



February 2, 2024

Submitted via email: DOER.SMART@mass.gov
CC: cbrown@SEAdvantage.com, tmichelman@seadvantage.com

Ms. Samantha Meserve
Director of the Renewable and Alternative Energy Division
Massachusetts Department of Energy Resources
100 Cambridge Street, 9th Floor
Boston, MA, 02114

Dear Ms. Meserve:

Gridwealth LLC appreciates the opportunity to submit the following comments in response to the request for stakeholder comments on the SMART program, posted as Stakeholder Questions on Dec. 21, 2023. The SMART program has been a major driver of solar development in the Commonwealth since it was launched in 2018, and has provided opportunities for varied types of installations and varied types of off takers, as well as helping to drive the increase in facilities with collocated energy storage systems (ESS).

However, in the last two years, the early success of the program in generating development proposals in Massachusetts, combined with the structure of the program to reduce support for continued development through the declining block design, has led to a decline in interconnected solar by megawatts (MWs) per year and a decline in applications to the program by MWs due to reduced economic viability of projects under the terms of the program, as well as a zeroing of the incentive level for some potential participants, namely residential and small commercial customer projects.

The decline in economic viability for larger projects is for multiple reasons. First, as is well known by solar market participants and energy regulators, interconnection costs and timelines have skyrocketed, with larger projects now delayed by years due to group studies, affected system operator studies, and regulatory processes over the establishment of new cost allocation mechanisms. Second, the price of panels has decreased at a much slower rate than was the case while the program was designed, and with a shift back to U.S. assembly and manufacturing, sometimes a slight increase in cost. Finally, the cost to install projects and the balance of plant has moved steadily higher, and greater than consumer inflation like other costs in the electric sector. These costs make up approximately two-thirds of a solar facility's installation costs, and are continuing to increase.

Given these pressures, and the slowing interest of the solar industry in proposing new projects in Massachusetts under the present circumstances, Gridwealth agrees with the Department of Energy Resources (DOER) that the time is right to review the SMART program, adjust pricing where needed and possible, and modify certain definitions and requirements to make the program more compelling once again. Moreover, Gridwealth would urge DOER and the Healey Administration to shift focus for this next phase of the SMART program away from mid-sized ground-mount systems (the 1-5 MW size) with requirements for connected ESS for all facilities greater than 500 kW. Instead, the revised program should focus on promoting the types of projects that can be done quickly today to regain momentum towards the Commonwealth's



clean energy and long-term solar energy goals. These types of projects include rooftop solar, brownfield solar and canopy solar that emphasizes use of pre-disturbed land, and location of projects in areas with higher electric loads and greater existing hosting capacity. These projects should not be required to also install ESS, as discussed further below in these comments. In addition, as mentioned at the end of these responses, Gridwealth believes there is a role for large-scale solar projects (i.e., in the 5-50 MW range) located in or out of state that can settle their power in Massachusetts, along with the provision of renewable energy certificates (RECs) through long-term support agreements with the state's utilities, as a means to catch up on the pace of solar development needed to even potentially meet the Commonwealth's solar supply goals.

Thank you for your attention to these responses. Please reach out to me at Gridwealth if you have any questions or wish to discuss any of these suggestions further.

Sincerely,

A handwritten signature in black ink that reads "Anthony Quincy Vale". The signature is fluid and cursive, with a long horizontal stroke at the end.

Anthony Quincy Vale
Chairman and President
qvale@gridwealth.com

Stakeholder Questions from DOER

1. The SMART program currently provides added incentives for certain project types, including building mounted, canopy mounted, landfill, brownfield, agricultural, floating, community solar, and projects serving low income or public entities, projects with energy storage, and axis tracking. DOER seeks additional feedback on changes or improvements that will advance achievement of the Commonwealth's 2050 GWSA mandates while balancing land use, equity, and economic considerations.

- A. What project type incentive changes could improve program outcomes?
- b. Should other project types also be prioritized?

DOER should recognize that within its list of eligible project types, there can be significant cost variance on the projects that best support the Commonwealth's climate and clean energy goals. Projects developed on brownfields are some of the most desirable from a land-use perspective, yet costs can vary widely. For example, site remediation requires inspecting and environmental engineering services, and the ballasted supports required for such projects can add up to \$0.05 per kWh to the overall cost (compared to the existing \$0.03 and \$0.04 per kWh adder for brownfields and landfills, respectively.) Solar projects developed on rooftops, similarly, can increase overall costs by 20 percent or more because many roofs need expensive upgrades to support the project, either structural in nature to support the addition of solar panels, or a replacement of the roof itself, now or on the horizon.

Increasing the adder for rooftop systems could also create opportunities for roof replacements that drastically increase efficiency on some of the most energy intensive buildings in the Commonwealth. Specifically, buildings above 25,000 ft²—representing solar potential of about 250 kW—exhibit some of the highest energy intensities in the region.¹ Capturing this synergy within the SMART program is essential to maximize climate and clean energy benefits.

Gridwealth recommends higher and additional adders for brownfields, rooftop systems and canopy systems, to reflect both increases in costs associated with these projects due to inflation since the program's launch, and the recognition of more complexity for certain types of projects. These proposed adder levels are listed below:

Building-mounted: 4 cents

Roof replacement and new construction adder: 2.5 cents

Brownfield I: 4 cents

Brownfield II: 6 cents

Inside Rte. 128 adder (1 MW AC or Less sized projects): 3 cents

Canopy adder: 8 cents

2. The current SMART program structure includes a declining block model. Is a structure with fewer blocks and a greater decline between blocks preferable to a greater number of blocks with a smaller decline between blocks? Are there any other modifications to the declining block model structure that could more effectively support solar development?

Gridwealth believes that halting or removing the declining block structure altogether would be the most effective means of supporting solar development. In the current inflationary environment, even with headline inflation rates slowing, many project costs are higher now, not

¹ U.S. Energy Information Administration. (2018) *Commercial Building Energy Consumption Survey*. Table C7.

lower, than when the program began, and hold the potential to head higher still. Holding the current block prices for the remainder of the 3200 MW goal of the program, along with higher adder prices for preferred project types (discussed in #1) would provide an opportunity for developers like Gridwealth to know with more certainty the support level available to a project being scoped today, when comparing against expected installation costs. DOER should also examine the project price evidence gathered by its consultants, Sustainable Energy Advantage, to develop an “inflation adder” that would be provided for the remainder of the 3200 MW, which could then be adjusted via a Program Guideline update for recent and additional changes in key pricing indices, such as a solar panel price index and a construction cost inflation index weighted for their proportion of project installed costs.

3. Are any eligibility criteria in the SMART program a barrier to participation? What are they, and how would you address these barriers? How would you streamline these eligibility criteria?

The current state of interconnection queue study timelines and regulatory processes creates a significant barrier to the ability of solar developers to have certainty over the level of program support that will be available for a project early in its development cycle. As a result, the requirement to have an Interconnection Services Agreement (ISA) is viewed as a major barrier to participation.

Instead of requiring a fully executed ISA, Gridwealth believes that a requirement of having a preliminary interconnection assessment should be sufficient if paired with a refundable deposit fee that is substantial enough to dissuade purely speculative applications. This would enable developers like Gridwealth to better understand project economics with some certainty earlier in the process, especially if the declining block structure is to continue, so that a project can lock in its support level in terms of block participation and the value of applicable adders. This move would allow negotiations for roof and land leases to progress and ideally conclude well before ISAs are provided to projects.

The deposit should be meaningful, such the initial year of estimated total incentive payments for a project. This hold of capacity before SOQ should be valid for two years, or the estimated date of interconnection, whichever is less, and then extendable for periods of six months by payment of additional, refundable fees. This timeline should of course also retain the indefinite extension for completion of interconnection studies and construction by the host utility.

In addition, the requirement to add storage to all projects of 500 kW AC or greater has created a significant barrier for participation, especially for projects on rooftops, canopies, and other projects with surrounding parcel space constraints. It has been Gridwealth’s experience that hosts who do not intend to use the energy directly from a SMART facility on-site do not benefit from a connected storage facility, and the requirement often complicates the installation and management of the project, which has led to projects being down-sized to avoid the requirement. This is dampening the potential for and scale of solar (which in this case means only solar photovoltaic (PV)) installations in the Commonwealth. Moreover, there is no material benefit to requiring storage to be collocated with solar on an AC basis, and substantial increases in complexity between the customer and utility if DC-coupled. If any storage requirement remains, it should only be applicable to ground-mounted systems of 2 MW or greater, which would enable building mounted, canopy and agrivoltaic systems to move ahead without being encumbered by storage complications.

4. Is the current SMART reservation period (excluding any blanket extensions) adequate given

current development and construction timelines? If possible, please provide a representative project timeline inclusive of key project milestones, such as permitting, procurement, and interconnection, to help inform DOER's understanding of the development process and current project timelines.

For projects over 250 kW, 12 months is an insufficient amount of time to receive all permits and complete all site work and construction. Increasingly, certain long lead-time components, like transformers, can cause delays that exceed the 12-month timeline. In addition, those projects located on preferred sites, like rooftops and brownfields, are more complicated than smaller or typical ground-mount systems and can take longer than 12 months to permit and construct. Gridwealth recommends that DOER both (a) extend the SOQ reservation period to 24 months for all projects, and (b) adopt a similar structure to the NY-Sun program, which increases the period to 30 months for projects over 750 kW, as well as all public and new construction projects.²

Additionally, Gridwealth presents the following illustrative project timeline for DOER's information.

Milestones	Time Range	Uncertainty	Note
<i>Interconnection Service Agreement</i> received, SMART App. complete	-	-	Reservation period begins.
<i>Interconnection Service Agreement to Notice to Proceed</i>	3-4 months	Low-Med	Need to complete financing agreement, with certainty of final incentive amounts.
<i>Notice to Proceed to Construction Start Date</i>	2-4 months	High	Highly dependent on condition of existing roof; obtaining electrical and building permits.
<i>Construction Start Date to Mechanically Complete</i>	2-5 months	Med-High	Highly dependent on system size, roofing characteristics, weather
<i>Mechanically Complete to Certificate of Completion</i>	1-2 months	Med	Authority having jurisdiction (electrical inspector) signs COC form.
<i>Certificate of Completion to Permission to Operate</i>	1-2 months	Med-High	Dependent on need for witness test.
<i>Permission to Operate to Commercial Operation Date</i>	6+ months	High	Significant uncertainty between PTO and COD due to application processing and programmatic requirements.
Total	14 – 26+ months		

² Program manual <https://www.nysersda.ny.gov/All-Programs/NY-Sun/Contractors/Resources-for-Contractors>

5. Are there any emerging technologies or project types that are not currently eligible for SMART that DOER should consider making eligible for the program? Please describe potential project applications, any suggestions for eligibility requirements, and what level of incentives if any would be needed spur project development of the project type.

While not a distinct “project type,” in the near future, the electric distribution companies (EDCs) in Massachusetts indicate they will have installed and be operating energy management systems that would effectively interact with and actively curtail distributed energy systems. These broadly-termed “Distributed Energy Resource Management Systems” (DERMS) will have the potential to impact the output of a project, either to generate more reactive power in an area, or to avoid overvoltage and potential power backflow issues by curtailing output. In either case, the generation in real power will be lessened by the system operator’s action. Implementation and acceptance of terms for such curtailment may substantially reduce the potential need for interconnection upgrades in some areas of the EDCs’ electric power systems, which will in turn enhance and speed up the deployment of more solar projects. Gridwealth would suggest that systems subject to DERMS that experience curtailment beyond some materiality threshold should be able to request a true-up calculation for lost generation value. DOER should engage a qualified consultant to develop a calculator that can be used with project specific inputs and the day and time of specific curtailments, to determine a percentage of output curtailed, which the recipient project sponsor/facility owner would then receive from the host utility on an annual basis, by determining the lost output and multiplying by the compensation rate. Utilities and facility owners could then use the same calculator to determine the true-up payment, reducing disagreements over the amount to be paid.

6. Are program compliance requirements clear prior to program enrollment? What are the key challenges with satisfying the data and/or documentation requirements for various program compliance checks, such as compliance with the energy storage, low-income, or community solar requirements? Are there any modifications you would suggest to DOER’s compliance processes, or alternative data/documentation you believe could satisfy the requirements?

No response.

7. Are SMART application processes and requirements clear? Is communication between applicants, the Solar Program Administrator, and DOER clear and effective? Please describe any improvements you believe could be made to the SMART application process.

No response.

8. Are there solar canopy project types that currently fall outside the SMART program’s definition of Solar Canopy that you believe should be eligible for the Canopy adder? Please provide example project types and describe their benefits.

Yes, canopy systems can be created which cover other uses besides parking, pedestrian walkways and canals; private roadways and access ramps, non-pedestrian areas used for landscape design and safety zones, and agricultural uses such as livestock feeding and storage areas, are just a few examples. The canopy definition should be more general in nature to allow

for all potential uses and configurations of canopy systems. The definition could read, as here edited with strikethrough for removed and underscore for added text:

“A Solar Tariff Generating Unit with 100% of the solar.... Installed ~~on top of a parking surface, pedestrian walkway, or canal~~ on a raised structure high enough that maintains the function of the area beneath the canopy.”

In addition, the substantially higher cost of canopy systems, along with the reality of the structure created being rated to last 2-3 times longer than the useful life of the solar panels, suggests that the enrollment period for canopy projects be lengthened to 30 or 35 years. This would better align the amortization period with the structural life and create additional ability for debt support of such projects which will increase the ability to construct such projects in the near future.

9. Are there examples of dual use agrivoltaics policies in other jurisdictions that align with Massachusetts’ solar and agricultural objectives? Please provide citations and summaries of those policies.

No response.

10. What modifications to SMART incentive payment calculations, as currently set forth in 225 CMR 20.08, if any, are needed? Please provide examples formulas or calculations for DOER review.

Both standalone and behind-the-meter incentive payment calculations have posed issues for solar developers like Gridwealth in the recent period of high utility energy supply costs and growing distribution and transmission rates. As recently experienced, the value of energy can be high enough that the resulting incentive payment calculation is zero (or negative), resulting in no compensation for the RECs then transferred to the utility as part of participation in the SMART program. For residential and small commercial customers and their developers, this can create an incentive to simply not enroll the customer’s system in SMART, to enable capture and monetization of RECs separately. This undermines the intended simplicity of the SMART program for small-use customers, where RECs and other attributes are transferred to the utility, reducing transaction costs and third-party discounting of the REC’s value. For larger, stand-alone systems engaged in the net metering program, this can result in the same result, where the project is not receiving any additional value outside of that provided by the state’s net metering statute for the attributes supplied to the utility.

Instead of this scenario, DOER should establish minimum values for the incentive for both standalone and behind-the-meter (BTM) systems. This value should be at least 2.5 cents per kWh of generation, reflecting an estimate of the long-term average value of Massachusetts Class I RECs. For standalone systems, the current calculation of incentives for different energy categories should remain, with the addition of language that in no case shall the incentive value paid per kWh be less than 2.5 cents per kWh. For BTM systems, where the fixed value of incentive is set once at the issuance of SOQ, the same equation can determine the value with the added provision that in no case shall the net incentive be less than 2.5 cents per kWh for the term of enrollment. These amounts should be indexed by inflation going forward from adoption, in order to maintain the value of the incentive over the 10- to 20-year life of program enrollment.

11. How could the program be designed to insulate projects and participants from unforeseen market circumstances that materially impact the value of the SMART program incentive? For example, global events impact supply chain and energy costs.

Gridwealth recommends that DOER index the base compensation rate or the above-mentioned inflation-adder calculation to industry-representative price indices, to reflect market conditions experienced by the solar development industry. This would insulate the participants from unexpected shifts in the market that, as observed throughout the COVID-19 pandemic, can drastically impact project economics. Suggested price indices to consider include the Handy-Whitman Index of Public Utility Construction Costs³ and one of various Solar Module price indices, weighted to the proportionate input costs of average projects. The incentive amount should then be updated periodically to give applicants sufficient time to evaluate project economics and secure necessary financing.

Under Section (6)e of the Guideline on SOQ Reservation Period, *Extended Reservation Period for Good Cause*, the Department should also strike the qualifier of additional delays due to COVID-19. While we have exited the worst impacts of the pandemic, the four issues listed under (6)e nevertheless persist and operate outside of the control of the applicant. For example, ongoing trade disruptions (such as that caused by the current conflict in the Red Sea with Yemeni rebels) and labor supply issues continue to add unforeseeable obstacles that continue to warrant extension for good cause. Additionally, while the applicant may be able to provide an expected timeline for this extension request, it should not be beholden to this estimation as these are inherently circumstances outside the applicant's control.

12. What additional consumer protection measures or modifications to existing measures should the SMART program incorporate to ensure such protections are achieving their objectives, especially as they pertain to low-income customers?

One of the key barriers to enrolling and maintaining enrollment of any customers in community solar is the process of billing them for credits once enrolled. Financial pressures are still present with customers despite being enrolled in a community solar program, and the additional bill to pay to the host credit provider or their servicing agent is sometimes not paid, resulting in arrearages for the host and eventually a disenrollment from the CSS program. This is even more prevalent for low-income customers who face greater than average financial pressures.

A far better means of providing CSS savings to enrolled customers, but particularly residential and low-income residential customers, would be on-bill net crediting. This would mean that the CSS host, like Gridwealth, would indicate the value of the net credit on a Credit Transfer Form in the SMART program to be provided to each customer. The remaining AOBC value would be paid to the host in cash, like the remainder of the total incentive. This credit would go onto the customer's bill, and there would be no billing or payment required for it, as it would reflect amount they would have originally benefited from after paying the host in a separate payment.

This would dramatically reduce administrative costs, arrearages for both hosts and utilities, and eliminate questions of customer creditworthiness. DOER should initiate further discussions on this concept to develop minimum crediting levels for residential customers, appropriate transparency and consumer protection rules for hosts, whether this should also be available for

³ <https://www.pjm.com/committees-and-groups/subcommittees/cds/handy-whitman-index>

commercial customer accounts, and how the CSS and LICSS adders for hosts using such a mechanism could be lowered to reflect the lower costs and losses of such a program.

13. Are there any Commonwealth policies (e.g., renewable energy goals, land use priorities, housing policy) that you believe the SMART program inadvertently conflicts with? Please describe any potential modifications to SMART that would alleviate these conflicts.

The Commonwealth has established in law and regulation meaningful goals to reduce the carbon intensity of all energy use in the state. While substantial progress has been made to date, much more progress is needed in beneficial electrification of transportation and building climate-conditioning to come close to achieving these goals. As laid out in the “Energy Pathways To Deep Carbonization Technical Report” of the *Clean Energy and Climate Plan for 2050* this will require substantial increases in the amount of carbon-free electricity with a balance of wind and solar resources, supported by battery storage capacity. The report, while now just over three years old, provides the most recent and thorough snapshot of what that future need could be: more than 20 gigawatts of solar capacity in Massachusetts alone by 2050 in nearly all scenarios reviewed.

In order to reach that significant level of connected solar generation, the Commonwealth cannot stand still while ISO-NE and the utilities to work through the extensive transmission and distribution impact studies and upgrade construction requirements due to concentrated mid-sized (1-5 MW) solar interconnection requests, nor should it wait another several years for the Department of Public Utilities to sort out a new workable mechanism for cost allocation of those extensive upgrade costs caused by those concentrated requests. Instead, DOER should shift the SMART program to emphasize what can be done within the footprint of the state’s EDCs in the immediate future.

This shift means increasing incentives for building-mounted, brownfield, canopy and agricultural solar facilities, and potentially establishing a second level of incentives for projects that have greater complications due to roof health, building condition, and type of pollution or hazard on site. This will help push forward more applications in populated, higher-load areas where projects today are not viable due to declining-block base prices, high real estate values, and high remediation costs. This also would place more projects in areas with less saturation from DG, where there is still ample capacity to connect solar today.

Gridwealth recommends that DOER reset the above-mentioned adders as outlined above in Response #1, and add other categories as listed to encourage this shift toward load and continue immediate progress toward the state’s solar goals.

In addition, DOER should launch a separate effort to procure solar from out-of-state projects and facilities built with the state’s municipal light district territories, particularly those connected to the transmission system. These systems should be required to settle exported power in a Massachusetts load zone, to bring the avoided energy and capacity benefits into the state. While not customers directly of the state’s EDCs, the developers participating in this new program should be enabled to receive, through enrollment in a new part of the SMART program that enables it, an adder on such energy settlements for community solar or low-income community solar, that could then be shared through net billing subscriptions (as described elsewhere in these comments), with residents of the Commonwealth. In addition, the facility’s RECs would be purchased through a long-term enrollment agreement with the utility managing the geographical location where the energy would be settled. This combination of requirements



and potential, optional support for CSS would incentivize and enable these types of projects and provide tangible benefits to ratepayers in Massachusetts.

14. Is there any additional feedback you wish to provide to DOER?

No response.