%	0.157%	0.194%	\$143.95
	Retail – 2%	8.65%	0.285%	0.235%	0.306%	\$212.15

Sensitivity: 50% minimum subscription discount for low-income, no adder (10% low-income participation)						
Tier Size	Bill Credit Rate	Project Manager 20y IRR	PGE Ratepayer Impact (% of Rev. Req.)	PAC Ratepayer Impact (% of Rev. Req.)	IPC Ratepayer Impact (% of Rev. Req.)	Gross 20y Ratepayer Impact (\$M)
25%	Retail - fixed	3.73%	0.053%	0.043%	0.053%	\$39.18
	Retail – 2%	6.06%	0.075%	0.063%	0.081%	\$56.16
50%	Retail - fixed	5.04%	0.102%	0.083%	0.102%	\$75.44
	Retail – 2%	7.30%	0.147%	0.122%	0.158%	\$109.66
75%	Retail - fixed	5.68%	0.148%	0.119%	0.147%	\$109.03
	Retail – 2%	7.92%	0.215%	0.177%	0.231%	\$160.10
100%	Retail - fixed	5.87%	0.195%	0.156%	0.193%	\$143.29
	Retail – 2%	8.10%	0.284%	0.234%	0.305%	\$211.33

Sensitivity: 50% minimum subscription discount for low-income for 5% capacity						
Tier Size	Bill Credit Rate	Project Manager 20y IRR	PGE Ratepayer Impact (% of Rev. Req.)	PAC Ratepayer Impact (% of Rev. Req.)	IPC Ratepayer Impact (% of Rev. Req.)	Gross 20y Ratepayer Impact (\$M)
25%	Retail - fixed	4.01%	0.053%	0.043%	0.053%	\$39.18
	Retail – 2%	6.32%	0.075%	0.063%	0.081%	\$56.16
50%	Retail - fixed	5.37%	0.102%	0.083%	0.102%	\$75.44
	Retail – 2%	7.62%	0.147%	0.122%	0.158%	\$109.66
75%	Retail - fixed	6.04%	0.148%	0.119%	0.147%	\$109.03
	Retail – 2%	8.27%	0.215%	0.177%	0.231%	\$160.10
100%	Retail - fixed	6.24%	0.195%	0.156%	0.193%	\$143.29
	Retail – 2%	8.46%	0.284%	0.234%	0.305%	\$211.33

Sensitivity: 20% minimum subscription discount for low-income, but 5% low-income per project						
Tier Size	Bill Credit Rate	Project Manager 20y IRR	PGE Ratepayer Impact (% of Rev. Req.)	PAC Ratepayer Impact (% of Rev. Req.)	IPC Ratepayer Impact (% of Rev. Req.)	Gross 20y Ratepayer Impact (\$M)
25%	Retail - fixed	4.20%	0.053%	0.043%	0.053%	\$39.18
	Retail – 2%	6.56%	0.075%	0.063%	0.081%	\$56.16
50%	Retail - fixed	5.55%	0.102%	0.083%	0.102%	\$75.44
	Retail – 2%	7.85%	0.147%	0.122%	0.158%	\$109.66
75%	Retail - fixed	6.21%	0.148%	0.119%	0.147%	\$109.03
	Retail – 2%	8.48%	0.215%	0.177%	0.231%	\$160.10
100%	Retail - fixed	6.41%	0.195%	0.156%	0.193%	\$143.29
	Retail – 2%	8.67%	0.284%	0.234%	0.305%	\$211.33

Sensitivity: Project Managers pay application fee without initial ratepayer support						
Tier Size	Bill Credit Rate	Project Manager 20y IRR	PGE Ratepayer Impact (% of Rev. Req.)	PAC Ratepayer Impact (% of Rev. Req.)	IPC Ratepayer Impact (% of Rev. Req.)	Gross 20y Ratepayer Impact (\$M)
25%	Retail - fixed	2.87%	0.048%	0.039%	0.048%	\$35.41
	Retail – 2%	5.30%	0.071%	0.058%	0.076%	\$52.39
50%	Retail - fixed	4.40%	0.095%	0.076%	0.094%	\$69.76
	Retail – 2%	6.77%	0.140%	0.115%	0.150%	\$103.97
75%	Retail - fixed	5.34%	0.141%	0.112%	0.139%	\$103.37
	Retail – 2%	7.68%	0.208%	0.170%	0.223%	\$154.44
100%	Retail - fixed	5.66%	0.187%	0.149%	0.185%	\$137.26
	Retail – 2%	7.99%	0.277%	0.226%	0.296%	\$205.30

Attachment B – Modeling assumptions

The majority of inputs are informed by other solar models in Oregon, such as QFs, other states' CSP models that do not have a PA tasked with finding administrative efficiencies and driving down project costs. Within that context, key modeling assumptions include:

- Average project design
 - PGE service area project
 - 3 MWdc single axis tracking
 - 16% capacity factor
 - 95% subscribed after 2 years
 - Average LI participation level = 10%
 - LI participation fee = participation costs are 20% lower than residential participant bill credit rate
 - General participant fee set to secure financing = participation fee + admin fee is 5 percent below the bill credit rate. Staff and the PA team understand that financing a CSP project can be difficult without a baked-in financial benefit for participants. However, the amount of discount required to move forward with project development is driven by a range of project design, Project Manager, and participant factors. For example, national solar development companies assume a ten percent savings, however, community-driven projects assume a lower or no-savings subscription. Identifying an average project's participant savings is more difficult given the willingness of PGE and PAC customers to pay more to support renewables through the nation's top two performing voluntary green power products. Staff assumed that the average project provides a five percent general participant savings to capture this range between 0 and 10 percent.
- Average subscriber characteristics
 - All subscribers are residential
 - All subscribers are subscribed to 5 kW, which is 80% of usage based on a consumer that uses an average of 750 kWh per month
 - Home heating, but not home cooling usage patterns – usage declines slightly per year
 - Average residential rate increase of 2% per year – based on a straight average of the three utilities' rate increases over the past 5 years
- RVOS Values: The bill credit analysis assumes the RVOS values in Table 9, where are derived from each company's July 18, 2019 compliance filing.
- Ratepayer impacts were estimated using the same methodology described Staff's April 10, 2018 Staff report to UM 1930 p. 13 and the adjustments described in Staff's May 23, 2019 Staff report to UM 1930, with the following additions:
 - Includes estimated start-up an ongoing administrative costs prior to the 24 month off-ramp to reach the transition capacity level.
 - Adjusted revenue requirement assumptions to 2019(\$) at 2.8 percent based on Oregon Office of Economic Analysis Western Region CPI found at <https://www.oregon.gov/das/OEA/Documents/forecast0919.pdf> p. 42.

Table 9 Most Recently Filed RVOS Values			
RVOS Element	July 18, 2019 RVOS Values (Real Lev \$2019/MWh)		
	PAC	PGE	IPC
Energy	20.18	26.78	28.77
Generation capacity	24.23	7.19	10.55
T&D capacity	2.89	7.91	6.03
Line losses	1.40	1.58	2.33
Integration	(0.63)	(0.83)	(0.57)
Administration*	N/A	N/A	(5.80)
Market Price Response	0.60	1.81	(0.02)
Hedging	1.01	1.34	1.44
Environmental compliance**	N/A	N/A	N/A
RPS compliance	(0.04)	3.76	N/A
Grid services TBD	=	=	-
Total 20 yr levelized RVOS (\$/MWh)	49.64	49.54	42.73
RVOS (\$/kWh)	0.04964	0.04954	0.04853

*Administrative costs are not included because CSP administrative costs are paid for through the recovery of CSP start-up and ongoing costs.

**Environmental compliance values are information only per Commission order.

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Attachment C – Program Administration Team’s Low-income Policy Analysis and Recommendations

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Program Administration Team's Low-Income Policy Proposal

Introduction

The following paper outlines the Program Administrator's recommendations for low-income design principles, project requirements, participant requirements, policies and justifications. These recommendations were developed based on the program administrator's experience, stakeholder interviews, and review of national low-income best practices. Stakeholders, including utilities, project developers, and community-based organizations are encouraged to review and provide comments to each of the listed or proposed policies. The following topics are covered in this position paper:

1. Low-Income Program Design
2. Program Design Justification
3. Low-Income Subscription Eligibility
4. Low-Income Financial Incentives
5. Low-Income Capacity Per Project
6. Program Recommendations Summary

Low-Income Program Design

Program Design Goal:

Empower low-income ratepayers to take part in, and benefit from, the Community Solar Program.

Program Design Principles:

To reach the program goal that low-income ("LI") ratepayers take part in and benefit from the Oregon Community Solar Program ("CSP"), the program's design needs to include several key components, including accessibility by reducing barriers, participant protection, ensuring benefit, and encouraging diverse participation.

1. **Accessibility:** Community solar reduces the barriers around traditional rooftop installation and is an opportunity for solar to be accessible to low-income communities. However, there are still many opportunities for systemic lack of inclusivity to new audiences that must be addressed in the design phase. We aim to address these opportunities through:
 - **Reduced Financial Barriers to Participation:** Those with lower incomes do not have access to the same financial means as those with higher incomes. For example, upfront costs and penalties to leave the program would be significant barriers.

- **Financial Benefits:** Provide some fiscal resiliency to low income communities that are not controlled by external parties (such as housing providers and utilities). These financial benefits would allow LI subscribers to participate in the program to the fullest extent possible and in the same manner as other market participants.
 - **Program Certainty and Program Uptake:** State agencies and nonprofits serving vulnerable populations are risk averse and are conservative when referring their participants to any programs. Therefore, community-based organizations (“CBOs”) will be extremely reluctant to make referrals and participants are highly unlikely to engage with a program with uncertain risks or benefits. The CSP is a new program that is unvetted and unknown to trusted entities so eliminating as much program risk and uncertainty as possible will eliminate barriers to participation.
2. **Participant Protection:** The founding principle of the program’s low-income program design is the idea of “do no harm”. Vulnerable communities are frequently targeted with schemes that are deceptive and high risk. These activities result in increased energy bills, termination fees, misleading marketing, or complicated contracts. To avoid these types of negative impacts to communities, the program’s participant protection activities include:
- Safe, standardized contracts that are in simple language that can be easily understood and translated into other written or spoken languages;
 - Policies to ensure bills do not increase due to community solar subscriptions, especially in winter;
 - Program administrator review of marketing tactics;
 - LIF income verification to ensure a respectful, secure experience at signup.
3. **Ensuring Benefit:** Solar energy access has not been available to low-income audiences in Oregon. In order to engage and advertise to a new market, the program offering must meet a need. In the LI market, bill savings would meet a critical need, and would be highly marketable because of the following:
- The benefit provided to participants through this program will greatly impact the amount of outreach needed to engage LI participants.
 - The benefit will directly impact how CBOs that serve LI communities will interact with the Program. The LIF knows this from 40 years of experience in serving LI communities. This knowledge was confirmed in the LI Stakeholder Meeting and the Diversity, Equity and Inclusion Stakeholder Meeting on April 29, 2019. In the DEI meeting CBOs (Self Enhancement Inc, NAACP, Urban League, Department of Human Services) informed the PA team that without any financial benefit, they would have little to no reason to refer a program to their clients as such a program would not meet any needs.
 - Low-Income communities experience far more barriers than higher income Oregonians. From lack of internet access to displacement due to the statewide housing crisis, many LI

individuals navigate around these barriers and prioritize what helps with survival.¹ CBOs that serve frontline communities also prioritize what will best help their clients meet their needs.

- A recent NREL study found that “up-front cost can be a significant barrier for LMI customer participation. In a survey of approximately 500 potential LMI community solar customers, the Pacific Consulting Group (2017) found the top three considerations for participating in community solar were up front cost, percentage of bill covered, and initial contract duration.”²
4. **Encouraging Diverse Participation.** This Program’s LI mandate will allow for solar access to low-income communities and people of color for the first time. Programs are made equitable by removing barriers to participation and by creating programs that meet the relevant needs of those markets.
- a. For the last three years, the Community Solar Implementation Low-Income Subgroup (established by order 18-042) requested that the Program take multiple equity considerations into account while recruiting LI participants, including race, fixed income (such as those with disabilities and seniors), and rural participation. Requiring equity goals was also a key goal drafted by this Subgroup.³

Program Design Justification:

The key principles in the low-income program design are: accessibility by reducing barriers, participant protection, ensuring benefit, and encouraging diverse participation. If we follow the design principles detailed above, we will develop a program where low-income participants can participate and benefit without risk of harm.

Based on experience in other community solar markets such as Colorado, New York, and Maryland, the program design and principles assume that if the program does not provide substantial benefits and reduce accessibility barriers, enrollment of LI participants in the program will be difficult. This leaves the program with the risk of failing to meet the 10% low-income mandate. Through discussions with several CBO agencies (Self Enhancement Inc, NAACP, Urban League, Department of Human Services), programs are most successful with at least 20% bill savings for LI participants, with incentives to developers to help reach that target.

¹Monica Anderson and Madhumitha Kumar, Pew Research Center, *Digital divide persists even as lower-income Americans make gains in tech adoption*, <https://www.pewresearch.org/fact-tank/2019/05/07/digital-divide-persists-even-as-lower-income-americans-make-gains-in-tech-adoption/>

² Jenny Heeter, Lori Bird, Eric O’Shaughnessy, and Sam Koebrich, *Design and Implementation of Community Solar Programs for Low and Moderate-Income Customers*, National Renewable Energy Laboratory, P. 21-22, https://www.nrel.gov/docs/fy19osti/71652.pdf?utm_source=NREL+Solar+Market+Research+and+Analysis&utm_campaign=76b463570b-EMAIL_CAMPAIGN_2019_03_28_04_02&utm_medium=email&utm_term=0_7e950366d3-76b463570b-289293163

³ Goals and Equity Metrics of Low-Income Subgroup, Saved to Sharepoint.

NREL cites that a lack of bill savings was consistently listed as a disadvantage to successful approaches.⁴ Most community solar programs that are being offered provide bill credits or savings for low income communities. NREL outlines that “Many utilities provide energy subsidies to low-income customers through ratepayer surcharges. These public utilities commission-mandated actions are known as utility-funded energy subsidies and are different from government assistance programs. Just as these ‘discounts’ are given to low-income citizens, they could also be used for community solar subscriptions. An informal survey by SEPA (2017a) found that nationally several utilities had bill reduction programs ranging from 10% to 50% of customers’ bill.”⁵

Low-Income Subscription Eligibility

Proposal:

“To qualify towards the Program's low-income requirement, a Subscription must be held by:

1. A residential utility customer with a household income of 80 percent or less than the of the Oregon State Median Family (or Household) Income, as defined by the U.S. Census American Community Survey, or;
2. An affordable housing provider that directly pays for the residential electricity costs of tenants with household incomes of 80 percent or less than the Oregon State Median Family Income, as defined by the U.S. Census American Community Survey. In addition to all other Subscriber eligibility requirements, affordable housing providers participating on behalf of low-income customers living in their building must:
 - Identify to the LIF the low-income customers, by name and housing units, on whose behalf they are participating (the "low-income beneficiaries");
 - Share at least 75 percent of any financial savings that result from the Subscription with the low-income beneficiaries;
 - Educate the low-income beneficiaries about community solar, the Project, how they benefit, and how to sign up with the Low-income Facilitator for another Project if they move.

Justification:

Low-Income is defined as 80% State Median Income (SMI).

A median household income refers to the income level earned by a given household where half of the households in the area earn more and half earn less. Using median instead of the average or mean household income gives a more accurate picture of an area's actual economic status. The SMI also has an income range based on the number of people in a household. In Oregon the median household SMI is \$60,212 (2017)⁶, however this is across all household sizes. The Federal Department of Health and Human Services adjusts the state SMI to account for different household

⁴ NREL, 7

⁵ NREL, 7

⁶ US Census, American Community Survey (ACS) yearly survey.

sizes and sets levels below state household SMI as thresholds for a variety of federal and state programs. While in Oregon the median household SMI is roughly \$60,000 (equaling roughly 2.5 people), the SMI for a family of 4 is estimated to be around \$74,000.

At 80% of SMI, according to the table below, the qualifying income for a one-person family would be \$30,793 a family of four is around \$59, 217.

Table 1. Oregon State Median Income for FFY 2018⁷

Estimated state median income for a 4-person family: \$74,022	80 Percent of Estimated State Median Income*					
	1-Person	2-Person	3-Person	4-Person	5-Person	6-Person
	Family	Family	Family	Family	Family	Family
	\$30,793	\$40,268	\$49,743	\$59,217	\$68,692	\$78,167

*In accordance with 45 CFR 96.85, 80 percent of each state's estimated median income for a 4-person family is multiplied by the following percentages to adjust for family size: 52 percent for one person, 68 percent for two persons, 84 percent for three persons, 100 percent for four persons, 116 percent for five persons, and 132 percent for six persons. For each additional family member above six persons, add 3 percent to the percentage for a six-person family (132%) and multiply the new percentage by 60 percent of the state's estimated median income for a 4-person family.

According to census data from the American Community Survey and accounting for a typical household size in Oregon, this would represent approximately 34% of Oregon households.⁸

In Oregon, State Median Income is used by LIHEAP (Low-Income Home Energy Assistance Program). While few agencies use SMI directly, hundreds of CBOs serve populations that fall within 80% SMI such those who use FPL (Federal Poverty Line). For example: SNAP (130% FPL), Section 8 (50% MFI), Head Start (100% FPL), and WIC (185% FPL) would all fall within the 80% SMI threshold. While LIHEAP uses 60% SMI, raising it to 80% SMI will be more realistic for the PGE territory.

The U.S. Dept of Housing and Urban Development sets their low-income threshold at 80% of the median income for a resident's county.⁹

Regulatory agencies outside of Oregon have accepted this income metric for qualifying participants in several programs including new and existing community solar programs. For example, Washington D.C.'s Solar for All program uses this threshold to target their low-income communities. Solar for All will provide the benefits of solar electricity to 100,000 low-income households (at or below 80% Area Median Income) and reduce their energy bills by 50% (based on the 2016

⁷ https://liheapch.acf.hhs.gov/Tribes/Tables/povertytables/FY2018/orsemi_tribal.htm

⁸ <https://www.census.gov/cps/data/cpstablecreator.html>

⁹ US Dept of Housing and Urban Development, https://www.hud.gov/topics/rental_assistance/phprog

residential rate class average) by 2032.¹⁰ In addition to D.C., California’s solar programs such as Single Family Affordable Solar Homes (SASH) program also uses the same metric.¹¹

Finally, during stakeholder meetings, the LIF reviewed a few standard methods currently used in Oregon to determine income qualification. After these meetings and conducting further research, the PA team recommended using 80% SMI for the following reasons:

1. SMI is set and updated annually by the U.S. Department of Health and Human Services to account for income changes.
2. SMI will provide easier, unified outreach across the state as the threshold will be the same regardless of county or utility service territory.
3. Using SMI helps give rural communities a slight advantage, as they are resource poor, but a higher threshold doesn’t leave Multnomah County out. Median Family Income (MFI), another metric, tends to give wealthier counties advantages so for this reason, SMI was recommended by Community Action Partnership of Oregon (CAPO) and Oregon Housing and Community Services (OHCS).
4. Setting the percentage at 80% casts a slightly wider net of low-income Oregonians, increasing the likelihood of program success. An estimated 34% of Oregonian households fall below the 80% SMI.
5. It creates a diverse cross-section of lower-income Oregonians, to stabilize the subscription pool regarding turnover.
6. It’s inclusive of the parameters often used by agencies that work with low-income communities.

To quantify this threshold, the LIF would verify whether the subscriber earns up to or below 80% of the State of Oregon’s median income.

Exceptions

Master-metering exception

Regarding the exception proposed for affordable housing providers who directly pay the utility bills of their tenants under a master-metering situation, the intent is to provide a pathway for low-income customers living in this type of affordable housing to access the program. We do not have an exact count of the number of affordable housing properties that fall into this category, but we have been told in conversations with providers (including Pacific Crest Affordable Housing and Viridian Management), as well as with multifamily experts at Energy Trust and BEF, that the arrangement is uncommon. We have submitted a data request to OHCS to see if we can obtain this analysis to share with the Commission.

75% Pass Through Requirement for Master Meter Accounts

¹⁰ Low-Income Solar Policy Guide, <https://www.lowincomesolar.org/best-practices/district-of-columbia/>

¹¹ Single-Family Affordable Solar Homes (SASH) 2.0 PROGRAM HANDBOOK, https://www.gosolarcalifornia.ca.gov/documents/SASH_Handbook.pdf

“Affordable housing providers must share at least 75 percent of any financial savings that result from the Subscription with the low-income beneficiaries”

The percentage level was selected to cover any administrative costs that a housing provider may incur by participating in the program and as an incentive for housing providers to subscribe to a project. It’s seen that a percentage of benefits allocated to the housing provider is helpful to motivate enrollment and further investment in the property. The California SOMAH program has a requirement that 51% of incentives must be passed on to the tenants while the 49% is allocated to the landlord in order to provide motivation to invest in indirect tenant benefit such as other energy efficiency efforts.¹²

Engaging and educating tenants would be the responsibility of the housing provider, and they would receive information from the Project Manager and/or LIF. Basic educational information about community solar will already be available through the Program and the LIF. The exact form and mode of education can be up to the housing provider and tailored to fit the community. For example, an informational seminar might be the best fit for one property, whereas mailing/distributing informational materials and posting information on bulletin boards throughout the building might be more effective elsewhere. We do not perceive this to be a resource-intensive undertaking and would estimate the cost to Project Managers to be negligible, and within the scope of customer service and education expected for Subscribers.

Section 8 Housing Exception

The PA team recognizes that there are times in which the type of housing a LI Subscriber resides may deny them direct bill savings due to factors beyond our control such as utility allowance calculations. While our research says that this would not be a factor in the majority of LI housing, an LI Subscriber would not be disqualified from the program due to housing type or utility allowance calculations. Tenants that live in these type of housing situations, such as Section 8 housing, are not denied the possibility of participation because the bill credit may not be directly linked to a residential customer. If a tenant suddenly moves into Section 8 housing they do not have to lose their subscription. Due to subscription mobility, the tenant would be able to take a subscription with them, where they would receive the same bill savings/discount.

Agency participation

Many companies, nonprofits, and organizations serve low-income communities as tenants, customers, and clients. Aside from the master meter exception, an agency may not be able to count directly as a low-income participant. In the case of master meters, the majority of the benefit must go directly to the tenants. Low-income housing has been brought up consistently as an example, along with other businesses that may want qualifying-wage employees to become solar subscribers and CBOs serving low-income clients.

Agencies serving low-income populations may take part in two ways:

¹² California CPUC decision D.17-12-022, Pg 41-42, <http://docs.cpuc.ca.gov/PublishedDocs/Published/Go00/M201/K940/201940057.pdf>

1. **As a Project Manager or Participant:** Agencies and businesses will be able to take part in up to 40% of a Community Solar Project and will be able to utilize their share however they like. The LIF will provide customized support in reaching low-income subscribers.
2. **As a Referring Entity:** Any agency serving low-income populations can refer their customers, employees, clients, tenants, etc. to be part of Community Solar Projects across the state.

Low-Income Financial Incentives

Proposal:

Low-income subscription costs must be discounted at 50%.

Justification for Financial Incentives

Evan Bixby with Pine Gate Renewables presented a pro forma to the PA team on June 7, 2019. He has several years of experience working in nonprofit community solar in New York for a nonprofit called Southern Tier Solar Works. He said that initial savings of 10% was not a compelling amount for the LI market, and until bill savings reached 20% (and they were able to work with their version of an equal pay program) the program was not successful. He reiterated the point in more detail in a one-on-one phone meeting asking about his experience with LI solar programs in NY.

In a monthly conference call with Vote Solar, the Maryland representative who works with the CS program expressed the same issue – that the program struggled until savings reached approximately 20% savings.

Achieving LI Savings Requirement

When proposing a minimum savings requirement for low-income subscriptions, a key design objective was to make progress towards reducing the energy burden on the low-income population in Oregon, in alignment with Executive Order 17-201¹³ and the state’s ten-year plan.

It is well documented that the average energy burden of low-income households and of communities of color far exceeds the average energy burden on median-income households.¹⁴ The census data shows that on a national average, low-income households have an energy burden three times higher than non-low-income households.¹⁵ In Oregon, the average affordability gap for energy burdened households earning < 200% Federal Poverty Line is \$631 and is over \$1,000 in many rural counties

¹³ Governor Kate Brown Executive Orders, EO 17-20 “Accelerating efficiency in Oregon’s built environment to reduce greenhouse gas emissions and address climate change” Nov 2017. https://www.oregon.gov/gov/Documents/executive_orders/eo_17-20.pdf

¹⁴ Ariel Drehobl and Lauren Ross, American Council for an Energy Efficient Economy (ACEEE), “Lifting the High Energy Burden in America’s Largest Cities: How Energy Efficiency Can Improve Low-Income and Underserved Communities” April 2016. <http://aceee.org/research-report/u1602>

¹⁵

³ New Tools for Advancing Energy Affordability in Low Income Communities,

(including Wallowa, Morrow and Jefferson counties, which overlap with the service territory of the Oregon CSP).¹⁶

The PA team received input from Oregon CBOs that low-income participants need to receive meaningful savings from participation in the Program.¹⁷ In discussions about what constituted meaningful savings, CBOs suggested the following:

1. At least a 20 percent reduction in their electric bill
2. An average savings of at least \$20 per month
3. Energy burden is at or below the average energy burden for non-LI customers
4. Annual savings that is on-par with the average payment from low-income energy assistance programs (\$357.58)¹⁸

These recommendations from CBOs align with the findings from national studies performed by NREL, LBNL, GTM Research, Vote Solar and others. It has been well documented in the literature that LMI households require tangible financial savings and typically cannot afford upfront investments. In a recent report, GTM Research found that “Low- and moderate-income subscribers put top priority on tangible economic savings from community solar, often need higher relative discounts on their energy bill—sometimes at least 20%-50%—to see the same dollar savings.” They found the same to be true for affordable housing operators. “Operators are often looking for energy bill discounts of 20% or more,” according to GTM Research interviews.¹⁹

Their research further found that “even 10% to 20% percent savings is not sufficient because of the higher energy burden of low-income households.” The report goes on to explain: “conversations with market participants validate the fact that higher energy burdens mean that community solar subscriptions need to offer anywhere between at least 20% and upwards of 50%-year 1 bill savings in order to secure commitments from LMI subscribers. The lower end of that range is more viable for master-metered affordable housing property owners, where bill savings are not always directly passed through to the tenants. One notable exception to that range is in Colorado, where much of the initial community solar capacity installed that serves LMI subscribers offers greater than 50% bill savings.”

Other states have incorporated this understanding into their community solar low-income program designs. The Colorado Energy Office targeted a 30%–50% reduction in LMI bills through its community solar pilot programs, and a 50% bill savings target is required by low-income solar

¹⁶ The data referenced is for households at or below 200% federal poverty level (FPL), which does not align with the program’s definition of low-income (less than 80% SMI).

¹⁷ Community Energy Project held stakeholder meetings with CBOs on 4/25/2019, 2/26/2019, and 4/29/2019. The Oregon Low- to Moderate-Income Solar Working Group also discussed requirements for low-income participation in community solar at its 7/31/2018 meeting and throughout all the other meetings more broadly.

¹⁸ State Yearly Program Snapshot Report for LIHEAP and OEAP in 2016 for all Oregon counties. \$357.58 was the average annual payment amount for the 81,872 households served.

¹⁹ Wood Mackenzie and GTM Research, “The Vision for U.S. Community Solar: A Roadmap to 2030” July 2018.

<https://votesolar.org/policy/policy-guides/shared-renewables-policy/csvisionstudy/#reportdownload>

programs in California and Washington D.C. These targets were developed with the purpose of lowering LMI energy burden.

In considering how to structure the minimum savings requirement for low-income subscriptions, we considered a variety of savings targets, relative to various income levels, which are summarized in Table 1.

Table 1. Design options for achieving savings for low-income CSP participants

Assumptions for 4-Person Household	40% SMI	60% SMI	80% SMI
Annual electricity expenses before CSP ²⁰	\$ 1,281	\$ 1,281	\$ 1,281
Annual income	\$ 29,609	\$ 44,413	\$ 59,217
Electricity burden before CSP	4.3%	2.9%	2.2%
Annual electricity use (kWh)	11,645	11,645	11,645
Full retail rate	\$0.110	\$0.110	\$0.110
Annual Savings Targets	40% SMI	60% SMI	80% SMI
20% bill reduction	\$ 256.20	\$ 256.20	\$ 256.20
50% bill reduction	\$ 640.50	\$ 640.50	\$ 640.50
Equivalent to avg LIHEAP/OEAP	\$ 357.00	\$ 357.00	\$ 357.00
\$20 per month	\$ 240.00	\$ 240.00	\$ 240.00
Reduce electricity burden to 2%	\$ 688.83	\$ 392.74	\$ 96.65

There are two factors that determine the total savings a subscriber will receive as a result of a CSP subscription: the price of the subscription cost relative to the bill credit and the size of the subscription.

Though the overarching design goal may be to achieve a certain level of savings for the customer, explicitly requiring that subscriptions save customers a specific percentage (e.g. 25% bill reduction) or a minimum amount of money (e.g. \$250 a year) could be challenging for Project Managers to implement and guarantee year-over-year, and for the PA to verify. It would require significant customization of each subscription offer to each customer, which increases sales and transaction costs. It also obligates Project Manager to provide performance guarantees, which is an additional cost and risk for them to bear.

A requirement to discount the subscription cost guarantees a certain level of discount but does not directly translate into a specific level of bill savings. **The actual bill savings a customer will experience will depend on not only the discount, but the difference between the bill credit rate and the customer’s retail rate, as well as the size of the subscription.**

For example, a subscription that is discounted by 50%, and sized at 50% of the customer’s load, would deliver a bill savings of approximately 25% (or a little less, factoring in non-volumetric

²⁰ Average annual electricity bill for an Oregon LMI household, defined as HH income ≤120% AMI. American Community Survey 5-year Estimate, Census 2015 self-reported figures. <https://lmisolaroregon.files.wordpress.com/2017/03/fact-sheet-lmi-housing-types-and-meaningful-savings.pdf>

charges). If that same subscription was sized to offset 80% of the customers load, it would deliver bill savings of approximately 40%. If the bill credit rate is lower than retail rate, the relative benefit to the customer’s bill decreases.

We believe that requiring LI subscriptions to be discounted in a way that results in a savings regardless of the bill credit rate, is the best way to ensure that low-income participants will receive meaningful and tangible financial savings. It also gives Project Managers the flexibility to size subscriptions as they desire and plan their product offerings without specific knowledge of individual participants’ energy bills. The relationship between subscription discount, subscription size and bill savings for the interim bill credit rate is shown in Table 2.

From conversations with potential Project Managers, the PA team believes that Project Managers will tend to size their low-income subscriptions to be as large as possible, but with margin of **10-20% less than their estimated annual usage**, to avoid having to adjust subscriptions because of a reduction in customer load. This helps them control their customer acquisition management costs. Other potential Project Managers have said that they plan to offer standard sized subscriptions (e.g. 5 kW portions). This helps simplify their sales process and reduces customer acquisitions costs. Thus, we are anticipating that, if given the flexibility to size LI subscriptions as they choose, Project Managers will tend to size subscriptions in the 50-90% offset range.

Table 2. Approximate volumetric bill savings resulting from different levels of subscription discount and subscription sizes, when the bill credit = retail rate

		<i>Subscription Size (as a % of bill offset)</i>										
		0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
<i>Subscription Discount</i>	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	10%	0%	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
	20%	0%	2%	4%	6%	8%	10%	12%	14%	16%	18%	20%
	30%	0%	3%	6%	9%	12%	15%	18%	21%	24%	27%	30%
	40%	0%	4%	8%	12%	16%	20%	24%	28%	32%	36%	40%
	50%	0%	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%
	60%	0%	6%	12%	18%	24%	30%	36%	42%	48%	54%	60%
	70%	0%	7%	14%	21%	28%	35%	42%	49%	56%	63%	70%
	80%	0%	8%	16%	24%	32%	40%	48%	56%	64%	72%	80%
	90%	0%	9%	18%	27%	36%	45%	54%	63%	72%	81%	90%
	100%	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%

Other Low-Income Financial Incentive Proposals

Although the policy listed above is the Program’s ideal proposal that allows for the most low-income participation and subscriber benefits, the following are other policy proposals that are being considered. Stakeholders should consider providing public comment on any or all of the proposed or considered low-income incentive policies:

1. Low-income subscription costs must be discounted at 20% and the developer incurs a 30% adder creating a net 50% discount for low-income subscribers.
2. Low-income subscription costs must be discounted at 20% and ratepayers incur a 30% adder creating a net 50% discount for low-income subscribers.
3. Low-income subscribers receive 20% bill savings.
4. There is no subscription cost discount requirement enforced for developers but providing a 50% discount is highly incentivized. These incentives could be related to specific project designation and reducing other program barriers.
5. Low-income subscription costs must be discounted at 50% but the low-income dedicated capacity per project is reduced from 10% to 5%.

LI Subscriber Capacity per Project

Proposal:

10% of each Project should be comprised of LI subscribers.

Justification:

The Colorado case study exemplifies how setting up a project threshold becomes a ceiling or cap on low-income participation. The Low-Income Solar Policy Guide sites this experience in Colorado:

“The five percent low-income minimum participation level for community solar projects in Xcel Energy’s service territory in Colorado, though successful in meeting the target, functioned as a ceiling to low-income participation. The bid process to secure placement in the program resulted in a highly competitive program, and thus, very thin margins for developers and financiers. The low-income carve-out further eroded these margins, making it extremely unattractive to exceed the mandatory five percent amount; in practice, due to the way the program was structured, no developers exceed this requirement and effectively “wrote off” low-income participants as another program cost.”²¹

Relationship between Subscriber Requirement and Bill Credit

Irrespective of rates, not requiring 10% LI capacity for each project would be a significant program risk eroding the legislative requirement of 10% for the program as a whole. Allowing for a lower threshold (e.g. 5%) with no guarantee for higher LI projects is a program risk. As previously mentioned from the Low-Income Solar Guide, existing community solar programs have not shown

²⁰ Low-Income Solar Policy Guide, <https://www.lowincomesolar.org/best-practices/community-solar-colorado/>

LI capacity to exceed minimum thresholds established in program rules because there is simply not a market incentive for developers to over-subscribe this type of capacity.

LI Focused Solar Projects

The PA team is not aware of any significant 100% LI projects in the queue that would “buoy” other market rate projects with less than 10% LI capacity. We are aware that reaching 10% LI capacity for each project will be challenging, however, lowering the threshold will only make it more challenging to hit the 10% program-wide mandate as the program matures. We have not seen or heard about any concrete solar projects that would fill the additional 5% requirement if project developers only do the expected minimum required of them.

Summary of PA Recommendations

Based on stakeholder feedback, Program Administrator team experience, and a comprehensive review of state and national program standards, the following are the PA Team's Low-Income Policy recommendations along with their justifications.

Program Design Principles

1. **Accessibility:** Community solar reduces the barriers around traditional rooftop installation and is an opportunity for solar to be accessible to low-income communities. However, there are still many opportunities for systemic lack of inclusivity to new audiences that must be addressed in the design phase.
2. **Participant Protection:** The founding principle of the program's low-income program design is the idea of "do no harm". Vulnerable communities are frequently targeted with schemes that are deceptive and high risk. These activities result in increased energy bills, termination fees, misleading marketing, or complicated contracts.
3. **Ensuring Benefit:** Solar energy access has not been available to low-income audiences in Oregon. In order to engage and advertise to a new market, the program offering must meet a need. In the LI market, bill savings would meet a critical need, and would be highly marketable.
4. **Encouraging Diverse Participation.** This Program's LI mandate will allow for solar access to low-income communities and people of color for the first time. Programs are made equitable by removing barriers to participation and by creating programs that meet the relevant needs of those markets.

Low-Income Subscription Eligibility

Proposal:

"To qualify towards the Program's low-income requirement, a Subscription must be held by:

3. A residential utility customer with a household income of 80 percent or less than the of the Oregon State Median Family (or Household) Income, as defined by the U.S. Census American Community Survey, or;
4. An affordable housing provider that directly pays for the residential electricity costs of tenants with household incomes of 80 percent or less than the Oregon State Median Family Income, as defined by the U.S. Census American Community Survey. In addition to all other Subscriber eligibility requirements, affordable housing providers participating on behalf of low-income customers living in their building must:
 - Identify to the LIF the low-income customers, by name and housing units, on whose behalf they are participating (the "low-income beneficiaries");
 - Share at least 75 percent of any financial savings that result from the Subscription with the low-income beneficiaries;

- Educate the low-income beneficiaries about community solar, the Project, how they benefit, and how to sign up with the Low-income Facilitator for another Project if they move.

Low-Income Financial Incentives

Proposal:

Low-income subscription costs must be discounted at 50%.

Justification:

Though the overarching design goal may be to achieve a certain level of savings for the customer, explicitly requiring that subscriptions save customers a specific percentage (e.g. 25% bill reduction) or a minimum amount of money (e.g. \$250 a year) could be challenging for Project Managers to implement and guarantee year-over-year, and for the PA to verify. It would require significant customization of each subscription offer to each customer, which increases sales and transaction costs. It also obligates Project Manager to provide performance guarantees, which is an additional cost and risk for them to bear.

A requirement to discount the subscription cost guarantees a certain level of discount but does not directly translate into a specific level of bill savings. The actual bill savings a customer will experience will depend on not only the discount, but the difference between the bill credit rate and the customer's retail rate, as well as the size of the subscription.

Low-Income Capacity Per Project

Proposal:

10% of each Project should be comprised of LI subscribers.

Relationship between Subscriber Requirement and Bill Credit

Irrespective of rates, not requiring 10% LI capacity for each project would be a significant program risk eroding the legislative requirement of 10% for the program as a whole. Allowing for a lower threshold (e.g. 5%) with no guarantee for higher LI projects is a program risk. As previously mentioned from the Low-Income Solar Guide, existing community solar programs have not shown LI capacity to exceed minimum thresholds established in program rules because there is simply not a market incentive for developers to over-subscribe this type of capacity.