275 Attachment 7

Town of Sullivan

Solar Farm Guidelines
[Added 12-15-2021 by L.L. No. 4-2022]

Solar farms are long-term temporary, nonagricultural land developments in a community. They generally occur on leased farmlands that are proposed to be returned to the original condition at the end of the lease. Solar farms often propose to use active or fallow agricultural lands as their construction sites. The following presents guidelines as to what lands are considered best suited for solar farm use in the Town of Sullivan and are deemed consistent with the Town's long-term goals to balance renewable energy benefits and the potential impacts with agricultural resources.

Prime Farmlands

Where possible, solar farms should be located using a site design that limits the potential for negative impacts to the long-term use of productive farmland. NYS Department of Agriculture and Markets (NYSDAM) recommends that project sponsors avoid installing solar arrays on the most valuable or productive farmland. The following is the order of importance recommended by NYSDAM for solar array avoidance:

Active rotational farmland (most important)
Permanent hay land
Improved pasture
Unimproved pasture
Other support lands
Fallow/inactive farmland (least important)
Active rotational farmlands are generally considered to be prime farmland.

"Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil quality, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. The water supply is dependable and of adequate quality. Prime farmland is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service." (NRCS)

Based upon this definition, the Town of Sullivan considers soils designated by the NRCS as

well-drained soils with 0% to 8% slopes to be prime community farmland and that solar farm development on lands with these soils should be avoided.

Submittals

Prior to submitting engineering drawings for a solar farm development, the applicant for a solar farm shall submit three drawings/maps that will give provide information for the Town of Sullivan Planning Board to better understand the features of the site when engineered drawings are submitted.

Site-Specific Soil Survey: This document shall field identify the borders of existing site soils in accordance with NRCS standards and shall be performed by an accredited soil scientist whose name shall be noted on the drawing. Existing published soil maps and data shall only be used as guideline information by the soil scientist. In addition to field identifying site soils, the soil scientist shall document the depth of the plow layer on the site.

Topographic Map: This document shall be a map of the property (solar farm area) showing topographic features and shall be drawn displaying existing contours at two-foot intervals.

Visibility Map: This document shall be a map depicting existing natural (vegetation, topography) and man-made landscape features along roadways bordering the solar farm and within a half-mile radius of the site that provide potential visual screening for the proposed solar farm location. The map may use published data as its base. This document should include a graphic representation of the potential natural screening of a proposed solar farm site with a rating of high, medium, or low. The regulations include an option for the Planning Board to request a "digital-elevation-model-based project visibility map showing the impact of topography upon visibility of the project from other locations, to a distance radius of three miles from the center of the project." However, this map may be more appropriate to use in areas of documented vistas and viewsheds established by the Planning Board/Board of Appeals.

Solar Farm Features

When engineering drawings are submitted for review, the following important features of the solar farm should be considered:

Avoiding the use of concrete footings and driving the support posts into the ground to reduce or minimize disturbance of the existing farmland soil profile.

Designing the structural system that the panels will sit upon so that a single post can be used to support the individual solar panels.

Spacing of solar panels and panel rows with sufficient distances between them that will allow adequate sunlight penetration for viable plant growth on the farmland surfaces under the panels.

Enabling the potential for dual use of the solar farmland by setting panels approximately two meters above grade so that grazing (cattle, cows, sheep) and planting of some farm crops may occur.

Stringing electrical connections/wires on the panel structures or burying wires in shallow-laid conduits, setting them in the plow layer so the original soil profile is not disrupted.

Designing the site plan and its management of stormwater runoff to work with existing topography to minimize site grading and disruption of existing farm soils.

Restoration of the solar ground surfaces after construction. If not proposed for dual use, the site should use pollinator plant species (grasses, wildflowers) to create habitat features for small animals, birds, butterflies, and insects. Mowing of these areas should be limited to no more than twice a year, once before May 1 and once near the end of October.

If the solar farm surfaces are restored to habitat landscape, small openings in the bottom of the fence should be made to allow movement of small animals in and out of the farm.

Visual Mitigation

The solar farm applicants should provide a system for screening views of the solar farm from surrounding areas. This commonly entails a monoculture planting of smaller growth evergreen trees set in a line along the borders of the solar farm, but in a naturalistic way. Plant species often include arborvitae or red cedar. In suburban and rural areas, the arborvitae is deer food and the red cedar is a host for cedar apple rust (apple grower's problem). The monoculture evergreen planting, when installed with six-foot-high plants, will take a significant portion of the lease to provide a meaningful screen for the solar farm. Other visual mitigation solutions may exist.

On a relatively landscape area with a bordering local road, a solar farm may be screened with a constructed low (six-foot +/-) mowable earthen berm following the roadway alignment that is planted to pollinator species of grasses and wildflowers.

Rather than installing a monoculture line of plants, a solar farm plan may propose a hedgerow character planting using a mix of evergreen (60%) and deciduous (40%) species. The plantings should be clustered and staggered in much the same manner of natural hedgerow growth. Plants should be installed on a low mound, thereby giving better height at time of planting and maintaining the original farm soil profile.

Planting of larger growth evergreen trees (white pine, white spruce) at locations in or bordering the solar farm that would be out of the sun angle and thereby not impact the electrical system. The mature growth would help to mitigate the overall visual impact of the solar farm.

Woodland Solar Farm Sites

Woodland sites that may be proposed for solar farm use generally do not have prime agricultural soils. Use of a wooded area for a solar farm would require land clearing, stumping the land surface, and modifying of the soil profile.

Should a wooded site be proposed for solar farm use, it should not be dominated by the growth of native plant species. These would include sugar maple, red maple, black birch, beech, hickory, red oak, white oak, shadblow, and white pine.

A solar farm site proposed in a woodland dominated by the alien buckthorn and Norway maple or an old declining plantation of spruce or pine could be an ideal woodland location for a solar farm.