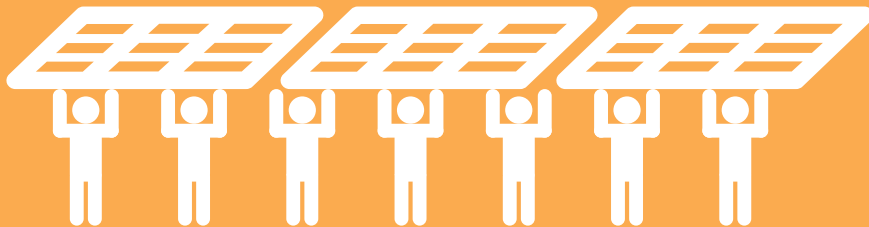


INDUSTRY ANALYSIS

Renewable Power to the People

Attractive Attributes for Community Solar Projects



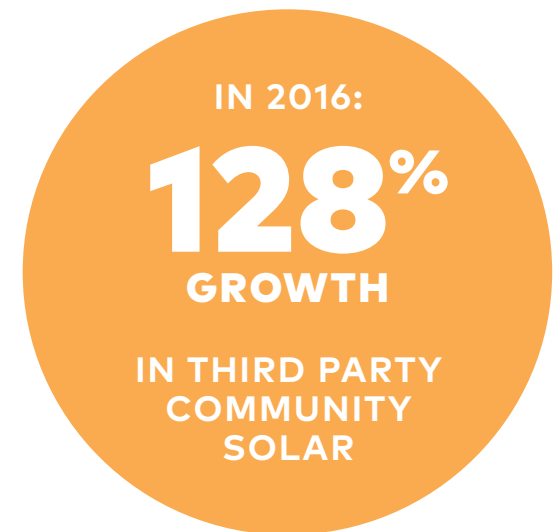
Overview

Community solar is a promising solution for residential customers and small businesses who want to purchase and support renewable energy but for whom rooftop solar doesn't make sense. As solar prices continue to decline, community solar is a market segment primed for rapid growth and new product offerings that address consumer preferences.

As mentioned in a previous article, there are two primary types of community solar with lots of variation within each. In regulated utility markets, community solar is typically presented to customers as a program the utility offers. In competitive markets, community solar is one of several available electricity products, usually offered to residential and business customers by an independent developer.

In its 2017 U.S. Community Solar Market Outlook report, GreenTech Media (GTM) predicted that, over the next five years, third-party led community solar will continue to expand although specific state markets vary significantly in both size and timing of growth. Overall, by 2021, this segment is predicted to add 1.8 GW_{dc} of capacity.

There are two primary types of community solar with lots of variation within each: regulated utility markets and competitive markets.



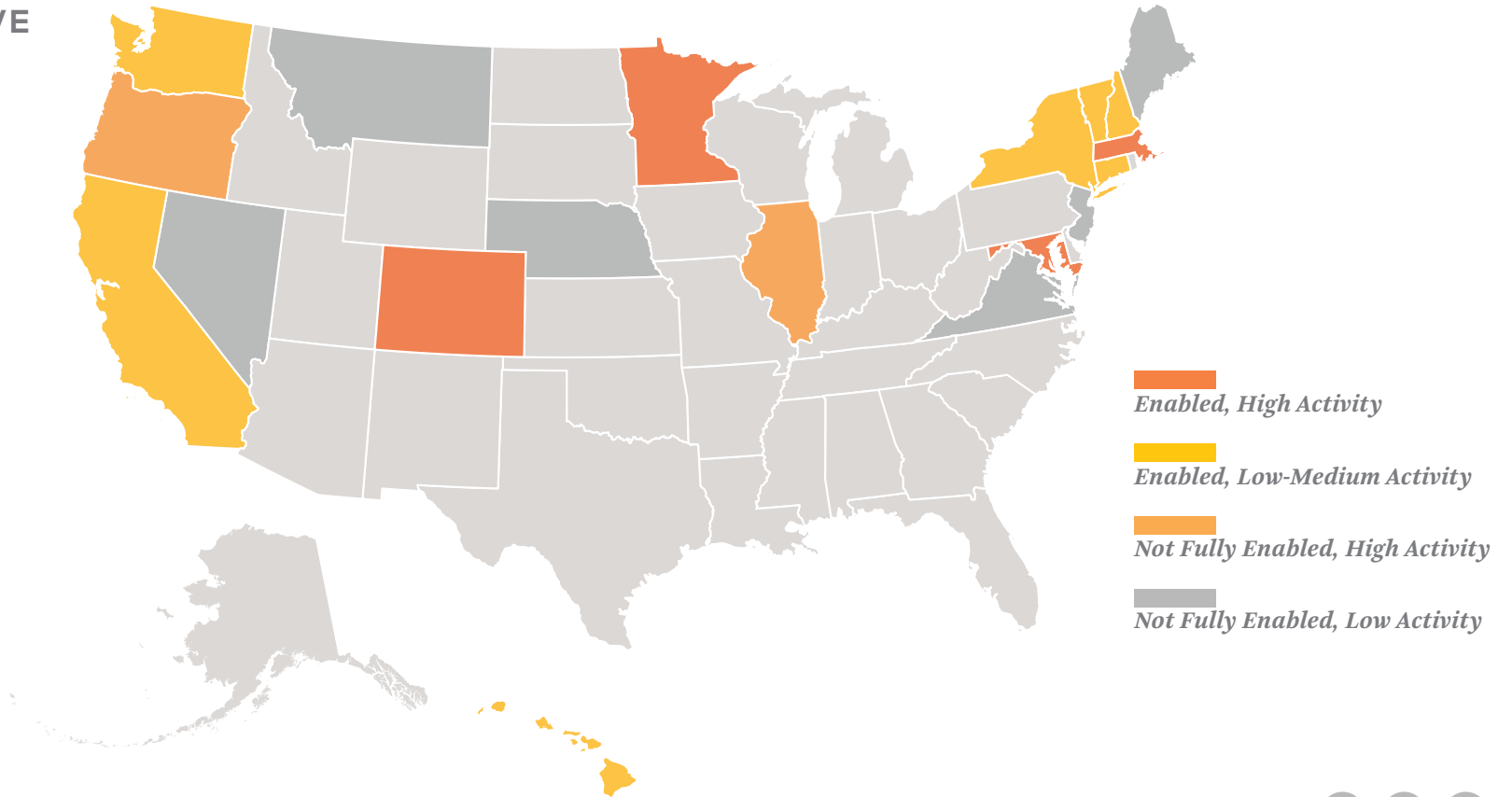
SOURCE: GTM RESEARCH
U.S. COMMUNITY SOLAR OUTLOOK 2017

More available projects combined with lower participation costs means community solar is an increasingly viable business model for the competitive market. But how do developers and financiers identify product designs that will attract customers? In Fall 2016, 3Degrees engaged in research to help answer that question. This report presents our findings and offers insights for creating products that will be appealing to customers and investors alike. This research focuses on community solar in competitive (often called “third party led”) markets. The survey asked people about their personal preferences for their households. It did not look at potential applications of community solar for the commercial market.

How do developers and financiers identify product designs that will attract customers?

U.S. COMPETITIVE MARKET STATUS

2017



What is community solar?

According to NREL, community solar is “. . . a solar-electric system that provides power and/or financial benefit to multiple community members”. For the purposes of this research, we think it is important to get a bit more specific. In most cases, developer-led community solar that we see in places like Massachusetts and New York does not provide power to the customer (the power is fed into the grid), but it does provide a customer a financial benefit (often between 5-15% savings on their electric bill).

When a solar generation facility operates it creates two products that can be (and often are) sold separately. First, it produces electricity. This electricity might be used on site, or more often, is sold back to a utility and distributed as one of their many resources. This is what happens in the case of community solar. The second product created from the production of renewable energy is a Renewable Energy Certificate, commonly known as a REC.



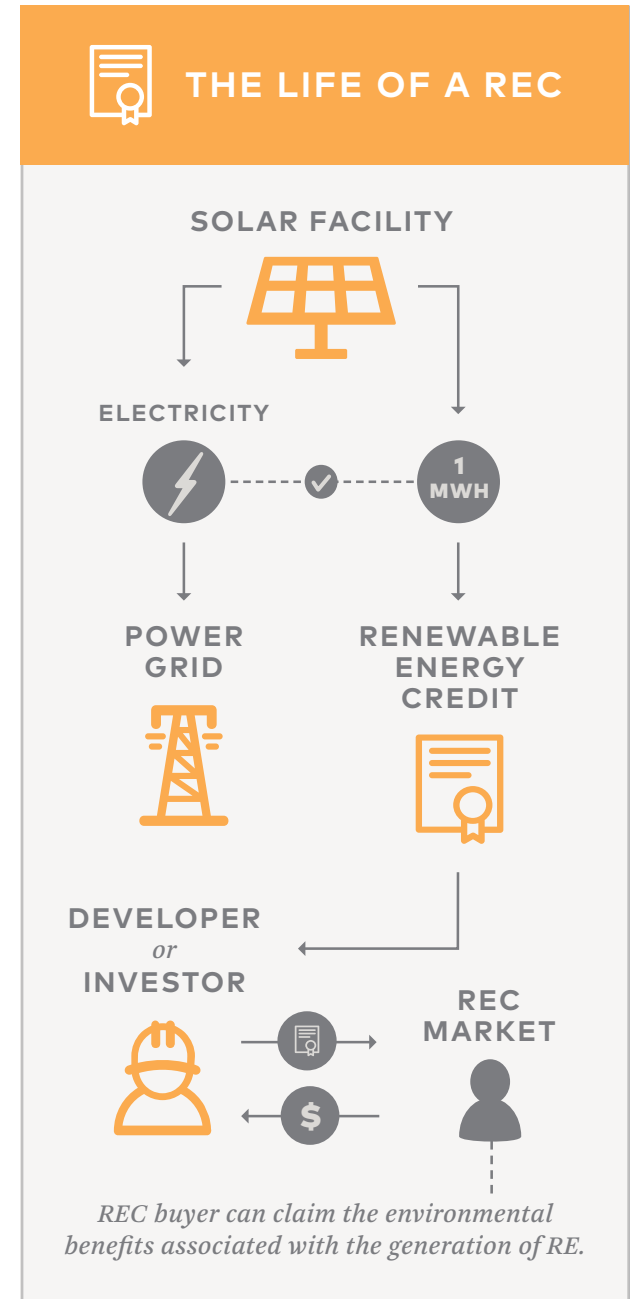
A solar generation facility creates two products: electricity and a Renewable Energy Certificate.

What is a REC?

A REC embodies the renewable energy attributes of the power. One REC is created for each megawatt hour of renewable energy generated and delivered to the grid. The REC acts like a receipt for the environmental benefits associated with the generation of renewable energy.

RECs play several important functions in the market. First they allow a developer to get a second revenue stream for the renewable energy they produce, helping to generate demand for new renewable energy facilities. Second, for customers and business that are committed to using renewable energy for some or all of their electricity use, they can demonstrate that commitment by purchasing RECs.

For most community solar projects in deregulated markets, subscribers do not get the RECs associated with the electricity produced. In other words, the subscriber is not purchasing renewable energy. The benefit to developers and investors in community solar is that they hold on to the revenue stream RECs generate. However, developers need to be careful how they market the product so as not to mislead customers into thinking that they are buying renewable energy.



Key findings

“Authentic marketing is not the art of selling what you make but knowing what to make. It is the art of identifying and understanding customer needs and creating solutions that deliver satisfaction to the customers, profits to the producers and benefits for the stakeholders.”

—PHILIP KOTLER

This research validated the classic product development conundrum: developing the right community solar program comes down to balancing competing product attributes. As so often happens, if you make one attribute more appealing to consumers, another becomes less so. From a consumer perspective, the ideal product would save them lots of money, have a short (or non-existent) contract, low exit costs, and include a sign-up bonus. For the developer (and their investors) the ideal product would have some (but not too much) savings for the customer, a long contract to ensure stability of returns, and a low cost to enroll a customer. So the trick is find the right balance that provides an adequate return and risk profile to investors and developers while appealing to a large subset of potential customers.

Our research explored a range of community solar product attributes to find out which factors had the highest impact (positive or negative) on a customer’s willingness to sign up for community solar. In summarizing the results, we offer insight into options for balancing product attributes and how to communicate product attributes most effectively.



SUMMARY OF FINDINGS

- 1 Long term commitments are a serious barrier
- 2 People want to save money and support renewable energy
- 3 Not all savings are created equal
- 4 Education is critical
- 5 The right product could attract 22% participation

FINDING #1

Long-term commitments are serious barrier to participation

Twenty year community solar contracts have a strong negative response from residential customers. This is consistent across the industry, as rooftop solar installers face the same issue. Our survey screened out anyone that had a rooftop solar system, but 51% of those without a system had considered one. When asked why they did not ultimately purchase a rooftop solar system, the second most common response was: “I did not want to make the long-term commitment.”

Our research showed the same findings for community solar. Lowering the contract term is the single biggest opportunity to increase market acceptance of the product. Further, resistance to long-term contracts seem to be highest among those customers we most want to attract—those with the best credit rating.

The reason investors want long term contracts is understandable—they provide a predictable revenue stream that is (practically) guaranteed for the life of the program. We suggest a couple of options to address this disconnect between the desires of the market and the investor:

- + Consider offering products with lower term lengths that also have smaller savings. Our research shows that consumers are willing to trade off a significant amount of savings if the contract length was reduced to 10 years.
- + Work with a seasoned marketing firm to develop a wait list for the offering, allowing you to quickly replace any cancelled contracts.

This is a key challenge for most community solar products currently being offered to customers and will need to be addressed for the market to grow.

Contract length is the key challenge for community solar products.



TERMINATION FEES MATTER

Closely related to concerns about contract length is concern over termination terms and fees. Eliminating termination fees has almost the same (positive) impact on customer interest as reducing the contract length from 20 years to 10 years. This makes sense—if a long term contract is easy to get out of, it doesn't really feel like a long term contract.

FINDING #2

People want to save money and support renewable energy

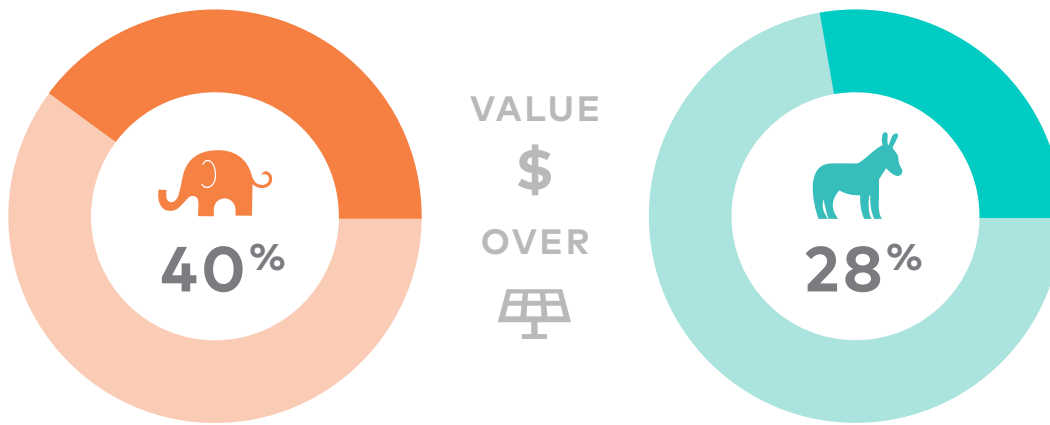
We asked the survey respondents to tell us what was more important to them—saving money or supporting renewable energy. Overall, they valued these attributes almost equally and did not want to trade off one for the other. When marketing these products, it will be important to promote both attributes.

However, when you look at the data more closely, there were some interesting differences that could impact messages in targeted marketing. Specifically:



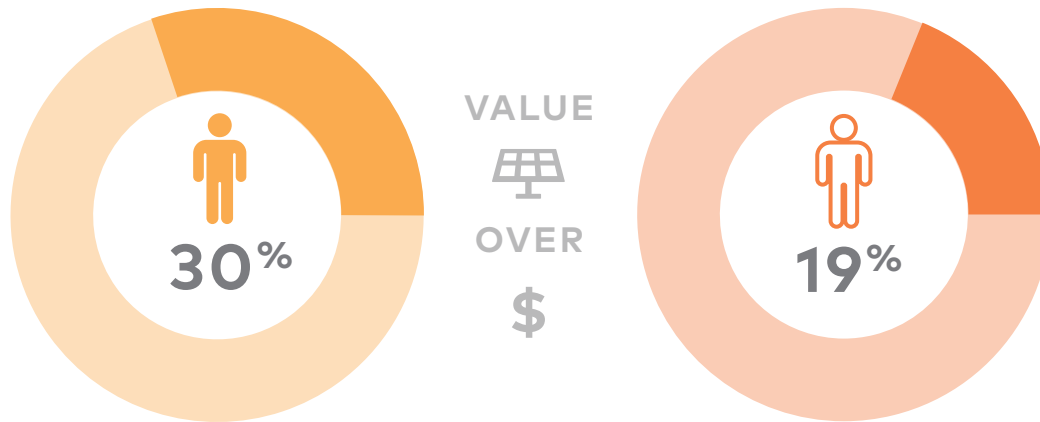
POLITICAL LEANINGS

People who identify as conservative are almost 50% more interested in saving money than those who identify as liberal.



ETHNICITY

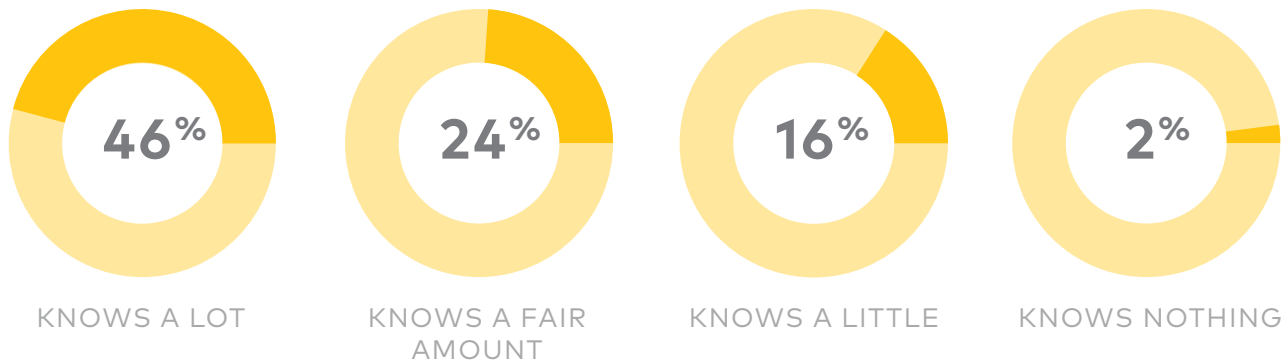
Compared to white respondents, non-whites are almost twice as likely to care about renewable energy messaging.



KNOWLEDGE

The more someone knows about renewable energy, the more likely they are to want to support it.

% WHO VALUE RENEWABLE ENERGY OVER SAVING MONEY



TARGETING

We also found that income, formal education level, and home ownership makes no difference in how they evaluate saving money versus supporting renewable energy.

Because there is widespread agreement that both benefits are important, marketing messages should cover both. But targeted marketing may want to stress one message more than the other, depending on who the target is.

FINDING #3

Not all savings are created equal

Although signing incentives have a lower value to the customer than short contract lengths, they can still have a significant impact on participation. The research shows offering a \$500 signing incentive can increase participation by 10.5%. And our on-the-ground experience shows that signing incentives can move certain customers from consideration to purchase.

We also asked respondents what percentage of their utility bill they wanted covered by community solar (the larger portion of the bill covered, the larger the savings to the customer). Not surprisingly, more is better. But it is not that much better. In fact, moving from having 75% of the bill covered to 100% of the bill covered only increases potential participation by a little more than 1%.

This may seem counterintuitive—the value of having a higher portion of your bill covered is much higher than \$500 over the life of a contract. But from a human behavior perspective, this is in line with what has economists have proven again and again: people tend to place greater value on near-term rewards as compared to rewards in the future. This tendency should be considered when designing a program that appeals to both customers and financiers (who theoretically act in more rational manner).

These findings do not mean products should cover a smaller portion of the bill and offer a big signing bonus, because the incentives are different for developers. Covering a very high percentage of the customer's bill means the developer has to recruit fewer customers, replace fewer customers who drop out and manage fewer bills through the life of the contract. So, although this product attribute is not especially important to the customer, it has high value to the developer.



People tend to place greater value on near-term rewards as compared to rewards in the future.

FINDING #4

Education is critical

As mentioned above, our research confirmed that the more someone knows about renewable energy, the more important it is to them. It also showed that the knowledge and exposure to information on solar varies significantly across the three states we looked at.

But we should be careful not to assume that knowledge and understanding of rooftop solar is the same as knowledge and understanding of community solar.



SOURCE: SEPA/SHELTON REPORT

Industry research (including the [SEPA/Shelton report](#)) shows that few people are seriously considering community solar, primarily because they are not familiar with it or don't understand it. Our own on-the-ground experience shows that even customers who have heard the term "community solar" often don't understand how these products work. And, because people don't sign long-term contracts for products they don't understand, education is critical as we work to market these products.

Education can be time-consuming, but there is good news. The SEPA report showed that once customers understood what community solar is, there was a large increase in interest in the product.



Because people don't sign long-term contracts for products they don't understand, education is critical

FINDING #5

The right (realistic) product could garner a 22% participation rate

Based on data and assumptions from our research, here's a look at what three different product designs might include, and what the expected market acceptance rate for each might be. These illustrate that even modest improvements in design could lead to a significant uptake in customer participation.

Although there are many options available in the market today, in Scenario 1, we attempt to show a “typical” or common community solar product. Scenario 2 is the customer's ideal product, which we realize is unrealistic from a developer's perspective. Scenario 3 is one example (and there are others) of a product that could be attractive to both customers and developers.

As this example shows, customers are willing to trade savings for a shorter term and an upfront incentive.

Customers are willing to trade savings for a shorter term and an upfront incentive.

	SCENARIO 1 (Typical)	SCENARIO 2 (Customer's Ideal)	SCENARIO 3 (Achievable)
SAVINGS	10%	15%	5%
INCENTIVE	none	\$500	\$100
TERM	20 years	1 year	10 years
PENALTY	\$500	No penalty	No penalty with 3 months notice
BILL COVERAGE	75%	100%	90%
MARKET ACCEPTANCE	13%	50%	22%

Conclusion

Community solar has been up front and center over the past few years for utilities and developers. But for the majority of the general public it is still very much a new product, and one that happens to also be fairly complicated, at least when compared to a standard utility bill. As community solar is introduced to consumers state-by-state and people learn more about it, sales will become easier.

Community solar offered in competitive markets provides an excellent vehicle for a wide population base to directly access a source of renewable energy. This research highlights that by tweaking some product attributes and investing in customer education and marketing it is possible to significantly increase the appeal and ultimately the commitment to community solar.



Community solar provides an excellent vehicle for a wide population base to directly access a source of renewable energy.

Methodology

The community solar market research was conducted by PCG on behalf of 3Degrees in October of 2016. An online survey was distributed to residents of Maryland, Massachusetts, and New York. A total of 606 residents, approximately 200 per state, responded. Respondents were paid for completing the survey. Respondents were screened to ensure gender, age, income and other demographics balanced to reflect population of each state.

In addition, all respondents:

- + Pay utilities separate from other housing payments
- + Have at least partial responsibility for household decision making related to energy
- + Do not currently own or lease a solar system

The survey consisted of three main sections:

- + A screener, to ensure the right people were responding
- + A series of multiple choice questions about interests and attitudes toward renewable energy
- + Choice modeling that allowed us to compare customer interest in various product scenarios



3DEGREESINC.COM

407 Sansome Street
San Francisco, CA 94111

☎ 415 321 7654
✉ info@3degreesinc.com

About us

At 3Degrees, we are passionate about addressing climate change. That's why we've built a business around offering comprehensive clean energy services that enable organizations and individuals to transition towards a low-carbon economy.

We have been working on community solar for the last 5 years, in both the regulated and competitive markets and have worked with developers and utilities to design and market community solar programs that attract customers.

