



Solar Local Zoning and Building Regulation in Illinois

As a result of the Future Energy Jobs Act, local government in Illinois can expect to see increased interest in solar development. By 2025, the demand for solar will result in the development of over 2,000 MW of solar. Solar development will provide many new jobs as well as hundreds of millions of dollars in new investment into the state. This amount of development will require between 10,000-15,000 acres of land or rooftop, which represents only a small fraction of Illinois’ overall area. Projects will come in a variety of forms, and local governments should plan to see interest from solar developers in all of these categories. Short descriptions of the different types of solar that will be built are in the table below, as well as the amount of MW that is likely to be developed by 2025 because of the Future Energy Jobs Act.

Generally, solar development has a very low-impact on the land that is hosting the equipment and the surrounding area. While local officials may have had experience with wind development in Illinois, these two clean energy sources have very different impacts on land and land use and should be regulated differently.

The Illinois Solar Energy Association has developed this set of comments and principles as guidance for local governments that are confronted with the prospect of increased development. This document is the result of industry collaboration and is fully endorsed by members of the Illinois Solar Energy Association.

	Description	Probable MW of Development by 2025	Size Limit per Project, per the Future Energy Jobs Act
Residential Rooftop Solar	System is on the customer's roof (main building or accessory structure). In rare instances, a residential customer may want to put solar on the ground.	300	All behind-the-meter projects are limited to 2 MW in size, but each must be sized to appropriately meet the owner’s electric need. A typical residential project is between 3-10 kW, whereas a commercial project could be 10 kW – 2 MW depending on the size of the business.
Commercial & Industrial Solar	System is on the customer's property (main building or accessory structure), either on the roof or the ground.	300	



<p>Community Solar</p>	<p>Generally, a larger system where a combination of several entities (residents, businesses, governments) have a partial interest (subscription) in the output of a system. Systems can be located on a roof or on the ground, but do not have to be located near the subscribers. Projects are limited to 2 MW in size (10-12 acres).</p>	<p>275-325</p>	<p>The Future Energy Jobs Act limits each community solar project to 2 MW (10-12 acres), however developers may be allowed to locate more than one project at the same site (co-locate). Final rules on this provision are expected in early 2018.</p>
<p>Brownfield Solar</p>	<p>System is located on blighted land that is not suitable for redevelopment, such as closed landfills or Superfund sites.</p>	<p>35-50</p>	<p>There is no minimum or maximum size for brownfield projects.</p>
<p>Utility Scale Solar</p>	<p>Large systems (2 MW-200 MW) that generally do not serve an individual customer and are located near electrical infrastructure.</p>	<p>750-1000</p>	<p>Systems must be larger than 2 MW, but have no upward limit. These projects could use anywhere from 10 acres to 100s of acres for a single project.</p>

General Principles:

1. Solar projects provide local clean energy generation as well as local investment. Projects of all sizes will have a positive impact on jobs, tax revenue and other forms of direct and indirect economic activity in local communities
2. Solar developers will look to develop projects in areas where projects are encouraged and where the permitting process is clear and straightforward. Solar developers and solar owners want to work with communities in which they build and operate systems. Developers are interested in partnering with communities where their systems are installed and are ready to address any concerns that communities or local authorities may have with the construction or operation of those systems.
3. Solar system developers and owners have a vested interest in making sure that the project is constructed in an efficient manner and that the system operates for the full life of the panels. For developers to get financing for the construction and operation of the system, they need to prove that the system is not at risk of impacting endangered species and other wildlife and that the system isn't at risk for flooding. Protecting the system from property damage and maintaining the site are key parts of maintenance that contribute to the continued efficient operation of the system.
4. Building solar is no more disruptive than any other typical development, and in many cases, is less impactful. Unlike other large-scale energy developments, solar has minimal impact on land, roads, water, and neighboring properties. The most significant disturbance is during construction, but the equipment needed is no different than equipment needed for other types



of general construction. Residential rooftop solar can be installed in several days, and large-scale ground-mount systems can be installed in 6-9 months.

5. Solar systems operate with minimal impact to the area and minimal maintenance. Once constructed, solar systems tend to blend into the surroundings and are a positive compliment to agricultural and other existing land uses. Ground-mount systems sit between 10-20 feet tall, and are hard to see beyond the borders of the property. Neighboring properties are unlikely to even notice the system on a daily basis, and it will have no impact on property values or quality of life. Once operational, solar systems provide energy without any pollution, minimal noise, and few, if any, moving parts.

Specific Recommendations

Applicability: Solar should be permitted in all zones (accessory use for behind-the-meter systems and principle use for other systems) as "by-right" if it meets certain requirements.

Process: Authorities should distinguish between projects. Smaller projects (behind-the-meter or community solar) should be evaluated separately from larger projects. Preferably, all projects would be allowed "by-right" through administrative review if they meet the requirements and subject to special use permit if not.

System Size: Authorities should distinguish between types of systems and have those systems track the size requirements in the Future Energy Jobs Act (see the table above). In this Act, distributed (roof-top or ground-mount behind-the-meter) solar is limited to 2 MW AC. Community solar is also limited to 2 MW AC, though projects may be able to co-locate. Utility scale solar must be bigger than 2 MW AC, but has no upward limit. Brownfield solar has no size limit.

Lot Size: If systems meet the other requirements in the regulation and conform to the project size outlined in the regulation, there should be no limit (minimum or maximum) on the size of the lot or the number of parcels or lots the project covers. Community solar projects can be as small as 100 kW, which would take approximately 1/2 an acre of space, or may be able to co-located, thereby using upwards of 20 acres.

System Height: For ground-mount systems, a 20' limit is appropriate, however the authority should have a waiver or variance process for unique situations.

Setbacks: As discussed in the general principles above, ground-mount solar projects have minimal impact on the land used for development as well as surrounding properties, therefore setbacks should be minimal. At most, ground-mount solar projects should be subject to the same setbacks as other standard structures in the same zone or twenty-five (25) feet, whichever is less. It is appropriate to limit roof-mounted systems to the size of the roof with appropriate room for fire-fighting purposes.



Fencing: The owner of the ground-mount system has a vested interest in making sure the system is secure. In most instances, an 8' fence is appropriate, though the authority should allow for some waivers if there are natural borders or surrounding neighbors approve.

Equipment: Developers should use UL approved equipment for all projects.

Glare/Visibility: The majority of panel technology is antireflective, so glare risk is minimal to nonexistent. If the authority wants to include glare guidance, it should be minimal but should provide clear requirements; open-ended requirements provide risk to the developer. Per federal regulations, projects around airports need approval from the FAA.

Airport: Projects developed near airports are subject to approval from the FAA. Any additional regulation at the local level is unnecessary.

Installers: The Illinois Power Agency Act requires that all systems (utility-scale, distributed and community solar) are installed by qualified installers. This requirement is regulated by the Illinois Commerce Commission. Any additional requirements are unnecessary and burdensome.

Site Plan: A site plan is appropriate for all systems, and systems that meet the plan requirements should not need Planning Commission or Zoning Board approval.

Environmental Impact: For large solar systems to secure financing, the developer will have to show that the system does not have an endangered species impact, wetland impact or historical places impact. This is standard practice, and the developer should be able to provide the authority with this information.

Floodplain: All ground-mount systems will have a topographical and hydro analysis that will be completed prior to issuance of a building permit. Additional requirements are unnecessary.

Storm water/Drainage: Ground-mount systems should be exempt from impervious surface requirements if the developer is doing minimal grading (i.e. less than 1 acre of soil disturbance) and will maintain vegetation or other regulatory approved surface application (i.e. gravel or synthetic surface liners) under and around the system. There will be some impact through pier placement and conduit trenching, but overall the impact is minimal. Impact to drainage tiles and other subsurface utility concerns are addressed in the arrangement with the landowner and does not require additional oversight at the local level.

Landscaping: For ground-mount systems, native vegetation is typical, and mowing maintenance is common. In most instances topsoil will be minimally impacted during construction. There should not be additional requirements, and a clear path for variances if the development is atypical.

Transportation: In general, solar projects do not need the same level of heavy equipment as wind projects, and in most instances roads and access roads will only need to bear, at maximum, a 60,000pound wheel load for construction. Developers will follow load limits for local roads and will apply for permits to use overweight vehicles if necessary, but road commissioner approval for general construction is unnecessary and burdensome.



Interconnection: Systems should show proof of application for interconnection, but not a final agreement with the utility. Developers will not go through the entire interconnection process before starting the local permitting process; these processes generally happen in parallel.

Transmission: In most instances, developers will bury many of the interior lines associated with the project. But it is impractical and, in most cases, impossible to bury the lines related to interconnection with the utility. If the authority requires interior lines to be buried, the developer should be able to apply for a waiver.

Operations and Maintenance: Solar system owners have a vested interest in making sure the system is operating efficiently. Many systems have ongoing O&M contracts that include system maintenance, mowing, etc. Proof of this maintenance is unnecessary.

Decommissioning: System owners have a vested interest in making sure the system operates for the full life of the panels, which are warranted for 25 years, but can often be much longer. Solar system owners will decommission the sites after they are no longer productive, and in most cases, developers include this provision in the agreement with the landowner. Therefore, it is duplicative to have this provision in the permitting process. If the authority decides to nonetheless require a decommissioning plan, a letter of credit or bond as well as an engineering cost estimate of decommissioning demonstrating feasibility should be required after 10-15 years, not at the outset, and cash should not be required. Requiring a bond at the beginning of the project is unnecessary and will only deter development. If the system is found to be inoperable, which is unlikely, there should be a limited amount of time for system owners to get the system back online before the authority forces decommissioning.

Property Value: Solar will not have an adverse effect on neighboring properties. Any requirement to protect neighboring properties will completely prevent development. If a LESA evaluation is required, it should be clear how the county will use the LESA score.

Complaint Resolution: Many solar developers are members of the Illinois Solar Energy Association, and as such are required to comply with the association's codes of conduct. Solar systems should not be subject to any more stringent complaint processes than other types of development.

Fees: If the authority requires a fee for permit application, the industry prefers a clear delineation of such fees.

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