

**Commonwealth of Massachusetts**  
**Executive Office of Energy and Environmental Affairs**  
**DEPARTMENT OF ENERGY RESOURCES**  
**DEPARTMENT OF AGRICULTURAL RESOURCES**

**SOLAR MASSACHUSETTS RENEWABLE TARGET PROGRAM**  
**(225 CMR 20.00)**

**GUIDELINE**

**Guideline Regarding the Definition of Agricultural Solar Tariff Generation Units**

**Effective Date: April 26, 2018**

**PURPOSE**

This document provides guidance regarding the manner in which a solar photovoltaic facility may qualify as an Agricultural Solar Tariff Generation Unit (“ASTGU”) under the Department of Energy Resource’s (Department) Solar Massachusetts Renewable Target (SMART) Program.

**BACKGROUND**

On April 11, 2016, Governor Baker signed Chapter 75 of the Acts of 2016 into law. The Act directs the Department to create a long-term sustainable solar incentive program to promote cost-effective solar in the Commonwealth. The Act further directed the Department to “...differentiate incentive levels to support diverse installation types and sizes that provide unique benefits...” In developing the SMART Program, the Department established six types of location based Compensation Rate Adders, one of which is provided for ASTGUs.

Given the small number of solar facilities that meet the objectives and criteria outlined in the definition of ASTGU in the Commonwealth today, but the desire to see the installation of such systems that can provide the dual-use benefits, the Department, in consultation with the Massachusetts Department of Agricultural Resources (MDAR), has developed this Guideline to clarify additional eligibility criteria not prescribed in regulation.

Adopting these provisions via Guideline, as was requested by many commenters in the initial stakeholder process that led to the promulgation of the regulation, will provide the necessary flexibility for the Department, in consultation with MDAR, to make modifications to key eligibility criteria as lessons are learned in constructing and operating ASTGUs.

Any modifications to this Guideline will only be made following an opportunity for public comment that shall remain open for at least two weeks. All capitalized terms in this Guideline are defined in 225 CMR 20.02.

**225 CMR 20.00 Regulatory Provisions Specific to ASTGUs**

Under the SMART program, Solar Tariff Generation Units are eligible to qualify as an ASTGU, which is defined under 225 CMR 20.02 as follows:

Agricultural Solar Tariff Generation Unit. A Solar Tariff Generation Unit located on Land in Agricultural Use or Prime Agricultural Farmland that allows the continued use of the land for agriculture.

Additionally, 225 CMR 20.06(1)(d) contains special provisions pertaining specifically to the eligibility of ASTGUs:

(d) Special Provisions for Agricultural Solar Tariff Generation Units. In order to qualify as an Agricultural Solar Tariff Generation Unit, a Solar Tariff Generation Unit must submit documentation itemized in 225 CMR 20.06(1)(d) below. All final determinations regarding the eligibility of such facilities will be made by the Department, in consultation with MDAR. A Solar Tariff Generation Unit must also submit satisfactory documentation to the Department as detailed in the Department's *Guideline Regarding the Definition of Agricultural Solar Tariff Generation Units*.

1. the Solar Tariff Generation Unit will not interfere with the continued use of the land beneath the canopy for agricultural purposes;
2. the Solar Tariff Generation Unit is designed to optimize a balance between the generation of electricity and the agricultural productive capacity of the soils beneath;
3. the Solar Tariff Generation Unit is a raised structure allowing for continuous growth of crops underneath the solar photovoltaic modules, with height enough for labor and/or machinery as it relates to tilling, cultivating, soil amendments, harvesting, *etc.* and grazing animals;
4. crop(s) to be grown to be provided by the farmer or farm agronomist in conjunction with UMass Amherst agricultural extension services, including compatibility with the design of the agricultural solar system for such factors as crop selection, sunlight percentage, *etc.*;
5. annual reporting to the Department and MDAR of the productivity of the crop(s) and herd, including pounds harvested and/or grazed, herd size growth, success of the crop, potential changes, *etc.*, shall be provided after project implementation and throughout the SMART incentive period; and
6. other system design information, which shall include, but not be limited to:
  - a. dual-use type, *e.g.*, ground mount racking, pole towers, tracking, *etc.*;
  - b. total gross acres of open farmland to be integrated with the project;
  - c. type of crop(s) to be grown, including grazing crops;
  - d. pounds of crop(s) projected to be grown and harvested, or grazed;
  - e. animals to be grazed with herd size(s); and
  - f. design drawing including mounting system type (fixed, tracking), panel tilt, panel row spacing, individual panel spacing, for pole towers tower spacing and mounting height, *etc.*

#### **Additional Provisions for ASTGUs**

Provided a Solar Tariff Generation Unit meets all program eligibility criteria in 225 CMR 20.00, in particular the provisions relating to ASTGUs prescribed in 225 CMR 20.02 and 20.06(1)(d), a Solar Tariff Generation Units must also satisfy the following provisions to qualify as an ASTGU. Note that these provisions take into account the entire useful life of the solar photovoltaic array with consideration for the variety of possible agricultural activities and crops that could take place on farm land over that timeframe. In other words, they do not simply consider present use.

The parameters defined in Section A below will allow for the variety and flexibility of potential farming operations at any given farm throughout the life of the solar photovoltaic array. These parameters are stated as minimums, giving farms the flexibility to determine and finalize farming operations. Applicants complying with the additional provisions in Section A below will be reviewed in an expedited process.

DOER intends to develop a standard design tool (SMART Tool) to be mandated for use by all Agricultural Solar Generation Tariff Unit applicants, and to be used by developers and farmers alike to demonstrate meeting the SMART regulations and Guidelines. The SMART Tool will be designed to:

- a) assist in the design of an Agricultural Solar Generation Tariff Unit by understanding the shading impact on all the land beneath, behind, and throughout the farmed area, of various dual-use array system designs and layouts;
- b) provide a farm plan template to be used by the landowner to propose their active agricultural production plan consistent with the array configuration and shading profile and compliant with the Guideline requirements; and
- c) provide an annual reporting form template compliant with the Guideline requirements.

#### **A. System Design Parameters:**

##### 1. Panel Height Requirements

- a. For fixed tilt ASTGUs, the minimum height of the lowest panel point shall be eight (8) feet above ground;
- b. For tracking ASTGUs, the minimum height of the panel at its horizontal position shall be 10 feet above ground;

##### 2. Maximum Direct Sunlight Reduction Requirements

All ASTGUs must demonstrate that the maximum sunlight reduction from the panel shading on every square foot of land directly beneath, behind and in the areas adjacent to and within the ASTGU's design shall not be more than 50% of baseline field conditions;

##### 3. Growing Season/Time of Day Considerations

The typical growing season shall be considered to be March through October, with sunlight hour conditions with maximum 50% sunlight reduction to be between 10AM and 5PM for March and October, and from 9AM to 6PM from April through September;

##### 4. Maximum Size

The maximum AC rated capacity of an ASTGU shall be two MW in the first two Capacity Blocks of each Distribution Company's service territory. The Department, in consultation with MDAR, will make an evaluation as to whether or not this provision shall be adjusted in subsequent Capacity Blocks.

#### **B. Waiver from Additional Provisions**

DOER recognizes the variety and, in some cases, the uniqueness of farming operations where some of the Additional Provisions for an ASTGU may not be required to achieve the objectives of the ASTGU. To address this issue, a landowner may request that DOER issue a waiver from any of the Additional Provisions for an ASTGU that is not contrary to the law or the intent of the regulations. All waiver requests should be submitted to [DOER.SMART@state.ma.us](mailto:DOER.SMART@state.ma.us).

In order to request a waiver, the applicant must provide the Department with the following:

1. Plan Development

Develop a plan that:

- a. describes how the applicant will integrate the ASTGU into their farming operation;
- b. demonstrates that a waiver does not result in a diminishment in the agricultural production capacity of the land; and
- c. demonstrates that the primary use of the land is for agricultural or horticultural production, as defined under M.G.L. Chapter 61A.

2. Justification and Substantiation

An applicant must provide justification as to why an ASTGU design is necessary for the proposed agricultural operations on the relevant parcel of land.

3. Additional Documentation

An applicant must provide documentation for each specific aspect of the design parameters from Section A of this Guideline for which the ASTGU requires a waiver as follows:

- a. Panel Height Requirements: Provide documentation demonstrating how the proposed design will allow for the variety and flexibility of a variety of potential farming operations at the farm throughout the term of the SMART Tariff.
- b. Maximum Direct Sunlight Reduction Requirements:
  - i. Demonstrate how the proposed dual use design will provide equal or greater total agricultural yields than if both the agricultural crop and the solar array were grown and installed separately, utilizing the same amount of total land area for the comparison;
  - ii. Demonstrate how each square foot of land will be used for agriculture production;
  - iii. Demonstrate how the design will be able to accommodate a variety of potential agricultural products throughout the twenty year term of the SMART Tariff.
- c. Growing Season/Time of Day Considerations: Provide documentation on how the time of season and day data in Section A is not relevant to the farming practice and operation, currently, and for the term of the SMART Tariff.
- d. Other: For all other requirements for which a waiver is being sought, please describe the waiver(s) requested, why the proposed alternatives require a waiver, and how these alternatives will meet the intention of the ASTGU regulations.