



September 27, 2019

Judith Judson, Commissioner
Massachusetts Department of Energy Resources
100 Cambridge Street, 10th Floor
Boston, MA 02114

Re: Solar Massachusetts Renewable Target (SMART) Program 400MW Review

Dear Commissioner Judson,

American Farmland Trust (AFT) saves the land that sustains us by protecting farmland, promoting sound farming practices, and keeping farmers on the land. One such practice that can keep farmers on the land is through income diversification. On-farm solar production can have a significant impact on the security and stability of income, thus improving overall viability. Flat, open farmland is ideal for solar array siting. However, targeted and wide-spread development of Massachusetts farmland is in direct opposition to the mission of AFT and counter to the future of food security in New England. AFT believes there is a middle ground that can promote the development of solar energy in Massachusetts while maintaining farmland production.

Significant care and thought have undoubtedly gone into these proposed changes to the SMART program at the 400MW review and the changes show careful consideration for the conservation of natural and working land. In this same spirit of reflection, AFT has worked closely with the Conservation Law Foundation and Vote Solar (Conservation Solar Parties) to develop a **Traffic Light Approach to Solar Development and Land Conservation** that provides opportunity for select and smart siting of solar on farmland of all soil designations, generates funds for further land conservation, and still incentivizes the use of preferred sites such as brownfields, carports, and other previously developed land. Enclosed is the proposal developed and supported by the three aforementioned Conservation Solar Parties.

In addition to the enclosed traffic light approach, we respectfully submit our comments regarding dual-use siting in the SMART program. The current guidelines for dual-use solar siting in the SMART program require at least 8ft of clearance under the lowest point of a fixed panel array. This added height and infrastructure significantly increases the cost and difficulty of installation, deterring the pursuit of such projects by developers. As such, there are no operational dual-use projects under the SMART program as of yet, and very few even in the approval stage. An 8ft clearance requirement is appropriate for dual-use solar arrays where the producer requires large machinery to access the land, or for example with cattle grazing. Yet, an 8ft panel clearance is an unreasonable requirement for a small animal farmer that can graze sheep or keep pastured poultry safely with significantly lower panel clearance. **AFT suggests a reduction in the panel height requirement in instances where sustaining current or proposed future agricultural activities safely and practically does not require an 8ft clearance.**



Figure 1: Sheep grazing at a 2.4MW installation in Halfmoon, NY. Credit: Ayanna Dunmore, EnterSolar, LLC.

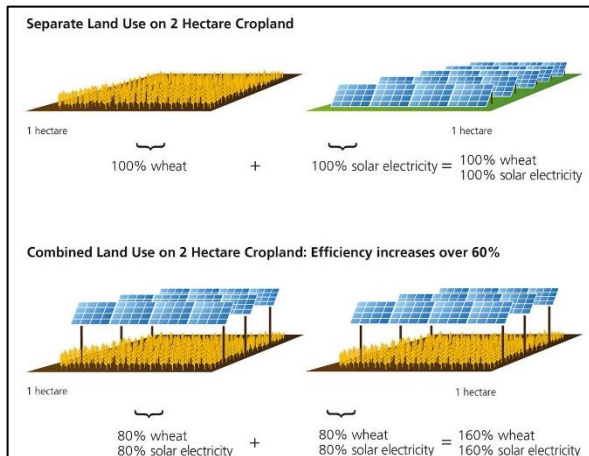


Figure 2: Combined Land Use Efficiency under Dual Use Solar Array. (Credit: Fraunhofer ISE)

Dual-use installations are designed to ensure sustained agricultural productivity, alleviating concerns regarding loss of local active farmland. The current SMART program dual-use capacity restriction of 2MW AC and the proposed 2.5MW DC cap, also diminish the economic feasibility of such projects. Because the very nature of dual-use solar depends upon the continued productivity of the land beneath the array, therefore, **AFT suggests increasing the dual-use size restriction, or removing it altogether.** Farmland that can maintain agricultural production while simultaneously producing solar energy should not be restricted in its potential to do so. Recent research reports that the integration of dual-use solar arrays on farmland contribute to an overall increase in land productivity.

In the instances where important farmland is developed, but not as dual-use, **AFT recommends that the SMART program mandate developers contribute into a Solar Conservation Fund appropriately.** This contribution of either \$5000 or \$10000 an acre generates funds to permanently conserve land through participation in the SMART program (see YELLOW lands in the Traffic Light Approach explanation below). Replacing land-use subtractors with contributions to the Solar Conservation Fund will encourage siting on preferred (GREEN) lands, through immediate and potentially significant costs to the development of solar on important farmland in Massachusetts.

The Massachusetts SMART program has expanded renewable energy development quickly and land development consequences are not fully understood at this stage. The proposed changes pull back significantly on the availability of land for solar development. This halting change is drastic and concerning to AFT regarding the continued smart siting of solar in Massachusetts. AFT has a history of almost 4 decades protecting farmland from development and our mission in this endeavor is no different. We believe that solar can be successfully integrated on farmland without threatening the security of farmland through these suggested changes to the SMART program.

Thank you for your time and review of this important matter. We are happy to provide additional information or further guidance on this as requested.

Respectfully,

N. W. L'etoile

Nathan W. L'Etoile
New England Director

Cc: email only: Secretary Kathleen Theoharides;
Commissioner John Lebeaux;

Encl: Traffic Light Approach to Solar Development and Land Conservation

A Traffic Light Approach to Solar Development and Land Conservation

In order to protect our most critical lands and agriculture and encourage accelerated solar development on more marginal land, the Conservation Solar Parties propose some improvements to the categories currently proposed in the SMART program. The classification system, which is detailed below, is designed to be easily instituted through updates to existing Department regulations and guidelines. Our framework relies largely on geographic information system (GIS) layers that were in part generated using satellite data and sampling and were not designed or prepared for this type of regulatory use. As such, we do propose that solar developers be given the ability to appeal their site designation if they can prove an egregious error in the layers or change in the nature of the land since the layer was last updated.

The classification system is designed to fit with the Department's existing category-based land use classification under SMART. For ease of understanding, we have created Red, Yellow and Green designations:

RED LIGHT (Category 4): A project site in these areas would be ineligible for the next tranche of available capacity under the SMART program (i.e., blocks 9 and beyond).

- Core forests and other areas with high ecological value: Projects sited on land in any of the following layers:
 - All components of BioMap2 Core Habitat, specifically: Forest Core, BioMap2 Wetlands, Vernal Pool Core, Priority Natural Communities, and Aquatic Core.
 - For BioMap3 Species of Conservation Concern, this layer should trigger a full NHESP Priority Habitats of Rare Species review under the Massachusetts Endangered Species Act if not already underway. If the project is found to have an impact on any of Species of Conservation Concern, it would not qualify for SMART.
- Actively farmed prime farmland: Project sites on land that meets both of the following criteria:
 - Prime Agricultural Soils, and
 - Classified as “pasture/hay” or “cultivated crops” in the NLCD 2016 CONUS Land Cover GIS layer.¹
- Project sites within protected open space and other prohibited areas, including:
 - On protected open space, as established under Article XCVII of the Amendments to the Constitution, that do not meet the specific qualifying criteria of Category 1 Land Use;
 - In a wetland Resource Area, as defined in 310 CMR 10.04: Definitions, not including Buffer Zones, as defined in 310 CMR 10.04: Definitions, except as authorized by all necessary regulatory bodies; and
 - On properties included the State Register, as defined in 950 CMR 71.03: Definitions, except as authorized by regulatory bodies.
 - Within the “Openspace by Level of Protection” GIS layer, unless the solar would comply with the allowable use on the property.
- Waiver Process
 - A waiver process will be made available for project sites with Active Long-term Forest Management Plans, compelling rationale for incorrect inclusion within a mapped layer, or compelling case for “Ecological equivalency” to the current project site and associated ecosystem.

¹ Note: Landowners should be given the opportunity to contest the agricultural designation by showing that agricultural activity has not occurred on the property since 2015.

YELLOW LIGHT (Categories 2 and 3): A project site in these areas would be eligible for the SMART program but would be required to pay into the Solar Conservation Fund to help mitigate impacts on higher-valued land areas.

Category 3 (Developers with a project that impacts these lands would be required to make a \$10,000 per acre Solar Conservation Fund contribution):

- Project sites on areas designated “Farmland of Statewide Importance” that have recently been farmed (i.e., located in “pasture/hay” or “cultivated crops” in the NLCD 2016 CONUS Land Cover GIS layer).
- Projects located in areas identified as “Prime Forest 1” other than those identified as RED (above).
- The following components of BioMap2 Critical Natural Landscape (Landscape Blocks, Wetland buffers, Aquatic Buffers, and Coastal Adaptation Areas).

Category 2 (Developers with a project that impacts these lands would be required to make a \$5,000 per acre Solar Conservation Fund contribution):

- Project sites on Prime Agricultural Soils that have not been recently farmed (i.e., not located in “pasture/hay” or “cultivated crops” in the NLCD 2016 CONUS Land Cover GIS layer).
- Projects sited in Prime Forest layers other than “Prime Forest 1”
- Farmland of Unique Importance that has recently been farmed (i.e., located in “pasture/hay” or “cultivated crops” in the NLCD 2016 CONUS Land Cover GIS layer).
- Project sites according to solar zoning ordinance: Projects that would otherwise be Category 3 that are sited within a solar overlay district or on land that complies with established local zoning that explicitly addresses solar or power generation as an as-of-right use, or a use approved through site plan review and special permits.
- Forest projects with minimal tree-clearing: Projects located in Prime Forest 1 that would otherwise be designated Category 3 requiring the clearing of less than 5 acres of forest.

GREEN LIGHT (Category 1 and Location-Adder Projects):

Low-value land (Category 1): Projects sited in the following areas would be eligible for SMART without any additional qualifications.:

- Any areas not identified as “RED” or “YELLOW.”
- Disturbed land, defined as any land on which waste materials have been deposited or from which significant materials have been removed for commercial or industrial purposes.

Adder Projects: Projects in the following areas or with the following characteristics would be eligible for SMART incentives regardless of location and would receive adders to overcome higher costs associated with siting solar in these areas. No conservation fees would be required for these projects.

- Building mounted.
- Carports.
- Brownfields.
- Landfills.
- Agricultural Dual Use Canopies.

Beyond these improved categories, we recommend the following updates:

- De minimis exceptions: For projects that include YELLOW land types of an area no greater than 2 acres or 10% of the total project area (whichever is the lesser area), all YELLOW land types would be treated the same as GREEN. No such exception will be made for RED land types.
- Pro-rated conservation payments: Payments to the Solar Conservation Fund would be pro-rated based on the proportion of each project site that is located in each YELLOW subcategory (e.g., if only a portion of the project is located in the YELLOW category and the rest is GREEN, the developer only pays an amount based on the acreage that is located in the YELLOW area).
- Projects spanning multiple categories: Projects spanning multiple categories would make Solar Conservation Fund payments pro rata based on the number of acres of the project located in each category.
- Project Site Definition– the limits of work necessary to construct an array and associated improvements.
- The use of Chapter 61A and similar provisions is not recommended – as this program functions primarily as a tax abatement program, rather than an indicator of land value or use. Whether a project is located on land formerly classified as Chapter 61, 61A, or 61B should be irrelevant for purposes of the SMART program.