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COMMUNITY SOLAR

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COMMUNITY SOLAR FARMS

Community solar farms are one type of shared clean energy facility. They are often interchangeably referred to as "community solar," "solar gardens," or "shared solar."

Legislation passed in 2015 generally defines "shared clean energy facility" as a clean energy-powered electricity generating facility to which customers subscribe for a (1) percentage interest in the total amount of electricity produced or (2) set amount of electricity produced. The subscriber's share of the electricity produced is then used to offset the subscriber's electric costs at another billing meter identified by the subscriber.

ISSUE

This report addresses three questions:

1. Does the state of Connecticut have any community solar programs?
2. Has the Connecticut General Assembly addressed the issue of community solar in the last five years?
3. What are some examples of states that have successfully established community solar programs?

SUMMARY

Connecticut law does not generally authorize community solar programs and we are not aware of any currently operating in the state. In 2014 and 2015, the Energy and Technology Committee considered bills to fully implement shared clean energy programs or establish pilot programs. One of these bills became law: PA 15-113 requires the Department of Energy and Environmental Protection (DEEP) to establish a two-year pilot program to support the development of shared clean energy facilities.

We found three states (Colorado, Massachusetts, and Minnesota) that provide examples of successful community solar programs.

Colorado passed legislation in 2010 permitting community solar gardens subject to rules adopted by the state's Public Utilities Commission. Colorado's largest utility currently has at least 14 solar gardens.

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Massachusetts passed legislation in 2008 allowing community solar programs, however a statewide cap on net metering somewhat limits the program. Massachusetts incentivizes community shared solar by allocating a higher level of solar renewable energy credits to these projects compared to other eligible projects.

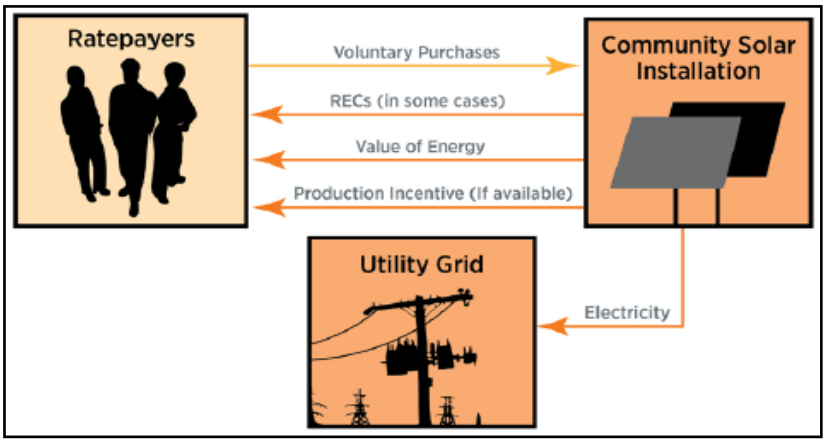
Minnesota passed legislation in 2013 requiring one of the state's utilities (Xcel Energy) to administer a community solar garden program and giving other utilities the option to do so. Public Utility Commission proceedings on Xcel's proposed community garden program have discussed, among other things, (1) the rate at which Xcel must purchase energy generated by a solar garden and (2) capacity limits on co-located facilities. Xcel currently has one active solar garden in place with approximately 1,600 applications from garden developers. At least 12 other utilities have solar garden programs (including investor-owned, cooperative, and municipal utilities) and three utilities are planning to establish programs.

BACKGROUND ON COMMUNITY SOLAR

Generally, community solar programs allow two or more individuals to purchase a share or subscription to one renewable energy system and receive a proportional share of the system's financial or energy-related benefits (i.e., through credits against their own energy use, production incentives, or renewable energy credits (REC)).

For example, a developer could build a solar array consisting of numerous solar panels. Interested customers could subscribe by purchasing a specified quantity of the electrical output produced by the system. Customers could then receive a credit for that power deducted from the energy portion of their electric bills (see Figure 1). Different models of community solar have different requirements and features.

Figure 1: Community Shared Solar Model



Source: U.S. Department of Energy

RECENT STATE LEGISLATIVE ACTIONS

Shared Clean Energy Study (2014-15)

On September 18, 2014, the Connecticut General Assembly requested a study on the topic of shared clean energy facilities from the Connecticut Academy of Science and Engineering (CASE). The CASE study, completed and presented in March 2015, is available here and the related presentation is available here.

The study discusses shared clean energy facilities (SCEF) (focusing largely on solar) and recommends adopting legislation to permit the development and operation of SCEFs throughout the state. In the report, a SCEF is a system that utilizes clean renewable energy (such as biomass, fuel cells, geothermal, hydroelectric, ocean/tidal, solar, or wind, among others) to provide power or financial benefit to multiple users. Among other things, the report also recommends a study of non-monetary benefits of clean energy and how those benefits should factor into rates (i.e., a value of clean energy analysis) to ensure rate fairness.

Pilot Program (PA 15-113)

Effective October 1, 2015, PA 15-113 requires DEEP to establish a two-year pilot program to support the development of shared clean energy facilities. In general, under the act, a shared clean energy facility is a clean energy-powered electricity generating facility to which customers subscribe for a percentage or set amount of the electricity produced. The subscriber's share of the electricity produced is then used to offset the subscriber's electric costs at another billing meter identified by the subscriber. A community solar farm is one type of clean energy facility that could be included in this pilot.

Under the act, by January 1, 2016, DEEP must develop and issue a request for proposals (RFP) to develop shared clean energy facilities from entities that (1) own or operate such facilities to benefit subscribers or (2) contract with third parties to build, own, or operate them. DEEP must select a project or projects with a total generating capacity of up to (1) two megawatts in United Illuminating's (UI) service area and (2) four megawatts in Eversource's service area. The full public act summary is available here.

Other Considered Legislation

In 2014, the Energy and Technology Committee considered two bills related to shared clean energy programs. HB 5412 would have required electric companies and the Public Utilities Regulatory Authority (PURA) to fully implement a shared clean energy program (i.e., not a pilot program). The committee took no action on the bill. SB 353 would have required DEEP, in consultation with the electric

companies, to establish a three-year pilot program for shared clean energy. The committee favorably reported the bill to the Senate, which took no action on it.

In 2015, the Energy and Technology Committee again considered two bills related to shared clean energy programs. SB 928, as it was raised, would have required the electric companies and PURA to fully implement a shared clean energy program (similar to HB 5412 in 2014). The bill was later amended to create a pilot program and passed as PA 15-113, described above. HB 6940 would have required DEEP to establish a pilot program by issuing RFPs for two shared clean energy projects. The committee took no action on the bill.

COMMUNITY SOLAR FARMS IN CONNECTICUT

We found no community solar farm or similar type of shared clean energy program currently in Connecticut.

According to this notice, DEEP conducted a technical meeting on October 21, 2015 to discuss the RFPs to begin the pilot program required by PA 15-113. In the notice, DEEP identifies several policy objectives for the program, including:

1. supporting clean energy objectives,
2. increasing access to clean energy for low to moderate income customers,
3. optimizing siting objectives,
4. supporting in-state economic development opportunities, and
5. minimizing cost for electric ratepayers.

The agency accepted public comment through October 29, 2015, on issues discussed in the notice, including:

1. the role of subscribers, electric companies, and subscriber organizations;
2. possible tax implications for subscribers;
3. electric company cost recovery for costs related to the program;
4. potential subscriber models;
5. targeting specific customers (e.g., low or moderate income) or locations (e.g., brownfields);

6. minimum or maximum requirements for the size of the shared clean energy facility, the amount of energy a subscriber may sign up for, and the number of subscribers a facility must have; and

7. consumer protections.

COMMUNITY SOLAR IN OTHER STATES

Generally, to have a community solar program, a state must allow virtual net metering, which is a type of net metering that allows multiple customers to receive benefits or credits from a net-metered renewable energy source. States may opt to further incentivize community solar programs by requiring utilities to purchase a certain amount of electricity from community solar projects, creating renewable energy credits (REC) specific or preferential to community solar, or providing other installation or production incentives (e.g., loans or financing). States may place limits on community solar through various methods including (1) limits on the capacity of installed systems, (2) minimum or maximum number of customers or subscribers, (3) limits on the amount of energy subscribers may purchase, or (4) geographic restrictions.

Colorado

In 2010, the Colorado General Assembly passed the Community Solar Gardens Act (HB 10-1342). Among other things, according to a summary of the act from Colorado's Office of Legislative Legal Services, it:

1. defines a community solar garden as a solar electric generation facility with a capacity of two megawatts or less and in which subscriptions are owned by 10 or more customers of a qualifying retail utility;

2. limits the size of a subscription to 120% of the average annual electric consumption of each subscriber;

3. allows the creation of a community solar garden owned by a subscriber organization, subject to rules adopted by the Public Utility Commission;

4. specifies that, in their first three compliance plan years after the effective date of the act, qualifying retail utilities must purchase the lesser of six megawatts, or half their total purchases of electricity from community solar gardens sized at 500 kilowatts or smaller;

5. exempts community solar gardens from the definition of (and regulations governing) a utility; and

6. specifies that the act does not apply to cooperative electric associations or municipally owned utilities.

According to the CASE report, the Public Utility Commission established rules requiring a shared clean energy facility to limit to 40% of its total capacity the amount that any individual subscriber could purchase, but also delayed this requirement for the first 18 months of a facility's development (see also Public Utility Commission rules at 4 CCR 723-3, 3665).

Documents filed by Colorado's Public Utility Commission as part of their review of Colorado's largest power provider's (Xcel Energy) Renewable Energy Standard Compliance Plan show that, in 2014, Xcel had at least nine community solar systems completed with a capacity of over four megawatts. A 2015 story in the Denver Post states that Xcel's community solar program has grown to 14 solar gardens operating in its service area with 530 participating customers.

Massachusetts

Legislation passed in 2008 permitted community solar programs as part of a number of other energy reforms and also imposed a cap on the total installed net-metered capacity for electric distribution companies (Senate, No. S2768). While subsequent legislation has increased the net metering cap, the CASE report states that the cap has hindered the development of community solar in the state.

As part of a federal initiative to make solar energy cost-competitive with other forms of energy, the state received federal funding and used some of the funds to develop recommendations and guidelines for community solar. Massachusetts also incentivizes community solar through preferential REC allocation. Community solar projects are among certain solar installations that currently receive one Solar Renewable Energy Credit (SREC) for every megawatt generated, whereas other solar projects receive less (e.g., solar generation on landfills receives 0.8 SRECs for every megawatt generated). Independent community solar activities in Massachusetts include the Harvard Solar Garden and the Brewster Community Solar Garden Cooperative.

Minnesota

Legislation passed in 2013 requires one of the state's utilities (Xcel Energy) to administer a community solar garden program and gives other utilities the option to do so. Investor-owned, municipal, and cooperative utilities participate in Minnesota's solar garden program, according to the Clean Energy Resource Teams (CERTS) website. (CERTS is a public-private partnership advocating for community-based clean energy projects. It includes staff from the state's Division of Energy Resources within its Department of Commerce.) According to CERTS, at least 12 other utilities have solar garden programs and three utilities are planning to establish programs.

According to its website, Xcel currently has one active solar garden in place with approximately 1,600 applications from garden developers. The law required Xcel to submit a plan to the Public Utilities Commission (PUC) by September 2013 and required the program to begin operating within 180 days of the commission's approval of the plan (Minn. Stat § 216B.1641). Xcel filed its initial plan in September, PUC rejected it and issued a revised order in April 2014, and Xcel submitted a revised proposal in May. Xcel also filed an additional motion rejecting the value-of-solar rate established by the Minnesota Department of Commerce for community solar gardens. The law required Xcel to purchase all energy generated by a solar garden at the value-of-solar rate, or, until PUC approved such a rate, the "applicable retail rate," which the statute does not define. In September 2014, the commission approved the solar garden program with rate credits at the applicable retail rate, defined by the commission as "the full retail rate, including the energy charge, demand charge, customer charge, and applicable riders" for the subscriber's customer class.

Since then, Xcel, project developers, and the PUC have further debated the program's structure, specifically the size limit of co-located systems (i.e., adjacent facilities, generally located at the same site). While the law limits eligible projects to one megawatt, the commission's rules allowed companies to submit clusters of co-located projects that could surpass the one megawatt limit. According to a subsequent PUC order, Xcel expressed concern that developer applications for gardens, while individually complying with the one megawatt limit, were proposing co-locations in groups with larger aggregate capacities. The PUC order limited applications for co-located facilities submitted before September 25, 2015 to five megawatts and those after that date to one megawatt, though Xcel can adjust applications already filed if they are not compliant with the PUC order.

HYPERLINKS

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