Allianz Global Investors

Community solar brings the 'sharing economy' to the power market

Just as disruptors such as Uber and AirBnB have shaken up everything from transport to hotels, a nascent trend in renewable energy — community solar — is bringing the "sharing economy" to electricity.

While the current amount of electricity being generated in the United States by community solar is relatively small — 1,523 megawatts were installed through 2018 — it is a trend that is gathering momentum, with the potential to democratize electricity generation and consumption.

As of this writing, 40 states have at least one community-solar project online, with Minnesota leading the way at 635 megawatts of capacity installed, buoyed by supportive state laws. The Solar Energy Industries Association forecasts that within five years the United States could add 3.5 gigawatts of community-solar generation — enough to power 700,000 homes.

Community solar is a game changer for renewables because it allows *everyone* to benefit from green energy. That's especially attractive now, as a growing number of U.S. communities establish smart-city initiatives.

Why is community solar popular? For years, retail solar was restricted to Goldilocks customers — homeowners who could afford the sizeable upfront investment and the excellent credit scores demanded by third-party leasing models. In addition, customers needed a south-facing roof, unobstructed by trees or buildings. These restrictions prevented residential solar from achieving its true potential, excluding a large percentage of the population.

Now, community solar is starting to democratize the power market. Subscribers can be customers who might not otherwise be able to access renewable energy, such as apartment dwellers, businesses or homeowners with roofs that are not oriented to catch the sun's rays. Subscribers can also include lower-income populations and those with more modest credit scores. Without having to locate the generating facility on the customer's home, the developer/investor has significantly less risk if any one customer drops out of the project. By aggregating a diverse customer base into a single-facility subscription, and actively managing potential customer churn, the investor effectively securitizes the counterparty risk, enabling further renewable development and more market participants.

Community solar works like this: A developer identifies a suitable location for a solar array, for example, on the roof of an urban factory or in a field not far from the power demand. Concurrently, the developer seeks to secure both finance capital and a steady subscriber base. For capital, these developers traditionally turn to larger pools of capital, as the scale of these community-solar projects is closer to utility scale than to residential (i.e., private equity vehicles or independent power producers). As for the demand side of the equation, there are a number of potential sources of revenue depending on the state. First, they seek subscribers, who purchase a percentage of the electricity production and who, in return, receive discounted electricity, in the form of virtual-net-metering credits, which can be offset against their consumption. Second, the developer will work with local authorities/utilities to secure ancillary revenue streams, ranging from capacity payments for guaranteed production for the grid to incentive payments from state authorities looking to encourage community solar.

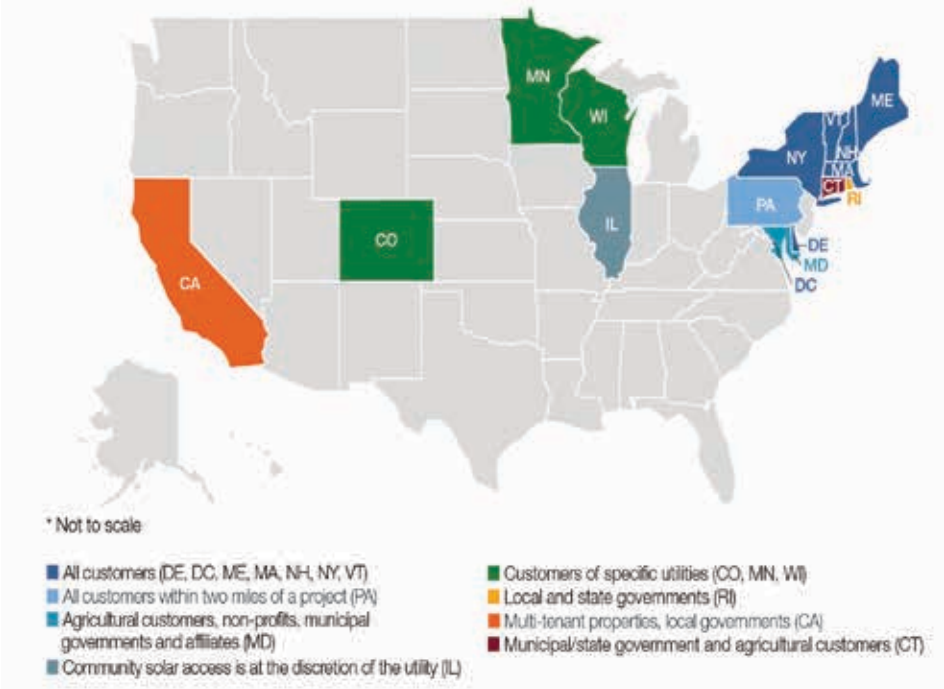
These projects are a win for everyone. Subscribers get electricity at discounted prices, while developers gain higher revenue from not having to sell all of their generation wholesale and the economies of scale that accrue from building larger projects. It's like a co-op or farmer's market, directly connecting producers and consumers, not only doing good but doing good business. Investors can benefit too: Borrowing from private equity terminology, these deals have a greenfield risk/return profile, with a goal of generating an annual internal rate of return expectation in the 10 percent to 12 percent range.

One community-solar project that recently came online is in the town of Elgin, Ill., about 35 miles from Chicago. The project comprises 3,700 solar panels on top of an industrial building, producing 1.2 megawatts annually, with nine Illinois towns signing up as subscribers. The Elgin project is the first of its kind in Illinois, but 100 similar schemes are set to be completed statewide by 2021, highlighting the momentum behind community solar.

Most U.S. community-solar activity to date occurs in the 15 states (and the District of Columbia) with virtual-net-metering policies that allow these projects (Exhibit 1). Given the number of local, state and federal laws and incentives at play, these projects tend to be best managed by hands-on developers that have this expertise.

While some states, including Massachusetts and Maine, allow anyone to join community-solar projects, others have restrictions. California, for

Exhibit 1: A growing number of U.S. states have laws encouraging Community Solar



As of January 31, 2020
Source: Allianz Global Investors, Institute for Local Self-Reliance

example, only allows multitenant properties and local governments to subscribe, while Maryland restricts access to farms, non-profits and government. States across the United States are also experimenting with various development models. In California, one project in Oakland is financed by investments of up to $1,000 each from more than 50 community members. In Colorado, the Denver Housing Authority has developed a project serving multifamily housing.

Community-solar projects are also being supported by corporations that are increasingly hungry to show connections to both green energy and the communities they operate in. In Minnesota, for example, Walmart is subscribing to 36 community-solar projects in 13 counties. And, a new rule in New York now allows community-solar projects to have "anchor tenants," similar to a shopping mall, a rule change that should make it easier for developers to secure deal financing.

As more states, consumers, corporations and investors embrace the renewable-energy revolution, community solar is likely to play a key role in the expansion of green energy sources, as well as in the democratization of the electricity market.

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