



February 2, 2024

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VIA Email: DOER.SMART@mass.gov
CC: CBrown@SEAdvantage.com , TMichelman@SEAdvantage.com

Re: Solar Massachusetts Renewable Target (SMART) Program Review

Dear Ms. Meserve,

On behalf of Mass Audubon's 160,000 members and supporters, I appreciate the opportunity to provide input and comment on DOER's program review of the Solar Massachusetts Renewable Target (SMART) program. As a national leader in both clean energy deployment and ambitious goals for mitigating GHG emissions from electric power generation and other sectors, Massachusetts' success in solar deployment has set strong precedent for other states and regions. This is a highly opportune moment to conduct a SMART program evaluation and make the adjustments needed to set the stage for expanding solar energy's contributions to Massachusetts' goal of net-zero GHG emissions by 2050.

We respectfully submit these comments and inputs to DOER's current evaluation of program costs and performance underway by SEA. One general suggestion is that it would be helpful going forward for DOER to make clear what underlying data and information are available for this program review beyond the public-facing datasets such as MA CEC's Production Tracking System. For example, is there a dataset which describes total costs per installed kW (or W) and state incentives used at the project level for all projects in the Production Tracking System? Our recommendations for specific analytics and metrics that we believe are important for stakeholders and the public are built from an assumption that such data are indeed available.

It is worth taking a moment to clearly state Mass Audubon's high-level positions on climate mitigation, decarbonization of the electric power sector, and solar energy's importance to these goals. These are stated below:

- Core to Mass Audubon's 5-year strategic [Action Agenda](#) is the **need to quickly advance all solutions that enable the Commonwealth to achieve net-zero GHG emissions by 2050**. We believe that, along with energy efficiency (the "first fuel") and demand response, renewable energy is foremost among these solutions: scaling of both new

wind and solar resources is mission-critical to delivering the low-carbon electric power over the next decade that's needed to unlock deep GHG emission reductions across our economy.

- **We believe that both ground-mount solar and solar on buildings and parking lots play a key role in the power sector decarbonization.** Our [Growing Solar, Protecting Nature analysis](#) shows that at least 100,000 acres are technically and legally suitable for ground-mount solar, and at least half of that is economically competitive with wind and other resources with only federal incentives under the Inflation Reduction Act. However, a continuation of the pace and scale of the impacts of ground-mount solar on natural systems and working lands over the last ten years is not consistent with net-zero GHG by 2050, other state policies, or public attitudes towards clean energy. Now is the opportune moment to adjust incentives so that deploying more ground-mount systems on already-developed lands and the built environment takes priority before additional natural lands are used.
- **We believe that major changes to technology, policies, and governance in the energy sector are not just possible, but inevitable.** Some of these technologies, such as energy storage, have the potential to significantly reduce total generation capacity needed to meet peak loads, thereby reducing land needs for solar. Innovations in rate design and strategies like community energy systems can improve overall cost-effectiveness and equity in access to clean energy, and reduce peak load. We should try to anticipate these changes in this program review to the extent feasible.
- **We believe that retention of our forests, wetlands, other natural ecosystems, and soil carbon are as vital to meeting net-zero GHG by 2050 as renewables.** Recent EEA estimates are that terrestrial ecosystems remove carbon from the atmosphere equal to roughly 10 percent of the Commonwealth's current annual GHG emissions. Moreover, there is no commercially viable technological equivalent to carbon removal by natural systems – if we lose the carbon removal capacity of these systems, our ability to reach net-zero will be at risk. It will require additional reductions in GHG emissions from fossil fuel sources, which will come at very high marginal costs, if available at all.
- **We believe that the Commonwealth needs to set policies that improve upon the current approach to siting large-scale solar systems.** If the state makes a concerted effort to align incentives with reducing impacts to natural resources, working lands, and communities bearing disproportionate impacts of cumulative development, *this will build the public support needed to take this resource to scale*. Reducing the current level of conflict and the number of challenges and appeals to specific projects will not only improve the industry's 'social license to operate,' it will reduce costs and delays from appeals, litigation, etc. Additional adjustments to and fine-tuning of SMART incentives to maximize solar siting on already-developed land and the built environment can play a large role in achieving a better balance between nature and development; in so doing, it will help build the public's confidence that impacts to communities and nature have been avoided and minimized to the maximum extent feasible. Incentives for energy

storage are outside the scope of this inquiry but if well-designed, can result in more optimized systems and better outcomes for nature, communities, and equitable access to clean energy.

Our comments on specific questions are below.

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

- **Stronger incentives for canopy systems.** Our analysis found that of 55,000 total acres of parking lot surfaces in the Commonwealth, up to 30,000 acres could support solar canopies. These systems are also popular with the public, and offer an opportunity to build in new EV charging infrastructure. However, our desktop review of canopies installed in New England suggest that these systems cost 1.5-2X that of an average commercial system. Incentives for these systems need to be significantly increased, using the results of this program cost review as a basis.
- **Increase incentives for low-impact ground-mount systems, integrate into building decarbonization programs.** Our analysis shows that there are at least 100,000 acres of sites suitable for smaller ground-mount solar projects. And, more than half of these sites are owned by the Commonwealth and cities and towns, so these could be developed for public benefit or community solar; the residential sector is another sector with many of these potential sites.¹ Better integration and coordination of solar incentives and programs within the Green Community and MassSave programs aimed at building weatherization and efficiency would leverage both programs. Given that the operating costs for some heat pumps are still high relative to natural gas heat, integrating solar on buildings *before* shifting heating technologies can reduce total costs of building decarbonization to consumers. Roofs should be evaluated for solar anytime a MassSave audit is done, and incentives for roofs and electric panels for low- and moderate-income households should be considered.

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.

- Examine inflation adjusters deployed in recent procurements for offshore wind in MA and other states.

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.

¹ In the *Growing Solar, Protecting Nature* analysis, lots zoned residential that were equal to or larger than 1 acre in size were included in analysis of lands suitable for ground-mount solar.

- **Eliminate SMART eligibility for ground-mount projects on greenfields with high carbon and biodiversity value, regardless of project attributes that achieve other goals.** The current greenfield subtractors (i.e., \$0.0005/kWh or \$0.001/kWh depending on Category) are ineffectual when paired with adders for other desired project attributes which can be an order-of-magnitude higher in value (e.g., \$0.05/kWh for community solar).

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?

- **Expand incentives for distributed solar for LMI.** If the Commonwealth secures a grant under EPA's *Solar for All* program, hundreds of millions of dollars will be available for deploying solar to multi-families and other housing for low- and moderate-income ratepayers. Most distributed solar in Europe and Australia is achieved with significantly lower soft costs (permitting, marketing) than in the U.S. These funds should be deployed via pilot programs that explore approaches to streamlining soft and administrative costs of rooftop and canopy solar.

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.

- **Carbon removal goals for natural and working lands, forthcoming biodiversity goals, goals for healthy soils and local food productivity have not been adequately reflected in RPS Class I or SMART programs as of yet.** Adjustments to SMART in 2020 helped to reduce impacts on lands featuring core habitat for wildlife. However, the state is still developing specific goals, policies, and metrics to achieve a suite of land- and nature-related goals. All changes to SMART should anticipate these goals and be nimble to adjustments needed to preserve the state's ability to achieve them. Building in a periodic, systematic program review, akin to RGGI's 3-year program review, can reduce the uncertainties for developers and other stakeholders with respect to when and how program changes will be made.
- **Eliminate SMART eligibility for ground-mount projects on greenfields with high carbon and biodiversity value, regardless of project attributes that achieve other goals.** The current greenfield subtractors (i.e., \$0.0005/kWh or \$0.001/kWh depending on Category) are ineffectual when paired with adders for other desired project attributes which an order-of-magnitude higher in value (e.g., \$0.05/kWh for community solar), and inconsistent with forthcoming state goals described above.

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

- **Increase transparency of costs and incentives at the project level.** In addition to providing the *Production Tracking System* data describing capacity, type and location of individual solar installations, DOER and MA CEC should make project-level incentive and cost data publicly available so that stakeholders can perform analysis to better understand overall program costs, costs for each type and size of technology, and the effectiveness of incentives relative to desired policy outcomes. Moreover, these publicly available data should include begin to reflect incentives for and costs of energy storage paired with solar.

- **Changes to SMART design and incentives should reflect the value of proximity to load centers in reducing distribution costs.** Ratepayers in New England and elsewhere in the U.S. often pay more for transmission and distribution (T&D) charges to deliver electricity than for its generation; T&D costs are poised to grow even more with grid modernization underway. Solar (and solar plus storage) located close to current and future load centers will reduce the need for and costs of upgrading or building new distribution infrastructure. In a state with high distribution costs, it is critical to reduce impacts to low- and moderate- income ratepayers of grid modernization needed to support the clean energy transition. In addition to providing detailed breakout of costs of installed solar by type and size, we strongly suggest an exercise to estimate the accompanying distribution costs needed, or avoided, associated with solar of different types (e.g., ground-mount, rooftop, and canopy) deployed in specific sub-regions across the state.

In addition, specific metrics that we request be included in SEA's review of SMART program performance, costs, and other qualitative factors include:

- Comparison of Class I solar and SMART solar performance (total costs, \$ per installed W, LCOE, patterns by size class)
- Breakout of SMART performance by solar tech (i.e., type, size, and timing), including by individual adder and subtractors applied
- Analysis of solar cost components (soft costs v. hardware) for different project types (e.g., Small residential, large residential, commercial, ground-mount (under 1 MW) of even if only estimates by type/category
- Estimates of avoided distribution costs for distributed systems, and avoided interconnection costs for ground-mount depending on proximity to load centers
- Total land requirements for ground-mount projects, and lands used per installed MW

Thank you for the opportunity to comment. Please don't hesitate to reach out with any questions on these comments and suggestions.

Regards,



Michelle Manion
Vice President for Policy and Advocacy