

Solar Land Leasing and Municipal Best Practices:

The State of Solar in New York and Recommended Approaches for Landowners and Local Jurisdictions

Co-Sponsored by New York Solar Energy Industries Association (NYSEIA) and the NY
Energy Democracy Alliance (NYEDA)

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About NYEDA

NYEDA is a statewide consortium of diverse community organizations working to advance a just and participatory transition to a resilient, localized and democratically controlled clean energy economy in New York State. More at www.energydemocracyny.org. Coshare is a member-based network of civil society organizations, volunteer activists, entrepreneurs and energy practitioners who are working to advance locally controlled, community-based and shared renewable energy projects across the state. Learn more at www.cosharenys.org.



Community Owned Shared Renewables



About NYSEIA

NYSEIA is the only statewide membership and trade association dedicated solely to advancing solar energy use in New York state. Led by a growing staff and diverse Board of Directors, NYSEIA strives to achieve responsible and sustainable solar energy adoption throughout the state, while creating jobs that benefit communities and urgently reducing the environmental impacts from fossil fuels. Learn more at nyseia.org.



Context For Solar in New York

- Solar photovoltaics (PV) is a key source of clean renewable electricity, and is an important part of the needed transition to a renewable energy infrastructure
- New York has been deploying solar for over a decade, but with recent cost reductions, policy updates, and corrections to how we measure “externalized costs”, it is finally scaling to serve and benefit customers in all sectors – residential, community, and commercial/industrial/government



Context For Solar in New York

The policies driving this transition have previously just been in the form of state incentives and net-metering, but to increase the scale and pace the most significant initiatives currently are:

- **The NY Clean Energy Standard (CES)** - A state mandate for 50% of New York's electricity consumption to come from renewable energy sources by 2030. The exact form of the CES is currently being decided in Case #15-E-0302. The goal is to meet this target by requiring new utility-scale renewable resources to come online including solar, land-based and offshore wind, small-medium scale hydro, and some biomass/biogas in addition to the "behind the meter" renewable electricity already being deployed on the distribution system
- The **Reforming the Energy Vision (REV)** initiative has been underway for 2 years now, and is working to restructure the electric utility business model to encourage the above transition, improve resiliency, increase customer choice, and reduce customer costs.

Overview of Solar in New York

- Currently, solar provides 0.6% of New York's annual electricity, but this percentage is growing rapidly as larger facilities come online
- New York has a good solar resource. Even with our cloudy winters and snow, according to 30 years of meteorological data, we have 2/3rds of the annual solar resource of Southern California or Arizona. A MWdc of solar in New York will typically produce 1175-1325 MWh/year, depending on the project's location.
- Solar has proven itself to be reliable, with long warranties on equipment and low maintenance requirements, and its efficiency and safety (the panels and inverters) are rated and tested by 3rd parties. Thus industry is also regulated by the NY Public Service Commission, the NYS Uniform Code, and local municipal zoning.

Overview of Solar in New York

- The intermittency of solar is completely manageable and poses no near-term barrier to development. Addressing intermittency is not necessary until solar and wind reach more than 15-30% of New York's electricity. Beyond this level, we know how to mitigate solar intermittency by combining it with storage, hydro, wind, and other distributed energy resources.
- Besides providing clean renewable electricity, the solar industry in New York also employs over 8,250 people and this number continues to grow each year
- The economics of solar have and continue to make sense for customers. Most residential customers and a large % of commercial/industrial customers are able to save 10-15% in their annual electric costs without any capital investment upfront
- As more and larger solar facilities are coming online, landowners, municipalities, and local economies are also seeing greater economic benefits

Solar and Land Use

- **Timing**

- Commercial-scale solar facilities (up to 2-2.5MW per site or 10-12 acres) have only been being built in New York since 2013, with most under development just since mid-2015.
- No utility-scale solar facilities have yet been built outside of Long Island and will likely not be get underway until 2018 at earliest. These facilities are expected to be up to 50 MW facilities (but not up to 500 MW facilities like in California).
- Both types of facilities are very common in other states ranging from California to North Carolina.

- **Location**

- Solar can and will continue to be located on roofs and over parking lots (the later when affordable), but ground-mounted solar has been and will continue to increasingly be an important location for solar.
- 1 MWdc of solar requires about 5-7 acres of land, but with over 60% of that land being left as open space and 99+% remaining pervious

Solar and Land Use

- **Features of Land Being Sought**

- Previously cleared or disturbed land is first preference
- Land currently in active use for agriculture is not being sought specifically, but can be suitable based on landowner's preference, benefits, and the crop currently being produced
- Land that is relatively flat or has a gentle rolling topography is generally most cost effective to work with from an engineering perspective and also will not disrupt soil on slopes
- Land should not be a federal or state wetland, not be protected for historic or archeological reasons, and not have outstanding liens
- For medium to large commercial/industrial facilities, land should typically have 3 phase distribution lines on the road near the property
- For utility-scale facilities, land should have access to subtransmission or transmission lines

Solar and Land Use

- **Scope of Land Use**

- Land use will be limited fundamentally by the capacity of the distribution and transmission grids, and also by local zoning and the success of state policy
- The CES is intended to promote a number of renewable energy technologies of which solar is just one important one.
- In fact, currently the draft CES models 2,700 MW of behind-the-meter solar coming online by 2023 and then just proposes an additional 125 MW of utility-scale solar by 2023. This is 2,825 MW of solar and if in the unlikely case that it was all ground-mounted would use 14,125 acres, equivalent to 0.2% of New York's farm land or 0.04% of New York's total land area.
- NYSEIA would like to see utility-scale solar come online much more quickly than this, but even with that, it would be extremely unlikely that all new renewable electricity to meet the state's CES 2030 goal would be from solar. In the unlikely situation that it was all from solar and it was all ground-mounted, this would use 140,450 acres, which is equivalent to 2% of New York's farm land or 0.4% of New York's total land area

Solar and Land Use

- **Impacts on Land**

- As mentioned, solar facilities are typically not located in wetlands, conservation areas, or on extremely steep slopes etc.
- Solar facilities are typically viewed as low-impact – using little or no concrete, and not creating impervious surfaces. As mentioned above, over 60% of the land used for solar remains open space because of the needed spacing between the rows and typically over 99% of the land retains its natural vegetation
- Solar facilities are reviewed for and typically found to have little or no impact on storm water management, glare impact, or impact on wildlife especially with use of wildlife friendly fencing for large facilities



Solar and Land Use

- **Impacts on Neighbors and Property Values**

- To date in New York, there has been no evidence of solar facilities of the scale constructed to date having any negative impact on neighboring property values
- This is most likely because these facilities:
 - Generate no on-site pollution
 - Make no discernable noise
 - Do not have on-site lighting
 - Do not increase traffic
 - Retain most of the natural vegetation and have minimal impacts on site hydrology and storm water
 - Are relatively low profile (with 10-12' maximum height)
 - Can have additional landscaping or buffering from residential areas

Intro to Solar Land Leasing

- Solar developers have different approaches and processes for land leasing. We will do our best to present the general process and key areas of importance, while still recognizing that there can be many ways to do this well.
- Solar leases are detailed contracts and it is highly recommended that all landowners seek legal counsel from trusted attorneys.
- Ask the solar company a lot of questions about their lease! It's better to get questions/concerns out in the open before the project begins to make sure it's the right fit.
- Also please be aware that although we refer to “a solar developer”, there may be several different parties involved in the process over time and this is normal. These different roles can be handled by one company, or can involve several different ones working together under the project umbrella with clear lines of responsibility. Common different roles that exist for projects are: land agent, preconstruction developer, engineering/procurement/construction company (EPC), operator, owner, and lender.

Typical Land Lease Process Overview

- 1) Landowner or solar developer initiates process, and initial screening of land is done
- 2) Developer presents landowner with “option-to-lease (or to-purchase)” agreement. Option-to-lease agreements typically include an option period during which the developer reviews the site in more detail and files for the required permits and approvals, including the utility interconnection application and related studies, and the landowner is paid a one-time flat fee for this time
- 3) Landowner reviews agreement, negotiates any changes, and signs agreement
- 4) It is important to note that once an option agreement is signed, the developer will spend significant funds to complete the development/permitting of a project. Until the permitting and utility interconnection approvals are complete, the developer does not know if a project is viable or not.
- 5) If the developer is successful obtaining the permits and the utility interconnection costs are feasible, then the developer will typically exercise, the option to lease (or purchase) the land

Typical Land Lease Process Overview

- 5) The formal land lease period and accompanying annual or biannual payments begin typically at the start of construction although sometimes the amount of rent is lower during the construction period, and the full lease rate begins when the project is completed.
- 6) Leases are typically for a minimum of 25 years for project financing reasons, and so the lease lasts at least as long as the equipment's minimum useful life. Extensions can be allowed upfront in the agreement or can be by mutual agreement later on.
- 7) At the end of its useful life, the facility is decommissioned and removed.



Land Lease Best Practices

Lease Agreement should typically:

- Have an upfront fee paid to the landowner by the developer for the option period. During this period, the landowner is free to continue earning revenue from the land through previous agricultural or other land use practices.
- Be clear regarding the area available to be leased under the option, including access and any easements.
- Detail scope of possible property alterations within the leased parcel – maximum height of infrastructure, whether there are to be any roads or buildings constructed, vegetation changes, and signage
- Specify a lease payment that begins once the option to Lease is exercised and construction begins. Per acre payments should be based on prevailing land values, but are generally higher than tenant farming rates to account for the longer term nature of the lease. The lease payment can be either a specific amount, an amount per-acre, or an amount per-MW of installed capacity. The amount that a project can afford to pay for a lease is driven mostly by the electric rates in that area, since higher electric rates make the project's output more valuable.

Land Lease Best Practices

Lease Agreement should typically (cont):

- Have provisions to ensure maintenance is done on leased parcel, and usually should specify the allowed property management techniques, i.e. that vegetation maintenance be done without chemicals
- Prohibit the landowner from doing anything on their remaining unleased property that would shade and interfere with the solar resource of the leased property – i.e. buildings, planting trees, etc. In addition, leases typically address passive vegetation growth on the landowner's remaining property by granting the developer/tenant the right to keep any vegetation on the unleased land within certain radius of facility from shading solar using above specified management techniques

Land Lease Best Practices

Lease Agreement should typically (cont):

- Specify the developer/tenant is responsible for any increased taxes on the property due to the solar. This should include any increase due to a greater assessed value due to solar, reclassification of the assessment methodology used, and/or the loss of the agricultural exemption for the leased acreage due to solar.
- Include discussion of how to handle any upfront one time penalty/conversion fee if acreage removed from agricultural exemption
- Specify how base property taxes unrelated to solar are treated – typically they remain the landowner's responsibility.
- Specify that if there is a mortgage on property, the developer will require bank to sign Non Disturbance Agreement (NDA), and that future mortgages are possible with a similar NDA or subdivision

Land Lease Best Practices

Lease Agreement should typically (cont):

- Include that permitting is the responsibility of the developer
- Require that developer/tenant have liability and property damage insurance
- Include transfer of leases to successors, heirs, or new owners
- Have clear and detailed decommissioning section – for example, many leases require that at the end of facility operation all aboveground and below-ground equipment, structures, and foundations (if applicable) be removed. Usually decommissioning is assured by contract and scrap value of the facility exceeding the cost of removal.

Also, if the lease includes a provision for first-right-to-purchase or exclusivity zone, the landowner should clearly understand the provision and discuss it with their attorney

Municipal Best Practices

Municipalities have a very important role to play in facilitating smart solar deployment to benefit residents, businesses, and landowners, as well as to ensure community health and prosperity. Some key areas for municipalities are:

- Understanding scale and pace of possible solar development, and benefits to constituents
- Zoning and permitting policy
- Property tax policy

Scale and Pace of Possible Development

- Currently with solar only connecting to the distribution system, the near-term possible solar in any municipality or county can easily be estimated from the details of that system
- These numbers often show municipalities where development would likely go, and also that they are typically not at risk of overwhelming large solar development in the near-term
- Thus, many municipalities are finding that there is not need to pause or have a moratorium as they consider solar policies such as zoning and property tax



Zoning and Permitting

Some common best practices for zoning/permitting solar are:

- *If you don't have solar specific zoning*, ensure that it is possible for a solar project to go through your existing site plan review or special permit process
- *If you have or want to put in place solar specific zoning*,
 - Allow all scales of solar generally – residential, community/commercial, and utility
 - Allow as primary and accessory structures
 - Create at least 3 categories of facilities with different requirements for approval and possibly permitted in different zones. For example, roof-mounted facilities are often allowed in all zones with a permit, minor ground-mounted are often allowed in all zones with a permit as long as they meet certain requirements, and major ground-mounted facilities are allowed in many zones if they meet certain requirements and successfully go through a site-plan review process.

Zoning and Permitting

- Set general standard requirements for minor and major ground-mounted categories such as setbacks and height maximum
- Require additional items in the site plan review process for major ground-mounted systems like the following:
 - Consideration of vegetation removal and impervious surfaces as with other development
 - Review of storm water impacts and completion of SWPP if required
 - Review of glare towards buildings on adjacent properties or roads using Sandia's Solar Glare Hazard Analysis Tool
 - Review of landscaping and fencing (not required as a default but may be deemed necessary because of location or financing)
 - Small signage with facility contact info
 - Decommissioning timeline, plan, and standards
- **In either approach, plan to act as lead agency for SEQR process during permitting – typically solar is an unclassified action and requires a short form SEQR**

Property Tax

- New York currently has a law that provides a property tax exemption for the value solar adds to a property for 15 years from the facility's completion (NY Real Property Tax Law Section 487). This law has been in place since the 1990's and was just extended until 2025.
- Municipalities, counties, and school districts all provide this exemption as a default, and must pass a local law or resolution to opt out of providing it
- Opting out typically discourages solar development because the additional cost to solar customers can significantly impact the economics of projects, and/or the taxation process can introduce uncertainty that discourages financing
- An important presentation for every municipality, county, and school district to see is of the economic benefits of providing the exemption (through increased jobs and business development and their resulting tax contributions) vs. additional tax revenue from the solar directly.
- Please note that jurisdictions can also remain providing the exemption, but do Payments in Lieu of Taxes (PILOTS) for large facilities like utility scale solar

Questions?

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