Emerging State Policies to Support Community Shared Solar

Over the last several years, a number of states have expanded their successful on-site solar programs by instituting policies that encourage innovative community shared solar programs. While each of these state programs varies considerably, a number of themes are emerging. For example, all of the current state-level programs require the solar array and the group members to be located within the same utility service territory. Other requirements to participate in "group" ownership benefits vary, but may include a cap on system size, proof of partial ownership, or limits on the type of ratepayers that can participate. Billing methods also vary; some programs offer one aggregate bill for the entire group, whereas others assign a pro-rated monetary credit on each member's bill.

State-level community shared solar policies can be grouped based on how the benefits of community shared solar are distributed. In general, there are three broad categories: group billing, virtual net metering, and joint ownership.

LOCAL FLAVOR

In Vermont, two well-known residents, Ben and Jerry, (the ice cream guys) decided to share the benefits of one solar installation on a shared electric bill. They hired AllEarthRenewables to build a solar array on Ben's guesthouse and informed their electric utility that the output of the installation should be netted against the combined consumption of both Ben's and Jerry's homes, in one bill. The solar panels offset all of the energy consumption at the guesthouse, and the remainder of the energy is applied toward offsetting the combined use of Ben and Jerry's homes. They get one electric bill, and split the offset 50/50. They don't have a formal contract, but it works because they are good pals with a long history of working together.

GROUP BILLING

Group billing arrangements operate much like master metering in a multi-unit residential or commercial building. Under master metering, a landlord receives a single electric bill for all electricity usage within a building, including tenant load. The landlord then determines how to assign energy costs to individual tenants taking into account tenant leases. Group billing for community shared solar projects works in a similar way, except that participants do not need to reside in a single building. First, a utility produces a group bill showing all participants' energy consumption and relevant charges. Then, output from a shared PV system is netted against the group bill. The remaining costs are allocated to participants according to an agreement between the participants. Under this framework, group billing allows multiple participants to receive net metering credits from a single renewable energy facility.

A drawback to group billing is that a customer representative must serve as a point of contact and an intermediary between a group of participants and a utility. The customer representative takes on tasks, such as billing and dispute resolution, that expose the representative to administrative burdens. This framework may also raise concerns regarding the creditworthiness of a customer representative.

Vermont has expanded its net metering program to allow group billing for shared systems and this expansion has proven very popular.[11] In the service territories of Vermont's two largest utilities, Green Mountain Power and Central Vermont Public Service territory, over 22 groups have formed to share in the output of a renewable energy system with system sizes ranging from 1.5 to 199 kW. Vermont's program is not limited to solar energy systems. Any eligible renewable energy resource within Vermont's net metering program, including wind, small hydro, and biomethane can be installed under a group billing arrangement. In 2011, Vermont doubled the capacity limit for net metered systems, including group net metered systems, to 500 kW.[12]

VIRTUAL NET METERING

Community shared renewables programs in Colorado, Delaware, Massachusetts, and California rely on virtual net metering to distribute economic benefits from a shared solar energy system. Similar to group billing, virtual net metering allows net metering credits generated by a single renewable system to offset load at multiple retail electric accounts within a utility's service territory. As with traditional net metering, credits appear on each individual customer's bill.

Colorado has implemented one of the most publicized and recognized community shared solar programs using virtual net metering, which it calls Community Solar Gardens. Colorado has allowed jointly owned systems (discussed below) for quite some time, although it has not formulated detailed program rules to support joint ownership. In 2010, Colorado authorized the Community Solar Gardens program under a subscription-based model.[13] In 2011, the Colorado Public Utilities Commission implemented rules governing the program.[14] The rules allow for substantial flexibility with regard to the structure of the Community Solar Garden entity. Regarding the virtual net metering component, the Community Solar Gardens program values a solar garden subscriber's bill credit according to the subscriber's "total aggregate retail rate," less a "reasonable charge" to account for the delivery, integration, and administration costs of the program. Stakeholders continue to discuss the calculation of the bill credit in another docket at the Commission (11A-418E) as part of the Commission's approval of Xcel Energy's 2012 Renewable Energy Standard Compliance Plan.

Unlike Colorado's program, Delaware's community shared program is open to any eligible renewable energy resource—solar, wind, ocean, geothermal, biogas, and small hydro—within Delaware's net metering program. Delaware passed the bill permitting the program in July 2010 and the Delaware Public

[11] See Vermont Public Service Board Rule 5.100, available at: *www.psb.vermont.gov/sites/psb/files/rules/OfficialAdoptedRules/5100adoptedrule_2.pdf.*

[12] Vermont Energy Act of 2011, H. 56, 30 V.S.A. 219a(a)(3)(A), available at*: www.leg.state.vt.us/docs/2012/bills/Passed/H-056.pdf.*

[13] See Colorado House Bill 10-1342, available at: *www.leg.state.co.us/* .

[14] 4 C.C.R. 723-3 Rule 3664, available at: *www.dora.state.co.us/puc/rules/723-3.pdf.*

Service Commission followed up with rules in June 2011.[15] Delaware's community shared renewables program allows community systems to be behind a customer's meter or off site. The value of the virtual net metering credit depends on whether or not a customer is on the same distribution feeder as the facility. If the customer is on the same distribution feeder as the facility, the credit is essentially valued at the customer's full retail rate. If it is not, the credit is essentially a generation-only credit. In other respects, Delaware's program structure is identical to the Community Renewables Model Program Rules, developed by the Interstate Renewable Energy Council (Appendix B).

Under Massachusetts' virtual net metering program, there are two avenues of participation:

1. A "neighborhood net metering" program allows neighborhood facilities to serve the energy needs of at least ten residential customers in a neighborhood group.
2. An alternative program allows participating net metered systems to allocate monthly excess generation to one or more customers within a distribution company's service territory.

Under Massachusetts' neighborhood net metering program, a renewable energy system must be behind a participating customer's meter. However, only a minimal amount of load needs to be present on site. In fact, even "parasitic" load needed to run a facility is allowed to count toward meeting on-site load requirements. Kilowatt-hour credits generated by a renewable energy system are allocated to participating customer accounts by the participating utility. Utilities are not required to include the distribution component of participants' applicable retail rate within neighborhood net metering credits.

Under an alternative program, and contrasting what is typically seen in net metering, Massachusetts allows any customer with a net-metered system to allocate credits associated with monthly excess generation from a system to other customers of the same distribution company. Customers designated by the owner of the net-metered system receive a net metering credit that reflects the host customer's fully bundled retail rate. The net metering credit offered to designated customers is calculated using the retail rate of the host customer (cents per kWh), multiplied by the allocation of kWh for the designated customer. While on-site load must be present where the net-metered system is installed, as with neighborhood net metering rules, parasitic load qualifies as on-site load. This alternative program is very flexible in who can participate and offers a more financially attractive net metering credit than the neighborhood net metering program.

[15] S.B. 267, An Act to Amend Title 26 of the Delaware Code Relating to Net Energy Metering, July, 2010. *www.legis.delaware.gov/LIS/LIS145.NSF/db0bad0e2af0bf31852568a5005f0f58/f17ba623105f222b8525774500765d6e?OpenDocument*; DE PSC, Order No. 7984, June, 2011. *www.depsc.delaware.gov/orders/7984.pdf.*

The California Public Utilities Commission recently expanded the availability of virtual net metering in California to all multitenant buildings in the state. Up until this expansion, under California's Multifamily Affordable Solar Housing (MASH) program, residents of multifamily, low-income complexes, such as the SDCHC townhomes in San Diego, have been allowed to receive bill credits from a single on-site PV system.[16] The building owner allocates net metering credits to individual tenants and a building's common load. Virtual net metering allows the building owner to avoid building a separate solar energy system with a separate inverter for each tenant, which saves considerable funds. According to a program report issued in August 2011, 325 projects are eligible for participation in the MASH program representing over 20 MW of capacity.[17] In July 2011, the Commission expanded the types of customers eligible for virtual net metering to tenants in any multi-tenant or multi-meter property—not just affordable housing properties. In addition, the Commission allowed for virtual net metering credits to be shared throughout an entire affordable housing property, as long as that property is on contiguous parcels and under common ownership.[18] This change opens virtual net metering to a much broader group of customers and signals a significant expansion in California's net metering program.

SOLAR FOR ALL

The nonprofit San Diego Community Housing Corporation (SDCHC) partnered with a third party, Everyday Energy, to put a 20-kW system on its Hacienda Townhomes property. Everyday Energy installed and owns the system on the 52-unit apartment building, taking advantage of the tax benefits that are not available to the nonprofit Housing Corp. SDCHC signed a 20-year solar services agreement with Everyday Energy under which they will pay a flat fee to cover maintenance and electric services from the installation. An electric meter measures the energy flow directly to the grid, and the utility (San Diego Gas & Electric) credits the tenants and common areas as directed in the Virtual Net Metering agreement. Residents will save a projected 30% on their electric bills.

[16] See Multifamily Affordable Solar Housing Semiannual Report, available at*:* *www.cpuc.ca.gov/NR/rdonlyres/B3644285-F573-428F-AA0A-A2497A30401B/0/MASHSemiAnnualReport.pdf.*

[17] See California Solar Initiative Low-Income Solar Program Evaluation, available at*:* *www.cpuc.ca.gov/NR/rdonlyres/13AAEDF8-BB7D-4FBD-AC05-3FC2B9CBF746/0/CSISASH_MASHImpact_and_Cost_Benefit_Report.pdf* .

[18] See California Solar Initiative Phase One Modifications, Decision 11-07-031, Rulemaking 10-05-004, available at: *www.docs.cpuc.ca.gov/word_pdf/FINAL_DECISION/139683.pdf* .

JOINT OWNERSHIP

Following the precedent set by successful community shared wind programs, a few states are exploring options for distributing the benefits of participating in a community shared renewable energy program through frameworks similar to wholesale power sale arrangements. The community shared wind movement was motivated, in part, by a desire to promote rural development through expanded citizen investment opportunities. By allowing citizens to "piggyback" their projects onto larger wind projects, communities could benefit from economies of scale. This history led to a primary difference between the emergence of community shared solar and wind: Community shared wind uses a technology that began as utility-scale application and moved into smaller scale applications. In contrast, community shared solar uses a technology that began with on-site systems and applies it to larger solutions.

Maine's Community-Based Renewable Energy Pilot Program law[19] allows "locally owned electricity generating facilities" with at least 51% ownership by "qualifying local owners" to elect one of two incentive mechanisms. Under the first, qualifying local owners can enter into a long-term contract to sell output from a facility to a transmission and distribution utility. The contract price for energy may vary over the course of a year, but the average price, weighted based on the expected output of a facility, may not exceed $0.10 per kWh. This price only includes the value of a power sale and does not include a purchase of RECs. A significant downside of this approach is that a payment for power sales to a wholesale or retail purchaser results in taxable income at a federal level and possibly at a state level. Depending on the tax bracket a particular customer faces, the taxation of payments for power sales can significantly decrease the size of benefits available to participating customers.

Under Maine's second incentive option, generation is virtually net metered to joint owners in proportion to the owners' stake in a system. For example, a 50% owner would receive 50% of the net metering credits generated by a system though virtual net metering.

Washington's community solar rules allow for ownership of community shared solar projects up to 75 kW that are either jointly owned by individuals, businesses, and nonprofits or owned by a utility and voluntarily funded by the utility's ratepayers. Participants receive production incentives based on their proportional share of the output of a project. In addition, in the case of utility-owned projects, participants receive the value of the electricity. Washington's community solar incentives are among the most generous in the world if projects use inverters and modules made in Washington. For such systems, the production incentive is set at $1.08 per kWh through June 2020, but is subject to dilution if incentive payments exceed 0.5% of utility gross revenue in a given year.

[19] See An Act To Establish the Community-based Renewable Energy Pilot Program, available at: *www.mainelegislature.org/legis/bills/bills_124th/chapters/PUBLIC329.asp*.