NARUC
National Association of Regulatory Utility Commissioners

Regulators' Financial Toolbox: Designing Low- and Moderate- Income (LMI) Community Solar Compensation Programs

The National Association of Regulatory Utility Commissioners (NARUC) Center for Partnership and Innovation (CPI) Regulators' Financial Toolbox series explores the types of financial tools utility regulators can use to support integration of electricity system technologies that benefit the public interest. This brief was prepared by Jamie Scripps of Hunterston Consulting LLC and is based upon work supported[1] by the U.S. Department of Energy under Award Number DE-OE0000925. The speakers' presentations and recordings can be found at www.naruc.org/cpi-1/electricity-system-transition/valuation-and-ratemaking/.

On February 9, 2022, as part of the NARUC Winter Policy Summit, five NARUC Staff Subcommittees (Energy Resources and the Environment, Rate Design, Electricity, Electric Reliability and Resilience, and Consumers and the Public Interest) co-hosted two sessions on community solar. The first panel was *Community Solar I: Benefits for Low- and Moderate-Income Consumers*, featuring opening remarks from moderator Hon. Eric Blank, Chairman of the Colorado Public Utilities Commission, and presentations from Richard Caperton, Vice President, Policy and Market Development, Arcadia, on behalf of the Coalition for Community Solar Access (CCSA); Chris Nichols, Senior Program Director, Groundswell; and Ted Trabue, Managing Director, DC Sustainable Energy Utility. See presentations and recordings. The second panel, titled *What is Community Solar 2: Cost Impacts to Participants and Non-Participants*, featured opening remarks from moderator Jamie Barber, Director of the Energy Efficiency and Renewable Energy Unit at the Georgia Public Service Commission, and presentations from Dr. Gabriel Chan, Associate Professor, Humphrey School of Public Affairs, University of Minnesota; Matthew McDonnell, Managing Director, Strategen Consulting; and Katie Chiles Ottenweller, Southeast Director, Vote Solar. See presentations and recordings.

The speakers' presentations and this accompanying brief address:

- Community solar market status

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What is Community Solar?

The U.S. Department of Energy (DOE) defines community solar as "any solar project or purchasing program, within a geographic area, in which the benefits of a solar project flow to multiple customers such as individuals, businesses, nonprofits, and other groups."[2] A typical community solar project has historically been sized between 1 and 5 megawatts (MW),[3] though some recent community solar projects have reached upwards of 70 MW.[4]

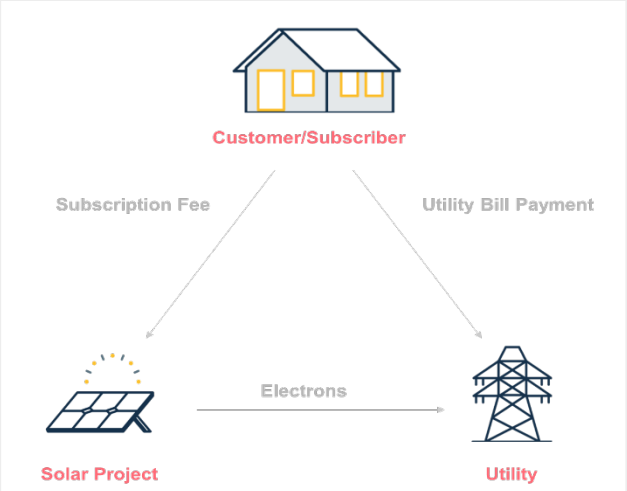

Figure 1: Community Solar Illustration. Source: Richard Caperton, Arcadia, on behalf of the Coalition for Community Solar Access (CCSA).

Customers participating in a community solar program offered by their utility subscribe to receive credit for a portion of the energy generated by an off-site solar array located in their local community (Figure 1).[5] In this way, community solar programs provide renewable energy access to customers who lack the ability or desire to install solar panels on their home or building rooftops.

Community Solar Market Status

In recent years, community solar has expanded throughout the U.S., with projects located in 39 states plus the District of Columbia (DC) as of December 2021.[6] Community solar projects represent more than 5.2 GW of total installed capacity.[7] Twenty-two states plus DC have policies that support community

[2] DOE, National Community Solar Partnership. Available at https://www.energy.gov/communitysolar/community-solar

[3] "Community Solar I: Benefits for Low- and Moderate-Income Consumers," NARUC Winter Policy Summit, Presentation by Richard Caperton, Vice President, Policy and Market Development, Arcadia on behalf of the Coalition for Community Solar Access (CCSA), at slide 1 (February 9, 2022). Available at Session 1 presentations.

[4] See "What is Community Solar 2: Cost Impacts to Participants and Non-Participants," NARUC Winter Policy Summit, Presentation by Katie Chiles Ottenweller, Southeast Director, Vote Solar, at slide 2 (February 9, 2022). Available at: Session 2 presentations. See also FPL-Solar Together. Available at: https://www.fpl.com/energy-my-way/solar/solartogether.html.

[5] See DOE, National Community Solar Partnership. Available at https://www.energy.gov/communitysolar/community-solar

[6] National Renewable Energy Lab (NREL), State, Local and Tribal Governments, Community Solar. Available at https://www.nrel.gov/state-local-tribal/community-solar.html

[7] "What is Community Solar 2: Cost Impacts to Participants and Non-Participants," NARUC Winter Policy Summit, Presentation by Dr. Gabriel Chan, Associate Professor, Humphrey School of Public Affairs, University of Minnesota,

solar (see Figure 2).[8] Currently, about 74% of the total market is concentrated in four states: Florida (1,636 MW); Minnesota (834 MW); New York (731 MW); and Massachusetts (674 MW).[9]

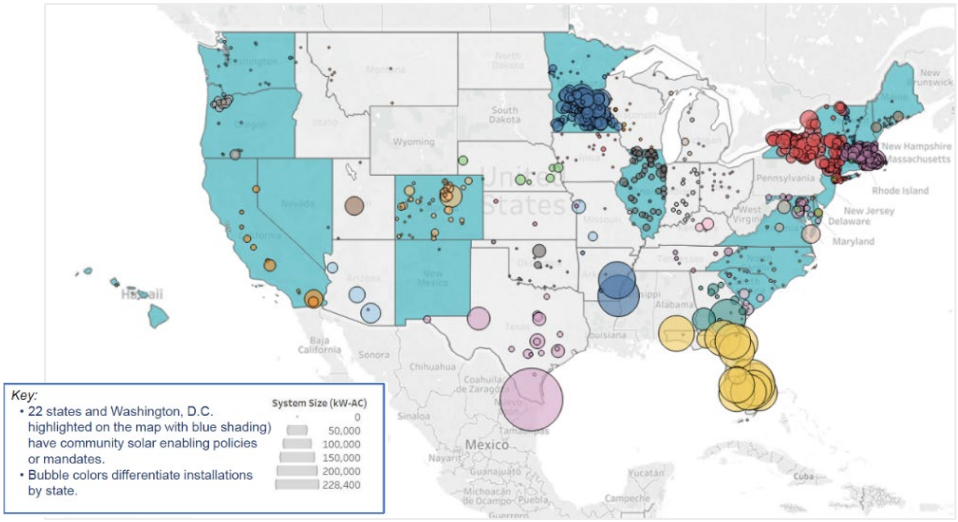

Figure 2: State Policies Supporting Community Solar. Source: Dr. Gabriel Chan, University of Minnesota.

In October 2021, DOE announced a community solar target "to enable community solar systems to power the equivalent of five million households by 2025 and create $1 billion in energy bill savings."[10] To support this goal, the Coalition for Community Solar Access (CCSA), a national coalition of businesses and non-profits advocating for community solar, committed to build 20 GW of community solar by 2025.[11] As of December 2021, there were 65 MW of installed community solar capacity serving low- and moderate-income (LMI) customers across the country.[12] Of the roughly 1,640 community solar projects active in the U.S., around 200 of these community solar projects include LMI subscribers. [13]

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at slide 2 (February 9, 2022). See also NREL Data Catalog, Sharing the Sun Community Solar Project Data (December 2021). Available at https://data.nrel.gov/submissions/185.

[8] NREL, State, Local and Tribal Governments, Community Solar. See also "What is Community Solar 2: Cost Impacts to Participants and Non-Participants," NARUC, Presentation by Dr. Gabriel Chan, at slide 2.

[9] See ibid.

[10] DOE, "DOE Sets 2025 Community Solar Target to Power 5 Million Homes," October 8, 2021. Available at https://www.energy.gov/articles/doe-sets-2025-community-solar-target-power-5-million-homes

[11] CCSA. "Community Solar Industry Commits to Develop 20 GW of Capacity by 2025 in Alignment with U.S. Department of Energy Goals," January 25, 2022. Available at https://www.communitysolaraccess.org/community-solar-industry-commits-to-develop-20-gw-of-capacity-by-2025-in-alignment-with-u-s-department-of-energy-goals/

[12] "What is Community Solar 2: Cost Impacts to Participants and Non-Participants," NARUC Winter Policy Summit, Presentation by Dr. Gabriel Chan, at slide 4.

[13] "Community Solar I: Benefits for Low- and Moderate-Income Consumers," NARUC Winter Policy Summit, Presentation by Chris Nichols, Senior Program Director, Groundswell, at slide 5 (February 9, 2022).

Benefits of Community Solar for LMI Customers

LMI customers face particular challenges related to solar adoption. While the rooftop solar market is becoming more equitable over time,[14] solar-adopter incomes tend to be higher relative to the population at large. For example, the median income of all U.S. [households] was $63,000 in 2020, compared to $115,000 for 2020 solar adopters.[15]

Contributing to these income disparities are difficulties in solar adoption related to renting and residing in multifamily housing. According to the National Multifamily Housing Council, the 2020 Median Household Income was $43,000 for apartment households (5+ units) and $45,191 for all rental households. By contrast, the 2020 Median Household Income was $67,463 for all households and $82,210 for all owner-occupied households.[16] For renters and residents living in multifamily buildings, of which a high proportion are LMI utility customers, there can be significant challenges to accessing rooftop solar, such as the split incentive between landlord and tenant.[17] Further challenges to installing rooftop solar may include shading and inadequate roof conditions. In 2012, the National Renewable Energy Laboratory (NREL) estimated that between 50% and 75% of U.S. households and businesses were unable to access rooftop solar.[18] Community solar is one model for addressing these barriers.[19]

The ability to receive credit for energy produced by an off-site solar array offers community solar participants many potential benefits, including reduced energy costs, increased resilience, ownership and wealth building, and equitable workforce development.[20] Community solar may also provide benefits to utilities, third-party entities, and the grid as a whole. As distributed energy resources,[21] community solar installations can increase resiliency; locating energy generation closer to load may also reduce grid costs for all ratepayers.[22]

Community solar deployment may also help to create jobs and bring other economic benefits to communities.[23] For example, DC's "Solar for All" community solar program is responsible for creating

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[14] Lawrence Berkeley National Laboratory (LBNL), Residential Solar-Adopter Income and Demographic Trends: 2022 Update (March 2022), at slide 5. Available at https://eta-publications.lbl.gov/sites/default/files/solar-adopter_income_trends_final_0.pdf

[15] Ibid. at slide 11.

[16] National Multifamily Housing Council, Household Incomes. Available at https://www.nmhc.org/research-insight/quick-facts-figures/quick-facts-resident-demographics/household-incomes/

[17] See NREL, State, Local and Tribal Governments, Community Solar. Available at https://www.nrel.gov/state-local-tribal/community-solar.html

[18] "A 2008 study by the National Renewable Energy Laboratory (NREL) found that only 22 to 27% of residential rooftop area is suitable for hosting an on-site photovoltaic (PV) system." A Guide to Community Shared Solar: Utility, Private, and Nonprofit Project Development, NREL, May 2012. Available at http://www.nrel.gov/docs/fy09osti/44073.pdf, citing Supply Curves for Rooftop Solar PV-Generated Electricity for the United States, NREL, Nov. 2008. Available at http://www.nrel.gov/docs/fy09osti/44073.pdf

[19] See NREL, State, Local and Tribal Governments, Community Solar.

[20] DOE, National Community Solar Partnership. Available at https://www.energy.gov/communitysolar/community-solar

[21] "What is Community Solar 2: Cost Impacts to Participants and Non-Participants," NARUC Winter Policy Summit, Presentation by Dr. Gabriel Chan, at slide 4.

[22] "Community Solar I: Benefits for Low- and Moderate-Income Consumers," NARUC Winter Policy Summit, Presentation by Richard Caperton, at slide 1.

[23] Ibid.

over 120 green jobs, with DC residents receiving valuable training through the DCSEU Workforce Development program.[24] By 2032, DC's "Solar for All" program aims to bring the benefits of solar energy to 100,000 income-qualified DC residents.[25]

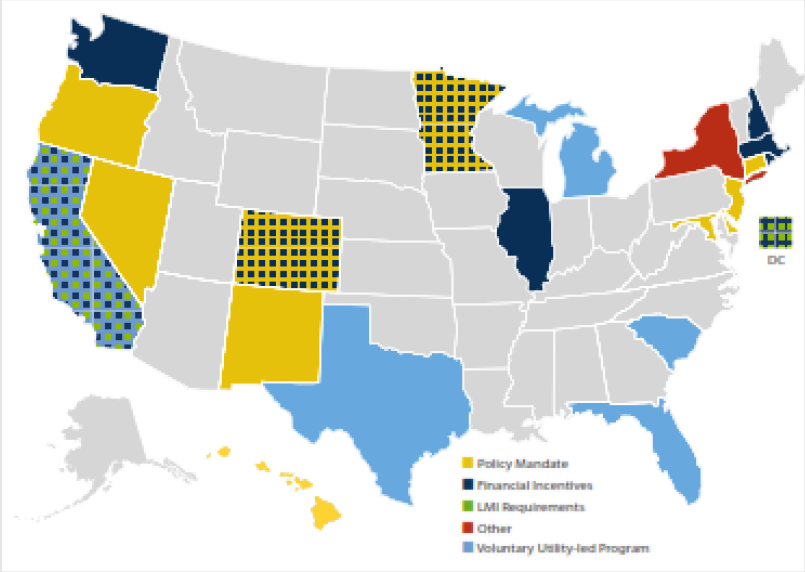

Figure 3: Community Solar Policies with Equity Components. Source: NREL, Equitable Access to Community Solar (September 2021).

Ensuring equitable access to the benefits of community solar is a growing priority in many jurisdictions, with states such as Colorado, Connecticut, Hawaii, Maryland, Nevada, and Oregon having adopted community solar mandates with requirements for access for LMI customers (see Figure 3).[26] For example, the Colorado Community Solar Gardens Act requires a 5% LMI capacity carve-out for each community solar project to make community solar more accessible to LMI households.[27]

There is also support for equitable access to community solar from the federal level. In July 2022, DOE's Solar Energy Technologies Office issued a request for information to pursue development of a secure online platform to identify and make community solar subscriptions with verified savings more accessible for households participating in government-run low-income support programs.[28] DOE also announced *The Sunny Awards for Equitable Community Solar*, a $100,000 prize competition that

[24] "Community Solar I: Benefits for Low- and Moderate-Income Consumers," NARUC Winter Policy Summit, Presentation by Ted Trabue, Managing Director, DC Sustainable Energy Utility, at slide 6 (February 9, 2022).
[25] Ibid. See also DC SEU Solar for All. Available at https://www.dcseu.com/solar-for-all
[26] NREL, "Equitable Access to Community Solar: Program Design and Subscription Considerations," September 2021, at p. 1. Available at https://www.nrel.gov/docs/fy21osti/79548.pdf
[27] Ibid.
[28] DOE, Request for Information: Low-Income Community Solar Subscription Platform. Available at https://www.energy.gov/communitysolar/request-information-low-income-community-solar-subscription-platform

recognizes community solar projects and programs employing or develop best practices to increase equitable access to community solar.[29]

LMI Community Solar Program Design Best Practices

Community solar program design, from customer qualification to rate design and compensation, can have a significant impact on levels of participation by LMI customers. Barriers to LMI customer participation can include upfront expenses, minimal bill savings, the sometimes-onerous process of qualifying LMI customers as "low income" or "LMI," and challenges in identifying and reaching eligible customers. Emerging best practices that mitigate these barriers include pre-qualification through participation in other income-assistance programs and self-attestation.[30] A "Pay-As-You-Go" approach can allow LMI participation with no initial buy-in, and a guaranteed savings approach can help assure minimum bill savings for LMI participants. Protections against fraud or deceptive sales tactics are critical to avoid victimization of vulnerable customer groups.[31]

Recent research by LIFT Solar, a three-year research project funded through the DOE Solar Energy Technologies Office (SETO), aims to identify the optimal finance and customer models to address barriers to solar access for LMI customers.[32] As part of this research, LIFT Solar collected and aggregated finance and customer experience data sets from community solar projects that included at least 10% LMI subscribers.[33] The LIFT Solar analysis sought to define how financial drivers impact financial performance of the project, thus affecting risk and sustainability and influencing inclusion of LMI customers.[34] The finance and customer experience data streams were analyzed separately. Financial drivers were used to correlate findings across regulatory environments and utility types.

The LIFT Solar research found that many programs never ask their customers if they are satisfied. [35] Through LIFT Solar's research, they found:

- Higher renewable energy credits (RECs) and incentives lead to higher customer satisfaction.[36]
- Solar projects that enjoy healthier value stacks correlate with higher savings and satisfaction. [37]
- Higher bill credits lead to greater satisfaction, although higher savings do not. [38]
- No upfront costs and easy sign-up seem to be more important for LMI customers than for non-LMI customers. [39]

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[29] DOE, The Sunny Awards for Equitable Community Solar. Available at https://www.energy.gov/communitysolar/sunny-awards-equitable-community-solar

[30] "What is Community Solar 2: Cost Impacts to Participants and Non-Participants," NARUC Winter Policy Summit, Presentation by Matthew McDonnell, Managing Director, Strategen Consulting, at slide 6 (February 9, 2022).

[31] Ibid.

[32] Groundswell, "LIFT Announces New Study of Solar Financing," August 27, 2020. Available at https://groundswell.org/news/lift-announces-new-study-of-solar-financing/

[33] "Community Solar I: Benefits for Low- and Moderate-Income Consumers," NARUC, Presentation by Chris Nichols, at slide 5.

[34] Ibid.

[35] Ibid. at slide 2.

[36] Ibid.

[37] Ibid.

[38] "Community Solar I: Benefits for Low- and Moderate-Income Consumers," NARUC Winter Policy Summit, Presentation by Chris Nichols, at slide 2.

[39] Ibid.

The LIFT Solar research found that community solar LMI carve-outs tend to specify 10% LMI subscribers and/or at least 10% energy savings (as applied to fuel charges).[40] Many LMI consumers experience scams and price gouging and trust is low.[41] LIFT Solar recommends consideration of the entire consumer bill (electricity rate charges, fees, surcharges, taxes) and that the utility guarantee significant (50% or greater) total bill savings to income-qualified households.[42] LIFT Solar also recommends requiring dashboards and other subscription information portals, and removing requirements for long contracts and upfront deposits.[43] In order to eliminate potentially humiliating requirements to prove income eligibility, LIFT Solar recommends allowing assistance programs to qualify a household for community solar.[44]

Western State Community Solar Snapshots

The following western state community solar snapshots provide examples of programs that are in different stages of maturity, with New Mexico's program still under development.[45] These community solar programs reflect variations of emerging best practices around program design, including pre-qualification of LMI customers, and compensation.[46] Notably, each of these programs contains a carve-out for participation by LMI customers.[47]

Oregon

The Oregon community solar approach was established by SB 1547 (2016), with rules adopted by the Public Utilities Commission in 2019. Total program capacity was divided into 2 tranches:1) an initial offering of 82 MW, made available in early 2020; and 2) a second offering of 79 MW, made available in early 2022. Updated rules were adopted for the second offering; see Table 1.[48]

Table 1: Oregon Community Solar Overview. *Source: Matthew McDonnell, Strategen Consulting.*

Bill Credit	Equal to the retail rate for residential customer and 90% of the retail rate for non-residential customers, with an annual 2% escalator; Total costs and fees for LI participants must be at least 40% lower than the bill credit
Carve-Out	10% of project capacity for LI customers; 25% of program capacity for community-based projects
Project Selection	First-come, first-serve
Prequalification of LI customers	No prequalification; Income verification conducted by the LI Facilitator; An affordable housing facility can enroll on behalf of specified LI tenants if it directly pays for electricity costs

[40] "Community Solar I: Benefits for Low- and Moderate-Income Consumers," NARUC Winter Policy Summit, Presentation by Chris Nichols, at slide 4.
[41] Ibid.
[42] Ibid.
[43] Ibid.
[44] Ibid.
[45] "What is Community Solar 2: Cost Impacts to Participants and Non-Participants," NARUC Winter Policy Summit, Presentation by Matthew McDonnell, at slide 7.
[46] Ibid.
[47] Ibid.
[48] "What is Community Solar 2: Cost Impacts to Participants and Non-Participants," NARUC Winter Policy Summit, Presentation by Matthew McDonnell, at slide 7.

Education & Outreach	The LI Facilitator can recruit LI participants for a project at no cost if requested by the PM; PMs that recruit their own LI participants must submit a LI Recruitment Plan
Cost Shift & Cross-Subsidization	Required to minimize cost shift to non-participating ratepayers, but no specific parameters

Hawaii

The Hawaii community solar approach was established by Act 100 (2015), with the program receiving approval in 2018. Total program capacity was divided into two phases: 1) 8 MW made available in 2018; and 2) 235 MW made available in 2022; see Table 2.[49]

Table 2: Hawaii Community Solar Overview. *Source: Matthew McDonnell, Strategen Consulting.*

Bill Credit	Based on historic average avoided cost of energy; differentiated by island
Carve-Out	50% LMI Subscribers for utility-owned community solar facilities
Project Selection	First-come, first-serve for small projects (up to 250 kW); RFP Solicitation for larger projects with Price and Non-Price Selection Criteria
Prequalification of LI customers	Prequalification based on participation in Medicaid, SNAP, LIHEAP, other LI programs, or residence in an affordable housing facility
Education & Outreach	Community Outreach Plan requirement for Subscriber Organizations; Cultural resource impacts evaluated
Cost Shift & Cross-Subsidization	Exploring subsidization of interconnection costs for LMI community solar projects

New Mexico

The New Mexico community solar approach was established by SB 84 (2021), with rules still under development. Total program capacity is 200 MW; see Table 3.[50]

Table 3: New Mexico Community Solar Overview. *Source: Matthew McDonnell, Strategen Consulting.*

Bill Credit	Derived from the total aggregate retail rate on a per-customer-class basis, minus distribution costs; May include the net present value of RECs
Carve-Out	30% of project capacity for LI customers and LI service organizations
Project Selection	Non-price RFP based on: Project viability; Developer experience and subscriber benefits; Project siting; Local community benefits.
Prequalification of LI customers	Prequalification based on participation in Medicaid, SNAP, LIHEAP, other LI programs, or residence in an affordable housing facility; An affordable housing facility can enroll with consent of all tenants
Education & Outreach	Experience working with LI communities and LI customer engagement included in RFP criteria
Cost Shift & Cross-Subsidization	Cross-subsidization may not be more than 3% of non-subscribers' aggregate retail rate on an annual basis

[49] Ibid.

[50] "What is Community Solar 2: Cost Impacts to Participants and Non-Participants," NARUC Winter Policy Summit, Presentation by Matthew McDonnell, at slide 7.

Compensation and Rate Design

There are many different models of ownership for community solar, but most community solar capacity has historically been owned by third parties with the output purchased by utilities and then credited to subscribers. While enabling legislation can provide guidance on rates, utility regulators have important roles in oversight of community solar compensation rates.[51]

The two main approaches to rate design and compensation for community solar programs are: virtual net metering and virtual net billing.

- With virtual net energy metering, the community solar participant's consumption meter is allowed to (virtually) spin backward when their portion of the community solar project is generating more than the participant is using.[52] The netting period is typically over one billing cycle.[53] The virtual net metering approach is simple to explain to customers and often yields the highest customer savings potential. However, virtual net metering may raise concerns about cost-shifting for non-participating LMI customers.[54]

- By contrast, virtual net billing mimics the rooftop solar benefit while incenting consumption during times of high-solar output, thus mitigating cost-shift concerns.[55] In virtual net billing, a solar credit reduces the total electricity consumption reflected on a customer's bill.[56] When the account consumes more than the allocated virtual solar, then the solar reduces consumption charges and is thus implicitly compensated at the retail rate. When the account consumes less than the allocated virtual solar, the excess solar export is compensated at a specified export rate, which is less than the retail rate (*e.g.*, a value-of-solar rate). The netting frequency is instantaneous.[57]

A key consideration for utility regulators is how the costs associated with community solar projects impact both participants and non-participants in the community solar program. As discussed previously, participation in a community solar program can generate modest bill savings for enrollees.[58] In the example provided in Figure 4, a low- or moderate-income Florida

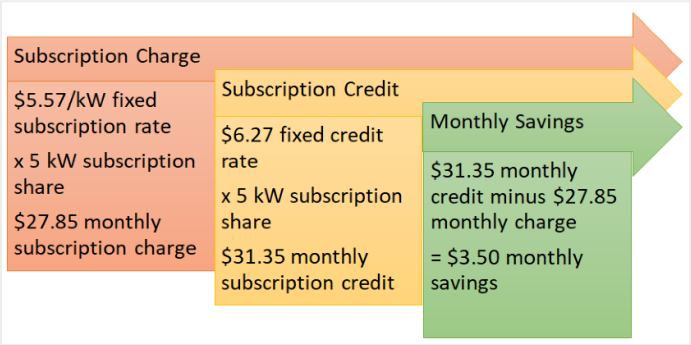

Figure 4: Sample Bill Savings under FPL's "Solar Together-Sun Assist" Community Solar Program. *Source: Adapted from Katie Chiles Ottenweller, Vote Solar.*

[51] "What is Community Solar 2: Cost Impacts to Participants and Non-Participants," NARUC Winter Policy Summit, Presentation by Dr. Gabriel Chan, at slide 4.
[52] See NREL, "Grid-Connected Distributed Generation: Compensation Mechanism Basics," October 2017. Available at https://www.nrel.gov/docs/fy18osti/68469.pdf
[53] Ibid.
[54] "What is Community Solar 2: Cost Impacts to Participants and Non-Participants," NARUC Winter Policy Summit, Presentation by Matthew McDonnell, at slide 3.
[55] Ibid.
[56] Ibid. at slide 4.
[57] See NREL, "Grid-Connected Distributed Generation: Compensation Mechanism Basics."
[58] See "What is Community Solar 2: Cost Impacts to Participants and Non-Participants," NARUC Winter Policy Summit, Presentation by Katie Chiles Ottenweller, at slide 5.

Power and Light (FPL) customer participating in the company's "SolarTogether-Sun Assist" community solar program would see approximately the following subscription charges and credits on their monthly bill. The illustration assumes a $100 monthly energy bill with a maximum community solar subscription of 5 kW.[59]

For community solar programs with LMI carve-outs, utility regulators must consider whether and how to allocate the costs and benefits of the LMI portion of the project among non-LMI consumers, including both participants and non-participants in the community solar program.[60] Commissions must also consider whether and how to allocate the system-wide costs and benefits of community solar among non-participant consumers.[61]

Under FPL's community solar approach, the overall project benefits and costs are shared by all consumers, not just participants in the community solar program.[62] Because of the declining cost of solar, this results in long-term system savings for all FPL customers.[63] By contrast, the costs of the LMI carve-out are ring-fenced inside the community solar program. Under this approach, non-LMI community solar participants contribute to the energy savings experienced by LMI participants.[64]

Another approach to community solar compensation is a Value of Solar (VOS) tariff, such as the one used in Minnesota, which was finalized in 2014 after extensive stakeholder engagement.[65] Minnesota's 2013 enabling legislation for community solar established the parameters for a Value of Solar (VOS) tariff:

> *The distributed solar value methodology established by the [Department of Commerce] must, at a minimum, account for the* ***value of energy and its delivery, generation capacity, transmission capacity, transmission and distribution line losses, and environmental value****. (MN Stat. § 216B.164, subd. 10)*

Under a VOS methodology, community solar participants are compensated according to the system-wide costs the utility avoids by using the solar and not having to produce (or buy) the power by other means. The VOS methodology in Minnesota takes into account the following values of distributed solar: energy and its delivery; generation capacity; transmission capacity; transmission and distribution line

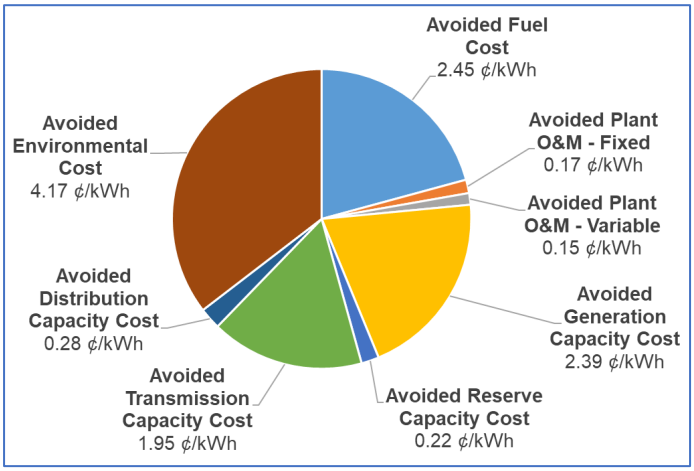

Figure 5: 2022 Value of Solar. *Source: Minnesota Docket 13-867*

[59] Ibid.
[60] See "What is Community Solar 2: Cost Impacts to Participants and Non-Participants," NARUC Winter Policy Summit, Presentation by Katie Chiles Ottenweller, at slide 6.
[61] Ibid.
[62] Ibid.
[63] Ibid.
[64] Ibid.
[65] See Minnesota Department of Commerce, "Minnesota Value of Solar: Methodology," April 1, 2014. Available at https://mn.gov/commerce-stat/pdfs/vos-methodology.pdf

losses; and environmental value.[66] The 2022 VOS rate is 11.79 cents/kWh (levelized) (see Figure 5).[67] In Minnesota, residential community solar participants are compensated according to the VOS rate plus a 1.5¢/kWh adder, which was adopted in 2019 and extended through 2022.[68]

Keeping Costs Low for All Customers

LMI participation rates in community solar projects typically range from 10% to 60%.[69] If a jurisdiction wishes to pursue 100% LMI participation in a project, one option is to partner with affordable housing authorities and facilities.[70] To help enable such a partnership, the U.S. Department of Housing and Urban Development (HUD) has issued guidance that allows residents of HUD-assisted housing to access cost-saving community solar subscriptions without inducing a rent increase or utility allowance adjustment.[71]

Another option may be a state-wide program requiring full LMI allocation to receive incentives.[72] Such a project could be entirely grant-funded with no return on investment required.[73]

In general, the LIFT Solar research found that it is difficult to finance smaller (<5 MW) projects, and there is no standardization yet in solar financing models.[74] Yet, project finance approaches may scale within a market or within markets where the economic incentives are similar or more favorable. [75] A large amount of federal loan financing is available, particularly through the Rural Utilities Service agency at USDA, to utilities serving rural populations throughout the U.S. [76] Programs bringing solar into the fuel mix can scale by using a project finance approach, which may also lower the cost to participate as the average price per kWh typically decreases.[77]

The LIFT Solar research found that developers identified "risk mitigation" and "time needed to structure and execute the deal" as the top two barriers impacting the financing of community solar projects that serve low-income households.[78] Financiers identified "project/portfolio size (too small)" as the greatest barrier impacting the financing of community solar projects that serve LMI households, followed by "risk mitigation."[79] However, credit scores may not correlate with community solar payments and developers

[66] Minnesota Department of Commerce, "Minnesota Value of Solar: Methodology," April 1, 2014, at p. ii. Available at https://mn.gov/commerce-stat/pdfs/vos-methodology.pdf
[67] "What is Community Solar 2: Cost Impacts to Participants and Non-Participants," NARUC Winter Policy Summit, Presentation by Dr. Gabriel Chan, at slide 6.
[68] Ibid. at slide 7.
[69] Ibid. at slide 7.
[70] Ibid.
[71] HUD, Memorandum re: Treatment of Community Solar Credits on Tenant Utility Bills (July 2022). Available at https://www.hud.gov/sites/dfiles/Housing/documents/MF_Memo_Community_Solar_Credits_signed.pdf
[72] "Community Solar I: Benefits for Low- and Moderate-Income Consumers," NARUC Winter Policy Summit, Presentation by Chris Nichols, at slide 7.
[73] Ibid.
[74] Ibid.
[75] Ibid.
[76] Ibid.
[77] Ibid.
[78] Ibid.
[79] Ibid.

and financiers may begin to recognize credit checks as ill-suited to measuring community solar repayment risk.[80]

To help overcome these financing barriers, DOE's National Community Solar Partnership recently announced the "Credit Ready Solar Initiative,"[81] which leverages technical assistance and strategic partnerships to build a pipeline of credit-ready community solar projects, creating access to a community solar marketplace and supporting more equitable deployment of community solar.[82]

What's Next?

In the future, increasing numbers of community solar projects may be paired with energy storage, with the utility able to dispatch output from the facility to meet a variety of dynamic grid needs.[83] In such an arrangement, the facility could receive flat monthly revenues for services akin to a capacity payment, with revenues shared with community solar subscribers on a proportional basis.[84] Such facilities may be strategically sited for resilience benefits.[85] The LIFT Solar research found that an area for further study may be the implications of energy storage trends in relation to community solar financing.[86]

[80] See Arcadia Power, "Community Solar Financing: Redefining Risk," May 2019. Available at https://blog.arcadia.com/assets/Communitysolar_Redefiningrisk_Arcadiapower.pdf

[81] See DOE, Credit Ready Solar Initiative. Available at https://www.energy.gov/communitysolar/credit-ready-solar-initiative

[82] Ibid.

[83] "What is Community Solar 2: Cost Impacts to Participants and Non-Participants," NARUC Winter Policy Summit, Presentation by Matthew McDonnell, at slide 5.

[84] Ibid.

[85] Ibid.

[86] "Community Solar I: Benefits for Low- and Moderate-Income Consumers," NARUC Winter Policy Summit, Presentation by Chris Nichols, at slide 11.

Resources for More Detailed Information

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