

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

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

GUIDELINE

Guideline Regarding Land Use, Siting, and Project Segmentation

Effective Date: April 26, 2018

Revised: July 14, 2020

Revised: October 8, 2020

Revised: September 22, 2021

1) Background and Purpose

The Solar Massachusetts Renewable Target (SMART) Program incorporates land use and siting criteria into the design of the program. When siting a Solar Tariff Generation Unit (STGU), multiple aspects of the site must be taken into account, including, but not limited to, zoning; existing use and development; site characteristics such as natural resources, endangered species, and topography; STGU design and size; and STGUs sited on the same or contiguous parcels.

Throughout this document the term Publication Date is used to reference when certain provisions of the regulations go into effect. 225 CMR 20.02 defines Publication Date as “The date established by the Department promulgation of revisions to the SMART Program pursuant to 225 CMR 20.07(5) specifically, April 15, 2020.”

2) Transition Project Exception

Using the Publication Date of April 15, 2020, the Regulations provide a limited project exception pursuant to 225 CMR 20.05(5)(e)1.c. to assist with the transition of the SMART Land Use and Siting Criteria.

- a) STGUs that were issued a preliminary Statement of Qualification prior to April 15, 2020, may follow the eligibility criteria outlined in 225 CMR 20.05(5)(e)2 through 6. All applications submitted on or after April 15, 2020, must meet all the Land Use and Siting Criteria, per 225 CMR 20.05(5)(e).
- b) To assist with the transition of the SMART Land Use and Siting Criteria, the regulations provide a limited project exception pursuant to 225 CMR 20.05(5)(e)1.c. There are two required criteria for the exception to apply:

Criteria #1: An applicant must demonstrate a sufficient interest in real estate or other contractual right to construct the STGU prior to the Publication Date.

Criteria #2: For those projects that meet Criteria #1, the Solar Tariff Generation Unit must also demonstrate that it received an executed Interconnection Service Agreement within six months of the Publication Date or that it had submitted a completed Interconnection Service Agreement application at least 135 business days prior to the Publication Date. The Department has determined that the application deadline to satisfy this criteria shall be September 27, 2019.

If a STGU can meet all criteria stated above in Section 2(b), the requirements under 225 CMR 20.05(5)(e)7, 20.07(4)(g)2., and 20.07(4)(g)4, outlined below, may not apply:

- i. Public Entity STGUs not located on Land in Agricultural Use or Important Agricultural Farmland are designated as Category 1 Non-Agricultural;
- ii. STGUs with a capacity greater than 500 kW located in a solar overlay district or an area zoned for solar energy or power generation are designated as Category 2;
- iii. STGUs qualifying for capacity in the initial 1,600 MW of the program cannot be sited on land that is Priority Habitat and/or Core Habitat;
- iv. STGUs qualifying for capacity in the initial 1,600 MW of the program cannot be sited on a parcel of land where at least 50 percent of the parcel's area is designated as Priority Habitat and/or Core Habitat;
- v. STGUs qualifying for capacity in the additional 1,600 MW of the program cannot be sited on land that is Priority Habitat, Core Habitat, and/or Critical Natural Landscape;
- vi. STGUs qualifying for capacity in the additional 1,600 MW of the program cannot be sited on a parcel of land where at least 50 percent of the parcel's area is designated as Priority Habitat, Core Habitat, and/or Critical Natural Landscape; and
- vii. STGUs classified as Category 2 Land Use and Category 3 Land Use are subject to "Post Publication Date" Greenfield Subcontractors.

The project exception pursuant to 225 CMR 20.05(5)(e)1.c. does not allow the STGU to receive an exception from any other land use and siting criteria provision in 225 CMR 20.05(5)(e)2 through 6, which includes 225 CMR 20.05(5)(e)5 ineligible land use.

3) Land Use Categories

In SMART, STGUs are placed into one of three different land use categories pursuant to 225 CMR 20.05(5)(e) or they are found to be ineligible for qualification. The categories are:

a) Category 1 Land Use

Category 1 Land Use is divided into two types: (i) Agricultural or (ii) Non-Agricultural.

i. Category 1 Agricultural Land Use may apply to STGUs sited on Land in Agriculture Use or Important Agricultural Farmland. Land in Agricultural Use includes land that is currently, or has in the past five years, enrolled in the Chapter 61A tax benefit program. On these types of land, the following types of solar facilities are eligible:

- (1) Agricultural STGUs (for more information, please refer to the Department's *Guideline Regarding the Definition of Agricultural Solar Tariff Generation Units*);
- (2) Building Mounted STGUs;
- (3) Floating STGUs;
- (4) Canopy STGUs; or
- (5) STGUs sized to meet no greater than 200 percent of the annual operation load of an agricultural facility.

ii. Category 1 Non-Agricultural Land Use may apply to STGUs **not** sited on Land in Agricultural Use or Important Agricultural Land. On these types of land, the following types of solar facilities are eligible:

- (1) Ground-mounted STGU ≤ 500 kW AC;
- (2) Building Mounted STGU;
- (3) STGU sited on a Brownfield (for more information, please refer to the Department's *Brownfields Guideline*);
- (4) STGU sites on Eligible Landfills;
- (5) Floating STGU;
- (6) Canopy STGU;
- (7) Ground-mounted STGU, sized greater than 500 kW AC and less than 5,000kW that are sited on land that has been previously developed; or
- (8) Public Entity STGU.

Note: To be classified as Category 1 Non-Agricultural Land Use, the STGU's footprint may not be installed on Land in Agricultural Use or Important Agricultural Farmland. More information on how to determine if a STGU is sited on Important Agricultural Farmland is provided in Section 8(a) of this Guideline.

b) Category 2 Land Use

Category 2 Land Use applies to STGUs greater than 500 kW AC and less than or equal to 5,000 kW AC, that are sited on land that:

- (1) has not been previously developed and is zoned for commercial and industrial use; or

- (2) Ground-mounted STGUs sited within a solar overlay district or on land that complies with established local zoning that explicitly addresses solar or power generation.¹

c) Category 3 Land Use

Category 3 Land Use applies to projects that do not meet the criteria for Category 1 or 2.

4) Applying the Greenfield Subtractor and Pollinator Adder

a) Pollinator Adder

Pursuant to 225 CMR 20.07(4)(e), a STGU may receive a Pollinator Adder if it maintains at least silver certification from the UMass Clean Energy Extension's Pollinator-Friendly Certification Program, or other equivalent certification as determined by the Department. To verify whether the STGU meets the requirements of UMass's silver certification, please review the most up-to-date certification criteria at <https://ag.umass.edu/clean-energy/current-initiatives/pollinator-friendly-solar-pv-for-massachusetts>.

The Pollinator Adder is \$0.0025/kWh and, if qualified, shall be added to a STGU's Base Compensation Rate. Unlike the Greenfield Subtractor, which is calculated on a per kWh per impacted acre basis, the Pollinator Adder is calculated only on a per kWh basis.

Example: A 2 MW standalone STGU that is designated as Category 1 Non-Agricultural, is allocated to Capacity Block 9 of in National Grid service territory, and qualifies for a Pollinator Adder would receive a total compensation rate calculated as follows:

$$\begin{aligned} \text{Total compensation rate} &= (\$0.11227/\text{kWh} + \$0.0025/\text{kWh}) \\ &= \$0.11477/\text{kWh} \end{aligned}$$

b) Greenfield Subtractor

Pursuant to 225 CMR 20.07(4)(g), a STGU that falls under Category 2 or Category 3 has an associated Greenfield Subtractor applied to the STGU's Base Compensation Rate.

¹ Historically, projects that submitted a complete Statement of Qualification Application prior to the Publication Date were categorized as Category 1 Land Use Non-Agricultural. Pursuant to 225 CMR 20.05(5)(e)1.c., STGUs may be granted an exception to this provision. Further information is provided in Section 2 of this guideline.

Greenfield Subtractors before the Publication Date, or after the Publication Date if the Transition Project Exception applies:

Category 1 Agricultural and Non-Agricultural:	No Greenfield Subtractor
Category 2 Land Use:	\$0.0005/kWh per acre impacted
Category 3 Land Use:	\$0.001/kWh per acre impacted

Greenfield Subtractors after the Publication Date:

Category 1 Agricultural and Non-Agricultural:	No Greenfield Subtractor
Category 2 Land Use:	\$0.00125/kWh per acre impacted
Category 3 Land Use:	\$0.0025/kWh per acre impacted

Pursuant to 225 CMR 20.07(4)(g), the value of the total Greenfield Subtractor applied to a STGU is measured as the acreage of land that the STGU occupies, which is calculated by measuring the square footage of the solar photovoltaic modules.

Example: With the understanding that 1 acre = 43,560 ft², if a 5 MW DC STGU in Block 9 of National Grid service territory has 12,821 (390 W) solar panels, with each panel measuring 5 feet x 4 feet, then the impact of the project will be calculated as follows for Category 2 and Category 3:

$$12,821 \times 20 \text{ ft}^2 = 256,410 \text{ ft}^2$$
$$256,410 \text{ ft}^2 / 43,560 \text{ ft}^2 \text{ per acre} = 5.886 \text{ acres impacted}$$

- a) If the STGU is classified as Category 2 Land Use, the subtractor would be:

$$\begin{aligned} & \$0.00125/\text{kWh per acre of land} \\ & \$0.00125/\text{kWh per acre of land} \times 5.886 \text{ acres} = \$0.00736/\text{kWh reduction to total} \\ & \text{compensation rate} \end{aligned}$$

The total compensation rate with a Pollinator Adder and Greenfield Subtractor would be:

$$\begin{aligned} \text{Total compensation rate} &= (\$0.11227/\text{kWh} + \$0.0025/\text{kWh} - \$0.00736/\text{kWh}) \\ &= \$0.10741/\text{kWh} \end{aligned}$$

- b) If the facility is classified as Category 3 Land Use, the subtractor would be:

$$\text{\$0.0025/kWh per acre of land}$$

\$0.0025/kWh per acre of land x 5.886 acres = \$0.01472/kWh reduction to total compensation rate

The total compensation rate with a Pollinator Adder and Greenfield Subtractor would be:

$$\begin{aligned} \text{Total compensation rate} &= (\$0.11227/\text{kWh} + \$0.0025/\text{kWh} - \$0.01472/\text{kWh}) \\ &= \$0.10005/\text{kWh} \end{aligned}$$

5) Ineligible Land Use

Solar photovoltaic Generation Units sited on the following types of parcels are ineligible to receive a Statement of Qualification under the SMART program:

- (1) Permanently protected open space, categorized under Article 97 of the Massachusetts Constitution, unless the STGU qualifies under Category 1 Land Use. In general, this is inclusive of land held by a state, regional, or local conservation, park, water supply, forest, or agricultural agency is protected by Article 97 (e.g. Conservation Commission, Water District, DPW Water Supply Division, etc.);
- (2) A Wetland Resource Area, unless the STGU is authorized by the regulatory body, such as an Order of Conditions issued by the local Conservation Commission; or
- (3) Properties in the *State Register*, unless the STGU is authorized by the regulatory body, such as a local Historic Commission.

After the Publication Date, solar photovoltaic Generation Units sited on parcels listed above in items (1) through (3), in addition to the following, shall be ineligible for the SMART program:

- (4) Land designated as Priority Habitat and/or Core Habitat unless the STGU meets the criteria of Category 1 Land Use; or
- (5) a parcel with at least 50 percent of its area designated as Priority Habitat and/or Core Habitat unless the STGU meets the criteria of Category 1 Land Use.

After the Publication Date, Solar photovoltaic Generation Units seeking a Statement of Qualification for the 1600 MW of additional capacity available, sited on parcels listed above in items (1) through (5), in addition to the following, shall be ineligible for the SMART program:

- (6) Land designated as Critical Natural Landscape, unless the STGU meets the criteria of Category 1 Land Use; or
- (7) a parcel with at least 50 percent of its area designated as Critical Natural Landscape, unless the STGU meets the criteria of Category 1 Land Use.

These land designations have been identified by the Massachusetts Division of Fisheries and Wildlife BioMap2 framework within the Natural Heritage and Endangered Species Program. BioMap2 is a web-based mapping resource that can be used to see land that is identified as Priority Habitat, Core Habitat, or Critical Natural Landscape. The BioMap2 framework may be updated as data layers are revised.

Priority Habitat is defined in 321 CMR 10.02 *Definitions*. Core Habitat means key areas that are critical for the long-term persistence of rare species and other species of conservation concern, as well as a wide diversity of natural communities and intact ecosystems across the Commonwealth. Critical Natural Landscape includes areas of large natural landscape blocks and buffering uplands around coastal, wetland and aquatic Core Habitats to help ensure their long-term integrity.

To assist the public, an online mapping tool is available at tinyurl.com/SMARTsiteEvaluation. Using this tool, the public can zoom in to site level data to assess the applicability of this regulatory provision to a particular parcel. Upon submitting a Statement of Qualification Application, applicants must demonstrate to the Solar Program Administrator that the proposed STGU is not sited on land designated as Priority Habitat, Core Habitat, and/or Critical Natural Landscape.

6) Project Segmentation

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

If a generation unit previously qualified as a Solar Carve-out Renewable Generation Unit or Solar Carve-out II Renewable Generation Unit subject to 225 CMR 14.00 is sited on the property, that capacity and qualification shall not impact the qualification of any STGU qualified on the same parcel or a contiguous parcel.

Eligible Exceptions to the Project Segmentation Requirements

Under certain limited circumstances, and in accordance with 225 CMR 20.05(5)(g), the Department may permit an exception to its project segmentation rules. In cases where an exception is requested by a STGU, the applicant must identify the applicable exception, and demonstrate to the Department's satisfaction all factors identified within the identified exception(s). In all instances, the total capacity of a STGU qualified on a single parcel, or contiguous parcels, must not exceed 5,000 kW AC.

a) One Building Mounted STGU on a single building. Possible exceptions:

- i. a Building Mounted STGU or a STGU $\leq 25\text{kW AC}$ may be located on the same building as another STGU, provided each is separately metered from the first, and are all STGUs are connected to the meter(s) of a separate end-use customer.
 - ii. a Building Mounted STGU or a STGU $\leq 25\text{kW AC}$ may be located on the same building as another STGU, provided that it submits a Statement of Qualification Application at least 12 months after the Commercial Operation Date of the original STGU;
- b) One ground-mounted STGU on a single parcel or contiguous parcels. Possible exceptions:
- i. a STGU is $\leq 25\text{ kW AC}$ and is located on a contiguous parcel, provided the contiguous parcel of land was not the result of a subdivision performed for the purpose of qualifying for SMART;
 - ii. a single Canopy STGU and/or a single Building Mounted STGU, that is located on the same parcel or contiguous parcels, and is separately metered from the original STGU;
 - iii. a STGU located on the same or contiguous parcel submits a Statement of Qualification Application at least 12 months after the Commercial Operation Date of the original STGU;
 - iv. a STGU can demonstrate to the Department's satisfaction that the Owner is unaffiliated from the Owner of the original STGU located on the same or contiguous parcel;
 - v. a STGU is physically located across multiple parcels of land, provided it is behind a single interconnection point and production meter, and its capacity does not exceed 5,000 kW AC;
 - vi. a STGU can demonstrate to the Department's satisfaction the documentation required to submit a Statement of Qualification Application, pursuant to 225 CMR 20.06(1)(c) was obtained prior to June 5, 2017; or
 - vii. a STGU located on a parcel(s) owned or controlled by the Massachusetts Department of Transportation and can demonstrate to the Department's satisfaction that the STGU should be granted an exception to the provisions of 225 CMR 20.05(5)(f).

A STGU may also apply directly to the Department for a good cause exception to the project segmentation rules set forth in 225 CMR 20.05(5)(f), which the Department will review on a case-by-case basis. Any request for an exception for good cause should be submitted to DOER.SMART@mass.gov.

If the Department determines that STGU qualifies for an exception to the project segmentation rules set forth in 225 CMR 20.05(5)(f), resulting in more than one STGU on a single parcel, each STGU will receive a separate Statement of Qualification and will have its Base Compensation Rate set independently of the other STGUs on the same parcel. The Distribution Companies may not always be able to provide multiple generation production

meters for each STGU on a single parcel due to the limitations of their billing systems. These projects shall be reviewed on a case-by-case basis and determined in accordance with the Department's *Guideline on Establishing SMART Compensation Rates*.

7) Performance Standards

All ground-mounted STGUs greater than 500 kW AC installed on any pervious open space must provide certification from a professional engineer that the construction of the STGU meets the Performance Standards set forth 225 CMR 20.05(5)(e)6. For the purpose of this requirement, Eligible Landfills and Brownfields shall not be considered pervious open space.

8) Frequently Asked Questions

The following questions and answers are meant to provide more context to terms that are not clearly defined in 225 CMR 20.02: *Definitions*.

a) How can I determine if my STGU is located on Important Agricultural Farmland?

The definition of Important Agricultural Farmland means those soils found to be Important Farmlands pursuant to 7 C.F.R. § 657.5, including prime farmlands, unique farmlands, and additional land of statewide importance.

The Department utilizes MassGIS Oliver to determine whether any of the footprint of the STGU is located on Important Agricultural Farmland. MassGIS Oliver (http://maps.massgis.state.ma.us/map_ol/oliver.php) can be used to display the data and identify which land is categorized as Prime Farmland, Farmland of Unique Importance, and Farmland of Statewide Importance.

In MassGIS Oliver, go to the column labeled "Available Data Layers" and select "Physical Resources." From the dropdown options, select "Soils" and click on "Prime Farmland Soils." Once you zoom into a parcel, the legend will populate with the different Prime Farmland Soils.

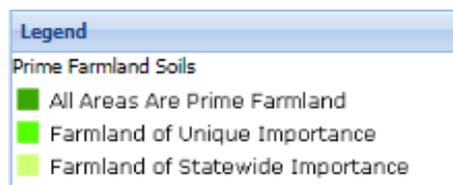


Figure 1: MassGIS Oliver - Legend for Prime Farmland Soils Data Layer

Alternatively, an applicant may request a determination from the Department whether a site is in Important Agricultural Farmland and is available for agricultural use, pursuant to 7 C.F.R. § 657.5(a). The applicant must demonstrate to the Department's satisfaction that the site contains: (1) impervious surfaces; (2) is located in an urban area; or (3) is

otherwise unable to be used for agriculture. The Department may consult with state and federal agencies including the Natural Resources Conservation Service (NRCS) and Massachusetts Department of Agricultural Resources (MDAR). The request should include a site plan depicting where the STGU’s footprint overlaps with the Important Agricultural Farmland, the impervious surface, or urban area on the parcel.

b) How can I determine if my project is sited on Priority Habitat, Core Habitat, Critical Natural Landscape, or Article 97 land? How can I determine if my project is sited on a parcel where 50 percent of the area of the parcel is considered Priority Habitat, Core Habitat, or Critical Natural Landscape?

A web-based mapping tool has been created that applicants must use to verify whether the land on which their project is sited is identified as Priority Habitat, Core Habitat, Critical Natural Landscape, or Article 97 land. This interactive map allows applicants to zoom in and out throughout the Commonwealth of Massachusetts to identify whether specific parcels are subject to the prohibition. Projects located directly on these types of designated land, and projects located on a parcel where these types of designated land make up at least 50 percent of the area of the parcel, are not allowed to participate in the SMART program.

To access the web-based mapping tool, please visit: tinyurl.com/SMARTsiteEvaluation

According to the map’s legend, Core Habitat and Critical Natural Landscape are referred to as Biomap2. These data layers are combined with Priority Habitat and are identified as the dark green. Any land that parcel whose area is comprised of at least 50% of these designated land types is shown in dark grey. Article 97 land is displayed as a light green.

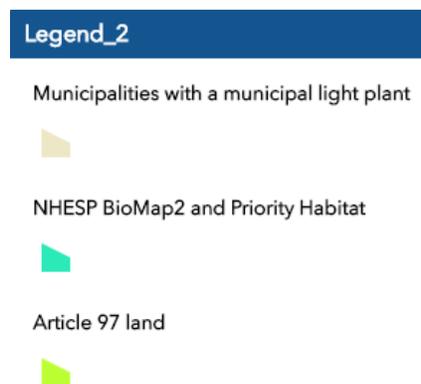


Figure 2: MA EOEEA BioMap2 – Legend for Ineligible Land Use

c) If I am building on a site that has an Agricultural Preservation Restriction (“APR”) held by the Commonwealth, can I build a project that serves more than

200 percent of the of the annual operational load of the farm? What if I plan to build an Agricultural STGU?

The rules of the SMART program do not supersede the existing terms of the APR and the rules in existence at the time of the SMART application. Any renewable energy project built on APR land must be sized to serve no more than 200% of the annual operational load of the structures on the land protected by the APR, regardless of any adders it may be eligible to receive. Prior to the construction of any Agricultural STGU the APR landowner must apply for and receive approval from the Massachusetts Department of Agricultural Resources.

d) How is “previously developed” defined?

An STGU seeking to qualify as Category 1 with the claim that the selected site has been previously developed must demonstrate to the Department’s satisfaction that the site has pre-existing paving, construction, or altered landscapes. Landscapes altered from current agricultural use, forestry, or use as a preserved natural area, per 225 CMR 20.05(5)(e), will **not** be considered previously developed. Any alteration made to the landscape related to the development of the solar project, even if completed prior to the application for a Statement of Qualification, shall not be considered previously developed.

Examples of documentation the Department may accept to demonstrate previous development may include, but are not limited to, site plans, pictures, or satellite imagery. The site must have existing development at the time the STGU submits a Statement of Qualification Application. For the purposes of determining previously developed, the Department will be reviewing the characteristics of the project site, not simply the characteristics of the larger parcel. For example, if a parcel has a portion that has been developed, but the site of the STGU is forested or undeveloped open space, the project would not be considered as installed on a ‘previously developed’ site. The Department will determine the application of ‘previously developed’ on a case-by-case basis.

e) What is a solar overlay district? What is meant by complying with established local zoning that explicitly addresses solar?

After the Publication Date, pursuant to 225 CMR 20.05(5)(e)7.b., classification as Category 2 Land Use applies to STGUs that are ground-mounted and have a capacity greater than 500 kW AC, but less than 5,000 kW AC, that are sited within a solar overlay district or that comply with established local zoning that explicitly addresses solar or power generation.

Projects located in a solar overlay district, sited by as-of-right siting, or sited in an area where solar is explicitly allowed with special permits, may fall under this categorization. If a project needs to seek a variance waiver or other discretionary approval, it will not qualify under this categorization.

f) What is required to demonstrate to the Department the Owner of one STGU is unaffiliated from the Owner of another STGU?

An application must provide documentation that demonstrates to the Department's satisfaction that the Owners of STGUs located on contiguous parcels are unaffiliated parties. As a general rule, unaffiliated parties are unrelated entities that do not share any association. As an example, for the purposes of this requirement, parties separated only by corporate tax identities, such as separate LLC's, shall *not* be considered unaffiliated.

g) What does "contiguous" mean?

Contiguous land shall be parcels sharing a border boundary. Land shall be deemed contiguous if it is separated from other land under the same ownership only by a public or private way, unless they can document to the Department's satisfaction that this requirement should be waived for good cause.