



SunShot Initiative Rooftop Solar Challenge Planning & Zoning Recommendations for CT Jurisdictions

Municipal planning and zoning regulations can impact the size, shape and location of residential solar PV systems and may impact a homeowner's ability to install solar. Solar PV systems (both ground and roof mount) are typically classified as "accessory structures" and are subject to the same regulations as any other structure in that category (e.g. a garage or shed). Often these regulations can be overly restrictive and prevent a solar PV system from being located in a way that would be most efficient or even prevent a PV system from being installed altogether.

The following recommendations can help make municipal planning and zoning regulations more solar-friendly:

Create a solar-friendly process

Allow residential solar PV systems to be installed "by right" in all zones

Residential solar PV systems are typically small structures, and are most often considered an accessory use to the principal structure. Allowing residential solar PV systems to be installed by right in all zones makes it easier for residents to go solar, and sends a clear message to constituents that your municipality supports solar PV deployment.

Exempt residential rooftop installations from zoning review

Consider exempting all residential roof-mounted solar PV installations (or those meeting certain criteria) from

zoning review. Many municipalities in Connecticut do not require zoning review for roof-mounted systems, and if they do it is largely administrative. This extra step in the process can cause delays for solar PV projects. If your jurisdiction's planning & zoning department does conduct an administrative review for solar PV systems, consider waiving any fee associated with this review. Solar PV projects usually pay a building and/or electrical permit fee in addition to fees charged by other departments; the sum of these permit fees can significantly add to solar PV project costs.

Make applicable regulations and required approvals clear

Many times, especially for ground-mounted solar PV systems, multiple department reviews are required and the type of review process required is determined by land use regulations. For example, if a ground-mounted solar PV is outside of a 100' buffer area for a wetland, the project can be approved through with an administrative permit but if it is within 100' more extensive review is required. By making applicable land use regulations clear up front to solar contractors, they can better site the location of the PV system and plan for lengthy reviews. One way to do this is to incorporate these requirements into an instructions sheet, by using the [CT Standardized Solar PV Permitting Instructions Template](#) or creating your own instructions sheet.

Verify compliance with Connecticut General Statute 8-25 (b) when reviewing plans for proposed subdivisions

G.S. § 8-25(b)¹ requires subdivision development regulations to "encourage energy-efficient patterns of development and land use, the use of solar and other

renewable forms of energy, and energy conservation” and “requires any person submitting a plan for a subdivision to demonstrate to the commission that such person has considered, in developing the plan, using passive solar energy techniques.” One way to ensure adherence to this statute is to require developers to submit to a Municipality a completed **Solar Site Design Worksheet for a Proposed Subdivision**. A sample worksheet, is available for download at www.energizect.com/sunrisene.

Exempt or allow increased flexibility from zoning requirements for solar energy systems

Consider creating exemptions or increasing flexibility for solar energy systems with respect to aesthetics, height, setback, lot coverage and impervious surface limitations. Small solar energy systems are usually categorized as accessory structures, and if so, the jurisdictions’ limitations for accessory structures should be reviewed to determine which limitations make sense for solar PV and which are unnecessarily restrictive.

Limit the extent to which your zoning code regulates solar PV systems based on aesthetics

Regulating solar PV based on aesthetics can create burdensome requirements that may limit the size or placement of a PV system, particularly for roof-mounted systems. Solar PV should only be regulated based on aesthetics in historic or village districts, and the extent to which solar PV is limited based on aesthetics in these zones is regulated by CT General Statute Section 7-147f².

G.S. § 7-147f mandates that a municipality cannot deny a “certificate of appropriateness” to a solar energy system unless it significantly impairs the historic character of the district. Not only can you include this provision in your town’s zoning regulations, also consider developing prescriptive standards to make the process of installing solar in your community’s historic districts efficient and clear. The National Trust for Historic Preservation³ and the North Carolina Solar Center⁴ have resources that can guide you in developing prescriptive standards for solar.

Consider flexibility in regulations with respect to:

- **Height**

Height restrictions can prevent a solar energy system from being installed if a structure is already at the maximum allowed height, or from being sized appropriately for free-standing solar PV systems. Height restrictions can also reduce a solar energy systems ability to collect sunlight and put the system at risk of obstruction from neighboring objects (e.g. trees, buildings). Exemptions from building height limitations should be considered for rooftop solar energy systems, (similar to the exemptions given for rooftop appurtenances such as a chimney or spire⁵) and from accessory structure height restrictions for ground-mounted solar energy systems.

- **Setback**

Ground-mounted solar energy systems could be exempt from lot setback requirements (e.g., side and rear yard setbacks) or the setback requirements could be reduced for solar. Lot setback considerations can also impact rooftop solar PV if the structure on which the solar PV is built or will be built to have access to sunlight as a result of meeting a setback requirement.

- **Lot coverage**

Ground-mounted solar energy systems could be excluded from counting towards lot coverage, as the contact with the ground is limited only to footings.

- **Impervious surface⁶**

Ground-mounted solar energy systems could be excluded from impervious surface calculations, or the impervious surface calculation could be limited to the system’s footings (the parts of the system that

New Jersey passed a law in 2010 excluding solar PV from impervious surface calculations.

¹ <http://www.cga.ct.gov/2011/pub/chap126.htm#Sec8-25b.htm>

² <http://www.cga.ct.gov/2011/pub/chap097a.htm#Sec7-147f.htm>

³ <http://www.preservationnation.org/information-center/sustainable-communities/buildings/solar-panels/design-guidelines-for-solar.html#UvpXqFKUP4Y>

⁴ <http://ncsc.ncsu.edu/index.php/2012/09/04/installing-solar-panels-on-historic-buildings/>

⁵ www.planning.org/research/solar/briefingpapers/localdevelopmentregulations.htm

make contact with the ground). This is significant as local zoning laws typically set maximum impervious surface or coverage percentages and municipal and state agencies have been inconsistent in determining whether solar panels should constitute an impervious surface. Ground-mounted solar energy systems do not completely cap the ground and thereby do not prevent water absorption. Exemption for solar energy systems allows for installation in areas otherwise protected by land use laws that pose limits on impervious surface coverage (e.g., coastal and waterfront areas, forest and conservation areas). New Jersey passed a state law in 2010 excluding solar energy systems from being counted as impervious surface.⁷

Note that there is still development and innovation in solar energy technology and solar energy system design taking place, so that restrictions left in place or put in place now that do not seem to pose a barrier to solar could become a barrier in the future. Restrictions can be difficult to remove and could give a jurisdiction a reputation among solar energy installers that is difficult to change.

Use the Model Planning and Zoning Ordinance

The **Solar PV Model Zoning Ordinance** is available at www.energizect.com/sunrisene and includes suggested language for roof and ground-mounted solar PV systems. In addition, the Green Bank has compiled example solar zoning regulations from municipalities in Connecticut and other states. While not a comprehensive document for the entire state of CT, the examples provided can further assist you in determining what types of regulations make sense for your community.

The reach of the model ordinance does not currently include but could be expanded in the future to include:

- Solar access protections which can be implemented once appropriate enabling solar access laws are adopted by the State of Connecticut legislature:
- Recordation of solar easements by the municipality

to protect access to sunlight for solar energy systems. While an agreement can be made between two neighbors that could address solar access considerations similarly to a solar easement; however, the existence of a solar access law provides a legal framework for addressing such considerations more broadly.

A Model Solar PV Zoning Ordinance is available at

Energizect.com/sunrisene

- Protection of the right to install rooftop solar PV with respect to private and local government restrictions such as covenants, conditions, deeds and local ordinances that pose barriers to installation of solar energy systems. This right would pertain to individually owned standalone buildings as well as those in communities regulated by homeowner or condominium associations or other governing boards.
- Zoning considerations for principal (large-scale) solar energy systems, solar thermal systems and other types of clean energy systems.

More information and resources on the planning and zoning aspects of solar PV can be found in the following resources:

- The American Planning Association's (APA) "[Solar Briefing Papers](#)⁸," specifically "Integrating Solar Energy into Local Development Regulations"
- The APA's Info Packet "[Planning and Zoning for Solar Energy](#)⁹," a compilation of ordinances from around the country that provide examples of zoning regulations for solar.
- Massachusetts' "[Model Zoning for the Regulation of Solar Energy Systems](#)¹⁰"
- New York State "[Model Solar Energy Law](#)¹¹"

⁶ "Impervious surface" means any structure, surface, or improvement that reduces or prevents absorption of stormwater into land, and includes porous paving, paver blocks, gravel, crushed stone, decks, patios, elevated structures, and other similar structures, surfaces, or improvements. Increases in impervious surface area are often used to characterize and measure land use changes in the process of property development.

⁷ <https://njzoning.wordpress.com/2010/04/22/solar-panels-do-not-constitute-impervious-cover-under-new-law/>

⁸ <http://www.planning.org/research/solar/briefingpapers>

⁹ <http://www.planning.org/pas/infopackets/open/eip30.htm>

¹⁰ <http://www.mass.gov/eea/docs/doer/green-communities/grant-program/model-solar-zoning.pdf>

¹¹ http://www.cuny.edu/about/resources/sustainability/reports/NYS_Model_Solar_Energy_LawToolkit_FINAL_final.pdf