

History and Path Forward

Background

Across the political spectrum, people are interested in ways to tap into renewable energy and reduce their energy bills. Over 18,000 homeowners in Washington State have installed a rooftop solar system, often with State incentives. However, there are a number of barriers for customers to participate in on-site solar, especially for people with lower incomes. We examine the history of Community solar in Washington, with an emphasis on how it could be used as a tool to boost investment and build wealth in lower income communities.

Washington State was one of the first to develop an incentive for shared benefit and investment in solar energy. In 2005, the Washington State legislature created a production incentive for generation from small solar and wind systems. It was envisioned as an economic development incentive to grow the local renewable installation industry. In 2009, legislators added “community solar” to the incentive program, encouraging individuals and utilities to develop projects for the benefit of multiple customers.

As part of an incentive overhaul in 2017, legislators revised the community solar incentive to allow economies of scale and opportunity for broader participation. New payment limits were implemented, in total dollars available statewide, per-utility, per project and per participant. As a consumer protection measure, non-utility entities involved in community solar were directed to register with the Washington Utilities and Transportation Commission (UTC). Washington State University Energy Office (WSU) took over administration of the program. Figure 1 compares features of the original and revised incentive programs.

Figure 1: Community Solar Programs Comparison

Program:	Original: 2009 - 2016	Revised: 2017 - 2018
Maximum system Size	75kW	1,000 kW
System Location Requirements	Only on local gov. or utility property	No location restrictions
Production incentive (range)	\$0.30 - \$1.08 per kWh	\$0.14 - \$0.21 per kWh
Term of Production Payments	From installation to June 2020	8 Years from project installation
Entities Eligible to Organize Com. Solar Projects	Utilities and LLCs	Utilities, Non-Profits, & Housing Authorities
Maximum Project Cost Recovery Allowed	No limit	50% of project costs

Implementation

The original incentive program spurred 76 community solar projects, totaling three megawatts of capacity. Most of these projects were developed by individuals working together through creation of LLCs, composed of people who had the up-front capital to finance the project. In addition, a number of utilities, including Seattle City Light, Avista, Orcas Power and Light, and Clark County PUD developed successful utility programs to serve their customers.

The revised incentive program has seen 26 pre-certified community solar projects, led primarily by utilities. Only one project is currently in operation; the rest of the projects must be operational one year from their date of pre-certification to retain the incentive. Some of these projects are seeking to include low-income customers as part of their program design. In October 2018, WSU announced that the incentive program was approaching the \$110 million statutory budget cap, and no new community solar projects were pre-certified after November, 2018.

Historical Impact: Inequity of Opportunity

Most of the current and past community solar projects in Washington State are based on an assumption of up-front payments by the participating customer, with recovery of those costs over time. This creates a barrier to participation for low and moderate income customers. In addition, Washington’s community solar legislation has focused on returning a portion of the initial capital invested in the solar array by paying a production incentive for a limited time; it does not address the value of the energy that is produced over the life of the project. This reduces the ability of communities to see long term benefits. Some utilities have voluntarily chosen to include a value for the energy attributed to each participant in the system during the limited incentive horizon, but voluntary actions do not create certainty for future project developers. For these reasons, the majority of community solar participants and beneficiaries to date are people who have the means to invest upfront. It has not served as a wealth-building tool for those who start with less. As we look to the next chapter of community solar, we offer the following lessons and observations.

Looking Forward

Community solar is a promising basis to support investment by and for low income communities. Figure 2 shows the low income barriers to onsite solar and how community solar can resolve them.

Figure 2: On-site Barriers and Community Solar Solutions

Low Income Barriers to On-site Solar	Community Solar Solutions
High up-front costs	Bite-sized portions
Renters don’t control their own roof	Participants need not control the roof
Lack of tax appetite to take Federal Tax Credit	Third party owner may monetize the tax credits on behalf of participants
Lack of awareness or aversion to risk	Raises awareness and shares the perceived risk
Small rooftop systems cost more per watt	Economies of scale

Around the country, other states are implementing programs that allow for greater shared benefit of solar energy, and Washington State should look to a broader, more sustainable approach to deploying community solar. The following examples offer inspiration.

- Colorado: Defined bill credits for energy and low-income target.** The CO legislature passed a community solar program in 2009 for investor-owned utilities, with an approach of retail rate bill credits. Over 50 MW of projects have been installed, with a requirement that 5% be allocated to low income customers. An additional 1MW of projects directed entirely at low income customers was launched in 2015. The program structure is paid for by the investor-owned utilities, who typically retain the RECs from projects, as well as from state grants. Consumer-owned utilities have also voluntarily developed community solar projects for their members, including some projects focused 100% on low-income customers.

- **Oregon: Defined bill credits for energy and low income target.** In 2016, legislation passed creating a bill-credit rate approach to community solar. The program is launching in 2019 with an initial 40MW allocation at retail bill credit rates. Future rounds of allocations may be at different rates. The program requires that 10% of the overall capacity be allocated to low income customers, and established a low-income facilitator to ensure that outcome.
- **California: Upfront Incentives and Virtual Net Metering.** The Multifamily Affordable Solar Housing (MASH) program was created through legislation in 2008, and is funded by electric ratepayer customers of the investor owned utilities through the California Solar Initiative. Project developers receive up front rebates for installations, and tenants of multifamily affordable housing receive retail bill credits for solar production through virtual net metering. The program has developed 34 MW of solar projects serving affordable housing properties, and over 10,000 tenants are receiving bill credits. 28MW of additional projects are in the development pipeline.
- **Illinois: Defined bill credits and up front incentives for low income goals.** Legislation passed in 2017 to create a wide-reaching community solar program under the Future Energy Jobs Act. Implementation is still in process, and is based on the transaction of Solar Renewable Energy Certificates (SRECs) through a subscription-based model. The state is seeking 200MW of community solar by 2020, and provides bill credits paired with up front incentives to meet specific goals through the Illinois Solar for All program. The incentives prioritize environmental justice communities and job training by paying for up-front cost of subscriptions for low-income families and partnership with community organizations. These elements are paid for by a Renewable Energy Resources Fund, which all utility customers pay into.
- **Massachusetts: Virtual Net-Metering and Production incentive payments to support low income participation.**
The state legislature developed a retail virtual net metering bill credit approach to community solar in 2008, and approved a program in 2018 for production (SREC) incentive payments to encourage development. There is a matrix of payment rates based on different project attributes. The payments are structured to be higher for community solar projects serving low-income participants, those located on brownfields, and for on-site solar projects under 25kW. The initial allocation which opened in November 2018 registered over 400MW of community solar projects. The SREC payments are made by the participating utilities, which have a regulatory obligation to hold a certain volume of SRECs.
- **Minnesota: Defined bill credits for energy.** In 2013, Minnesota legislature passed a bill creating a community solar program based on a bill credit transaction between utilities and their customers. The program launched with bill credits valued at retail rates, and transitioned to a Value of Solar rate in 2018, with an adder for residential participants. The majority of capacity is held by commercial customers, though residential participation is high as well in some specific projects. Over 460 MW of community solar projects have been installed as of November 2018, with nearly 100MW of that capacity serving schools and other municipal customers. The bill credits are paid by utilities, and recovered in their overall rate structure.

Conclusions

As Washington policy makers determine where to take our legacy of Community Solar, we offer these suggestions for success.

1. Set clear goals and metrics

A successful program defines the desired outcomes: Is the goal of the program to create jobs? Spur investment? Develop a certain amount of solar? Build wealth in underserved communities? How will we measure the impact of the policy, and who will pay for data gathering and analysis?

2. Create mechanisms that align with goals and metrics

When we set goals and metrics, we need to fund their implementation and leverage existing mechanisms. For example, we could:

- Create dedicated carve-outs for low-income, vulnerable populations, highly impacted communities
- Explore on-bill financing and subscription models to help those unable to pay up front
- Develop a revenue source that aligns with goals
- Engage diverse stakeholders aligned with goals (housing providers, community based orgs, etc.) in addition to standard energy stakeholders
- Track results and report progress in a transparent manner
- Integrate with other energy programs, such as weatherization, conservation and energy assistance programs

3. Provide multiple value streams to participants

Successful community solar programs typically deliver the following benefits to participants:

- Value of energy – Typically a per-kWh rate paid monthly to participants by utilities in the form of a bill credit based on a portion of generation. These are usually provided for the life of the system, at least 20 - 25 years.
- Value of incentives – Where available, incentives are paid to project developers, or directly to participants. These can be in the form of either up-front rebates or production-based payments, although up front rebates are more effective for lower income communities.
- Value of tax credits – If the project developer is a private entity, typically they are able to leverage Federal tax credits and depreciation. This poses a challenge for non-profits and public utilities, unless partnered with a tax equity entity. The value of these tax credits is reduced after 2020.
- Value of Renewable Energy Certificates (RECs) – Typically RECs are either retained by project participants, or monetized as part of the value that utilities or incentive providers offer.

We look forward to engaging with policy makers to explore a community solar program that fulfills Washington's early promise of community solar, and expands on past programs to deploy the benefits of solar energy more equitably.