Solar Siting in New Jersey

Background Document

Sustainable Jersey

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This document is intended to frame the issues around siting of large commercial solar siting as a prelude to developing best practices and a guide for developing ordinances. It addresses state regulations, common issue areas and existing guidance for communities who wish to address solar siting.

I. Background

New Jersey continues to be a leader in renewable energy and solar in particular, with nearly 18,500 solar development projects with over 900MWs of energy capacity providing cleaner and renewable electricity.[1] This is due in part to both federal and state financial incentives and recent New Jersey state regulatory changes that promote solar development in New Jersey.

Despite this large influx of solar development projects into the state, there is no clear guidance or accepted standards available to municipalities for properly siting these projects. In particular, municipalities have been struggling to deal with requests to accommodate large commercial installations. These installations have the potential to have significant land use, aesthetic, economic, and environmental impacts. Recent state legislations allow for the design and adoption of siting criteria for solar projects at the local level. Such criteria as the location, size and aesthetics can be regulated by municipalities. Currently, however, most municipalities do not have ordinances or site design standards in place to assess solar projects and approve, modify, or reject them, but rather must turn to the use-variance process which must be performed on a case by case basis.

This piecemeal approach has a two-fold effect. An inconsistent, unpredictable and inefficient process saps municipal and private sector resources and can retard the growth of the solar industry. Secondly, with no clear guidelines or standards for solar development in communities, any given application may have undesired consequences such as poor aesthetics or improper use of valuable or sensitive land.

Given the continuing demand for solar projects in New Jersey, it is becoming clear that municipalities should proactively address solar installations with the development of ordinances outlining siting standards. Some municipalities have begun adopting ordinances to regulate the installation of solar panels in an attempt to balance the benefits of renewable energy with the goals characterized in their municipal planning documents and to preserve the aesthetics of their community. However, without clear guidance on how to construct solar installation siting ordinances, many of these efforts conflict with state laws, are overly restrictive, fail to address key impacts, and produce other unintended consequences.

This document is intended to frame the issues around siting of large commercial solar siting as a prelude to developing best practices and a guide for developing ordinances. It addresses state regulations, common issue areas and existing guidance for communities who wish to address solar siting. It will first cover the current state regulations that affect solar siting and will then highlight issue areas that have been identified by municipalities, solar developers and other stakeholders.

Lastly, it will highlight topics that should be considered when developing regulations on solar siting on the municipal level. Ultimately, it also seeks to serve as an entrée for wider discussion amongst stakeholders to develop more comprehensive guidance and framework for solar siting in New Jersey.

[1] http://www.njcleanenergy.com/renewable-energy/project-activity-reports/installation-summary-technology/installation-summary-technology

II. State Regulations

Fueling this rapid development in solar installations has been the promulgation of laws by the New Jersey State Legislature to advance solar energy in the state. Some regulatory agencies have also engaged in rule making that addresses the solar and renewable energy industry. Below is an overview of these actions.

S1303/A3062 (2009) amended New Jersey Municipal Land Use Law (MLUL) to classify solar technology as an "inherently beneficial use" meaning that it is "universally considered of value to the community because it fundamentally serves the public good and promotes the general welfare." This places the burden on municipalities to prove that a solar installation is a substantial detriment to the community or substantially deviates from the master plan if the municipality wishes to block the project.

A2550/S1299 (2009) amended the MLUL to permit renewable energy facilities in industrial zones as a use by right on, "parcels of land comprising 20 or more contiguous acres that are owned by the same person or entity."

S921/A2289 (2010) exempts solar panels from calculations of impervious surface cover, typically required by New Jersey Department of Environmental Protections (NJDEP) Stormwater Management Regulation. This exemption makes it easier for larger solar installations to comply with state regulatory programs and obtain environmental permits for solar installations. It does not, however, exempt the base or foundation of the solar panels from the calculation.

S1538/A2859 (2009) Legislation was adopted that extended the protections of the Right to Farm Act to the generation of solar energy on commercial farms within certain standards. This extension provides commercial farms that wish to generate solar energy with protection against restrictive local ordinances and regulations. To comply with this act and receive protections of the Right to Farm Act, all solar development projects on preserved farmland must be reviewed by the State Agriculture Development Committee (SADC) in consultation with the owner of the development easement (e.g., county agriculture development board or nonprofit entity). The projects must be in compliance with the Agricultural Management Practices (AMPs) adopted by the SADC as well as any local municipal ordinances and siting standards.

Additional Regulations:

The Pinelands Commission proposed amendments to the Pinelands Comprehensive Management Plan that will set forth guidelines and regulations for the development of solar installations in all management areas.[2]

[2] Pinelands Comprehensive Management Plan. Proposed Amendments: N.J.A.C. 7:50-2.11, 4.1, 5.19, 5.22, 5.23, 5.24, 5.25, 5.26 and 5.47 Proposed New Rule: N.J.A.C. 7:50-5.36
http://www.state.nj.us/pinelands/cmp/amend/solarruleproposalforwebsite.pdf

New Jersey Department of Environmental Protection, Division of Land Use Regulations, has also adopted rules which give special allowances for locating solar within NJDEP's waterfront development jurisdiction (which is 500' from the mean high water line). The rule is at http://www.nj.gov/dep/landuse/7-7.pdf and the (Coastal Zone Management Rule (CZM) companion rule is at http://www.nj.gov/dep/rules/rules/njac7_7e.pdf

III. Common Issue Areas

While municipalities work to adjust to rise of solar development appropriately, many find they do not have the ability or capacity to review or regulate the projects properly. In many instances they encounter a variety of issues they were unprepared for or unaware of and cite these as concerns with solar development. Similarly, individuals and companies interested in pursuing solar installations find that while some municipalities seek to guide solar development through ordinances, these ordinances may be over burdensome and do not address issues suitably. While not an exhaustive list, the following sections highlights some of the most common issue areas highlighted by municipalities, solar developers, and both the public and private side in regards to solar installations in the state.

Location/Siting of large-scale solar installations

Perhaps the foremost issue in solar siting is the physical siting and location of solar photovoltaic systems. With the adoption of S1303/A3062 (2009) which amended New Jersey Municipal Land Use Law (MLUL) to classify solar technology as an "inherently beneficial use", siting of solar photovoltaic systems in many areas is deemed a beneficial use and difficult to halt even if the project is undesired by the municipality.

Though solar may be beneficial in many contexts, residents and municipalities often wish to prevent solar in some areas in their municipality that state laws currently permit for a variety of reasons. Large-scale solar development may compete with more desirable uses such as redevelopment areas and agricultural lands. Instead, municipalities may wish to redirect these solar systems to more appropriate sites such as rooftops, existing impervious areas, brownfields, and sand and gravel pits. However, without proper ordinances and supporting planning documents, many municipalities are unable to provide sufficient evidence to defeat the inherently beneficial use assumption and must accept applications for solar development in areas undesirable to the municipality and residents.

Many municipalities are beginning to face the issue of

Siting Standards

While the principal issue in many municipalities is the location of large-scale solar facilities, issues regarding siting standards are prominent on both the public and private side of solar installations. As outlined in their comments on the New Jersey 2011 Draft Energy Master Plan,

the Solar Alliance has identified these common problem areas and examples in local ordinances[3]. These areas and examples identified are:

Setback requirements
Issue: Towns imposing setbacks from lot lines and existing structures that are broader than necessary to address public safety and aesthetic concerns. This could limit the placement of solar panels to areas of the property that do not receive adequate sunlight and/or otherwise limit the economic viability of projects.

Example: The Town of East Amwell recently revised their Solar Ordinance, incorporating rather severe setback restrictions. The local ordinance now provides that the setback must be a minimum of 150' (all yards) + 300' from residential structure (adjacent use) + 150' setback from accessory structures on site.

Placement of panels on roofs facing street
Issue: Towns precluding, or establishing presumption against, the location of systems on street-facing portions of the roof. This often limits the ability to use portions of the rooftop with the best solar insolation (i.e., south facing roofs).

Example: The Township of Lafayette's Land Use Board recently proposed an amendment to its zoning laws which provide, in pertinent part: "Solar panels installed in a rooftop configuration must be installed on the rear roof area unless the applicant makes a showing to the satisfaction of the Land Use Board that the rooftop configuration proposed cannot be installed on the rear roof area."

Height restrictions
Issue: Overly stringent height restrictions can limit the use of fixed-tilt or tracking systems that are oriented to maximize the output of the solar system and achieve the customer's investment requirements.

Example: The Township of Kingwood limits rooftop solar installations to twelve inches (12") above the edge of the roofline of above the highest point of the roof surface or structure.

Minimum lot size for ground mounts
Issue: Ground mounts may be the optimal configuration for a given solar installation. Lot size to accommodate a ground mounted system is a function of the capacity of the solar system, and should not *assume* a massive project.

Example: The Township of Lafayette's Land Use Board proposed that ground mounted systems only be allowed on lots with a minimum lot size of three (3) acres.

Restrictions on portion of lot that can be utilized for solar systems
Issue: Farmland preservation is a paramount state objective. However, this goal must be reasonably balanced with the state's interest in clean and renewable energy that leaves a relatively lighter (and reversible) footprint. Some ordinances, by confining solar to a miniscule portion of the underlying property, fail to strike an appropriate balance.

[3] Comments of the Solar Alliance on the New Jersey 2011 Draft Energy Master Plan. August 25, 2011. http://www.solaralliance.org/editor/upload/files/Solar%20Alliance%20comments%20to%20NJ%20Draft%20EMP%20-%20FINAL.pdf

Example: The Township of Raritan limits ground mounted solar arrays to 2% of the total surface area.

Screening requirements
Issue: Judicious screening requirements may be desirable in order to limit visibility of large arrays from the street or adjoining properties. However, overbroad requirements can impede access to sunlight and, for rooftop systems, can also increase the structural load beyond that allowed by local codes. Excessive requirements for ground-mounted systems can be cost-prohibitive and not materially contribute to the objectives of limiting unsightly views.

Example (Rooftop): The Township of Washington enacted a Renewable Energy Ordinance which mandates that roof-mounted support structures shall not be higher than twelve inches above the roof-line unless screened by a parapet wall.

Example (Ground Mount): The Township of Kingwood requires extensive berm, landscaping and fencing requirements for grid-connected solar projects, including the requirement that "a landscaped berm shall be provided not less than 25' in width and of sufficient height to totally obscure any view of all solar and photovoltaic energy facilities and structures at the time such facilities and structures are placed in service."

Impervious surface restrictions
Issue: New Jersey law exempts solar panels from the calculation of impervious surface or impervious cover as it relates to stormwater run-off and other land use requirements. However, towns are routinely passing solar ordinances inconsistent with this law.

Example: The Township of Raritan's renewable energy ordinance unqualifiedly provides that solar arrays "shall count as hard surface coverage."

IV. Considerations for Ordinance Development

It is generally agreed that it is better for municipalities to proactively address solar installations with the development of ordinances and site design standards that address these facilities. Ordinances that are properly developed and well-defined can speed the approval process and balance the needs and goals of the community with the development of solar installations. These ordinances can identify particular areas within a municipality to encourage solar development as well as define specific site standards for their installation. In general, there are a variety of things that a municipality should consider when developing an ordinance that regulates solar siting.

Municipalities may first want to consider where they want to encourage solar development. Consulting of planning documents such as the master plan, open space and farmland preservation plans, environmental/natural resource inventory, and documents will help provide a background and context to where solar siting might be appropriate. Municipalities might seek to identify specific sites to encourage solar such as brownfields or large rooftops or to protect particular areas such as woodlands or agricultural areas. Additionally, municipalities may wish to reexamine and amend their master plans to analyze the issue of solar and include these visions.

As important as identifying areas where solar should be located is establishing siting standards. Location, done through zoning, addresses the location of a project. Siting standards can control

the aesthetics and details of an installation on a site, and mitigate the impact solar siting has on communities. There are numerous elements that should be considered when developing siting standards for solar. Areas already identified include:

- Setback requirements
- Height restrictions
- Screening
- Light reflection/glare
- Sound levels
- Signage
- Siting on historic sites
- Decommissioning/Abandonment
- Enforcement and penalties
- Mount type (roof vs. ground)
- Soil erosion
- Impervious Coverage
- Production limits

While all of these standards may not apply to all municipalities or projects, they should be evaluated when developing an ordinance. Furthermore, siting standards can be specific to certain areas with varying degrees of restrictions depending on the location of the project.

The Delaware Valley Regional Planning Commission has an extensive framework and guidelines for municipalities to utilize when developing a solar ordinance that is currently in draft form. This framework addresses the majority of issues identified above and presents questions and scenarios that municipalities will want to address when developing an ordinance.[4]

[4] Draft Alternative Energy Ordinance Framework – Solar. Delaware Valley Regional Planning Commission. April 2011.