

Green Communities Act, signed into law July 2, 2008

Promoting development of renewable energy

Promoting “net metering”, to allow owners of wind turbines and solar-generated power to sell their excess electricity into the grid at favorable rates.

Utilities required to obtain renewable power equal to 4 percent of sales in 2009, rising to 15 percent in 2020 and 25 percent in 2030.

Impact on electricity producers, consumers, municipalities, and builders

Energy efficiency

Green Communities

Incentives to qualifying communities to commit to efficiency and renewable technology.

Regional Greenhouse Gas Initiative

Special Town Meeting 11-9-2010 vote to qualify as Green Community

As-of-right siting in Large-Scale Ground-Mounted Solar Photovoltaic Facilities Overlay District

Expedited application and permit process

Benchmark for energy use and plan to reduce baseline by 20 percent within 5 years

Purchase only fuel-efficient vehicles

Adopted stretch code, to minimize life-cycle energy costs for new construction

Harvard chosen one of four towns to participate in “Solarize Mass”, promoting solar adoption by residents and small businesses

13 solar installations before Solarize, 88 when Solarize contracts have all been installed

403 kW in Harvard, 830 kW in all 4 towns

More than half of Harvard residents and businesses that requested site evaluations unable to participate, because of site or structural limitations

Harvard Community Solar Garden, for residents and businesses unable to participate in Solarize

Supported by Massachusetts Clean Energy Center, with grants to participants on the same basis as if generating capacity were installed on-premises (grant on first 5 kW, system size limited to 10 kW (2011), or 15 kW (2012))

LLC formed to allow participants to pool their shares, build one system with shares net-metered to participant residence or small business.

Ground Lease to control conditions by which property owner allows solar array to be constructed and operated for the useful life of the system, with provisions for removal and restoration when system is no longer operational.

Bylaw recommendations

Define a category, “Community Solar Garden”, parallel to “Commercial”

Use detailed criteria to differentiate community solar from commercial development. Suggested criteria follows.

Regulate on the same basis as if easements were being provided, allowing participants to locate their generating capacity in the community solar garden.

Think of it the same way as when a property isn't able to support on-site sewage disposal, or ground water has been contaminated and a well is needed on a neighboring property. Net metering within the utility load zone lets us do the same thing for a property that doesn't support on-site PV solar, paired with a property that does.

Allow the same setbacks as for any structure in the district.

There is nothing about the operation of a solar array that justifies increased setback requirements. Viewshed can be managed by fencing and/or screening.

Regulate Community Solar Garden on the same basis as projects in the Solar Photovoltaic Facilities Overlay District.

Site Plan Review, including viewshed and decommissioning plan.

Community Solar Garden (CSG) Criteria

Participants eligible for MassCEC Comm Solar II grant

Residential or small business

Grant on first 5 kW for each participant

Maximum system size for each participant (currently 15 kW)

Participants must be in the same utility load zone as CSG

Beneficial use of electricity generated belongs to participants, in proportion to their ownership share

Maximum capacity for one participant based on most recent program – currently 15 kW

Alternatively, 120 percent of most recent annual usage

Share can be transferred if participant moves, if new location is similarly qualified

Share may be transferred to different participant, if new participant is qualified

As-of-right siting on the same basis as Photovoltaic Facilities

Overlay District with setback of 100 feet, minimum lot size 5 acres

Additional Considerations

Loss of habitat, carbon capture

Clearing and tree removal for CSG may be less, even significantly less, than if solar were installed on participants' property.

Clearing of footprint would be the same, but clearing at the east, south, and west boundaries would only be required once for the CSG, vs. most of the time for individual systems being installed where shade is the limitation.

Municipal solar, solar for non-profits

CSG may provide the model for developing solar for the town, and for non-profits in town.

Because the cost of solar is significantly impacted by available tax credits, and because municipalities and non-profits are not taxpayers, it is not cost effective for them to develop PV solar capacity. A public-private partnership is required, with a for-profit, tax paying developer as owner, and the town, church, or museum as the "off taker", able to buy the production at a bargain rate.

We may want to allow such projects to be regulated under the Community Solar Garden provisions, in the interest of reducing municipal costs, and costs to our churches and museums, and furthering Harvard's progress toward Green Community goals.