Commonwealth of Massachusetts

Executive Office of Energy and Environmental Affairs
DEPARTMENT OF ENERGY RESOURCES

SOLAR MASSACHUSETTS RENEWABLE TARGET PROGRAM 3.0 (225 CMR 28.00) GUIDELINE

Guideline Regarding Land Use, Siting, and Project Segmentation

1) Background and Purpose

The Solar Massachusetts Renewable Target (SMART) Program 3.0 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, topography; and whether the site contains existing STGUs on the same or contiguous parcels.

One of the objectives of the land use and siting criteria of the SMART program is to achieve a balance between cost-effective ground-mounted solar development and the long-term preservation of the Commonwealth's natural and working lands. This Guideline provides additional details and resources on the program's framework for incentivizing development in the built environment and mitigating the impact of solar infrastructure on undeveloped land. All capitalized terms are defined in 225 CMR 28.02.

2) Project Footprint

225 CMR 28.02 defines Project Footprint as "[t]he acreage of land encompassed by an STGU's solar photovoltaic modules, plus any land significantly impacted by construction of the STGU, including, but not limited to, land altered of its natural vegetative composition and structure for clearing, grading, and roadways."

STGUs subject to a Mitigation Fee under 225 CMR 28.09 must report the acreage of the STGU's Project Footprint as part of their Statement of Qualification Application. This calculation will be subject to review and verification by the Environmental Monitor and the Department.

Below are examples of what should be included in the calculation of Project Footprint:

i. tree or vegetation clearing;
ii. grading;
iii. development of new roadways;

iv. fencing; ~~and~~
v. solar modules, energy storage system, and associated equipment; and
~~v.~~vi. ~~and~~ land that serves as a buffer between the equipment and/or fencing and any combustible vegetation.

3) Ineligible Land Use

There are certain ineligible land categories under 225 CMR 28.08(1) that apply to all STGUs and other categories that apply only to ground-mounted STGUs greater than 250 kW AC. The following areas are ineligible for all STGUs, with limited exceptions:

i. Wetland Resource Areas, as defined under 310 CMR 10.04: Definitions, not including Buffer Zones, as defined under 310 CMR 10.04: Definitions;
   a. Exception: work authorized by the appropriate regulatory body or bodies
ii. Properties included in the State Register pursuant to 950 CMR 71.00;
   a. Exception: work authorized by the appropriate regulatory body or bodies.
iii. Protected open space as established under Article XCVII of the Amendments to the Constitution.
   a. Exception: STGUs qualifying for a Locational Compensation Rate Adder.[1]

The following areas are ineligible for ground-mounted STGUs greater than 250 kW AC if the STGU does not qualify for a Locational Compensation Rate Adder **and** the STGU is not located on Previously Developed land:

i. land designated as Core Habitat;[2]
ii. more than 10 percent of the Project Footprint overlaps with the highest levels of forest carbon in Massachusetts, as detailed in Section 7 below.

4) Determination of Previously Developed Land

225 CMR 28.02 defines Previously Developed as "[a]reas degraded by impervious surfaces from existing structures or pavement, absence of topsoil, junkyards, golf courses, managed turfgrass, abandoned dumping yards, or other degraded areas as determined by the Department." Additional examples of Previously Developed Land could include gravel pits or parking lots. An Applicant may request a determination from the Department of whether a prospective Project Footprint meets the definition of

[1] 225 CMR 28.13(3)(b) contains the list of Locational Compensation Rate Adders. 225 CMR 28.07(5)(b) contains the special eligibility criteria for Locational Compensation Rate Adders.
[2] 225 CMR 28.02 defines Core Habitat as "[k]ey 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, as identified by the Massachusetts Division of Fisheries and Wildlife BioMap framework within the Natural Heritage and Endangered Species Program."

Previously Developed when a site does not clearly fit into the regulatory definition of Previously Developed and has unique on-site conditions that warrant individual review by the Department. -The Department may consult with relevant agencies and the Environmental Monitor in issuing a determination. -This determination is an optional process and the Department may decline to issue a formal determination if the Department determines the regulatory definition of Previously Developed clearly addresses the site's eligibility or the site does not contain unique on-site conditions that warrant individual review by the Department.

Applicants seeking a determination under this provision should submit a narrative request letter to the Department at DOER.SMART@mass.gov detailing why the site should be characterized as Previously Developed and the unique on-site conditions that warrant individual review. -The request should include supporting documentation, which may include but not be limited to:

i. historical and current aerial imagery;
ii. on-ground site photos;
iii. property records; and
iv. environmental condition reports.

5) Project Segmentation

Pursuant to 225 CMR 28.08(5), no more than one STGU on a single building or one ground-mounted STGU on a single parcel shall be eligible to receive a Statement of Qualification as a STGU under 225 CMR 28.00.- If an STGU seeking qualification under 225 CMR 28.00 is located on the same ~~or contiguous~~ parcel as a system previously qualified under the SREC I, SREC II, or RPS Class I program under 225 CMR 14.00, or the SMART program under 225 CMR 20.00, the previously existing system will not impact the qualification of the new STGU.

Multiple STGUs located on a single parcel that qualify for a Project Segmentation exception under 225 CMR 28.08(5)(a) may share a Point of Interconnection (POI) provided they are separately metered with their own SMART meters. Additionally, multiple STGUs may share an Interconnection Service Agreement (ISA) (*i.e.*, more than one STGU is included on the same ISA) provided that the STGUs meet all other applicable Project Segmentation requirements.

If an STGU does not meet one of the Project Segmentation exceptions enumerated in 225 CMR 28.08(5)(a), an Applicant may request a good cause exception from the Department under 225 CMR 28.08(5)(a)10. -Any request should be submitted to DOER.SMART@mass.gov and should explain why the system design warrants an exception from the project segmentation requirements for good cause and demonstrate that the exception request is not for the purpose of obtaining a higher incentive.

If the Department determines that an STGU qualifies for an exception to the Project Segmentation rules set forth in 225 CMR 28.08(5), resulting in more than one STGU on a single parcel, each STGU will receive a separate ~~Statement of Qualification~~PSQ and will have its Base Compensation Rate and relevant Compensation Rate Adders set independently of the other STGUs on the same parcel, unless the Department determines that a Combined Rate is appropriate. The parameters for a Combined Rate are outlined in 225 CMR 28.14(5)~~ and the *Guideline on Establishing SMART Compensation Rates*~~.

6) Environmental Monitor and Performance Standards

Pursuant to 225 CMR 28.08(6), all STGUs qualifying as Dual-use Agricultural STGUs or subject to the requirements of 225 CMR 28.09 must work with the Environmental Monitor to ensure compliance with the Performance Standards under 225 CMR 28.08(7).

For Program Years 2025 and 2026, Applicants that submit a Statement of Qualification Application during the initial 10-day application window will have 90 days after receiving a Preliminary Statement of Qualification to have the first site visit from the Environmental Monitor. Applicants that apply after the initial 10-day window may submit a Statement of Qualification Application into the queue but shall complete the first site visit before receiving a Preliminary Statement of Qualification. -After Program Year 2026, all STGUs shall complete the first site visit before receiving a Preliminary Statement of Qualification. Applicants will submit payment for both mandatory site visits upfront. The charge for any additional site visits will be applied at the time of such visit. For all STGUs, the final site visit shall occur once the STGU is mechanically complete and before the Department will issue a Final Statement of Qualification.

Under 225 CMR 28.09, an STGU with a Project Footprint that partially overlaps with Previously Developed land shall not be subject to the Mitigation Fee framework and the resulting Environmental Monitor requirements under 225 CMR 28.08(6) for the portion of the Project Footprint on Previously Developed land.

7) Mitigation Framework

Pursuant to 225 CMR 28.09, any ground-mounted STGU with a capacity greater than 250 kW that is not located on Previously Developed land **and** does not qualify for a Locational Compensation Rate Adder shall be subject to a Mitigation Fee. -The Department will use the following formula for calculating an STGU's Mitigation Fee, and the formula may be updated periodically to reflect current development conditions and policy goals.

Total Fee = *Max per acre fee * ((Carbon storage*3 + Ecological integrity*3 + Agricultural potential*2 + Critical landscape*2 + Geographical distribution)/44) * Acres of Project Footprint*

Example Calculation

$276,136.36 = *$50,000 * ((3*3 + 3*3 + 1*2 + 2*2 + 3)/44) * 9*

Project Footprint	**9 Acres**
Carbon Storage Score	3
Ecological Integrity Score	3
Agricultural Potential Score	1
Critical Landscape Score	2
Geographical Distribution Score	3

The maximum per acre fee will be $50,000. The Department may adjust the maximum fee in the future depending on program outcomes and policy goals. The total acreage of each Project Footprint may be verified by the Environmental Monitor. Pursuant to 225 CMR 28.09(2)(c), the Mitigation Fee calculation shall not include any portion of the Project Footprint that overlaps with Previously Developed land.

Carbon Storage

The Department will use *Forest Carbon (2070)* data in the Resilient Land Mapping Tool (RLMT), in metric tons of c~~C~~arbon expressed as a carbon dioxide equivalent per acre (mt CO2e/ac), to assess both the eligibility and the Carbon Storage score for each STGU. The calculation for project eligibility will be based on the percentage of the Project Footprint that intersects with the highest forest carbon values in the state, and the Carbon Storage score for the Mitigation Fee formula will be based on the average forest carbon value within the total Project Footprint.

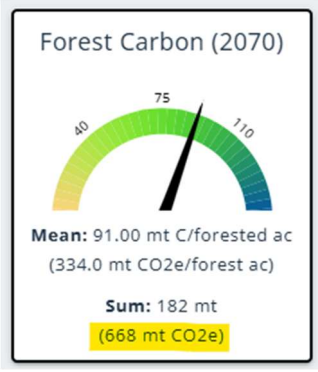
Forest Carbon (2070) can be visualized in the RLMT by toggling on this dataset within the "Carbon" section of the "Map Layers." Until a new tool is available (see additional details below), t~~T~~he Department will use the RLMT and assess the *Forest Carbon (2070, mt/ac)* data for the Project Footprint through the "Analyze a Polygon" feature on the map. The Applicant is responsible for providing the Project Footprint polygon (as a shapefile or geojson file).

Carbon Storage Score

The Department will calculate the Carbon Storage score for the Project Footprint by dividing the s~~S~~um of the *Forest Carbon (2070)* by the total acreage of the Project Footprint. The forest carbon data in the map only represents the carbon values for *forested* areas of the Project Footprint. This also applies to the results in the polygon analysis report. Therefore, using the "mean" forest carbon value listed in the report would skew the result to only represent the carbon in the forested portion of the Project Footprint. Dividing the "sum" of the forest carbon by the total Project Footprint acreage

represents the average forest carbon across both forested and non-forested areas, and will therefore more accurately represent the project's actual carbon impact.

Below is an example summary of the *Forest Carbon (2070)* metric from a Project Footprint's report. The sum of forest carbon through 2070 in the Project Footprint is 182 mt C expressed as 668 mt CO2e. The total acreage of the Project Footprint, as shown at the top of the report, is 2.2 acres.



The area of interest totals **2.2** acres (2.2 ac of land and 0.0 ac of open water) in the Lower New England / Northern Piedmont ecoregion(s). It includes **0.0** ac of conservation land (GAP1=0.0 ac GAP2=0.0 ac GAP3=0.0 ac)

The Carbon Storage score for this project would be **668 mt CO2e ÷ 2.2 acres = 303.64 mt CO2e/ac**.

The~~is~~ Carbon Storage score will place the STGU into one of the following scoring categories:

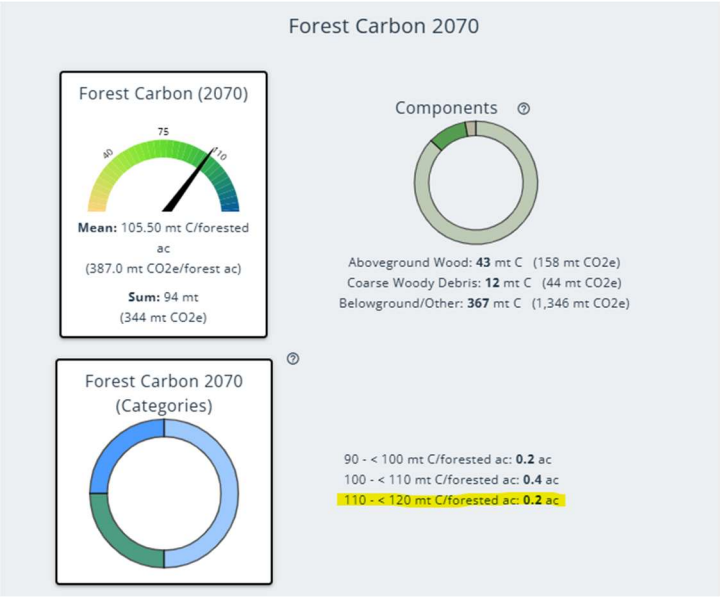
4 *(most impactful)*	3	2	1 *(least impactful)*
~~100~~ 374 - <~~<110~~ 413 mt CO2e/ac	~~90~~ 349 - <~~100~~ <374 mt CO2e/ac	~~80~~ 323 - <~~<90~~ 349 mt CO2e/ac	0 - <~~<80~~ 323 mt CO2e/ac

Ineligible Areas

An STGU will be ineligible for the SMART 3.0 program if more than 10% of its Project Footprint overlaps with areas ≥~~110~~ 112.63 mt C/ac (expressed as 413 mt CO2e/ac).~~).~~ ~~The report provided by the Resilient Land Mapping Tool allows for an easy evaluation of percentage overlap with each of the mt C/ac categories represented in the legend. The Department will calculate the percentage overlap with ineligible areas by dividing the number of acres overlapping with areas ≥110 mt C/ac by the total acreage of the Project Footprint. Below are two examples.~~

Currently, the RLMT displays units in metric tons of carbon per acre in bands of 10 metric tons. For those projects for which ~~the than~~ the Project Footprint polygon analysis shows 10% or less overlap in the bands of 110-120 metric tons or greater, Applicants shall submit such analysis for verification of eligibility. See example:

The area of interest totals **3.6** acres (3.6 ac of land and 0.0 ac of open water) in the Lower New England / Northern Piedmont ecoregion(s). It includes **0.0** ac of conservation land (GAP1=0.0 ac GAP2=0.0 ac GAP3=0.0 ac)



In this example, the total Project Footprint acreage is 3.6 acres. The number of acres overlapping with potentially ineligible areas (≥110 mt C/ac) is 0.2 acres.

0.2 acres of overlap ÷ 3.6 total acres = 5.6% potential overlap → ELIGIBLE

For those projects with a polygon that results in greater than 10% of the Project Footprint overlapping in the 110-120 metric tons band, the RLMT is currently unable to provide clear evidence of eligibility. A new tool, similar to the RLMT, is in development to allow Applicants to analyze their Project Footprint in carbon dioxide equivalent per acre and screen for SMART eligibility. The Department will provide further information once this tool is available.

Projects with greater than 10% of the Project Footprint overlapping in the 110-120mt band have two options: in addition to submitting the results of the polygon analysis, (1) submit documentation in the Statement of Qualification Application that demonstrates to the Department's satisfaction that no more than 10% of the Project Footprint overlaps with pixels that are 112.63 mt C (413 mt CO2e) or greater or (2) submit a Statement of Qualification Application and agree to place it on hold until the new tool is available to permit analysis of a polygon to verify SMART eligibility.

Until the new tool is published, Applicants may seek review of their Statement of Qualification Application under Option (1) above by accessing the raw data used by RLMT which is publicly available and can be downloaded from National Forest Carbon Monitoring System (NFCMS) version 3.0. Clark University and the Open Space Institute

have a guidance document for the NFCMS with more details on the data and its useful applications.

The Department will issue conditional PSQs to Applicants under Option (1) if the provided documentation demonstrates to the Department's satisfaction that 10% or less of the Project Footprint overlaps with pixels designated as >112.63 mt C/ac (expressed as 413 mt CO2e/ac). The Department will consider any pixel that overlaps with the Project Footprint, even where it is only partially overlapping, as included in the Project Footprint and the resulting carbon analysis. Any STGU that receives a conditional PSQ under this process shall be required to demonstrate eligibility using the new tool once it is available to maintain the STGU's eligibility.

Ecological Integrity

To determine an STGU's Ecological Integrity score, the Department will use the UMass EcoAssess Mapping Tool and assess the *State Ecological Integrity* score for the Project Footprint through the "Project area report" feature on the map. The "State" data layer should be selected under the "IEI layers." The Applicant is responsible for providing the polygon of the Project Footprint. Below is an example:

Index of ecological Integrity

Focus	Region	State	Ecoregion	Watershed
all	0.13 (bottom 13%)	0.35 (bottom 35%)	0.29 (bottom 29%)	0.29 (bottom 29%)
best	0.22 (bottom 22%)	0.55 (top 46%)	0.46 (bottom 46%)	0.52 (top 49%)

The Index of ecological integrity section of this project's report shows that the Project Footprint has a State Ecological Integrity score of 0.35.

The *State Ecological Integrity* score will place the STGU into one of the following scoring categories:

4 *(most impactful)*	3	2	1 *(least impactful)*
>0.75	0.5-0.75	0.25-0.5	<0.25

Agricultural Potential

To determine an STGU's Agricultural Potential score, the Department will use the MassMapper Tool and assess the Project Footprint's overlap with Important Agricultural Farmland[3] through the "draw a polygon" feature on the map. The Applicant is responsible for providing the polygon of the Project Footprint.

[3] 225 CMR 28.02 defines Important Agricultural Farmland as "soils found to be Important Farmlands pursuant to 7 C.F.R. § 657.5, that includes prime farmlands, unique farmlands, and additional land of statewide importance."

The Department will also evaluate if the Project Footprint meets the definition of Land in Agricultural Use.[4] The Applicant is responsible for providing supporting documentation to demonstrate if the Project Footprint meets the definition of Land in Agricultural Use. Such supporting documentation may include proof of enrollment in a Chapter 61A program, a copy of the property card issued by the local assessor, a copy of a recorded 61A lien at the local Registry of Deeds, or other documentation satisfactory to the Department.

The MassMapper tool has a feature for measuring area in acres, which will be used to determine the percentage overlap with Important Agricultural Farmland. The Applicant must provide evidence of the acreage calculation for both the entire Project Footprint and the portion that overlaps with Important Agricultural Farmland. Below is an example:

The report shows that the total Project Footprint area is 12.15 acres.

[4] 225 CMR 28.02 defines Land in Agricultural Use as "[a]ll land as defined under M.G.L. c. 61A, §§ 1 & 2, and land that had been enrolled in a program established pursuant to M.G.L. c. 61A within the past five years."

The portion of the Project Footprint that overlaps with Important Agricultural Farmland is 2.29 acres. This is Farmland of Statewide Importance, so the Department will calculate the percentage overlap:

2.29 acres of overlap ÷ 12.15 total acres = 18.85% overlap

The overlap with Important Agricultural Farmland and status as Land in Agricultural Use will place the STGU into one of the following scoring categories:

4 *(most impactful)*	3	2	1 *(least impactful)*
Overlap with Prime Farmland and/or Land in Agricultural Use	>25% overlap with Farmland of Statewide or Unique Importance	<25% overlap with Farmland of Statewide or Unique Importance	No farmland overlap

Critical Landscape

To determine an STGU's Critical Landscape score, the Department will use the MassMapper Tool and assess the Project Footprint's overlap with Critical Natural Landscape[5] through the "draw a polygon" feature on the map. The Applicant is responsible for providing the polygon of the Project Footprint.

The MassMapper tool has a feature for measuring area in acres, which will be used to determine the percentage overlap with Critical Natural Landscape. The Applicant must provide evidence of the acreage calculation for both the entire Project Footprint and the portion that overlaps with Critical Natural Landscape. Below is an example:

[5] 225 CMR 28.02 defines Critical Natural Landscape as "[a]reas including large natural landscape blocks and buffering uplands around coastal, wetland and aquatic Core Habitats to help ensure their long-term integrity, as identified by the Massachusetts Division of Fisheries and Wildlife BioMap framework within the Natural Heritage and Endangered Species Program."

The report shows that the total Project Footprint area is 10.22 acres.

The portion of the Project Footprint that overlaps with Critical Natural Landscape is 5.5 acres.

5.5 acres of overlap ÷ 10.22 total acres = 53.82% overlap

The overlap with Critical Natural Landscape will place the STGU into one of the following scoring categories:

4 *(most impactful)*	3	2	1 *(least impactful)*
>75% overlap with Critical Natural Landscape	50-75% overlap with Critical Natural Landscape	25-50% overlap with Critical Natural Landscape	<25% overlap with Critical Natural Landscape

Geographical Distribution

To determine an STGU's Geographical Distribution score, the Department will rank Massachusetts' counties by the MW AC capacity of Approved, Qualified, or Wait Listed, Large STGUs that do not qualify for a locational based adder per capita as established in the 2020 census[6]. If a Project Footprint covers more than one county, the STGU's score will be determined by the county that contains the highest proportion of the Project Footprint. The county that the STGU is located in will place it into one of the following scoring categories:

4 *(most impactful)*	3	2	1 *(least impactful)*
Franklin Berkshire Hampshire Worcester	Plymouth Hampden Bristol	Barnstable Nantucket Norfolk	Middlesex Essex Dukes Suffolk

8) Assessment of Mitigation Framework

During the Annual SMART Program Assessment, the Department may evaluate the five scoring criteria under the mitigation framework and determine if any adjustments are needed to reflect changes in real-world conditions and remain consistent with the Commonwealth's land use policy goals. The Department may adjust the maximum per acre fee, the cutoffs for scoring categories, the weighting of a metric, or the underlying data sources used for evaluating a metric. As more robust or accurate datasets become available, the Department may adopt the most recent datasets to ensure the mitigation framework is representative of the current landscape. Any adjustments to the mitigation framework will be published in the Department's Annual Program Year Report and in this Guideline and will be subject to public comment.

9) Request for Review of Mitigation Fee

Pursuant to 225 CMR 28.09(2)(b), an Applicant may request a review of an STGU's Mitigation Fee in instances where the Applicant can demonstrate a clear and obvious discrepancy in the calculation from on-site conditions. In these instances, the

[6] https://malegislature.gov/Redistricting/MassachusettsCensusData/County

Environmental Monitor will evaluate the on-site conditions during a site visit to the project and recommend any appropriate adjustments to the STGU's Mitigation Fee to the Department. -The Department will review any such recommendations and determine whether any adjustments are necessary on a case-by-case basis. -The Department and the Environmental Monitor may consult with relevant state agencies as necessary during this process.

The Applicant should submit the request to DOER.SMART@mass.gov and include a supporting narrative and documentation, which may include but not be limited to:

i. historical and current aerial imagery;
ii. on-ground site photos; and
iii. environmental condition report

The Request should also indicate which of the scoring criteria under the mitigation framework are being disputed and provide justification for the discrepancy. -The Department may adjust the STGU's score under the relevant metric if deemed appropriate and reasonable. Pursuant to 225 CMR 28.06(1)(e)2., the STGU's Statement of Qualification Application will not be deemed administratively complete until the Department has issued a determination. -The Department also will not exempt an STGU from the Mitigation Fee under this review process.

10) Payment and Refunding of Mitigation Fees

Pursuant to 225 CMR 28.09(3), an Applicant shall pay 25% of the STGU's Mitigation Fee within 30 days of receiving a Preliminary Statement of Qualification-.- If the Project Footprint acreage is impacted during the construction process, due to site design changes or other factors, the Applicant shall inform the Department of the changes so that any necessary adjustments can be made to the remainder of the STGU's Mitigation Fee. -The Applicant shall pay the remaining 75% of the Mitigation Fee at the time of submission of the final claim in order to receive a Final Statement of Qualification.

Pursuant to 225 CMR 28.09(4), an Applicant may be eligible to receive a refund of the initial 25% of the Mitigation Fee if the STGU is ultimately not constructed and the Applicant can demonstrate to the Department's satisfaction that the proposed Project Footprint was not materially impacted.

The Department considers the below actions to be examples of material impacts:
i. tree clearing;
ii. grading; and
iii. road construction.

The Applicant may submit site photos and other supporting documentation to demonstrate that there was no material impact on the proposed Project Footprint. The

Department may also request that the Environmental Monitor conduct an additional site visit to verify the on-site conditions.