



SMART Program: Ensuring Expanded Access for Low-Income Ratepayers and Communities

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Overview:

Massachusetts' proposed SMART¹ program has the potential to significantly expand the benefits of solar electricity to low-income ratepayers, tenants and communities, who have not been able to substantially benefit from earlier solar programs. The key to this is designing the solar project compensation and utility bill credit mechanism in the SMART program so that they: (1) allow the sharing of solar benefits between solar owners and other electricity ratepayers; (2) address the barriers that have limited participation in current and prior solar programs. Otherwise, the SMART program will not expand solar to those who have been historically underserved. With the proper compensation mechanism, the SMART Program can not only serve those customers, but can also lower costs of solar development, reduce costs of solar policy to rate payers, and address the primary utility concerns with current net metering policies.

This memo outlines the key elements and program details of how the SMART Program compensation mechanism should be designed and details how it will overcome the barriers that low-income customers and others face in accessing current solar programs. More specifically, to realize the goals of expanded access to solar benefits for low-income ratepayers and communities the final program design must include these components:

1. A "SMART Credit Mechanism²" that is an option for all solar projects as an alternative way of calculating the energy portion of the total SMART compensation.³
2. The SMART Credit Mechanism must allow the solar owner to allocate only a portion of the value of the SMART Credit Value to off-takers, unlike net metering projects, which must allocate all of

¹ The Solar Massachusetts Renewable Target (SMART) Program referred to in this memo is based on the SMART Final Program Design PowerPoint presentation made by the Massachusetts Department of Energy Resources (DOER) dated January 31, 2017.

² The "On Bill Credit Mechanism" is the term used DOER's proposals for SMART Program to describe this alternative mechanism. We recommend that the name be changed to the SMART Program Credit Mechanism, which we have used in this memo, because it is essential that a significant portion of this value be paid as cash rather than bill credits, while another portion be issued as credits to an off-takers utility bill. The previously suggested name can lead to confusion with the credit on off-takers' bills.

³ The SMART program gives a total fixed per kWh compensation value to all solar projects, with that value and term adjusted for system size, beneficiaries, system location and other factors. The total compensation is comprised of an energy value, or SMART Credit Value, and an incentive value. For example, for net metering facilities, the energy value is the applicable net metering rate and the incentive value is the difference between applicable total compensation value and the applicable net metering rate. The SMART Credit Mechanism would be available to all SMART projects as an option and is especially important for projects where net metering is not possible or that cannot qualify as a Qualifying Facility (QF).

the value. As described below, this overcomes one of the current barriers to low-income participation in net metering.

3. Any value of the SMART Credit Value that is allocated to an off-taker must be allocated as a bill credit, similar to net metering, on the off-taker's utility bill. As described below, most low-income customers and affordable developments cannot take cash as their "shared" value of a solar installation, so they are unable to benefit from QFs and some large net metering facilities, which could allocate cash but cannot allocate bill credits.
4. The amount of the unallocated value of the overall compensation, would be delivered to the solar project owner as a cash payment. This avoids the need for the solar facility to sell bill credits to the off-takers, collect payments from those off-takers or finance projects against their credit ratings. This reduces development, financing and operating costs for solar projects and allows more benefit to be shared with off-takers.
5. A third-party administrator would be responsible for certifying that the amount of the SMART Credit Value allocated to off-takers for each solar project meets minimum program requirements before calculating the credits to be allocated to off-takers. The administrator would then direct the utility company to make the bill credit allocations to off-takers and to pay the balance of the SMART Credit Value to the solar owner. This would be a simple and transparent way to ensure that off-takers received appropriate levels of benefits according to the program guidelines, both when a solar project was put in place and throughout the term of the SMART program.
6. To equitably serve all people and communities in the Commonwealth, the SMART Credit Value must be allowed to be allocated across utilities and load zones. With total compensation levels in the SMART program consistent throughout the state, it would be a simple accounting adjustment mechanism to equitably compensate individual utility companies for any disproportionate location for solar installations.

Background

Through an evolving series of policies, Massachusetts has become one of the nation's leaders in solar power. Initially, solar policy targeted first movers, and was aimed at demonstrating a viable market for distributed solar energy. Successive programs expanded who benefited from solar policy including municipalities, public housing, private affordable housing communities and off-site participants in community solar projects. The Baker Administration and the legislature have set a goal to ensure that the SMART program expands the benefits of solar directly to low-income residents who have not yet been able to benefit from solar, especially those in cities that have not been equitably served by the prior programs.

Potential for solar in low-income communities

Solar electricity can be an excellent way to address energy affordability challenges for low-income ratepayers by lowering the cost of electricity and protecting ratepayers from volatile and rising electricity rates. Many low-income customers struggle to pay their utility bills; recent utility companies' rate filings indicate that between 20%-40% of their low-income ratepayers are delinquent on their electric bills. During the winter of 2015, National Grid reported that as many as 60% of its low-income customers were 90 days late on their electricity bills. Similarly, affordable housing landlords report an

increase in late rent payments when utility prices rise. Solar can help with this by providing lower cost, fixed price solar electricity. This can not only help low-income families, but has the potential to reduce costs for all ratepayers by lowering collection, bad debt, arrearage management, and the costs of providing low-income discount rates.

To date, few low-income residents have been able to take advantage of the benefits of solar. A primary reason is that they don't own their own roofs or otherwise have roofs that are not appropriate for solar. NREL studies have shown that as many as 80% of the properties in the country are not suitable for rooftop solar. Low-income and minority residents, more often than not, are tenants and/or live in urban areas where roof top solar is even less feasible. Even with a suitable roof, many low-income households have a hard time paying for solar panels or utilizing existing solar programs like the federal investment tax credit due to insufficient income, limited savings and poor credit ratings.

Shared Solar Limitations and Progress to Date

Massachusetts has made a concerted policy effort to encourage shared or community solar as way to deliver the benefits of solar to those who cannot put solar on their own roofs. Under the SREC I and SREC II programs and the Commonwealth's virtual net metering policy, shared solar programs serving municipalities, public housing authorities and community solar have taken off. Over 140 megawatts (MW) of solar serving the common load accounts of affordable housing owners, primarily public housing authorities, have been qualified under the SREC II program⁴. Per capita, this is the largest amount of solar serving this market of any state in the country. However, this success has not yet materially expanded to directly lower the utility bills of those properties' tenants or other low-income electricity customers.

Under the current net metering framework, approximately half of the economic value of solar comes from net metering credits. The other half comes from SRECs. The only way for many shared solar projects (all those under 1 MW) to monetize that value, is to sell those credits to another utility customer who uses them to offset their electricity bill. An off-taker's primary motivation in purchasing net metering credits is to save money on their overall electricity costs, which means that the solar project must sell the net metering credits at a discount, or less than their full face value, in order for the off-taker to realize any savings.

The contracting process required to sell net metering credits, including billing and collections, may work well with a single relatively sophisticated off-taker like a municipality. But it quickly becomes a very expensive and complicated process when dealing with a large number of residential customers. For low-income customers, there is the added complication of mistrust as many low-income ratepayers have been targeted by unscrupulous electricity suppliers in the past and thus are often justifiably wary of energy scams and of contracts generally. For these and other reasons, community solar has not yet been a real answer for low-income communities. To date, the only shared solar projects serving low-income customers, are pilots like Boston Community Capital's Onset Shared Solar Project, and the City of Newton's Community Shared Solar, both of which depend on other off-takers giving up some of their savings in order to give away net metering credits to the low-income customers at no cost.

Barriers that limit access for affordable housing and low-income customers

The current net metering framework has barriers that prevent it from effectively serving low-income customers. First net metering credits from a solar facility can only be shared with electricity customers

⁴ As of April 24, 2017.

served by the same utility company and in the same load zone. Since siting, land and cost issues are very different in different utility territories, this limitation creates a mismatch between the most cost effective solar sites and where low-income residents live. Specifically, it has been very difficult to provide shared solar benefits, of any type, to institutions and residents in the Boston area (i.e. the Eversource NEMA load zone). While 33% of the Commonwealth's affordable housing inventory, along with a high proportion of the Commonwealth's minority population, is located in the Eversource NEMA communities, less than 7%⁵ of the total solar capacity qualified for affordable housing under SREC 2 is in that territory.

Second, many private affordable housing and individual low-income off-takers cannot receive cash payments in lieu of net metering credits. Currently, for solar projects greater than 1 MW, the utility company, at its discretion, can pay cash to the solar owner in lieu of issuing net metering credits, which, in turn, could be shared with off-takers.

Finally, our proposed SMART Credit Mechanism would be an easy way to confirm that low income and other off-takers are receiving savings from the solar, since the allocated portion of the SMART Credit Value would be deducted from the compensation to the solar owner by the Administrator. Currently, to get savings from a shared solar, an off-taker must purchase the net metering credits at a discount. However, there is no easy or efficient way for DOER to monitor if the contract price actually results in savings.

However, receiving cash payments isn't possible for many affordable housing developments because it could impact the terms of their financing. Affordable rental housing also typically has restrictions on its ability to receive non-rental housing income. As such, cash payment for solar payments could trigger compliance issues, which could result in loss and recapture of affordable housing subsidies. For many low-income utility residents, receiving cash is also a problem as it could impact their qualification for a variety of assistance programs or lower other benefits they currently receive, negating any savings from the solar.

In addition, cash payments for affordable housing properties and low-income residents would be taxable, further reducing their value. Municipalities receiving cash payments are typically tax exempt so this isn't a problem for them generally. On the other hand, credits on the utility bill are typically not taxable and thus are a critical mechanism for expanding access to solar.

The SMART approach to expand access to solar

The issues raised above are the primary reasons why private affordable housing developments and low-income households have not been able to easily benefit from existing solar policies. Allowing a portion of the SMART Program credit value to be allocated as an off-taker utility bill credit, allow allocations across utility company territories and load zones, and have the remaining SMART Credit Value to be paid to the solar owner, would address all of these issues.

Allowing a portion of the SMART Credit Value to be shared with any electricity account addresses the current mismatch between good solar sites and the location of affordable housing and low-income off-takers. It would also allow off-taker utility bill credits to be allocated to off-takers without the need for complicated contracts and without the need to bill off-takers for those benefits, because solar owners would no longer need to sell those credits to monetize their value to pay the development and

⁵ 9.7 MW out of a total of 140.6 MW as of April 24, 2017

operating costs of the solar facility. Rather, the solar owner would be able to allocate some portion of the value to off-takers as bill credits on the off-taker's utility bills and receive the rest as cash payments from the utility company or third party administrator. This formulation avoids significant legal and bookkeeping costs for all parties, as well as reducing project financing costs, thus making solar more affordable for the intended beneficiaries and for ratepayers. Finally, the off-taker utility bill credits, representing the energy, not incentive, portion of the total compensation, wouldn't be treated as cash or taxable income allowing them to be shared with any electricity account.

This approach also benefits utility companies. Currently, since a solar owner can only receive cash for net metering credits for all projects under 1 MW, if a shared solar project wants to offer 20% savings to an off-taker and needs the remaining 80% of the value of the net metering credit to cover its capital and operating costs, it would need to sell net metering credits equal to 100% of the off-taker's bill. This would mean that the off-taker would have no bill from the utility company, pay the equivalent of 80% of their electricity cost to the solar owner, and receive 20% savings. The utility company receives no cash payment from the off-taker for the services or electricity they provide.

Allowing a portion of the SMART Credit Value to be allocated as a bill credit and having the balance of the compensation go directly to the solar project as cash eliminates this problem. Offering the off-taker the same 20% savings on their bill, the solar owner would allocate the equivalent of that amount as a bill credit to the off-taker. The off-taker would pay the balance of their electricity bill, or 80%, to the utility company, not to the solar owner as is the case with virtual net metering off-taker agreements. We suggest that the off-taker utility bill credit could only be used to offset the off-taker's energy supply cost.⁶ Even though the off-taker utility bill credit would be capped at the supply cost, this could mean savings for the off-taker of up to approximately 50%. This proposed mechanism could thus provide a substantially larger benefit than what is currently available through most community solar or other virtual net metering programs today, while addressing the utility companies' primary concern regarding with this policy.

SMART Program Detailed Process Recommendations

The following lays out the detailed steps required to implement the SMART Program's SMART Credit Mechanism in a manner that maximizes the opportunity for low-income ratepayers, tenants and others whose participation has been underrepresented in prior solar policies.

Qualification

- Solar owner submits project and off-taker documentation to third party administrator, who determines total compensation (tariff and adders) a project qualifies for.
- Administrator approves required documentation for eligible adder
 - Affordable housing documentation, if applicable,
 - Service address (account receiving bill credit) at affordable housing development
 - R2 customer
 - schedule Z-like list of accounts for allocation, with individual allocation percentages
 - ten year allocation agreement
- Minimum allocation percent of off-taker utility bill credit—at least 20% of total SMART Credit Value from the solar facility must be allocated to eligible off-takers to be eligible for low-income CSS, CSS and affordable housing adders

⁶ Any amount of the credit received above the supply cost for the month could roll forward for a year, so that summer months would be evened out with winter months with lower solar production.

Energy Rate for SMART Credit Value

- Same across state
- Calculated basic service rate and considered PURPA avoided cost for energy and capacity
- Based on average sixth month basic service rates
- Off-taker may be any customer of any IOU in state (regardless of load zone)

On SMART Credit Value Allocation

- Total compensation value is approved by 3rd party administrator, including adders
- Generation reported to administrator
- On monthly basis, total compensation value is calculated
- Energy value (energy rate times generation) is calculated
- value is determined by subtracting energy value from total compensation value
- Allocation amount is calculated by administrator (energy value times total allocation percent)
- Off-taker allocation amounts calculated (allocation amount times individual schedule z percentages) and delivered to utility for crediting as off-taker utility bill credits to off-taker's accounts
- Off-taker utility bill credits can only be used to offset the off-taker's energy (supply) portion of the bill. Any excess off-taker utility bill credits can be rolled forward for one year but cannot be cashed out.
- Off-taker allocations can be changed at any time and will take effect no later than 30 days of complete documentation
 - Allow time for confirmation of affordable housing or residency
 - Total off-taker allocation to beneficiaries must meet or exceed minimum allocation percentage (we recommend 20% of solar facility credits)
 - If minimum allocation percentage is not achieved (i.e. accounts close) for 6 consecutive months (two consecutive quarters), associated adder is reduced by 25% until minimum percentage is achieved.
 - If minimum allocation percentage is not achieved within 12 months, associated adder is permanently forfeited.
- Allocated portion of SMART Credit Value is subtracted from total compensation value to calculate cash payment (net tariff amount) to solar owner
- Administrator pays solar owner and recovers cost from utility

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