UTILITY-SPONSORED MODEL

For communities desiring to organize a community shared solar project, the local electric utility is a good place to start. First of all, utilities are likely to have the legal, financial, and program management infrastructure to handle organizing and implementing a community shared solar project. Second, many utilities are actually governed by the member customers and can be directed to pursue projects on members' behalf. Fully one-fourth of Americans own their own electric power company through co-ops, or city- or county-owned utilities.[2] In general, publicly owned utilities have taken the lead in deploying community shared solar projects. Even when the utility is investor-owned or privately held, it may wish to expand customer choice with an option for community shared solar power.[3]

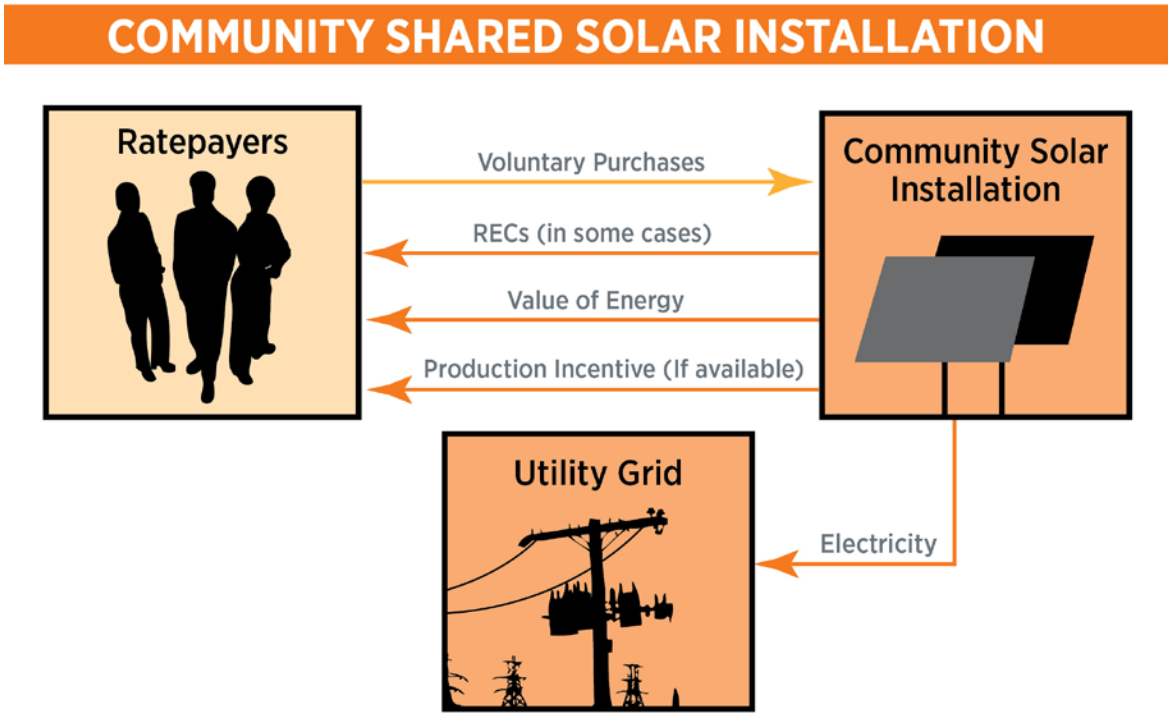
OVERVIEW

In most utility-sponsored projects, utility customers participate by contributing either an up-front or ongoing payment to support a solar project. In exchange, customers receive a payment or credit on their electric bills that is proportional to 1) their contribution and 2) how much electricity the solar project produces. Usually, the utility or some identified third party owns the solar system itself. The participating customer has no ownership stake in the solar system. Rather, the customer buys rights to the benefits of the energy produced by the system. Note that utility-sponsored community shared solar programs differ from traditional utility "green power" programs in that "green power" programs sell RECs from various renewable energy resources and generally do not act as a hedge against rising electric costs; utility community shared solar programs sell energy or rights to energy from specific solar installations, with or without the RECs, at a rate that is generally locked in for a period of many years.

Utility-sponsored programs can help make solar power more accessible by decreasing the amount of the purchase required, and by enabling customers to purchase solar electricity in monthly increments. Both Sacramento Municipal Utility District's SolarShares and Tucson Electric Power's Bright Tucson programs allow customers to participate in community shared solar on a monthly basis.

[2] Growing a Green Economy for All: From Green Jobs to Green Ownership, The Democracy Collaborative, June 2010, p. 22. *www.community-wealth.org/_pdfs/news/recent-articles/07-10/report-warren-dubb.pdf*.

[3] ITC tax benefits may not be readily accessible to for-profit utilities, due to the normalization accounting rules.



TAX AND FINANCE ISSUES FOR UTILITY-SPONSORED PROJECTS

A utility project's ability to use tax incentives depends on the individual utility's characteristics. Electric co-ops, municipal utilities and public utility districts are exempt from federal income taxes, and thus, cannot benefit from federal tax incentives, like the ITC and depreciation. However, the utility can make use of Clean Renewable Energy Bonds (CREBs) that are not available to the for-profit investor-owned or privately held utilities.

Since 2008, investor-owned utilities have been eligible to use the commercial ITC on qualifying public utility property. And as taxpaying entities, the utilities may have the tax appetite to make use of them. However, normalization accounting rules limit regulated utilities' flexibility in maximizing the value of these tax benefits compared to other private developers. Normalization rules require regulated utilities to spread the benefits of investment tax credits throughout the useful life of the solar project in the rate-making process. The utility's incentive for investment is the difference between the value it receives from the tax credit up front and the value it passes on to customers over time (i.e., the time value of money). Private developers have the flexibility to pass on the benefits of the ITC sooner, which can give them a price advantage over utility solar projects.[4]

[4] P. Alvarez and B. Hodges. (2009). "Buying Into Solar." Public Utilities Fortnightly. p. 57.

Other legal issues for utility-sponsored projects include the following:

- **Securities Compliance**. In designing mechanisms for customer participation in solar projects, utilities must be careful to comply with state and federal securities regulations. This requires carefully considering what benefit a customer-participant receives in exchange for a financial contribution to the project and how the project is marketed. For example, customer participants may be offered ownership stakes in the solar system itself or just the rights to certain benefits from the energy produced (such as credit on their electric bills, RECs, or access to a special electric rate). However, regardless of how the program is marketed, depending on your state, the receipt of credits on electric bills or other benefits may constitute a return on an investment and fall within the blue sky laws (state laws that regulate the offering and sale of securities).
- **Allocation of Incentives**. In addition to federal tax incentives, a utility-sponsored project might be eligible for various state incentive programs that provide cash benefits or savings to the project. The utility must consider whether and how these incentives will be passed on to customer participants and the tax implications of how the incentives are handled. For example, in Washington State, participants in a utility-sponsored program are eligible for production incentives. While the state Department of Revenue has ruled that the incentive is not taxable, the IRS has not ruled definitively on whether subsidies for solar PV in community shared solar installations are taxable income, although the precedent is that subsidies for energy conservation measures are not taxable.[5]
- **RECs**. Customer participants in utility-sponsored projects often desire to claim the environmental benefits of using solar energy. Participants can only make such a claim if they receive RECs or the utility retires the RECs on the participants' behalf. If the utility keeps the RECs for any reason, including Renewable Portfolio Standard compliance, only the utility can make environmental claims related to the solar system. The utility-sponsored project should consider and make explicit how RECs are allocated.

From a participant perspective, the tax implications are minimal. Bill credits for the value of electricity are not generally taxed; at the same time, participants in a utility-sponsored project are not eligible for the federal investment tax credit. The relative ease of participating in a utility-sponsored project may offset some of the foregone tax incentives available under other community shared solar ownership models.

EXAMPLES OF UTILITY-SPONSORED PROJECTS

The following examples highlight some of the project options available to those planning a utility-sponsored project.

[5] 26 USC 136 states that subsidies from public utilities for energy conservation measures are not taxable. For example, Washington State's production incentive was ruled to be not income. See *http://apps.leg.wa.gov/WAC/default.aspx?dispo=true&cite=458-20*.

Sacramento Municipal Utility District (SMUD): SolarShares Program

Photo from Stephen Frantz, Sacramento Municipal Utility District

SMUD's SolarShares Program allows customers who cannot or choose not to acquire PV systems of their own to purchase solar power directly from SMUD while achieving net metering benefits comparable to behind-the-meter PV. SMUD buys the output of local, community-scale photovoltaic systems under 20-year PPAs and then resells the solar power to participating customers. Bill credits equivalent to the amount of energy the customer buys from the SolarShares system are credited to the customer through virtual net metering and are equivalent in value to the bill credits received by a customer with behind-the-meter PV—i.e., full retail price per kWh. The program is subsidized with SB1[6] surcharge funds, which allows SMUD to sell the power for less than the PPA purchase price. SMUD retains the renewable energy credits and is able to count up to 25 MW of SolarShares projects toward its 125-MW SB1 goal. SolarShares' business goals are to make solar benefits available to all SMUD ratepayers, to contribute to achieving SMUD's 125-MW SB1 goal, and to gather pricing and marketing experience that could lead to a sustainable solar enterprise for SMUD beyond the current, mandated incentive program.

SolarShares began in mid-2008 with a 1-MW system constructed by enXco at a leased site in Wilton. The system has thus far produced an average 1,745 MWh per year, of which about 86% has been sold to SolarShares participants. Intensified marketing in Q4 2011 succeeded in moving the percentage sold toward the program's 95% goal. The program has maintained stable enrollment of around 600 customers throughout its three-year life, with most dropouts attributable to customers moving out of the District. Market research conducted in mid-2009 confirmed that most SolarShares customers are satisfied with the program (75% positive responses) and would recommend it to others (85% positive responses).

[6] SB1 is the California Solar Initiative, a state mandate requiring all California electric utilities to offer a 10-year program of declining incentives for customer-sited PV. It expires at the end of 2016.

Customers pay a fixed monthly fee, based on both their average electricity consumption and the amount of PV to which they want to subscribe (from 0.5 to 4 kW). SMUD is exploring the marketing advantages of changing this pricing structure to a flat fixed fee per kWh, allowing customers to purchase in packets of 1,000 kWh/year. Once enrolled, customers are locked in at the fixed monthly fee, for as long as they wish to participate. They receive monthly kWh credits for the estimated output of their solar subscription. Although customers currently pay a premium for solar energy, the effective rate for solar is locked in when they enroll, which maintains the ability of solar to act as a hedge against future price increases. SMUD is making plans for expansion of up to 25 MW by the end of 2016. An RFP for a second megawatt was released in Q3 2011, and the next 1-MW project is scheduled for completion in Q3 2012. The PPA price for the second MW will be blended with the price for the original system to yield a lower participation fee for both existing and new program subscribers. Depending on market response to the second project, SMUD will probably seek to expand the program by larger increments in the future (the enabling legislation caps projects at 5 MW each).

Program Highlights

- *System Owner:* enXco, with SMUD purchasing 100% of the output under a 20-year PPA
- *Installed Capacity:* 1 MW
- *Participant Agreement:* Customers pay a fixed monthly fee in return for a kWh credit. Credit varies monthly, as solar output varies, so a 12-month consecutive commitment is requested.
- *Electricity:* The estimated kWh generated by a customer's share is netted against the customer's consumption at home, at the full retail rate.
- *RECs:* Retained by SMUD
- *Number of Participants:* Approximately 600

Financial Details

- *Installed Cost*: NA
- *Capital Financing*: Handled by third party, enXco
- *Tax Credits*: 30% federal business investment tax credit taken by enXco, depreciation taken by enXco
- *Estimated Annual Cost*: Varies by customer size and array size. Output from a 0.5-kW share for the small user will cost $129/year at 2012 prices. As the price for non-solar energy rises, a participant could eventually realize monthly savings on their solar purchase.

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Tucson Electric Power: Bright Tucson Community Solar Program

Photo from Marc Romito, Tucson Electric Power

In 2011, Tucson Electric Power launched its Bright Tucson Community Solar Program to create opportunities for customers unable to install traditional distributed solar power. Through the program, customers have the opportunity to purchase solar power in "blocks" of 150 kWh per month. Program participants can choose to purchase some or all of their energy through the program. Each purchased block replaces the charges for an equivalent amount of conventional power. At current rates, the solar block is more expensive by about two cents per kWh, but program blocks are exempt from two surcharges applied to other electric usage. Both these surcharges are adjusted annually to reflect changing energy costs, so the benefit of avoiding them could increase over time. The solar block rate is locked in for 20 years under rules approved by the Arizona Corporation Commission (ACC), offering TEP customers a way to hedge against future rate increases. While blocks purchased through the program will still be subject to non-fuel rate changes, the blocks will not be affected by changes to the base energy rate or renewable energy surcharges.

Tucson Electric Power offers an online solar calculator to help potential participants determine how many blocks to purchase to offset the desired quantity of household electricity use. If the solar energy purchased through the program exceeds actual usage during a monthly billing period, the excess is carried forward to the next billing period as a credit. Any credit remaining after the September billing period will be paid in full as a credit on the next bill.

The first source of solar power for the Bright Tucson Community Solar Program is a 1.6-MW single-axis tracking PV array located in The Solar Zone at the University of Arizona Science and Technology Park. TEP is expanding the program as demand requires through utility-owned systems and power purchase agreements. Currently, program participants have purchased 2.1 MW of community shared solar.

The following details pertain specifically to the first Bright Tucson Community Solar Program solar source, a 1.6-MW single-axis tracking PV array, unless otherwise noted.

Program Highlights

- *System Owner:* Tucson Electric Power
- *System Host:* University of Arizona Science and Technology Park
- *Installed Capacity:* 1.6-MW single-axis tracking PV array
- *Participant Agreement*: Customers pay a fixed monthly fee per solar block in return for a 150-kWh credit. Any credit remaining after the September billing period will be paid in full as a credit on the next bill.
- *Electricity:* Each 150-kWh block replaces the charges for an equivalent amount of conventional power at a rate that currently adds $3 per month to the customer's electric bill.
- *RECs:* Retained by TEP
- *Number of Participants*: 564 (six are commercial; includes all program solar sources)

Financial Details

- *Installed Cost*: $4/watt
- *Capital Financing*: Utility financed
- *Tax Credits*: For 1.6-MW single-axis tracking array, TEP used levelized ITC. For 2-MW dual-axis tracking array, owner took the Treasury Grant (in lieu of ITC).
- *Estimated Annual Cost*: $36/year for a monthly 150-kWh block. As the price for non-solar energy rises, participants could eventually realize monthly savings on their solar purchase.

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OTHER COMMUNITY SHARED SOLAR PROJECTS

United Power, CO; City of Ellensburg, WA; Florida Keys Electric Co-op, FL; Seattle City Light, WA; St. George, UT; City of Ashland, OR; *Coming Soon: San Diego Gas & Electric, CA*