

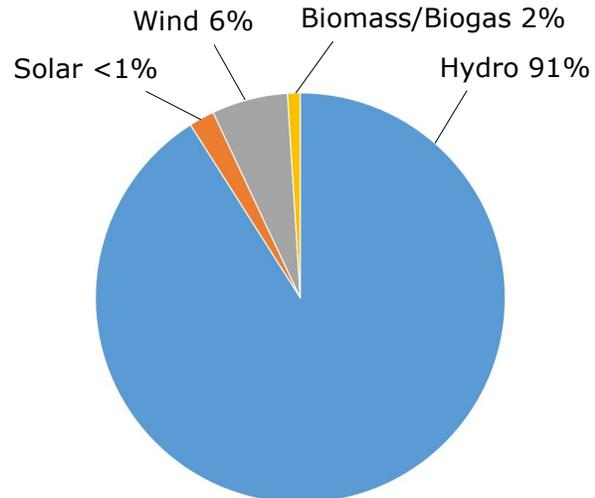
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Solar is Gaining Ground *How to Ensure Your Community is Prepared*

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In 2015, New York State enacted a comprehensive energy plan to build a clean, resilient and affordable energy system for all New Yorkers. One of the state's main goals is to generate 50% of electricity from renewable sources by 2030. Not only does the use of renewable energy reduce the emission of greenhouse gases, but having energy generation occur nearer to where it is being used can help create a more reliable distribution grid, which is more resilient to outages.

The 50% renewables goal is a very aggressive one, and will impact the number of solar projects we will see locally. While many of our communities have been primarily seeing small solar projects locate on or adjacent to private homes, we will likely see more community solar and solar farm projects in the future. The state anticipates approximately 5,000 megawatts (MW) of new solar capacity will come online by 2030 to meet the renewables challenge. For perspective, one (1) megawatt of solar generating capacity is equal to approximately six (6) acres of solar array, and can offset the electricity use of approximately 150–200 homes.



2014 statewide renewable fuel mix, which accounted for just 26% of the state's entire electricity generation needs. [Source: NYS Department of Public Service]

Update Local Zoning Regulations to Address Solar

In order to meet the state's goal of 50% renewables by 2030, our communities must be prepared to entertain proposals for solar generation. Yet many local zoning regulations haven't caught up with the need, and don't mention this type of use or make provisions for its approval or regulation. Since many zoning ordinances do not allow any uses not specifically listed as being permitted, solar energy generating systems are often prohibited by default.

To encourage the development of solar, NY-Sun has produced a Solar [Guidebook for Local Governments](#) and provided technical assistance to help make municipal approval of solar more consistent and less burdensome, while ensuring communities can mitigate any impacts to local resources. The state has also issued a [Model Solar Energy Law and Toolkit](#) to further support municipalities looking to encourage renewable energy development.

Regulating Solar - When Does Local Zoning Apply?

When discussing the regulation of solar energy generating systems, the first defining issue is scale. For large, utility-scale facilities of 25 megawatts or more, Article 10 of the NYS

Public Service law provides a unified review and approval process that supersedes most local and state approvals (except for SPDES and air quality regulations). These projects are managed by NYS Department of Public Service staff and are exempt from review under SEQRA.

Smaller scale photovoltaic (PV) projects are controlled by local and state regulations and are subject to local zoning and review under SEQRA. These types of projects are usually divided into three categories: Roof-Mounted/Building-Integrated, Accessory Ground-Mounted, and Large-Scale.

Roof-Mounted/Building-Integrated

These projects consist of solar arrays attached to a roof, or PV cells that are integrated into the architectural components of a structure. These are smaller systems that offset the power pulled from the grid for on-site use, feeding any excess back into the grid. These systems have very little impact on the community, and most municipalities consider them permitted as of right. Usually they are required to meet any height restrictions in the zoning district where they are located. Some additional guidelines may be added in historic districts.



View of roof-mounted solar panels installed on a single-family home.

Accessory Ground-Mounted

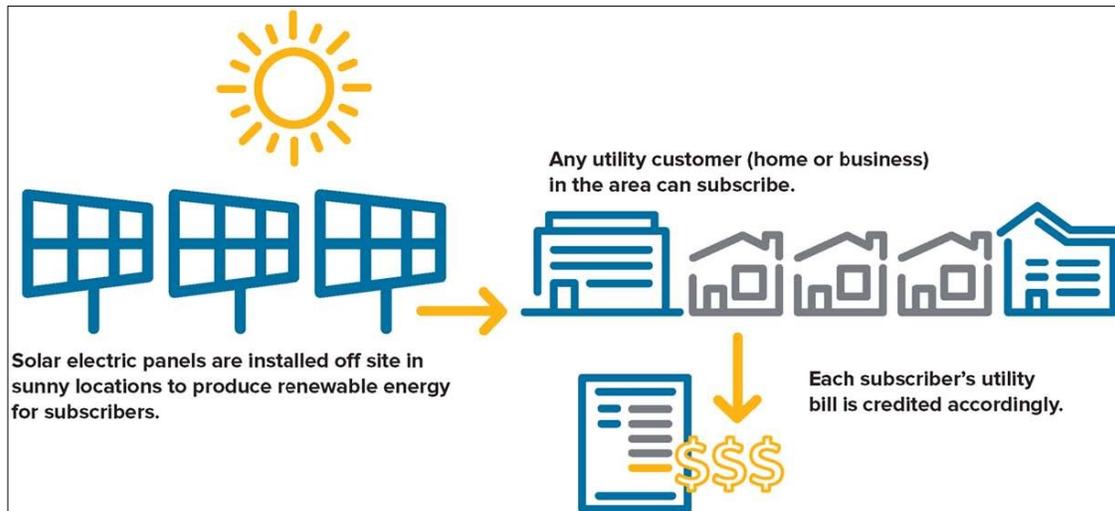
These projects are solar arrays that are mounted on poles, often located in side or rear yards. Again, these are smaller systems that are hooked into the electric grid and used primarily to offset the on-site power needs. Ground-mounted arrays are usually considered accessory permitted uses and are required to meet the same setbacks as any other building or structure in the involved district. In residential districts, ground-mounted systems are often required to be located in the side or rear yards, as practical. As long as these requirements are met, screening is usually not required as it may reduce the array's exposure to sunlight and thus its efficiency.



On the left is an example of ground-mounted solar installed in the side yard of a single-family home. On the right is a larger project, a ground-mounted array installed on the grounds of a private school.

Large-Scale

These systems are often in the generating capacity range of 2MWs, which can serve to offset the electricity use of approximately 200-400 homes. Most of the 2 MW projects are being developed as community solar (community distributed generation) projects, which allow residents who live in proximity to the project to buy shares in the solar array and receive credits on their utility bill based on the energy generated by the system. The larger nature of these projects means they have the potential to have a greater impact on the community, and so their approval requires more careful consideration.



This graphic provides a basic description of how Community Solar projects work. [Source: NYSEERDA]

Community solar systems are generally considered the primary use of the involved site. As a primary use, municipalities should conduct a thorough review of all their districts to determine where community solar projects should be allowed. Municipalities should also add a section to their comprehensive plans outlining the need for zoning changes to allow for community solar. Because these systems are fairly land extensive, this use may not be appropriate for areas with compact land use patterns.

After determining what districts community solar should be allowed in, the municipality may want to be able to place conditions on their approvals, so approval by special use permit with site plan is often chosen. There are a variety of issues to consider:

- These systems may not be compatible with natural resource protection areas. Buffers that the community already has in place to protect natural resources should be applied to these projects, including wetlands, stream buffers, flood-hazard areas, steep slopes and critical environmental areas (CEAs).
- Community solar systems may require a significant amount of tree cutting and clearing, so requirements that consider retaining existing contiguous forest and requiring stormwater management plans to reduce erosion and maintain vegetative cover are very important.
- The maintenance of any important wildlife corridors should be protected by not allowing fenced-in solar arrays to be sited within these corridors. This is important to provide connections between protected areas and other open space resources to allow animal populations to move between these areas.
- The size of these systems and their potential visual impact must also be considered. The visual impact of these projects can be addressed through required setbacks and screening.
- Detailed studies of the potential for glare from the system affecting adjacent roadways, neighboring properties or scenic views may be necessary.

New Obstacles to Solar Energy Development

As more communities are studying and incorporating solar project regulations, new issues have cropped up that should be addressed.

Decommissioning

Many municipalities are concerned with ensuring that large-scale solar arrays are removed and the land reclaimed when the site is no longer used for generating energy. Some have determined that the best way to ensure the proper restoration of the land is to require a bond be set up to fund the removal and restoration of the site. However, this may prove cost-prohibitive.

An alternative approach is to require a decommissioning plan be filed as part of the site plan approval process. The plan could then be enforced like any other site plan condition. It is important when considering this approach that a clear definition of when the decommissioning plan would be required to be implemented is included. For instance, the implementation of the decommissioning plan could be required after 18 months of the solar farm not generating electricity for sale. A clause could be included that specifically allows the municipality to undertake the removal and restoration of the former solar farm, once the agreed upon period of inactivity has been exceeded, and charge the landowner back for the decommissioning. If this is the approach to be taken, the municipality should also include a required notice to the landowner of the municipality's intent to take action and a thirty-day grace period for the landowner to commence the decommissioning themselves. Often solar farms are proposed on land leased for that purpose.

If a municipality is requiring a decommissioning plan for a community solar project, the landowner should be notified of this provision to ensure that they are not stuck with the decommissioning costs after the solar developers lease has expired. NYSERDA has created a [fact sheet](#) to inform communities how to ensure that decommissioning takes place, without overly burdening the landowner or solar developer.

Prime Agricultural Soils

Some municipalities are looking at ways to limit the development of solar farms on prime and statewide agricultural soils. Most have determined that a special use permit with site plan approval should be required for the development of solar farms, and when combined with a decommissioning plan that requires restoration of the land, this approach is adequate to protect soil resources. There may also be a cumulative limit imposed on how much of this soil resource located in a specific community may be impacted before no further solar farm projects would be allowed on prime agricultural soils. Another approach some municipalities are considering is to allow the prime soils to be removed and either stockpiled or used elsewhere on the property. This approach requires planning to ensure that the soil characteristics that make them exceptional for agricultural are maintained.

General Impacts on Agriculture

To mitigate the impact of the conversion of agricultural lands to solar energy production, other innovative ways to combine the uses are being considered. For example, by spacing the ground-mounted solar arrays farther apart and



Sheep grazing amidst an array of ground-mounted solar, able to enjoy the shade cast by the panels while helping to naturally manage the vegetation. [Photo credit: www.theecologist.org]

increasing the height of the poles, some types of agricultural uses can still be accommodated; livestock could continue to graze and live in the impacted fields, as long as the associated wiring and other hardware are protected. The arrays are required to be fenced in, as are the livestock, and the arrays provide shade that the animals can use on hot days.

One solar farm application we recently reviewed proposes “pollinator habitat plantings” under the solar arrays. With this approach, the involved solar farm can support pollinator species, which are essential for the success of so many types of agriculture.



Native wildflowers growing amidst a solar array can provide important habitat, particularly for pollinators. Other benefits include improvements to water infiltration rates as well as soil quality and stabilization. [Photo credit: Guy Parker]

Moving Forward With Solar

New York State is making significant efforts to promote and accelerate the development of solar energy generating systems to meet its goal of having 50% of electrical energy generated from renewable sources by 2030. The success of this goal depends, in part, on municipalities regulating solar in a way that does not raise unnecessary obstacles to their development, while also protecting the community’s existing resources and character. Take a look at how your community is handling this exciting transformation of the electrical industry to a more environmentally beneficial, resilient and reliable system for generating and delivering power. If nothing is on the books yet, local officials and those interested in supporting solar can use the resources included in this article to help craft responsible regulations.

More Information

[Solar Guidebook for Local Governments](#) – NY-Sun

[New York State Model Solar Energy Law](#) – CUNY, Pace Land Use Law Center, and NYSolar Smart Planning and Zoning Working Group

[Tools to Promote and Regulate the Deployment of Renewable Energy Systems](#) – Tompkins County Department of Planning and Sustainability

[Pollinator-Friendly Solar Initiative](#)

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More Information

[Solar Site Pollinator Habitat Planning & Assessment Form](#) – Pollinator-Friendly Solar Initiative of Vermont

[Model Ordinance for Solar Photovoltaic Systems](#) – Central New York Regional Planning & Development Board

[NYSERDA Fact Sheet: Decommissioning Solar Panel Systems](#)

[Zoning for Solar Energy](#) – DCPF October 2015 eNewsletter

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This newsletter was developed by the Dutchess County Department of Planning and Development, in conjunction with the Dutchess County Planning Federation.

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