



Utility best practices for managing community solar

At Arcadia, we are serving hundreds of thousands of members nationwide with a modern energy experience. For roughly 25,000 of those members (and counting!), that includes subscribing to a community solar farm.

Community solar is a way for people to support clean solar energy and save money with no installation at their home. Our members “subscribe” to a solar farm that is built locally within their utility service territory. These community solar farms are relatively large, typically benefiting 500 to 1,000 families. Arcadia coordinates closely with the utility to ensure the correct customers are subscribed to each solar farm and that savings are properly accounted for.

This paper describes the ways utility management of community solar affects customers, best practices, and a case study on one utility that has excelled at enabling an excellent experience for residential customers participating in community solar.

Best practices for utilities

Today’s consumer has high expectations for subscription-based products that can be offered as an online service. Community solar customers are no different, and utilities should be designing their community solar implementations with the customer’s experience in mind.

Arcadia has worked with a dozen utilities across seven states with active community solar farms, and has seen wide variation in utility practices for managing their responsibilities to subscribing customers. To benefit utilities, whether they’re just starting out with a new program or expanding an existing program, we’ve created this article to share insights and best practices on how utility management of community solar has a meaningful impact on the experience for customers.

Utilities should focus on best practices in three key areas that affect community solar customers:

1. Flexibility: how easy is it for customers to come and go as they please?

A. Allocation update frequency and submission mechanics

The frequency at which subscriber allocations can be updated, or subscribers can be added to or removed from community solar farms, has significant implications for consumers. For one thing, it is a superior customer experience to promptly process requests to join or leave a community solar farm. Perhaps even more important, the community solar farm's ability to quickly replace a subscriber who requests to leave means that each individual subscriber poses very little credit risk. The community solar farm's financiers will therefore be comfortable offering very flexible terms to customers (e.g., allowing for cancellation with no fee, and signup with no credit check). These are consumer-friendly terms that utilities can help to facilitate simply by administering efficient allocations changes.

Typically, regulators require utilities to accept a minimum allocation update frequency (for example, once per month), but the implementation is at utilities' discretion. The best-functioning community solar programs adhere to the following methods for accepting subscriber allocations:

- Allocations (i.e., the identities of the subscribers and the percentage or amount of capacity to which each is subscribed) are accepted on a continuous basis until a specified deadline.
- The deadline should be as close as possible to the point in time at which the community solar farm is distributing bill credits to subscribers. This helps ensure that customer requests can be honored as quickly as possible, even before the next billing cycle.
- If multiple allocation data submissions have been provided, only the most recent should

be relied on. This helps establish a clear method to identify the "source of truth" for any given period's allocations.

B. Data exchange methods

Utilities also vary in how they exchange data with companies managing community solar farms and their subscribers, ranging from Excel spreadsheets to software portals designed specifically for community solar management.

There are multiple ways to provide a reliable method of data exchange that ultimately provides a good experience to customers. Best-practice components include:

- Capability to submit or edit multiple subscriptions simultaneously. This is naturally the case with Excel-based systems; for software portals, "search" functionality as well as "bulk upload" and "bulk edit" functionalities are highly valuable.
- Rapid feedback loops in the case of any allocations that could not be accepted onto the community solar farm. The best-functioning utility implementations provide near real-time "rejections" of specific accounts within an allocations data submission that cannot be included on the community solar farm. The reason for a "rejection" could be a typo in an account number, a customer class that cannot be served under program rules, or a service disconnection. Rapid feedback loops allow accurate information to be provided to customers on the status of or any issues with their subscription and open space to accommodate additional community solar subscribers who are waiting to join.
- Robust processes and quality assurance for incorporating allocation information into bill credit distributions. We have seen many examples of billing errors due to either software bugs or manual data errors that lead to incorrect bills issued to customers. These errors are costly, both from a customer experience perspective and in terms of utility

time and effort to investigate and ultimately rectify them. Early investments in quality assurance will pay off.

- Ability to match subscription size to residential customer load. Even something as clerical as the number of decimals the data exchange system is configured to handle has an impact on consumers. If a typical system is 5 MW, then each one-tenth of one percent of the project represents a 5-kW subscription size. To properly match subscription sizes to residential customer load, the best practice is to allow for allocation increments of one one-thousandth of a percent, corresponding to increments of 0.05 kW.

2. Alignment with expectations: how predictable and reliable is the delivery of bill credits?

A. Timing of bill credits

Just as utility bills are issued monthly, it is important for community solar credits to be issued onto customer bills on a consistent and uninterrupted monthly basis. This may sound obvious, but we have seen numerous cases of utilities “falling behind” schedule on issuing credits (particularly when they rely on manual processes). Clearly, delays or irregularities in issuing credits cause community solar subscribers to miss out on some of the benefit they expected to receive. Even more problematic is the way we have seen utilities “catch up” in certain circumstances, where either (i) multiple months of credits are provided on a single monthly bill, or worse still (ii) customer bills are held and only released once credits have been applied, leading to multiple bills in short succession instead of the expected monthly cadence. These issues both cause confusion, and potentially higher charges than a customer may expect, even though they still get savings on a net basis. There is no good solution to the situation where a utility has “fallen behind,” so the best practice is to provide credits consistently every month, and in a timely manner from the beginning.

B. Rollover of unused bill credits

Similar to a cell phone plan with “rollover minutes,” community solar programs typically allow unused credits to “roll over” to subsequent months. This can happen if the solar energy generated by a customer’s allocation in a given month is greater than the customer’s energy consumption. This is most likely in summer months when increases in generation from more hours of sunlight could outstrip increases in consumption. In such cases, utilities can provide the best customer experience by rolling over credits without applying them to the current month’s utility bill balance, such that the utility account balance does not go negative. This way, the customer is ensured to save not only on a net basis across months, but also in each individual month, relative to what their bill would have been without community solar.

C. Correcting bill credit issuance errors

In our experience, utilities do unfortunately make errors in issuing bill credits, usually because they are either using an outdated allocation submission to calculate credits or they are unintentionally neglecting to issue credits at all to one or more subscribers during a particular billing cycle. The best way to correct such errors is to treat the missing or corrected credits as if they were “rollover” credits from the previous month (see above on “rollover” best practices). This way, customers will not be confused by re-issued historical bills that were already paid; instead, the correct information will be applied to the customer’s account going forward.

D. Intersection of community solar and budget billing plans

Many utilities offer some form of “budget billing” plan to residential customers. These plans typically allow the customer to pay a fixed amount each month for a 12-month period, based on the utility’s estimate of the customer’s annual cost evenly divided into monthly payments. However, the utility also tracks the customer’s actual cost each month, so these monthly budget bill payments are accumulating either a credit

balance (in the case of an actual cost less than the budget bill amount) or a deficit balance (in the case of an actual cost greater than the budget bill amount). The customer typically either pays or receives a true-up at the end of the period (or the balance could be amortized into the next 12-month period's budget billing plan).

Budget billing can work well with community solar, if the utility takes care in its implementation of community solar bill credits. Specifically, community solar bill credits must be subtracted from the customer's monthly payment amount due (i.e., the budget bill amount), not from the underlying actual bill cost that only affects the customer's credit or deficit balance with the utility. Failure to follow this best practice leads to a very poor customer experience for subscribers who are on budget billing plans. They would be paying for community solar credits at the promised discount and therefore saving money relative to what their actual utility cost would be without community solar, but the utility would charge the budget bill amount on top. This creates a large credit balance with the utility that the customer could only realize at the end of the budget billing cycle. By contrast, the best practice described above ensures that customers are not necessarily building a credit balance with the utility, and instead budget billing payments are net of community solar credits received.

3. Transparency: how is information presented to community solar farm managers and customers alike?

A. Community solar bill credit line items

To provide the best customer experience, subscribers must have access to transparent information on how community solar affects their monthly utility charges. Utilities should provide community solar bill credits as a distinct billing line item (not commingled with other values)

and display it consistently across customers and over time. They should also report on subscriber utility bills all of the following information, which is essential for confirming subscribers have received what they have been promised: (i) monetary value of the bill credits; (ii) kWh generated by the customer's allocation; (iii) any credits to be rolled over to subsequent bills; (iv) and any existing rollover balance.

B. Allocation status information

Finally, over the life of a community solar project, particularly whenever new subscribers enroll or existing subscribers unenroll, it is important to be able to quickly and accurately determine the status of any individual subscriber. Best practices allow community solar farm managers to identify any particular subscriber's status in real time, such as whether or not the subscriber is currently allocated to the project, the current allocation size on record for the subscriber, and, if any change has been requested, the date on which it will become effective.

The above utility best practices for managing community solar provide for a robust and efficient program that puts customers first and enables community solar farm managers to provide an excellent customer experience that meets the demands of modern consumers.



CASE STUDY:

Baltimore Gas & Electric (BG&E) software portal for community solar management

Arcadia manages approximately 10 MW across six community solar farms in BG&E territory. In 2019, BG&E released a software portal for community solar management, and Arcadia was the first entity to utilize it. Arcadia provided feedback to BG&E on several features of the portal and has been using it to manage these community solar farms efficiently and with a central focus on the customer experience.

Key functionalities

- Allocation updates can be submitted in near-real time, with no limit on the number or frequency of submissions.
- Updated allocations are accepted to be incorporated into the current billing cycle until 24 hours before the community solar farm's meter read date.
- Data exchange leverages a "csv" uploader, such that multiple accounts can be added / removed / or edited simultaneously, and a timestamped record of each submission is preserved.
- Only the most recent submission is relied on at the 24 hour deadline.
- Inactive or otherwise ineligible accounts are automatically "rejected" at the time of submission, allowing for corrections to be implemented prior to any unexpected impacts on customers and preventing one invalid account from affecting any other customers.

Key outcomes

- Zero errors with respect to administering bill credits according to the correct allocation sizes from the correctly dated allocation submission.
- Estimated 90% reduction in consumer credit risk as a result of allocation update frequency and data exchange effectiveness, which we anticipate will enable more companies to follow Arcadia's approach to offering consumer-friendly terms.
- Estimated 60% reduction in utility administrative and communication burdens as a result of consistently timely and accurate issuance of bill credits.