

US solar's bright young thing



Credit: Clean Energy Collective

Community solar | Community solar is emerging as a promising new source of demand in the US, opening up access to solar among previously excluded groups. John Parnell reports on the prospects for a new market segment whose time seems to have come

It's a claim that residential solar markets as disparate as the UK and the US have both faced: middle class; people with big houses and money to spare, perhaps motivated towards solar by smug superiority. This is a common line of attack from utilities in the net metering debate in the US. It is part of UK critics' argument that solar drives up the cost of bills, which is most keenly felt by the poor.

Residential solar has certainly had greater initial take up among medium- and high-income households but social housing schemes, local authorities and other non-profits have also found ways to expand access.

The most compelling – and market-driven – means of expanding solar's reach among all income groups is arguably community solar, or community solar gardens (CSG) as they are sometimes dubbed. Closer inspection reveals that US community solar is now at the inflection point from pilot schemes to substantial deployment as more and more states develop the necessary frameworks.

"It's basically a state market," explains Jason Coughlin, senior research analyst at the National Renewable Energy Laboratory (NREL), who adds that the first movers are Colorado, Minnesota and Massachusetts

and "hopefully California in the near future".

In the US, community solar has a slightly different definition than elsewhere. It is not about direct project investment by a local community or about direct supply to households via a private supply agreement. Instead, customers sign up for a certain amount of solar capacity, often at a level lower than would be economical as a rooftop install. They are billed as normal but the utility will then credit their account based on what their share of the install generated. Coughlin refers to it this approach as "virtual net metering".

"We're seeing real uptake in the projects. A number of colleagues here at the lab that are members of community solar gardens," he says. "I think it's a real market segment and here to stay."

NREL has previously put the size of the community solar market at 11GW by 2020. With standard utility projects easing up with the removal of the ITC crunch, that's a sizeable, and well-timed, new source of demand for projects.

Utility buy-in

Once a state has passed the necessary legislation it is over to the public utilities commission (PUC) and the utilities themselves to create an offering that

Community solar gardens offer access to solar to customers without the opportunity to install their own system

is attractive. Minnesota, as Coughlin mentions, was a pioneer in this aspect. Martin Morud, founder of the installer and developer TruNorth Solar, was one of those responsible for pushing the development of a community solar proposition.

"Consumer choice for clean energy is absolutely critical to our future, and the community solar programme provides that," says Morud. "I believe that if we're going to have sustainable, clean energy in the future you have to work with utilities not against them and so I wanted to be a voice of the PUC that said, 'You know what, let's work this out'."

Morud says this approach has aimed to develop a productive, 50-year relationship with the state's largest utility, Xcel, rather than an antagonistic one that doesn't survive one project cycle. While not perfect, as Morud admits, the scheme with Xcel does achieve several of the big asks: it has opened up the solar market for consumers, it is sufficiently attractive to consumers and it steers clear of the scale of controversy that sets the bar for approval of the policy that bit higher.

"It's designed to not be an incentive or a disincentive, it's meant to be equal with whatever they're currently paying. So if rates go up, the CSG bill credit rates go up. If rates go down, the CSG bill credit goes down. So there isn't a whole lot of certainty with the investment, it's just an opportunity to offset a consumed kilowatt hour with a different energy recipe," explains Morud.

Asked whether the additional benefits of solar should also be reflected in the price, he was unconvinced of the benefits, for now at least: "My personal and professional thought is I don't care whether it's applicable retail rate or CSG bill credit rate or value of solar net metering, none of that matters to me. What I care is whether clean energy infrastructure is built. If we clean up our energy recipe then we've won no matter what the policy is and that's my message to the state agencies."

Access

This sentiment is a common vein running through all community solar champions it would seem.

Hannah Masterjohn is the director of policy and new markets at Clean Energy Collective, one of the largest community

solar developers in the US. She also serves as the chair of the Coalition for Community Solar Access.

"We need to expand access to solar to all customers; 80% currently have no access and we think that needs to change and can change quickly," she says.

"Around 80% of people can't put solar on their own roof; they might not own it or have the rights to it. It could be shading or that it is facing the wrong direction or you have folks who are thinking about moving so they are not going to make a big investment in their property. Or maybe they don't want contractors interfering with their roof.

"Everyone paying their taxes contributes to the ITC. Bill payers are also paying into various state incentive programmes and they ought to be able to take advantage of that. Access is really the number one [issue]," adds Masterjohn.

Financing: who and how

TruNorth's Morud claims there is more demand than supply for community solar in Minnesota right now with his company one of a group working hard to get projects online. He expects Xcel to roll out around 200MW of solar gardens in 2016 and more than that next year.

Demand is high and an increasing number of states – Maryland is next – are creating the right policy and regulatory conditions for community solar. But with all the will in the world, this is not enough without the financial backing to get projects of the ground.

The structure of the finance will depend on the model being used for the community project. Some utilities are sponsoring their own projects and offering customers what is in effect a power purchase agreement that sets the price slightly higher than the current retail rate but protects the customer against future rises. The bill credit model brings together the patchwork of investments from each subscriber but that is insufficient in the development stage.

Marissa Alcalá, partner with the law firm Chadbourne Parke says that while it is still emerging as an asset class, it is taking on a familiar form.

"Community solar bridges the best of the residential sector and the commercial and industrial space, or perhaps the small utility-scale space," Alcalá says. "You have flexibilities for replacing customers but at the same time you've got the opportunity to evaluate the credit of your customers, you have the opportunity to have a project

that is going to be on a site, it doesn't have to move if you need to change your customer base, you have consistency of subscription agreements for the different customers who are signing on to a project but you have a scale that's obviously much bigger than anything one could ever dream of in the residential scale. It's much more like C&I or small utility-scale."

One area of additional complication is the state-by-state shape of community solar regulations.

"The biggest issue is the diversity in the regulatory framework across states, which just increases the transacting costs for people who are looking to develop projects in different states," Alcalá explains.

"So if you're looking to do financing for a portfolio that crosses different states, there are still growing pains. There are still inefficiency concerns about how people fit deals into financing structures because of the need for tax equity or debt providers to become comfortable enough with the programmatic requirements and frameworks in different states.

"Even when tax equity investors or lenders have gotten comfortable with community solar as a structure for building and developing projects, and selling power and generating revenue, they still need to get comfortable with the different programmatic requirements and programme structure in every state," she adds.

Customer acquisition

While sales-related soft costs are a major consideration for residential solar installers, who have become experts at sourcing and closing leads, community solar can be a far simpler process. In most cases, attracting and securing subscribers is akin to utilities' signing up new customers than it is to cold-calling or doorstep sales of solar systems and leases.

"It's definitely different from the process for signing up residential consumers. The product is so different in terms of the expertise that you would use for selling it," says Alcalá. "I think the sales process is much more efficient for community solar."

This, in addition to the financing similarities, offers another advantage to installers and developers that have had some experience in the commercial PV sector. It also opens up the opportunity to have some commercial clients as anchor subscribers for the projects.

"The interesting thing about community solar is that you have projects with those

individual consumers and subscribers and community solar projects with commercial or industrial subscribers. Some community solar farms have a combined subscriber base," says Alcalá.

The process of signing up customers is one of the differentiators that has seen Masterjohn's Clean Energy Collective develop 100 projects in 12 states. Masterjohn explains that the sign-up facility is now entirely operated with customers able to join via their iPhone if they want to. It also offers the software services required for utilities to offer their own community solar programmes.

"When you have tens of thousands of people using community solar you need the software interface, it's part of how we are going to make this happen. Lots of US utilities are literally using 30 or even 40-year-old billing systems. Some have even been manually handling rooftop net metering customers on Excel spreadsheets, that's just not going to work," she adds.

The market

Estimates vary but what is clear is that well in excess of 20,000 people will be community solar customers by the end of the year served by several hundred megawatts of capacity, Masterjohn says. Minnesota's largest utility will by the end of next year have 400MW just by itself. California's scheme is a work in progress but has huge potential. Colorado and Massachusetts will continue to enjoy success. Maryland will be joining the fray too.

For customers, it's a route to solar's benefits that doesn't rely on the authorities to have solved the net metering conundrum, and it resolves the issue of access. Utility companies can be seen to be offering the benefits of solar beyond those select households that have or will install their own system. In contrast to the polarising net metering approach, community solar is an inclusive offering with fewer (powerful) critics.

For developers, it is a source of demand for the sluggish C&I sector and the small utility-scale sector. Deployment by utility and independent power producing players is slowing as capacity they needed by the latter portion of the decade is no longer being rushed through to capture the end of the ITC. A new source of demand on the 11GW scale seen by NREL is a meaningful opportunity to tighten up some of that new slack in development pipelines. ■