Boston Community Capital

July 11, 2017

Delivered electronically to DOER.SREC@state.ma.us

Commissioner Judith Judson
Massachusetts Department of Energy Resources
100 Cambridge Street, Suite 1020
Boston, MA 02114

RE: SMART solar incentive program

Dear Commissioner Judson,

Thank you for the opportunity to provide comments on the SMART solar incentive program ("SMART"). Our comments focus on SMART's impact on low-income and shared solar projects, which have a critical role to play in addressing energy affordability challenges for families struggling to pay their electricity bills and affordable housing properties looking to lower and stabilize utility costs. The Baker administration has recognized this and taken some steps to support low-income solar. Unfortunately, the administration risks taking a large step backwards on progress made to-date as low-income solar is in jeopardy under SMART. In addition, as key barriers to solar are not addressed in the regulations, access to solar will remain limited. BCC's primary concerns with SMART are that the compensation levels are too low and the mechanism for sharing savings from solar has not been established.

Boston Community Capital is a thirty year old community development finance institution dedicated to building healthy communities where low-income people live and work. Since 2008, BCC has been working through its affiliate, BCC Solar Energy Advantage, to develop innovative financing and business models to expand access to solar in low-income communities. We presently own and operate approximately 7 MW of solar capacity

10 Malcolm X Boulevard, Boston, MA 02119
Direct 617-427-8600 Fax 617-427-9300
bostoncommunitycapital.org

on over 70 Massachusetts solar projects. These projects primarily serve affordable, multifamily housing developments. We also have projects that benefit non-profit organizations and municipal facilities, such as the Greater Boston Food Bank. Our experience in developing solar for low-income beneficiaries means we are uniquely positioned to understand the challenges of serving this market segment and the ways in which policy design can enable or hinder a more equitable distribution of solar's direct benefits across all classes of ratepayers.

When the Department of Energy Resources ("DOER") began the consultation process that informed the development of SMART, BCC had high hopes that this new program would make it easier to develop solar projects that save money for low-income residents and properties and address barriers that have so far limited access to solar for these constituents. While Massachusetts' previous solar programs have made the state a national leader on solar, access to this renewable energy resource has not been equally distributed. For example, less than 5% of the solar currently installed in Massachusetts serves low-income residents or affordable housing developments. At the same time, more than 65,000 homeowners, primarily in non-urban areas, have installed solar on their roofs, representing over 40% of the total solar in the state. In communities served by Eversource, including Boston, homeowners have installed more than 12 times as much solar as affordable housing developments, tenants and low-income residents under SREC II.

Increasing solar's ability to serve everyone, including low-income communities, hinges upon expanded opportunities for shared and community solar projects, which allow the benefits of solar to be shared with anyone, even if they don't own a sunny rooftop. To do that, SMART must provide sufficient compensation for these projects and have a well-designed tariff that allows bill credits to be shared across utility territories and load zones. Unfortunately, as currently designed, SMART does neither. Without these and other program fixes, the SMART program will make it harder for: (1) low-income communities to access solar, (2) affordable housing to use solar to reduce the volatility of and lower utility costs; and (3) solar to help families struggling to pay their electricity bills.

This letter includes a detailed outline of BCC's concerns as well as recommended fixes. BCC is also providing a redline of selected definitions in the emergency SMART regulations ("Attachment A"). The redline edits to the regulations only pertain to adjusting the definitions for community shared and low-income solar projects to expand access to solar. They do not address other concerns about the program, such as land use restrictions and the need to clarify the scope and meaning of certain terms. These concerns, and others, are outlined in the joint solar industry letter. BCC strongly echoes the concerns in that letter and urges DOER to also address them in the final regulations.

I. SMART compensation levels are too low and decline too quickly.

The dramatic decrease in compensation (as compared to net metering and SRECs) at the start of the SMART program, and the rate of decline in compensation throughout the program, will make it virtually **impossible to continue developing low-income solar projects in Massachusetts.** As a result, many rooftop affordable housing solar projects simply won't be economic at the start of the program. Compensation levels are also likely to be insufficient for low-income community shared solar ("LICSS"), meaning it will be difficult to develop a reasonable number of projects while offering meaningful savings to customers.

SMART cuts total compensation for private affordable housing solar projects by at least 46%, based on BCC's estimates, as compared to SREC II and retail net metering. It's important to realize that statewide, only 36 of these projects (totaling about 10 MW) were developed with full retail net metering and full SREC II values. In addition, since net metering rates were cut 40% last year, no new private affordable housing solar projects have come on line under the lower rates. SMART's even lower compensation rates are certain to undermine the economic feasibility of these types of projects.

Compensation levels are likely to be insufficient for LICCS, a new solar delivery model that no one in Massachusetts, or anywhere else, has ever successfully deployed. Modeling SMART's anticipated compensation levels for a representative LICCS project serving low-income housing and its residents shows that to generate positive cash flow over 20 years, total development costs would need to be approximately $1.45 per watt. That cost is far below prices in the current market. It's also 45% below the average total costs ($2.65 per watt) for SREC 2 projects completed in 2016 and 2017. It's also 57% below the price (i.e. $3.38 per watt) of National Grid's recently proposed 1 MW solar project.

Even if initial compensation levels under the SMART program are high enough to support some projects, these levels are set to decline quickly as each capacity block fills up. The automatic 4% decrease results in an overall reduction of 25% in total compensation levels over the eight capacity blocks, assuming adders are available throughout the program. If adders are not available because their caps are reached, the total reduction in compensation levels between the first block and the eighth block could be as much as 47%.[1] This rate of reduction is far too steep, particularly because recent experience in the solar industry shows that for every doubling of capacity there is at most a 20% decline in costs.[2]

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[1] This assumes a LICCS in block 1 with a base compensation rate of 14 cents/kWh plus the LICCS adder of 6 cents per kWh. The reduction without the adder is 38% but as the base compensation rate declines through block 8, the total reduction is 47%.

[2] As noted by the Solar Energy Industries Association in its letter, dated October 28, 2016, to DOER on proposed SMART program design.

II. SMART's adders caps increase uncertainty and complexity.

Arbitrary adder caps increase the complexity and uncertainty of the SMART program as there's no guarantee a specific adder would be available by the time a project is ready to submit its SMART program application. This element of the program will have a chilling effect on community shared solar ("CSS") and low-income solar projects, which often have long lead times and are more complicated to develop than other types of solar projects. The loss of an adder for one of these projects would almost certainly stop the development process in its tracks.

In addition, SMART permits certain solar projects to combine adders. This would allow a low-income rooftop project, for example, to combine two adders (i.e. building mounted adder and low-income adder) to receive the compensation necessary to be built. However, the rooftop adder is available to any rooftop solar project over 25kW and the cap for this adder could easily be reached early in the SMART program. In this case, such a low-income rooftop project would not succeed if, during the development process, the rooftop adder is no longer available. Instead of achieving any intended purpose, the adder caps serve as an unnecessary barrier and add a layer of uncertainty to the project development process.

III. SMART's decline in adder value fails to recognize the higher costs and complexity of low-income solar projects.

Decreasing the value of the adders over time fails to recognize the increased costs and complexity that necessitate higher compensation rates for CSS and low-income solar projects. These projects, for example, have higher site development, customer acquisition and administrative costs than other types of projects.

More specifically, low-income rooftop solar in the private affordable housing sector is often owned and maintained by third parties. There are a number of reasons for this, including the fact that many affordable housing developments are unable to accept non-rental income and the terms of their financing make it difficult or impossible to own solar. Third party owned solar has higher costs simply because an additional party is participating in the project. This increases transactional costs, such as legal and insurance fees. There is no reason to believe these costs will diminish over time, so reducing the value of the adders will only make it more difficult to develop these projects as the program progresses. As with the adder caps, decreasing the value of adders runs counter to ensuring equitable access to solar and will undermine the SMART program's ability to "support diverse installation types and sizes," as required by the legislation directing DOER to create this solar incentive program.[3]

[3] Chapter 75 of the Acts of 2016.

IV. Detail on how the tariff should be administered to ensure equitable access to solar has not been provided.

The draft SMART regulations provide no guidelines on how the tariff will be designed and administered. This includes detail on how the Alternative On-Bill Credit Mechanism (AOBCM) will work. This mechanism would be available to non-net metered projects. In principle, the AOBCM would allow certain projects to assign tariff credits to different electricity accounts in a manner similar to the way virtual net metering currently works.

An appropriately designed AOBCM 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. To do so, the AOBCM must allow for the following: (1) Splitting the value of the SMART compensation to allow for a portion to be allocated directly to low income offtakers while the remaining portion is paid to the solar owner; (2) Allow the amounts allocated to be received as a bill credit on the offtaker's electricity bill with the remaining compensation paid to the solar owner as cash; and (3) The ability to share bill credits with any Distribution Company electricity account in the state.

At the outset, an AOBCM is needed to make it easier to share the benefits of solar. Particularly in low-income communities, issuing solar benefits solely in the form of cash can be problematic. For many low-income ratepayers, for example, receiving cash from a solar project could impact their qualification for a variety of assistance programs or lower other benefits they currently receive, negating any savings from the solar. Cash payments from solar are also taxable, which further reduces their value. Cash is also a problem for the private affordable housing sector. For example, many private affordable housing developments are restricted in their 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.

The design of the AOBCM must make it possible to assign a **portion** of the SMART tariff as a bill credit directly to a low income offtaker, with the remainder paid to the solar owner as cash. This approach would enable new business models that could dramatically expand access to solar. It would, for example, allow bill credits to be allocated to offtakers without the need for complicated contracts and without the need to bill offtakers for those benefits, because solar owners would no longer need to sell all of their credits to monetize their value. Rather, the solar owner would be able to allocate some portion of the value to offtakers as bill credits on the offtaker'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, to really work, the AOBCM must permit bill credits to be shared with any electricity account in any utility territory and load zone. Doing so would make it much easier for urban residents that don't own a sunny rooftop to benefit from solar. Under the current net metering framework, 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). That's because very few sites are available for solar and current law does not allow net metering credits to be shared across utility territories and load zones. This restriction has resulted in a very inequitable distribution of solar. For example, while 33% of the Commonwealth's affordable housing, along with a high proportion of the Commonwealth's minority population, is located in the Eversource NEMA communities (Boston and the surrounding communities), only less than 7% of the total solar capacity qualified for affordable housing under SREC 2 is located there.

Recognizing that the DPU has jurisdiction over the tariff, DOER missed an important opportunity in issuing the regulations to provide further detail, clarity and guidance on how the tariff should be administered to ensure equitable access to solar. The absence of any detail or guidelines on the tariff that will implement the SMART program means the AOBCM needs to be created from scratch at the Department of Public Utilities. This process will take a significant amount of time, and SMART does nothing to address net metering caps and related issues in the short-term.

V. Definitional issues for low-income and shared solar projects must be addressed.

The current definitions for "Community Shared Solar Tariff Generation Unit", "Low-income Community Shared Solar Tariff Generation Unit", and "Low-income Property Solar Tariff Generation Unit" create ambiguity as to whether such projects could take advantage of the AOBCM and be eligible for adders. The definitions for each of those terms include a requirement for the allocation of energy or generation output as "electricity or net metering credits" and do not explicitly refer to allocation of bill credits for generation from an Alternative On-Bill Credit Generation Unit. Thus, those definitions could be interpreted to require such projects to net meter or directly sell electricity to customers in order to qualify for adders.

Further, the definition of an "Alternative On-Bill Credit Generation Unit" anticipates a new tariff for those types of solar projects but states that the new tariff is "not pursuant to 220 CMR 18.00 (net metering facilities) or 220 CMR 8.00 (Qualifying Facilities (QF))." This could mean that Alternative On-Bill Credit Generation Units cannot be Net Metering Facilities or QFs and therefore cannot provide output as either electricity or net metering credits. If that were the case, the regulations would fail to effect on of their core purposes: support for community shared and low income solar projects. Such projects, unlike other solar projects eligible for the SMART program, would effectively be required to net meter and would be restricted by the caps and other restrictions that the net metering program imposes. Straightforward changes to the definitions of these terms in 225 CMR 20.00 that add reference to allocating bill credits

from the Alternative On-Bill Credit Generation Units would resolve this inconsistency. We have proposed such changes in the attached Attachment A.

The above definitions should also be sufficiently flexible to accommodate new business models for low-income and shared solar projects. In particular, as noted in Section IV above, the ability to assign a portion of the SMART tariff as a credit would eliminate the need to sell credits and make it much easier for low-income households to benefit from solar. The definitions for low-income and shared solar should ensure that these types of arrangements would qualify.

Finally, the definition for "Low-income Customer" is presently restricted to Distribution Company customers on the low-income discount rate (i.e. R-2 rate). This definition is unnecessarily restrictive as eligibility for the R-2 rate is limited to households at or below 60% of Area Median Income ("AMI"). Compare this income limit with government-assisted affordable housing programs, which generally target households with incomes at or below 80% AMI.[4] What's more, while an estimated 280,000 electricity accounts are enrolled on the R-2 rate, there are many more households with incomes that are at or below 60% AMI not on the R-2 rate. This population could easily be too small to create a viable low-income solar market apart from the public and private affordable housing sectors. Also, identifying customers on the R-2 would be challenging for solar developers and could raise serious privacy issues. For all these reasons, DOER should expand this definition. (Please see Attachment A)

VI. Program design changes to improve SMART and expand access to solar

The recommendations in this section are aimed at addressing the SMART program design flaws that jeopardize continued viability of low-income and shared solar projects and limit access to solar. Accompanying these recommendations is a redline of selected definitions in the draft regulations, which demonstrate how DOER should adjust the regulations to address some of the concerns raised in this letter.

BCC strongly urges DOER to do the following:

1. Increase compensation for all categories of low-income and community shared solar projects and slow the rate of compensation decline;

2. Remove adder caps;

3. Fix adder values so they do not decline throughout the program;

4. Amend low-income and share solar definitions so these projects categories can take advantage of the AOBCM and remain eligible for compensation rate adders; serve a broader population of low-income residents than households on the low-income

[4] *See e.g.*, How to Obtain Housing Assistance, Massachusetts Department of Housing and Economic Development. Website. Available at: http://www.mass.gov/hed/economic/eohed/dhcd/how-to-obtain-housing-assistance.html (accessed July 6, 2017).

discount; and accommodate new business models that simplify solar projects and deliver meaningful savings to customers (see Attachment A); and

5. Issue guidelines or a straw proposal for the Alternative On-Bill Credit Mechanism that includes the elements needed to ensure expanded access to solar for low-income communities. Please review the attached *SMART Program: The Alternative On Bill Credit Mechanism Structure Needed for Low Income Solar Expansion* memo for further detail on the how the SMART tariff should be designed to ensure equitable access.

In summary, if the Baker administration is serious about its commitment to equitable access to solar, it must address the SMART program design issues highlighted in this letter. Failure to do so will create new barriers that greatly endanger the development of community shared and low-income solar projects, further limiting access to solar for renters, low-income households and those who do not own a sunny rooftop.

Thank you for your consideration.

Regards,

DeWitt Jones
President, BCC Solar Energy Advantage
Executive Vice President, Boston Community Capital

cc: Charles Baker, Governor, Commonwealth of Massachusetts
Matthew Beaton, Secretary, Energy and Environmental Affairs
Ned Bartlett, Undersecretary, Energy and Environmental Affairs
Patrick Woodcock, Assistant Secretary, Energy and Environmental Affairs
Michael Judge, Director of Renewable and Alternative Energy, DOER

ATTACHMENT A: Proposed redline of selected definitions in 225 CMR 20.00: Solar Massachusetts Renewable Target (SMART) Program

Community Shared Solar Tariff Generation Unit. A Solar Tariff Generation Unit that provides ~~energy or~~ electricity, net metering credits or bill credits from an Alternative On-Bill Credit Generation Unit to three or more Customers of Record. No more than two participants may receive net metering credits or bill credits for generation from an Alternative On-Bill Credit Generation Unit in excess of those produced annually by 25 kW of nameplate AC capacity, and the combined share of said participants' capacity shall not exceed 50% of the total capacity of the Generation Unit, except in the case of Generation Units smaller than 100 kW AC.

Low Income Community Shared Solar Tariff Generation Unit. A Community Shared Solar Tariff Generation Unit ~~with~~ that allocates to Low Income Customers either (1) at least 50% of its energy output ~~allocated to Low Income Customers~~ in the form of electricity or net metering credits or (2) bill credits for generation from an Alternative On-Bill Generation Unit equivalent to at least 50% of the incremental value that the Alternative On-Bill Credit Generation Unit receives as a result of qualifying for a Compensation Rate Adder as a Low Income Community Shared Solar Tariff Generation Unit under 225 CMR 20.07(4)(b).

Low Income Customer. An End-use Customer that: (1) is on a low-income discounted rate of a Distribution Company; (2) has a household incomes less than 80% of the state median income level; (3) is a resident of an environmental justice community, as defined by the Environmental Justice Executive Order No. 552 of the Commonwealth of Massachusetts date November 20, 2014; or (4) is a resident of low or moderate income housing, as defined under M.G.L. c. 40B.

Low Income Property Solar Tariff Generation Unit. A Solar Tariff Generation Unit with a rated capacity greater than 25 kW that provides to low or moderate income housing, as defined under M.G.L. c. 40B, or to residents of such low or moderate income housing either (1) all of its generation output in the form of electricity or net metering credits ~~to low or moderate income housing, as defined under M.G.L. c. 40B~~ or (2) bill credits for generation from an Alternative On-Bill Credit Generation Unit equivalent to at least 50% of the incremental value that the Alternative On-Bill Credit Generation Unit receives as a result of qualifying for a Compensation Rate Adder as a Low Income Property Solar tariff Generation Unit under 225 CMR 20.07(4)(b).

SMART Program: The Alternative On Bill Credit Mechanism Structure Needed for Low Income Solar Expansion

Updated July 11, 2017

Overview:

Massachusetts' proposed SMART[1] 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[2] 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 both sufficient compensation and 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 could 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. An "Alternative On Bill Credit Mechanism" that is an option for all solar projects as an alternative to net metering facilities and qualifying facilities.[3]

2. The Alternative On Bill Credit Mechanism must allow the solar owner to allocate only a portion of the value of the Total Compensation ("SMART Credit") to off-takers, unlike net metering

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[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 and the Emergency Regulations 225 CMR 20.00 filed by the Massachusetts Department of Energy Resources on June 5, 2017.

[2] As proposed in the Emergency Regulations, we do not believe that the compensation levels are sufficient to support the development of shared solar projects serving low income communities, residents, and affordable housing. Please see the BCC Solar letter to DOER on the proposed regulations dated July 11, 2017 for details of our concerns.

[3] The SMART program gives a total fixed per kWh compensation ("Total 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 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 Alternative On Bill Credit Mechanism should 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).

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

3. The SMART Credit 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 Total 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 Credits 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 SMART Credit allocations to off-takers and to pay the balance of the Total Compensation 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 is put in place and throughout the term of the SMART program.

6. To equitably serve all people and communities in the Commonwealth, the SMART Credits 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 developments 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 electricity 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. National Renewable Energy Lab (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 qualified to serve 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 program[4]. While only a third of this total has been completed to date[5], the amount qualified is the largest per capita 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 households and 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

[4] As of April 24, 2017.

[5] Since all projects qualified as affordable housing under SREC II must have all permits, interconnection service agreements, site control and offtakers, the amount of qualified but unbuilt systems suggest that the compensation levels under SREC II and net metering may not be sufficient to make these projects financeable or economically feasible.

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 served by the same utility company and in the same load zone. Since siting, land availability and land 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%[6] of the total solar capacity qualified for affordable housing under SREC II is in that territory.

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.

The proposed Alternative On Bill Credit Mechanism would be an easy way to confirm that low income and other off-takers are receiving savings from the solar, since the SMART Credit would be deducted from the Total Compensation to the solar owner by the Administrator. Currently, to get savings from a shared solar project, 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.

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 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 the SMART Credit to be allocated as an off-taker utility bill credit, allow allocations across utility company territories and load zones, and have the remaining Total Compensation to be paid to the solar owner, would address all of these issues.

Allowing the SMART Credit 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 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 electricity bills and receive the rest as cash payments from the

[6] 9.7 MW out of a total of 140.6 MW as of April 24, 2017

utility company or third party administrator to offset the cost of developing and operating the solar facility. 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, utility bill credits wouldn't be treated as cash or taxable income.

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 distribution and other services they provide.

Allowing the SMART Credit 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.[7] 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 net metering policy.

SMART Program Detailed Process Recommendations

The following lays out the detailed steps required to implement the SMART Program's Alternative On Bill 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 SMART Credit—at least 50% of the equivalent value of any adder a solar facility receives for a low income property, community shared solar or low income community shared solar must be allocated as SMART Credits to eligible off-takers to receive those adders

SMART Credit Allocation

- Total compensation value is approved by 3rd party administrator, including adders
- Generation reported to administrator

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

- On monthly basis, Total Compensation value is calculated (Total Compensation kWh rate times generation).
- Total SMART Credits are calculated (allocation percent times Total Compensation)
- Payment to solar owner is determined (Total Compensation minus total SMART credits) and made as cash payment
- Off-taker SMART Credit amounts calculated (allocation amount times individual schedule z percentages) and delivered to utility for crediting as SMART Credits on off-taker's month bill.
- SMART 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.
- SMART Credit 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 SMART Credit allocations to offtakers must meet or exceed minimum allocation percentage
    - 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.

For questions about these policy proposals, please contact DeWitt Jones, at Boston Community Capital (617) 427-3580 djones@bostoncommunitycapital.org