CONSIDERATIONS FOR COMMUNITY SOLAR

DECEMBER 2023

Overview

This document is a guide for groups considering pursuing a community solar system. It includes information about best practices, tax incentives and resources.

WHAT IS COMMUNITY SOLAR?

Community Solar is any solar project or purchasing program that provides power or financial benefits to multiple customers. Community solar customers typically subscribe to or own a portion of the energy generated by a solar array and receive an electric bill credit for electricity generated by their share of the community solar system. Community solar can be a great option for people who are unable to install solar panels on their roofs because they are renters, can't afford solar, or because their roofs or electrical systems aren't suited to solar.

HOW DOES IT WORK?

Community solar projects generate electricity from sunlight. The electricity flows through a meter to the utility grid. Community solar subscribers (i.e., households, businesses or any other electricity customer) pay for a share of the electricity generated by the community solar project. This is typically in the form of a monthly subscription fee.

The local utility pays the community solar provider for the energy generated. Each subscriber receives a portion of the dollar value generated by their community solar subscription as a credit. Typically, this credit is applied directly to a subscriber's monthly electric bill, helping to reduce customers' electricity costs.

WHY USE COMMUNITY SOLAR?

Community solar can allow all households and businesses to access the benefits of solar energy, such as lower electricity costs, regardless of whether they're able to host a system on their own roof. In most areas solar power is less expensive than fossil fuel-generated electricity, allowing consumers to save money on their monthly bills. Community solar offers resilience during blackouts and weather events, community wealth building and local job creation.

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BENEFITS OF COMMUNITY SOLAR

Greater household savings

Low-to moderate-income household access

Increased resilience and grid benefits

Community ownership

Equitable workforce development and entrepreneurship

Community engagement

Project Models

Utility-Sponsored Model

Utility owns or operates a project that is open to ratepayer participation.

- Utility customers purchase the rights to the benefits produced by the solar system by contributing either an up-front or ongoing payment to support a solar project. Customers receive a payment or credit on their electric bills that is proportional to their contribution and how much electricity the solar project produces.
- Utility or some third party owns the solar system.

Special Purpose Entity (SPE) Model

Individual investors join in a business enterprise to develop a community solar project.

- A group of investors forms and runs a business. They must negotiate contracts as well as the legal and financial hurdles of setting up a business and raising capital.
- Many entities pursuing community solar are organized by another existing business entity with legal and financial experience. For instance, solar installation companies such as My Generation Energy in Massachusetts have successfully created LLCs to purchase solar installations that are funded by investors.

Non-Profit "Buy a Brick" Model

Donors contribute to a community solar installation owned by a charitable non-profit corporation.

- While donors do not share directly in the benefits of the solar installation, they share indirectly by lowering energy costs for their favored non-profit and demonstrating environmental leadership.
- Non-profit organizations such as schools and churches partner with citizens to develop community solar projects. Supporters of the non-profit organization provide tax-deductible donations.

Incentives

Federal and State Tax Incentives

Federal and state tax incentives can be used to support solar projects. Community solar projects may not qualify for certain incentives that were developed with individually owned PV installations and commercial-scale solar projects in mind. Tax incentives vary widely, depending on the status of the project sponsor.
Additional detail can be found on the Database of State Incentives for Renewables & Efficiency (DSIRE) located at www.dsireusa.org/.

Examples of tax incentives include the following:

- **Tax Credit Bonds** - Qualified tax credit bonds are a mechanism to lower the cost of debt financing for non-tax-paying entities such as government agencies. Clean Renewable Energy Bonds (CREBs) and Qualified Energy Conservation Bonds (QECBs) were created to finance new renewable energy projects.
- **Federal Grants** - Federal grants can be used to lower the cost of a community solar project. These grants lower the cost of PV system installation and/or subsidize the cost of participation in a community solar project.

Utility-Based Incentives

Utility-based incentives can deliver additional resources. Utility providers may offer credits for renewable energy production that can offset the cost of production. For example, some providers may offer net metering, a billing tool that allows customers to send excess energy generated by solar panels to the local grid in exchange for credits on monthly electric bills.

The Inflation Reduction Act of 2022

The Inflation Reduction Act (IRA) of 2022, H.R. 5376, provides a large array of financial incentives for renewable energy. The Act's financial incentives for climate and energy are intended to drive investment in domestic renewable production and energy efficiency. This infusion of investment should result in the need for manufacturing facilities, renewable energy production sites, and other physical spaces to operate and implement efforts. More information can be found at https://energycommunities.gov/.

The following clean energy tax credits can be leveraged for solar projects:

- **Production Tax Credit (PTC)** - Following 2024, the IRA establishes a technology-neutral PTC for solar projects, which will remain in effect until 2032 or when specific CO2 emission targets are achieved. Projects are permitted to transfer the tax credits to another taxpayer. Direct pay in lieu of the PTC is available for tax-exempt entities.
- **Investment Tax Credit (ITC) -** The IRA extends the federal ITC for renewable energy from the end of 2023 to the end of 2024. The compromise expands the ITC to energy storage technology, biogas and microgrid controllers. Similar to the PTC, the compromise provides a base ITC of 6 percent that could be extended to 30 percent if certain prevailing wage and apprenticeship requirements are met. There are also bonus credits if such projects satisfy domestic content requirements and invest in energy communities. Following 2024, the IRA transitions the ITC to a technology-neutral incentive.
- **Increase in Energy Credit for Solar and Wind Facilities Placed in Service Connection with Low-Income Communities** - Provides an additional tax credit for small-scale solar and wind facilities in low-income communities. Solar and wind facilities with a maximum net output of less than 5 megawatts (MWs), including associated energy storage technology, qualify through 2032. Facilities on Tribal land qualify for 10 percentage point bonus credit.

CASE STUDY

Community Solar Farm Oronogo-Duenweg Mining Belt, Southwest Missouri

At the Oronogo-Duenweg Mining Belt site, EPA has cleaned up about 2,500 residential properties, and excavated mine waste from 4,500 acres around Joplin, Missouri. Cleanup activities have resulted in about 4,000 acres that are ready for reuse.

In 2021, a 60-acre part of the site located in the community of Prosperity became home to southwest Missouri's first solar renewable energy generation facility. Liberty Utilities developed a 2.25 MW solar project at a remediated former mine waste area. The solar panels will be able to generate enough electricity to power 400 homes if the pilot is successful.

Liberty has developed the solar farm based on a community solar model. Customers sign up for Liberty's Solar Subscription program and purchase blocks of solar power at a fixed rate over a period of time. This innovative approach allows a wide range of potential customers to invest in renewable energy without installing the panels or necessarily owning the property. The subscription program is open for both residential and commercial customers. Liberty has plans in place to develop several other 2 to 5 MW solar projects, with a goal of generating about 30 MW in the southwest Missouri region.

Ciba-Geigy Corp. Superfund Site, Toms River, New Jersey

CASE STUDY

The 1,350-acre Ciba-Geigy Corp. Superfund site is in Toms River, New Jersey. Starting in 1952, Ciba-Geigy Corporation (then called Toms River Chemical Company) operated a resin and dye manufacturing facility on-site. Improper chemical waste disposal contaminated soil and groundwater. With EPA oversight, the potentially responsible party (PRP) cleaned up the site. Groundwater treatment and monitoring are ongoing.

In 2023, Solstice Power Technologies, a community solar provider, opened enrollment for the Toms River community solar farm. The solar farm has the capacity to produce about 5 MW of solar energy, which will power 720 homes. When residents enroll in community solar, Solstice allocates a portion of a shared solar farm in the area, generating renewable energy on their behalf. Electricity produced is sent to the utility company and results in solar credits applied to participants' utility bills. Solstice bills participants for the value of their solar credits at a fixed 21% discount, which ensures savings on electricity costs. In addition, Solstice offers a $50 enrollment bonus for individuals who join the program.

Considerations and Best Practices

Best Practices

Community solar projects offer economic opportunities and potential benefits to communities that go beyond energy cost savings and sustainability. Below are several lessons learned from community solar projects that communities can leverage for a broader range of local benefits.

Investments for energy independence – Community solar projects allow many customers to invest in a sustainable and independent source of electricity. To reach low- and moderate-income households, community solar programs can take steps to reduce barriers to access such as allowing multiple payment methods, providing accessible, multilingual support for subscribers and simplifying verification and sign-up processes.

Battery storage systems for community resilience – Since community solar projects are generally connected to the electric transmission grid, they can be designed with battery storage systems that can serve as a backup energy source in case of grid outages. Battery storage systems can also help customers save costs by reducing the amount of power purchased during peak usage periods when electricity costs more. However, battery storage can be expensive. Comparing the finances of current electrical usage and costs for the community of users alongside the potential costs of solar and battery system components can help guide decision making.

Renewable energy projects for workforce development – Construction and maintenance of solar projects offer job training opportunities. Communities can work with regional economic development partners to establish paid internships, cooperative training and partnerships with solar developers, contractors and job providers.

Community engagement for authentic partnerships – Allowing community members to engage throughout the design process will ensure that a project garners community buy-in that will help ensure long-term success. This includes creating an ownership model that responds to community interests, provides education and creates leadership opportunities for members.

Considerations

Community solar relies on strong partnerships with state and local utilities. Utilities must be willing to buy into a solar project and have a mechanism in place to credit customers' bills based on their share of the solar electricity generated by the community solar project. Some considerations:

- Certain utilities offer community solar programs.
- Some utilities offer programs and resources set aside to benefit under-served and low-income communities.
- Community solar offers renewable energy benefits and potential cost savings for renters as well as homeowners.

Questions to Ask While Planning for a Community Solar Project

Allocation of Costs and Benefits – Who will pay for the planning, construction and operation of the solar system? Who will benefit from the electricity sales, tax benefits and other incentives?

Financial and Tax Considerations – Will money be raised by a solar fee on electricity bills, equity or debt financing of a business entity, charitable donations or other options? Will the project generate taxable income, tax credits or deductions for participants?

Other Legal Issues – What considerations are required to address regulation and agreements between project participants?

Recommendations

Community solar systems can allow all households and businesses to access the benefits of solar energy regardless of whether they are able to host a solar system on their own property. The benefits of solar energy include lower electricity costs that can provide household savings. Community solar systems offer resilience during blackouts and weather events and provide opportunities for community engagement, wealth building and local job creation. Project models can be tailored to fit a community's needs, with federal and state tax incentives available to provide financial assistance. EPA's Superfund Redevelopment Program offers assistance for communities. Information to assist communities in understanding considerations surrounding community solar projects can be found below.

Additional Resources

National Renewable Energy Lab State Community Solar List

Database of community solar projects: https://data.nrel.gov/system/files/215/State Policies for CS and LMI_ updated Feb 2023-1680720511.xlsx

Groundswell Low Income Financing and Transactions for Solar Access Everywhere Toolkit

Program designs and financing structures for community solar projects: https://lift.groundswell.org/

Database of State Incentives for Renewables and Efficiency (DSIRE)

Comprehensive information about incentives and policies that support renewables: https://www.dsireusa.org/

Office of Energy Efficiency and Renewable Energy (EERE)

Source for information about renewable energy technology: https://www.energy.gov/eere/about-office-energy-efficiency-and-renewable-energy

Rural Energy for America Program (REAP)

Information about grants for energy improvements: https://www.rd.usda.gov/inflation-reduction-act/rural-energy-america-program-reap

Northwest Sustainable Energy for Economic Development (Northwest SEED)

Targeted technical assistance, education and outreach resources: http://www.nwseed.org/

American Solar Energy Society (ASES)

Information about solar technology: https://ases.org/

Interstate Renewable Energy Council (IREC)

Forum for policy and renewable energy solutions: https://www.irecusa.org/

Vote Solar Initiative

Initiative to implement programs and policies for solar market growth: https://votesolar.org/