

Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs
DEPARTMENT OF ENERGY RESOURCES
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DEPARTMENT OF AGRICULTURAL RESOURCES
DEPARTMENT OF FISH AND GAME
SOLAR MASSACHUSETTS RENEWABLE TARGET PROGRAM
(225 CMR 20.00)

GUIDELINE

Guideline Regarding the Definition of Floating Solar Tariff Generation Units

Effective Date: TBD

1) Purpose and Background

The Department of Energy Resources (Department), in consultation with the Massachusetts Department of Agricultural Resources (MDAR), the Massachusetts Department of Environmental Protection (MassDEP), and the Massachusetts Department of Fish and Game (MassDFG) has developed this document to provide additional guidance regarding the manner in which a Solar Tariff Generation Unit (STGU) may qualify as a Floating Solar Tariff Generation Unit (FSTGU) under the Department's Solar Massachusetts Renewable Target (SMART) Program. The adoption of this Guideline will provide the necessary flexibility for the Department to make modifications to key eligibility criteria as lessons are learned in constructing and operating an FSTGU.

All Applicants will be required to submit a Pre-Determination request for eligibility to qualify as an FSTGU under the SMART Program. Applicants should submit the final Pre-Determination Application, to doer.smart@mass.gov. The Department, in consultation with MDAR, MassDEP, and MassDFG, will make all final determinations on eligibility.

All capitalized terms in this Guideline are defined in 225 CMR 20.02.

2) 225 CMR 20.00 Regulatory Provisions Specific to FSTGUs

Under the SMART program, STGUs are eligible to qualify as an FSTGU, which is defined under 225 CMR 20.02 as follows:

Floating Solar Tariff Generation Unit. A Solar Tariff Generation Unit located on a body of water that is currently, or was formerly, used for water treatment, agricultural or industrial activities, and that allows for the continued use of the water body for its intended purpose.

Additionally, 225 CMR 20.06(1)(i) contains special provisions pertaining to the eligibility of FSTGUs:

(i) Special Provisions for Floating Solar Tariff Generation Units. In order to qualify as a Floating Solar Tariff Generation Unit, a Solar Tariff Generation Unit must submit documentation itemized in 225 CMR 20.06(1)(i) below. All final determinations regarding the eligibility of such facilities will be made by the Department, in consultation with Massachusetts Department of Environmental Protection (MassDEP), Massachusetts Agriculture Resources (MDAR), and the Massachusetts Department of Fish and Game (MassDFG), or other state agencies as necessary.

1. the Solar Tariff Generation Unit will not interfere with the continued use of the water body for its designed purposes;
2. the racking system shall be made of materials that have been tested for water quality impact;
3. the Solar Tariff Generation Unit will not be permitted in wetland resource areas and natural waterbodies such as salt ponds, or freshwater lakes and great ponds, as defined in M.G.L. c. 91;
4. The ratio of the total surface area covered by the Floating Solar Tariff Generating Unit divided by the total surface area of the waterbody under standard conditions shall not exceed 50%;
5. the Solar Tariff Generation Unit shall be designed to minimize potential interaction with native species;
6. the Solar Tariff Generation Unit is a floating structure allowing for continued use and maintenance of the waterbody while generating electricity; and
7. other system design information, which shall include, but not be limited to:
 - a. total gross acres of open water to be integrated with the project;
 - b. designated function of water body;
 - c. anchoring system design and materials; and
 - d. design drawing including mounting system type, panel tilt, panel row spacing, individual panel spacing, etc.

3) Additional Provisions for FSTGUs

Provided an FSTGU meets all program eligibility criteria in 225 CMR 20.00, an FSTGU must also satisfy the following provisions to qualify. Note that these provisions take into

account the entire useful life of the solar photovoltaic array with consideration for the variety of possible floating solar location parameters. In other words, they do not simply consider present use.

a) Environmental Impact Assessment

At the time of submission of a Pre-Determination request, Applicants shall include a proposal for the design of an Environmental Impact Assessment (EIA) for the host site that assesses the entire footprint of the FSTGU, the host waterbody, and upstream or downstream waters, if applicable. **MassDEP shall review and approve the design of the EIA before it is conducted.** After the EIA is completed, MassDEP shall review the results and provide any necessary feedback to the Applicant. The EIA may include, but is not limited to, the following components:

1. Baseline water chemistry analysis
2. Stormwater impact analysis
3. Habitat assessment
 - i. Applicants shall provide documentation that demonstrates impacts on site-specific native aquatic, bird, and plant species, including seasonal migration species, will be minimized.
4. Wetlands delineation and impact analysis
5. An alternatives analysis for installation locations, methods, and project type and scale, including upland alternative(s)
6. Panel tilt/spacing
 - i. Applicants shall provide documentation that demonstrates spacing and tilt for the FSTGU(s) design and location will minimize environmental impacts. Supporting documentation for evaluation may include, but not be limited to: wind load, water movement patterns, and snow load.
7. Materials testing for the equipment that will be used to construct and anchor the array
 - i. Depending on the location of the FSTGU, the relevant tests may include, but not be limited to:
 - Wind-tunnel test
 - Tensile strength test
 - Bending fatigue test
 - Material composition test
 - Temperature- and UV-accelerated aging test
 - Polymeric material properties
 - Fire resistance test
 - Drinking-water compatibility test
 - Corrosion-resistivity test
 - Buoyancy/puncture test

In addition to the submission of an EIA proposal, Applicants shall provide confirmation if the site is located within mapped Priority and/or Estimated Habitat, as defined under 321 CMR 10.00 and 310 CMR 10.00. If the site is located within Priority or Estimated Habitat, the Applicant shall complete one of the following:

1. provide documentation of a Massachusetts Endangered Species Act or Wetlands Protection Act permit(s); OR
2. provide documentation of pre-filing consultations with MassWildlife indicating whether the project will require a Conservation and Management Permit.

4) Project Segmentation

Pursuant to 225 CMR 20.05(5)(f): no more than one Building Mounted STGU may be installed on a single building and no more than one ground mounted STGU or FSTGU may be installed on a single or contiguous parcel(s).

An FSTGU project will be treated as a ground mounted STGU and will count towards a single parcel of land for project segmentation requirements. The aggregate maximum capacity of Solar Tariff Generation Units located on a single parcel of land shall be five MW and shall not be inclusive of any solar photovoltaic generating capacity that is not qualified under 225 CMR 20.00.

5) Eligible Waterbodies

a) Formerly Used for Water Treatment, Agricultural or Industrial Activities

Pursuant to 225 CMR 20.02, an FSTGU must be located on “a body of water that is currently, or was *formerly*, used for water treatment, agricultural or industrial activities, and that allows for the continued use of the water body for its intended purpose.” (emphasis added).

A water body will be considered “formerly” used for water treatment, agricultural or industrial activities if the Applicant can demonstrate that it was in use for one of those activities within five years of the date of the predetermination application.

b) Wetland Resource Areas and Natural Waterbodies

Pursuant to 225 CMR 20.06(1)(i)(3), FSTGUs “will not be permitted in wetland resource areas and natural waterbodies such as salt ponds, or freshwater lakes and great ponds, as defined in M.G.L. c. 91.”

An FSTGU will not be permitted in an area currently serving as a protected wetland resource area under 310 CMR 10.00, even if it was “formerly” used for water treatment, agricultural or industrial activities, pursuant to 225 CMR 20.02. Please note that pursuant to 310 CMR 10.04’s definition of “Pond (Inland),” the following human-made bodies of

water are not considered ponds and are therefore not considered protected wetland resource areas: “(a) basins or lagoons which are part of wastewater treatment plants; (b) swimming pools or other impervious human-made basins; and (c) individual gravel pits or quarries excavated from upland areas unless inactive for five or more consecutive years.” Such areas may be eligible for an FSTGU provided they meet all other eligibility requirements of 225 CMR 20.00 and applicable Guidelines.

c) Other Applicable Requirements for Eligible Waterbodies

In addition to 225 CMR 20.00 and applicable Guidelines, an eligible waterbody is also subject to any applicable MassDEP programs or regulations that concern the use of water bodies. For instance, floating solar arrays may be prohibited on certain bodies of water if they qualify as protected waterways under G.L. c. 91 and 310 CMR 9.00 or drinking water resources under 310 CMR 22.00.

FSTGU applicants should consult with MassDEP’s Wetlands, Waterways, and Drinking Water programs concerning waterbody eligibility. Eligibility criteria have been outlined in the following MassDEP Bureau of Water Resources policies¹:

- Wetlands Program Policy # [in draft]: Solar Photovoltaic Systems;
- Waterways Program Policy # [in draft]: Solar Photovoltaic Systems; and
- Drinking Water Program Policy # [in draft]: Floating Solar Photovoltaic Systems;

6) Annual Report

Each year, an Annual Report must be provided to the Department, MDAR, MassDEP, and MassDFG that demonstrates installation of the FSTGU continues to allow for the use of the waterbody for the waterbody’s existing purpose.

The Annual Report shall include, but not be limited to, documentation of the following elements:

- Annual analysis of the water chemistry
- Annual inspection of the floating structure and anchoring system
- Annual solar production
- Annual inspection of impacts to biota and ecosystem of the waterbody
- Annual report of the volume of agricultural crops that were produced (if applicable)

The annual report is due to the Department, MDAR, MassDEP, and MassDFG by December 31st of each calendar year for the life of the FSTGU. The annual report should be emailed to DOER.SMART@mass.gov. All Annual Reports will be published on the DOER website.

i. Failure to Report

¹ MassDEP titles and substance may change under new policy updates.

If the FSTGU fails to submit an annual report, the Department may declare the project ineligible for the FSTGU adder for one year. If the annual report is not completed for a second year, then the Department may permanently disqualify the FSTGU from continuing to receive the FSTGU adder for the remainder of the STGU's tariff term.