Clean Energy Extension

WORKSHEET

Site Information to Gather When Calculating SMART Incentives



The Massachusetts Department of Energy Resources has established the Solar Massachusetts Renewable Target (SMART) program, which will regulate incentives associated with new solar photovoltaic (PV) development in the state, beginning November 26, 2018. A series of fact sheets designed to help farmers navigate the program is available on the UMass Clean Energy Extension (CEE) website, https://ag.umass.edu/clean-energy.

Important Site Information to Collect

The following information is helpful to have on hand in order to estimate expected compensation rates for a proposed solar PV array design:

1. **Is your land currently enrolled in Chapter 61A, or has it been enrolled in the last 5 years?** _____
   If you are not sure of your land's status with regard to Chapter 61A, check with your town tax assessors' office. They will have the information available for your property.

2. **Does your land have Prime Farmland Soils?** _____
   You can find soil definitions for your property on the MassGIS OLIVER website (http://maps.massgis.state.ma.us/map_ol/oliver.php) using the following process:
   i. Under "Available Data Layers," select "Physical Resources," and then "Soils."
   ii. Select "Prime Farmland Soils," which will add it to the list of "Active Data Layers" under "Legend."
   iii. Find your property by zooming in to the Massachusetts map, or entering a street address into the "Search for a location" box. To qualify as *Prime Agricultural Farmland*, the land must be in dark green – identified in the Legend as "All Areas are Prime Farmland."

   If you have difficulty with this process, please contact CEE for assistance.

3. **If your land is not in Chapter 61A, and not on Prime Farmland soils, would you be interested in applying for Chapter 61A status if it increased the range of solar PV array options available?**_____
   In order to receive Chapter 61A status, the property must be at least 5 acres in size and your land must be in agricultural production for commercial purposes. Check with your town assessors' office regarding the application process. Applications are typically due by mid-October to be included in the program the following year.

4. **What is your electricity service territory (local utility)?** _____
   If unsure, see the utility service territory map on page 5, or visit the MassGIS website.

5. **What is your annual on-farm electricity consumption?** _____
   Total your electricity bills for one year to estimate your annual electricity usage. This value should be given in kilowatt-hours, listed on your bill as kWh. This usage should include all metered electricity accounts associated with farm operations, but not the farm house, even if it is on the same property.

6. **What is your proposed system capacity (in kW AC)?** _____
   If your main objective is to supply annual on-farm electricity usage, divide your annual kWh usage (determined in question 5 above) by 1200. This is will give you a rough estimate of the number of kW of installed capacity necessary to meet 100% of the annual on-farm electricity use.

7. **Is the end-use customer of the electricity generated by the solar PV array solely the farm, or will there be excess electricity over the course of the year? If there will be excess electricity, do you plan to assign that electricity (in whole or in part), to low-income housing, a community-shared project, or a public entity?** _____
   Note that low-income housing, community-shared projects, and public buildings do not have to be immediately adjacent to the solar array to be assigned electricity from it. Electricity can be assigned to other customers in the same utility service territory through virtual net metering.

8. **What type(s) of solar PV are you considering?**
   a. Building-mounted _____
   b. Canopy-mounted_____
   c. Ground-mounted_____
   d. Ground-mounted, with dual-use agriculture _____

9. **Would you be interested in incorporating on-site energy storage?** _____
   Energy storage, typically in the form of batteries, adds value to the electric grid by allowing energy to be dispatched strategically to reduce peak demands. Batteries remain expensive, but the SMART program offers additional compensation to support battery storage. Farms with electric rates that include time-of-day rates or demand charges may also be able to use energy storage to reduce their electric bills.

If you are interested in installing a standard ground-mounted solar PV array with a large capacity (greater than 500 kW), you should have the following information on hand for the purpose of calculating compensation rates:

10. **Is the land being used for the array an eligible brownfield or landfill?** _____
    (See guideline: https://www.mass.gov/doc/smart-brownfields-guideline-final)

11. **Has the land being used for the array been previously developed with pavement or construction?**
    _____

12. **Is your land zoned for industrial or commercial use?** _____
    Check with your local town clerk or planning department.

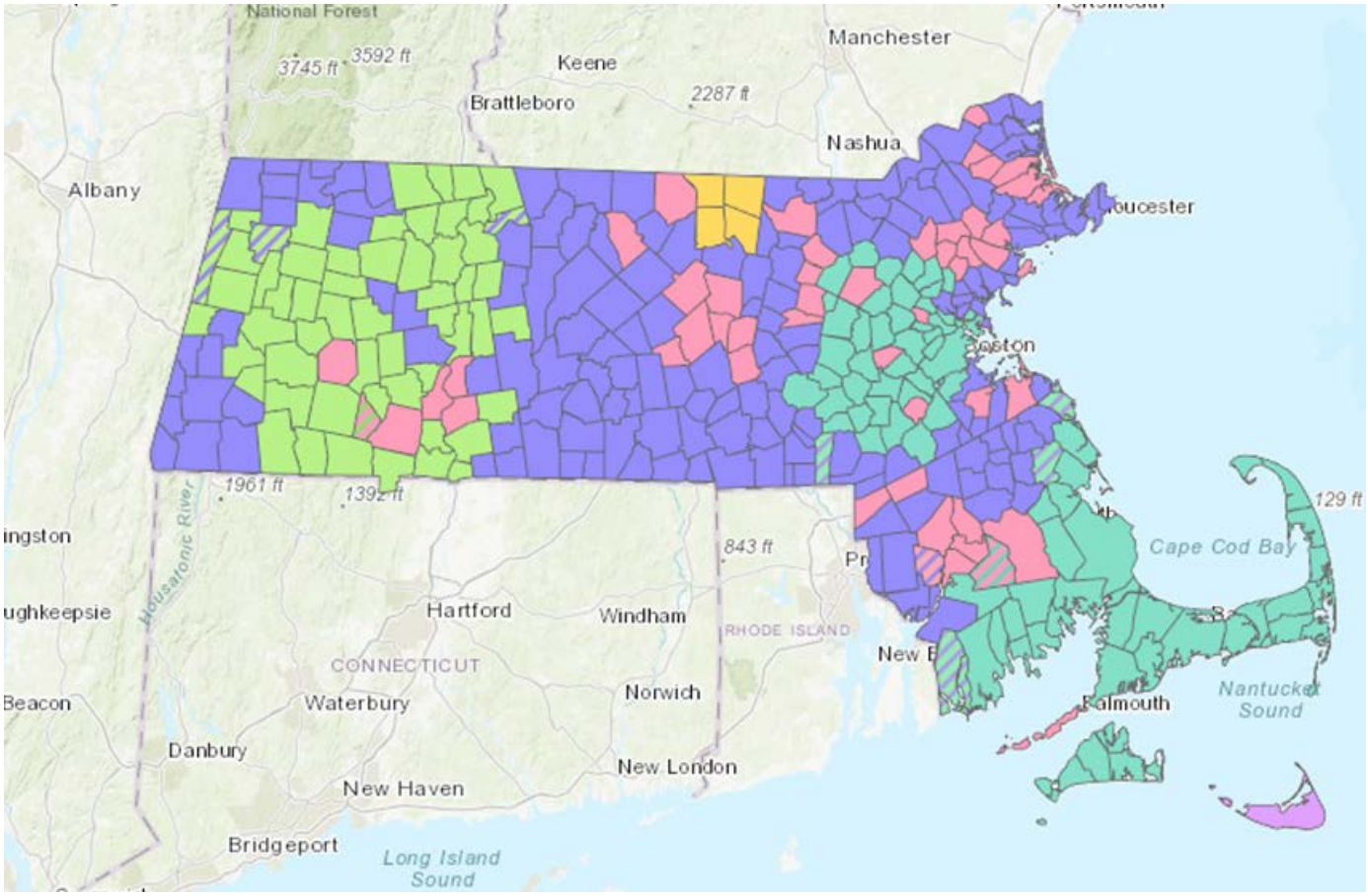
13. **Is your land in a solar overlay district as established by the town?**_____
    Check with your local town clerk or planning department.

14. **What is the planned acreage of your array?** _____
    Remember that 1 MW of traditional ground-mounted solar PV typically requires 6-8 acres of land in ideal circumstances.

General Information about Compensation Rates under the SMART Program

- A **Base Compensation Rate** is set based on the capacity of the system and the local utility service area. Over the course of the SMART program, the base rate declines by 4% for each "Capacity Block" that is filled in a given service area. You can check http://masmartsolar.com/ to determine which Capacity Block your site is in. Also review the *Capacity Block Rate Guideline* on the same website under Additional Resources, for additional details on compensation values.
- Small projects (≤ 25 kW) receive the highest Base Compensation Rates (in cents per kWh), but only for 10 years, compared to 20 years for larger projects.
- Projects of all sizes can receive additional incentives (cents per kWh) depending on the end-use customer for the electricity (e.g. low-income housing) and whether on-site energy storage is incorporated into the project.
- Larger projects (>25 kW) can receive additional incentives, depending on the location and whether the system is a fixed or tracking design. These incentives are also subject to a 4% decrease as each "tranche" is filled. See http://masmartsolar.com/ for more information.
- Qualifying as **Category 1 Agricultural** or **Category 1 Non-Agricultural** will lead to the highest compensation rates for larger projects (>25 kW).
- If your land is currently in the Chapter 61A program, has been in the past 5 years, or is on Prime Farmland Soils, it will qualify as **Agricultural** for the purposes of the SMART program. Projects on Agricultural land can qualify as **Category 1 Agricultural** if they 1) are building-mounted systems, 2) are sized to meet no more than 200% of on-farm demand, or 3) are dual-use systems up to 2 MW in capacity (or larger if they qualify for a waiver).
- If your land is not in the Chapter 61A program, has not been in the past 5 years, and is not on Prime Farmland Soils, it will be considered as **Non-Agricultural** land under the SMART program, regardless of whether farming is occurring on the land. Projects on Non-Agricultural land can qualify as **Category 1 Non-Agricultural** if they are 1) are building-mounted systems, 2) are canopy-mounted systems, or 3) are ground-mounted systems no more than 500 kW in capacity.
- If your proposed project is a ground-mounted system with a capacity between 500-5000 kW and it is in a solar overlay district, on previously developed land, or on an eligible brownfield or landfill, it can also qualify as **Category 1 Non-Agricultural**. Otherwise, if it is on land zoned for industrial or commercial use that has not been previously developed, it qualifies as **Category 2**. If it is on land that is not zoned for industrial or commercial use that has not been being previously developed, it qualifies as **Category 3**, as long as it is not protected open space or a wetland resource area.
- **Category 2 and 3 projects** are subject to "subtractors" which reduce the compensation rate based on the acreage of land developed.

Service territory map courtesy of MassGIS,
http://massgis.maps.arcgis.com/apps/MapSeries/index.html?appid=7c70397fcdb64c6f9c01fcfca8c2269d



Electric Utility Providers in Massachusetts

Massachusetts Electricity Providers, by Town

- WMECo d/b/a Eversource Energy
- NSTAR Electric d/b/a Eversource Energy
- Massachusetts Electric d/b/a National Grid
- Nantucket Electric Company d/b/a National Grid
- UNITIL
- Municipal
- WMECo d/b/a Eversource Energy, Mass. Electric d/b/a National Grid
- NSTAR Electric d/b/a Eversource Energy, Mass. Electric d/b/a National Grid
- WMECo d/b/a Eversource Energy, Municipal
- NSTAR Electric d/b/a Eversource Energy, Municipal
- Massachusetts Electric d/b/a National Grid, Municipal