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SOLAR POWER GENERATING FACILITIES

BACKGROUND

The Cayuga County Department of Planning & Economic Development (CCPED) has prepared this staff report on Solar Power Generating Facilities (aka: Solar Energy Systems, Solar Farms, etc.) in response to the increased solicitation of county landowners by utility companies to lease or purchase their land to develop solar power generating facilities; and in response to the concerns that have been expressed by several municipalities that currently do not have procedures to review and permit such facilities. Our Department was asked to produce a general guidance document that Towns and Villages can use to amend their current land use regulations (zoning codes or local laws) to provide certain parameters for siting and approving solar projects.

Many communities in Cayuga County have recently adopted a Unified Solar Permit through the NYSERDA incentive program which does not include land use regulations, but rather a process for the local Code Enforcement Officer to follow for issuing a permit for a small-scale on-site residential or commercial solar systems that is designed to provide power to an existing building. The primary focus of this Staff Report is on solar generating systems that function as an electrical utility; meaning that they are producing energy that is transmitted off the site into the local electrical grid and have solar arrays that typically occupy several acres of land.

The contents of this report include excerpts from the American Planning Association's (APA) Planning Advisory Service (PAS) report titled *Planning for Solar* that are intended to provide general information about solar systems and items that communities should consider when thinking about regulating their development; specific recommendations from CCPED staff; a short glossary of terms and definitions; and model ordinances that can be modified and adopted by Town or Village Boards as appropriate to their community.

ANALYSIS

The following excerpts from the APA PAS Report #575- Planning for Solar are meant to provide general information and guidance about the rapidly growing solar industry and how local municipalities can regulate and provide for the development of solar energy systems in their community.

Because of their scalability, solar energy systems can either be accessory to an existing primary use or structure or the primary land use for a particular parcel. Accessory systems supply heat or power on-site, while primary-use systems provide electricity to the grid or nearby properties.[1]

Solar Energy Systems as an Accessory Land Use

An accessory use is typically defined as a secondary activity incidental to the primary use of the property. In most cases an accessory solar thermal or PV [photovoltaic] *installation is on a home or business where the primary use of the property is either household living or a commercial activity. In these cases, the system utilizes roof space or other space on the property to provide heat or electricity for the primary use of the property.*[2]

Solar Energy Systems as a Primary Land Use

A primary land use is the main purpose for which a site is developed and occupied. While large "solar farms" may be the most familiar form of a solar PV or CSP [concentrated solar power] *system as a primary land use, smaller primary-use PV installations (sometimes referred to as "solar gardens") are popping up in communities across the country. Regardless of size, primary-use systems are typically freestanding, and the principal economic function of the land hosting a primary-use system is producing solar power for off-site consumption.*

Utility- or wholesale-size solar farms may have rated capacities of multiple megawatts and may cover tens to thousands of acres of land. These installations primarily supply power for offsite consumption through the electrical grid.[3]

Tree Protection

Maintaining and enhancing the tree canopy is a common sustainability goal. Trees provide a wide range of environmental, social, and economic benefits, including improving air quality, reducing stress, and increasing property values. When a tree's shade impacts the efficiency of a solar system, however, trees and solar become unlikely adversaries.[4]

The variety of regulations, guidelines, and policies that exists pertaining to solar and trees reveals the challenges communities face in trying to prioritize these two valuable resources. Instead of outcomes where one resource wins out over the other, communities should refocus their efforts on taking measures to ensure these interests can successfully coexist. The following recommendations can assist planners in these efforts:

- *Address urban forests and solar together during the comprehensive planning process to provide a basis for addressing this issue in ordinances, development review, and code enforcement*

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[1] American Planning Association Planning Advisory Service Report No. 575: *Planning for Solar Energy*, David Morley, Editor; April 2014; *page* 19 paragraph 16 and page 21 paragraph 1.

[2] American Planning Association Planning Advisory Service Report No. 575: *Planning for Solar Energy*, David Morley, Editor; April 2014; *page* 21 paragraph 2.

[3] American Planning Association Planning Advisory Service Report No. 575: *Planning for Solar Energy*, David Morley, Editor; April 2014; *page* 21 paragraphs 4 and 5.

[4] American Planning Association Planning Advisory Service Report No. 575: *Planning for Solar Energy*, David Morley, Editor; April 2014; *page* 30 paragraph 1.

- *Consider creating and adopting overlay zoning for "solar access zones" in suitable areas that specifically acknowledges the need to consider plant size to maintain clearance for solar collection.*
- *Replace removed trees where possible, and track tree removals to ensure there is no net loss in trees.*
- *In instances where a solar installation would result in the removal of mature trees, encourage or require other energy conservation strategies first along with pruning of trees rather than tree removal.*
- *Actively identify the best places to locate solar energy systems in a community—developed areas where infrastructure is already in place, such as parking lots, roads, brownfield and greyfield sites, landfills, and big-box stores—and direct installations to these areas.*
- *Educate citizens as to the benefits of both solar and trees, and increase their awareness of best practices of sensible planning to avoid shading and ensure that solar and trees can coexist.*[5]

Establishing Clear Definitions and Use Permissions

Many zoning codes fail to define specific terms related to solar energy use and do not clearly identify the zoning districts in which solar energy systems are allowed. This silence often creates uncertainty about the legality of various types of solar development, forcing local officials to make ad hoc determinations about the similarity of specific installations with other defined uses. When a community adds definitions and use permissions to its code, it eliminates this inadvertent barrier to solar development.[6]

Many communities permit accessory solar energy systems by right in all zoning districts. When localities explicitly acknowledge primary-use systems in their codes, they often permit these installations either by right or through a discretionary approval process (e.g., a special use permit) in rural or industrial districts.[7]

Beyond definitions, use permissions, and limited exceptions to general development standards, a number of communities have added use-specific standards for different types of solar development. These additional standards can mitigate concerns related to neighborhood character and help avoid conflicts over competing values, such as tree protection or historic preservation.[8]

Accessory Use Standards for Solar Energy Systems

Accessory use solar energy systems typically have minimal impacts. Rooftops provide a vast amount of potential space for solar development that does not consume new land or increase impervious surface area within a jurisdiction. The

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[5] American Planning Association Planning Advisory Service Report No. 575: *Planning for Solar Energy*, David Morley, Editor; April 2014; *page* 30 paragraph 5.

[6] American Planning Association Planning Advisory Service Report No. 575: *Planning for Solar Energy*, David Morley, Editor; April 2014; *page* 53 paragraph 3.

[7] American Planning Association Planning Advisory Service Report No. 575: *Planning for Solar Energy*, David Morley, Editor; April 2014; *page* 53 paragraph 5.

[8] American Planning Association Planning Advisory Service Report No. 575: *Planning for Solar Energy*, David Morley, Editor; April 2014; *page* 53 paragraph 7.

main concerns related to accessory solar energy systems are aesthetic: how and where systems are placed on a property.

Consequently, use-specific standards often address placement. Some codes encourage rooftop over freestanding systems. Many require rooftop installations to be located on side or rear roof slopes rather than street-facing roof slopes, when possible, for aesthetic reasons. Similarly, some codes limit the height that rooftop collectors may extend above the roofline (often two or three feet); alternatively, they may exempt solar collectors altogether from district height restrictions, along with other typical rooftop structures such as chimneys, air conditioning units, or steeples.

For freestanding systems, communities often restrict placement to side or rear yards and sometimes require screening from public rights-of-way. Many codes also address system appearance, requiring neutral paint colors and screening of nonpanel system components. In all placement and screening considerations, however, the effects of requirements on system function must be considered, and most codes provide for some degree of flexibility to ensure that property owners can work within site and structural constraints to achieve reasonable solar collection. [9]

Primary Use Standards for Solar Energy Systems

For primary-use solar energy systems, system size (whether measured by capacity or by physical space requirements) is an important factor as communities consider the appropriate scope and level of detail for use-specific standards. These installations can range in size from less than an acre in urban settings to hundreds or even thousands of acres in remote locations.

Large solar farms can raise concerns regarding impervious surface coverage, tree and habitat loss, transmission infrastructure, and construction impacts. Furthermore, proposals for large installations are more likely to court controversy, especially when developers propose greenfields or productive agricultural lands as sites.

Common use-specific standards for solar farms include height limitations, setbacks from property lines or neighboring structures, and screening from adjacent public rights-of-way. For security and safety reasons, many communities require that solar farms be securely fenced, that warning signs be posted, and that on-site electrical interconnections and power lines be installed underground.

Many communities require a site plan review for a large installation as well as an agreement with a utility for interconnection of the completed facility. Some localities also require stormwater management plans and, in more rural communities or areas that abut public land, environmental analyses for potential impacts on wildlife and vegetation. Finally, communities often require owners to decommission nonfunctioning facilities, and some localities require restoration of the site to its previous condition, especially for formerly agricultural lands.[10]

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[9] American Planning Association Planning Advisory Service Report No. 575: *Planning for Solar Energy,* David Morley, Editor; April 2014; *page* 54 paragraphs 2-4.

[10] American Planning Association Planning Advisory Service Report No. 575: *Planning for Solar Energy,* David Morley, Editor; April 2014; *page* 55 paragraphs 4-7.

GLOSSARY OF KEY TERMS RELATED TO SOLAR DEVELOPMENT

solar access: The ability to receive sunlight across real property for passive solar design or any solar energy system.

solar site design: A passive solar design technique that uses street orientation and lot design to maximize on-site solar energy use potential.

solar collector: Any device that transforms solar radiation into thermal or electrical energy.

solar energy system: A complete assembly consisting of one or more solar collectors and associated mounting hardware or equipment.

solar garden: Any freestanding solar energy system as a primary land use on a site up to 10 acres in size.

solar farm: Any freestanding solar energy system as a primary land use on a site larger than 10 acres.

solar-ready building: Any building specifically designed to accommodate the installation of a solar energy system.

solar development: Any real estate development that includes passive solar design techniques, solar-ready buildings, or solar energy systems.

RECOMMENDATIONS

1. Municipalities should establish a Special Use Permit process for the development review of Solar Power Generating Facilities. During this Special Use Permit review process, in addition to a detailed site plan, the following items (at a minimum) should be considered:

   - The appropriateness of the proposed land use in the community.

     - Review the Comprehensive Plan, Zoning Law, and/or Local Laws to determine how solar power generating facilities are defined and where they are permitted.

     - Require a statement of need from the utility company that is proposing to install the solar power generating facility that clearly illustrates, through specific analysis, that the local power grid has the capacity to receive additional electricity from the proposed development.

   - The proposed location relative to existing development and road infrastructure. Will the proposed development pose a safety risk to neighboring uses or vehicular traffic on adjacent roadways either from glare, fire risk, increased traffic volume during construction, etc.?

   - What impact will the proposed project have on priority, active agricultural lands? Review the local Agriculture & Farmland Protection Plan, if there is one, or the Cayuga County Agriculture & Farmland Protection Plan to help determine if the size and scope of the project (number of acres used) will be detrimental to farmland that has been identified as a priority or highly suitable for protection. Will the loss of acres be significant in the community?

- Fire and emergency response safety. Consult with the local fire department when reviewing the site plan for the project to ensure proper siting of the utility from a fire protection standpoint and to ensure proper training and response procedures are in place. Does the fire department feel comfortable with the layout of the solar array, inverters, equipment, etc. relative to existing development or vegetation in terms of responding to a fire at the site? Have the local fire fighters received training on how to respond to and extinguish a fire on or adjacent to solar panels?

- Require that 24 hour emergency contact information is clearly posted on the site for emergency responders to communicate with a licensed individual to safely turn off all power on site.

- What is the potential visual impact on the rural character of the community? Consider requiring parameters for siting the solar array and associated structures, fencing, landscaping, etc. to minimize the potential negative impacts of the project on the existing rural character of the area/neighborhood.

- Require a decommissioning plan that outlines a timeframe and process for returning the land to pre-construction conditions and disposal of equipment if the system is taken out of service or no longer generating electricity for a specified period of time.

- Require an erosion and sediment control plan to be instituted during construction and a stormwater management plan to minimize runoff post construction.

2. Municipalities should consider amending their Comprehensive Plan, Zoning Law, and/or Local Laws if solar power generating facilities are not clearly defined and regulated. Those amendments should identify specific areas in the community (generally or by zoning district if applicable) where each type of solar system is permitted (accessory use and primary use systems); allow the use by Special Use Permit; and provide conditions such as those listed above to guide the Special Use Permit review process for the Board in charge of said review.

3. Municipalities may wish to consider enacting a moratorium on solar power generating facilities while developing and considering necessary amendments to their Comprehensive Plan, Zoning Law, and/or Local Laws as mentioned above.

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APPENDIX A

Model Solar Development Regulation Framework

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This appendix is intended to serve as a tool to assist communities in translating existing plans and policies into clear and enforceable regulations that support solar energy use. It establishes a framework to guide the development of solar regulations that meet the unique needs of each community and are fully integrated within a community's existing regulations. This integrated approach is intended to create a more level playing field for solar energy systems as a distinct use as well as to avoid potential conflicts with other regulations. The framework may also be used to develop a stand-alone solar development ordinance that addresses the same topics; however, it is essential that communities carefully review any new provisions recommended as part of a stand-alone ordinance against existing regulations to avoid conflicts.

Solar energy systems come in a wide variety of shapes and sizes and may be installed in a multitude of development contexts—ranging from multi-acre solar installations surrounded by undeveloped public land to small-scale systems located in established residential neighborhoods. Each type of system and each distinct development context brings with it a different set of site planning considerations and potential impacts. As a result, solar development regulations must be carefully tailored to address a broad range of local considerations. Communities adopt solar development regulations for three basic reasons:

- *To reinforce community support for solar energy use*—Adopting regulations that clearly define where solar energy systems are allowed, where they are not allowed, and what regulations apply increases predictability for residents and businesses who wish to install solar energy systems. It also increases predictability for the solar installers who typically navigate the review and approval process.
- *To identify and remove potential barriers to solar energy use*—A community's development regulations may contain a variety of direct or indirect barriers to solar energy use. Indirect barriers are issues that a code is silent on and may consequently make a solar application difficult to submit or process, such as a lack of definitions for different types of solar energy systems. Direct barriers specifically limit solar energy systems in terms of their size or location, such as through the prohibition of solar energy systems in one or more zoning districts or through specific development standards, such as setbacks or lot coverage restrictions. Often, these barriers go undetected until a solar application is inadvertently delayed during the approval process.
- *To minimize potential impacts of solar energy systems*—Regardless of how aggressively a community wishes to encourage solar energy use, its development regulations must still address the potential impacts of solar energy systems on adjacent uses, the natural environment, and community character.

STEP 1: REVIEW AND ASSESS EXISTING REGULATIONS

The first step for any community in formulating solar development regulations is to review and assess what rules are on the books today at the state and local level and to identify a list of issues to be addressed as part of the process. This process should result in a brief summary report that can serve not only as the foundation for the development of new regulations, but as a foundation

for discussion with key stakeholders about the community's intent and line of thinking with regards to each proposed regulation. Taking the time to conduct necessary research, identify key issues, and establish a framework for the new regulations upfront will ensure discussions with residents, solar installers, business owners, elected and appointed officials, and other stakeholders are well informed and productive and will ultimately lead to a more streamlined review and adoption process.

Start by reviewing applicable state statutes to determine whether any specific authorizations or prohibitions specific to solar energy use currently exist. For example, statutes in some states, such as North Carolina, forbid local government regulations from prohibiting or effectively prohibiting the installation of solar collectors. Others, including those in Colorado, California, and Arizona, preempt private covenants that prohibit solar energy systems. These and other potential limitations should be taken into account, as applicable, to ensure compliance at a local level.
Next, review and analyze existing codes and regulations to determine if and how solar is addressed today. At a minimum, codes and regulations should achieve the following objectives:

- Clarify which types of solar energy systems are allowed and where
- Mitigate potential compatibility issues and nuisances associated with solar equipment, such as height allowances, visual impacts, and encroachment
- Define and protect solar access

The following sections provide an overview of specific development regulations that should be examined as part of the review and assessment process to address the objectives outlined above. These code provisions include permitted uses, dimensional standards, development standards, and definitions (See Table D.1.).

Table D.1. *Baseline considerations for developing solar regulations*

Source: Work for hire by authors for this report

Topic to be Addressed	Key Considerations
Permitted Uses	Types of solar energy systems permitted as a primary vs. accessory use; zoning districts in which different types of solar energy systems are permitted
Dimensional Standards	Height, lot coverage, and setbacks applicable to solar energy systems
Development Standards	Screening, placement (on building or side), and site planning for solar access (lot and building orientation)
Definitions	Types of solar energy systems, solar access considerations, and related terminology

Permitted Uses
With the exception of some form-based codes, most zoning codes include a section on permitted or allowed uses. This section of the code generally defines the types of uses that are allowed in different zoning districts as either primary, conditional, or accessory uses. Some codes also include use-specific dimensional or development standards.

Typical Regulatory Issues. Although building-mounted solar energy systems are sometimes addressed as potential building appurtenances, along with antennae, satellite dishes, chimneys, and other common features, most codes do not explicitly define solar energy systems as a primary or accessory use. This silence within the code creates uncertainty for applicants, planners, and residents as to the types of solar energy systems that would be permitted in different locations, what regulations would be used to review potential applications, and how long the review process might take.

Key Questions.

- Are solar energy systems currently allowed by right as a primary or accessory use?
- If so, what types of solar energy systems are allowed and in which zoning districts?
- Are these allowances consistent with adopted policies and with solar ordinance objectives? If not, what types of amendments are necessary?

Special Considerations. Absent clear policy guidance that specifically limits solar energy systems to one or more particular areas of the community, many communities allow accessory systems by right in most, if not all, zoning districts (often subject to specific dimensional or development standards). This is particularly true in communities with significant solar resources and strong political support for renewable energy. However, outside of these communities there is considerable variation in use permissions. These variations are typically based on the type and size of solar energy system and whether the system functions as a primary or accessory use. In general, solar energy systems that function as a primary use—commonly referred to utility-scale solar energy systems, solar gardens, or solar farms—are less likely to be permitted by right in all districts.

Primary-use installations are typically ground- or pole-mounted and range from less than one acre in size to as large as 40 acres or more. Although the scale of the equipment used for such installations also varies, most include equipment that is taller than that typically used in a residential or commercial context and significantly larger solar collectors. Potential impacts associated with the larger scale of such solar installations and equipment can also be more pronounced. Water quality, glare, and even noise generated from the motors used to align the collectors for maximum efficiency are typical issues to consider. As a result, some communities choose to limit this type of system to nonresidential districts or more rural locations where the potential for impacts on adjacent uses is lower. Other communities, such as Milwaukee, have fully embraced solar as an integral part of an overall renewable energy strategy and allow solar gardens or farms by-right within a range of residential, commercial, and industrial zoning districts.

If clear policy direction does not exist to inform this issue locally, take into account the location, size, number, and surrounding context of sites within the community that are potentially suitable for different types of solar installations and identify possible impacts associated with each as part of the review and assessment process. Use this analysis to identify potential conflicts and determine what types of solar energy systems should be allowed in each of your community's zoning districts.

Dimensional Standards

Dimensional standards establish the basic parameters that uses must adhere to within specific zoning districts. These parameters commonly include maximum height, maximum lot coverage, and minimum setbacks from property lines.

Typical Regulatory Issues. There are two primary regulatory issues related to dimensional standards for solar energy systems. First, a lack of dimensional standards may increase the potential for poorly sited solar energy systems. Second, dimensional standards may exist, but may not be effective or may apply in unintended ways. In some cases, existing dimensional standards are too restrictive and serve as a barrier to solar, or alternatively, dimensional standards may be too flexible, resulting in compatibility issues in some locations.

Key Questions.

- Does the code contain dimensional standards that guide different types of solar installations (e.g., minimum setbacks from property lines or adjacent residential uses, limits on the height of roof appurtenances, or maximum equipment height)?
- If so, have specific issues been raised in the administration of these standards? For example, have applications for roof-mounted solar energy systems ever been denied because they exceed maximum height limits by a modest amount? Or, have solar gardens or farms experienced challenges in the review process that would have been alleviated by the presence of clear, enforceable standards?
- If not, what types of dimensional standards should be included to address different types of solar installations? How should these standards vary by zone district, if at all? Should solar energy systems be allowed greater flexibility in dimensional standards (e.g., reduced setbacks or increased lot coverage) in deference to their alignment with economic development or sustainability goals?

Special Considerations. Appropriate dimensional standards may vary greatly depending upon the type and size of solar energy system and the location in which it is installed. As a general rule, the more sensitive the surrounding development context the more restrictive dimensional standards typically are. The following contexts may merit more restrictive standards:

- *Residential zones or historic districts*—More restrictive standards may be appropriate in some residential zones or historic districts where community character is of particular concern. In this type of setting, some communities limit the placement of solar energy systems to roof planes or rear yard locations that are not visible to the street. Others take a more flexible approach, stating simply that these locations are "preferred" without prohibiting them outright. The key is to reconcile any such limitations with state statutes to ensure local regulations do not conflict.
- *Environmentally sensitive or rural zones*—An environmentally sensitive site in a rural location may warrant broader setbacks or other standards to protect specific natural resources, such as a stream or documented wildlife corridor. In zoning districts with environmentally sensitive sites that vary greatly in terms of size, condition, and resources to be protected, it may make sense to require a special use permit for solar energy systems in order to verify appropriate site conditions prior to approval.

While the examples outlined above focus on the potential need for more restrictive dimensional standards, other communities who wish to encourage solar energy systems in specific locations choose to build additional flexibility into their regulations to accommodate solar. For instance, some communities allow solar installations of less than a certain height to be placed in the setbacks of an individual lot. Other communities allow solar structures to be exempted from setback, height, and lot coverage restriction in certain districts. Take each of these considerations into account as

part of the review and assessment process to determine the most suitable dimensional standards and level of flexibility for each zoning district within your community.

Development Standards

Development standards address site and building design considerations unique to a specific use or location within the community. Depending on the community, development standards may be located within the zoning code, the subdivision regulations, or addressed in both locations. With respect to solar energy use, development standards typically address issues such as screening, fencing and enclosures, and the protection of solar access.

Typical Regulatory Issues. Regulatory issues with these standards tend to center either on a lack of standards or on the difficulty of administering existing standards. Without basic development standards in place to guide the installation of solar energy systems, potential conflicts between uses may arise. While conflicts can certainly arise due to a lack of screening or fencing requirements, the potential for conflict is most likely to occur where standards do not exist to protect solar access. Without solar access standards in place, the existing and future solar potential of a particular site may be significantly reduced or eliminated altogether due to buildings, trees, or other potential obstructions. However, when solar access standards do exist, they can be extremely challenging to enforce and administer—either because they are too general or because they are too restrictive.

Key Questions.

- Does the code include development standards to minimize the potential impacts of solar energy systems on adjacent uses and address safety and environmental concerns (e.g., screening or fencing requirements for solar energy systems that function as a primary use and limits on the amount of glare that can reasonably be transmitted to adjoining properties)?
- Does the code contain development standards to maximize or protect solar access?
- Does the code establish parameters to guide the resolution of potential conflicts that arise in the process of enforcing solar access requirements?
- Does the code establish a process through which the removal of nonfunctional or decommissioned systems can be enforced?

Special Considerations. Solar access requirements are often not practical citywide, particularly in urban locations or where higher density development is desired. Focus requirements where resources are most viable or development patterns are most conducive to supporting your community's solar objectives. When developing new standards, take into account the administration of solar access requirements over time. If your community has limited staffing resources and solar expertise, avoid adopting detailed solar access requirements that are likely to be more onerous to administer.

Communities wishing to go above and beyond baseline regulations for solar may choose to include one or both of the following options as part of their package of solar regulations:

- *Solar site design requirements*—These standards establish basic site design parameters for "solar-oriented lots" that are intended to increase solar access to individual lots and preserve future options for solar. They typically require streets and lots to be oriented to maximize solar access and may also allow for flexible setbacks to accomplish the same

objective. They typically apply to new subdivisions and are imposed without any degree of certainty that solar energy systems will be installed in the future. Solar siting requirements may be limited to single-family residential zone districts or other lower-density districts or applied to residential dwellings in all zones. To provide flexibility, these requirements stipulate that some percentage of the total lots in a particular development must comply with the site design standards. Percentages may range from as little as 30 percent to more than 80 percent of lots. It is important to account for topography, tree canopy, and other site considerations when developing such requirements for a particular community to ensure the standards are not so restrictive as to effectively prohibit development altogether.

- *Solar-ready home requirements*—To encourage the broader use of solar over time, some communities require new homes to be "solar ready." These requirements are typically incorporated as part of the building and or plumbing code and often include structural/roof specifications, solar "stub-in" requirements for new homes to support future photovoltaic panel or hot water heater installation, and installation of PV conduit or hot water pipes on south, east, or west-facing roofs.

Definitions

Every code includes a list of defined terms. These definitions are intended to reduce the need for interpretation in the administration of the code and to minimize inconsistencies in the review process.

Typical Regulatory Issues. If a code is silent on the issue of solar energy systems and related concepts in its list of defined terms, applicants and planners must interpret how these systems relate to terms that are defined, which may lead to delay or denial of solar applications during the review process.

Key Questions.

- Does the code define the following key terms associated with solar energy systems?
  - Solar access
  - Solar collectors
  - Solar energy systems (with separate definitions for large vs. small and building vs. ground-mounted systems, as applicable)
  - Solar garden
  - Solar farm
  - Solar-ready buildings
- If the code defines solar-related terms, do these terms reflect current solar technologies and practices? If not, do they need to be revised or replaced as part developing new solar regulations?

Special Considerations. Defined terms should be tailored to prevalent technologies being used locally. In addition, they should be aligned with solar terminology used in other codes throughout the region, if applicable. For example, some communities protect solar access by regulating the "solar envelope" of a building—others define it as a "solar fence." The use of consistent terminology among communities in a region reduces potential for confusion and delay and simplifies the application process for all parties involved. Local solar installers can often serve as a resource to help identify a comprehensive list of terms that should be included and possible

conflicts between solar regulations in neighboring communities. When drafting new definitions, ensure that the language is specific enough to avoid difficult interpretations, but general enough to accommodate changes in solar technologies over time.

STEP 2: DEVELOP SOLAR REGULATIONS

The second step in the process is to build on the information gathered as part of the review and assessment phase to develop an initial draft of the actual solar regulations. Baseline and optional provisions for solar regulations are summarized below. Specific direction on each of these considerations should be drawn from the review and assessment summary report, discussions with community stakeholders, as well as the many model and sample regulations referenced in these appendices.

Baseline Considerations

To ensure solar requirements are clear, comprehensive, and enforceable, it is important to address each of the baseline considerations described below.

Purpose and Intent. Clearly describe the purpose and intent of the solar development regulations using existing plans and policies and the results of the review and assessment process as a guide. This purpose statement may range from a straightforward desire to encourage solar energy use communitywide to a comprehensive list of objectives that stem from a desire to clarify how and where solar development is encouraged or discouraged within the community.

Applicability. Define the types of development that the solar standards will apply to and where. In most instances, solar development regulations will apply to all types of solar energy systems and will apply citywide. If the baseline considerations are being addressed through a series of targeted amendments to an existing code (e.g., minor revisions or additions to various sections of the code), it may not be necessary to include a statement of applicability; however, such a statement can be helpful to include in interim drafts of the solar standards to provide context for the proposed amendments.

Permitted Uses. Define what types of solar energy systems will be allowed in which zoning districts as a primary use or accessory use, or with a special use permit. If solar energy systems will be prohibited in certain districts, clearly distinguish those districts. Provide cross references to use-specific dimensional and development standards, as necessary.

Dimensional Standards. Define the basic dimensional standards—maximum height, minimum setbacks, and maximum lot coverage—that will apply to different types and sizes of solar energy systems in different zone districts (e.g., standards for a ground-mounted solar energy system in an industrial district are likely to be less restrictive than those for a roof-mounted solar energy system in a historic district). If flexibility in the application of these standards will be allowed for solar energy systems, clearly define where that flexibility is allowed and what the process is for taking advantage of that flexibility (e.g., systems may be placed within side yard setbacks by right).

Development Standards. Establish specific development standards that will apply to different types and sizes of solar energy systems in different zone districts (e.g., screening requirements for freestanding systems or glare restrictions for hillside systems). If a particular standard or set of standards will be applicable to solar citywide (e.g., removal of non-functional or decommissioned

systems), consider grouping those standards under a "general" category to reduce repetition and complexity in the solar regulations.

Definitions. Ensure all key terms used in the solar development regulations are clearly defined, yet are drafted broadly enough to allow for changes in technology over time. In particular, focus on specific types of solar energy systems and site considerations. Crosscheck lists of terms with those used by adjacent communities for consistency.

Optional Provisions

If appropriate, incorporate the following optional provisions within the overall package of solar requirements. Alternatively, some communities may choose to pursue one or both of these options after their baseline solar requirements have been adopted and in place for a period of time. This "waiting period" allows a community to apply the baseline solar requirements in practice, providing a clearer understanding of staff time needed for administration, the volume of applications likely to occur on a weekly or monthly basis, and the overall level of support for more robust solar requirements.

Solar Site Design. Establish specific standards to promote solar access. In particular, take care to consider the appropriate level of flexibility for solar energy systems in different zone districts within the community based on their predominant land-use type and density (both existing and planned), existing tree canopy, topographic characteristics, and the degree to which the area has been "built out."

Solar-Ready Home Requirements. Work closely with building department officials and local installers to develop required specifications for solar-ready homes and to determine where the requirements would be most beneficial over time. Typically, such requirements are most effective in an area likely to see significant new development.

CONCLUSION

The act of establishing solar development regulations for a community is an important step toward reinforcing community support for solar energy use, identifying and removing potential barriers to using the solar resource, and minimizing the potential impacts of different types of solar energy systems. At a minimum, solar regulations should address what types and sizes of solar energy systems are allowed and where, mitigate potential compatibility issues associated with solar equipment, and define and protect solar access. Optional considerations may include more robust solar access, solar site design, or solar-ready homes requirements. Regardless of the approach selected, solar development regulations must be carefully tailored to meet the unique size, geography, climate, regulatory framework, and political/natural environment of individual communities. The model ordinance framework presented in this appendix provides a guide for refining existing regulations to more clearly address solar energy systems or to develop a stand-alone solar ordinance from scratch.

APPENDIX B

MODEL ORDINANCE FOR SMALL-SCALE SOLAR ENERGY PROJECTS

BACKGROUND:

This Model Solar Ordinance provides suggested language for consideration by municipalities in framing their own local solar ordinance for small-scale solar energy projects. To the extent practicable, explanatory comments and issues of concern are noted in endnotes at the end of this document. The use of **[brackets]** around certain provisions (1) indicates points at which a local government should supply locality-specific information or (2) signals a decision point at which a local government may adopt the suggested provision and/or may wish to give special consideration to local circumstances and preferences in framing the provision.

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1. TITLE

This ordinance shall be known as the **[Small-Scale]** Solar Energy Projects Ordinance for the **[Town/Village]** of **[Municipality]**.[1]

2. PURPOSE

The purpose of this ordinance is to provide for the siting, development, and decommissioning of small-scale solar energy projects in the **[Town/Village]** of **[Municipality]**, subject to reasonable conditions that promote and protect the public health, safety and welfare of the community while promoting development of renewable energy resources.

3. DEFINITIONS

"Applicant" means the person or entity who submits an application to the locality for a permit to install a solar energy project under this ordinance.

"Disturbance zone" means the area within the site directly impacted by construction and operation of the solar energy project.

"Integrated PV" means photovoltaics incorporated into building materials, such as shingles.

"Photovoltaic" or "PV" means materials and devices that absorb sunlight and convert it directly into electricity.

"Property Owner" means the person or entity who owns the property on which the solar energy project is sited. The property owner may or may not be the same person or entity as the project owner.

"Project Owner" means the person or entity who owns all or a portion of a solar energy project.

"Rated Capacity" means the maximum capacity of a solar energy project based on the sum total of each photovoltaic system's nameplate capacity.

"Site" means the area containing a solar energy project.

"Solar Energy System", "Solar Energy Project," or "Project" means a renewable energy project that **either**

(a) generates electricity from sunlight, consisting of one or more PV systems and other appurtenant structures and facilities within the boundaries of the site, **or**

(b) utilizes sunlight as an energy source to heat or cool buildings, heat or cool water, or produce electrical or mechanical power by means of any combination of collecting, transferring, or converting solar-generated energy, **and**

(c) meets at least one of the following criteria: has a disturbance zone equal to or less than **[two acres]**, is mounted on or over a building or parking lot or other previously-disturbed area,[2] or utilizes integrated PV only.[3]

4. PERMITTING, APPLICATIONS AND PROCEDURES

(a) By Right Approval: [4]

i. All small-scale solar energy projects shall require administrative site plan approval by the **[Zoning Officer or Code Enforcement Officer]**.

ii. Applications that meet the requirements of this ordinance, and do not require a Special Use Permit, shall be granted administrative approval by the **[Zoning Officer or Code Enforcement Officer]** and shall not require **[Planning Board, ZBA or Town/Village Board** (whichever is responsible for Special Use Permits)**]** review. Site plan approval does not indicate compliance with the Building Code or Electric Code. Applicants will be required to obtain all necessary building permits prior to construction.

iii. Applicant shall include in the site plan application scaled horizontal and vertical (elevation) drawings. The drawings must show the location of the project on the building or on the property for a ground-mounted project, including the property lines and setback lines.

iv. Before any construction can commence on any solar energy project, the property owner, project owner, or other appropriate entity must formally acknowledge that he/she is the responsible party for maintaining the solar energy project.

5. LOCATION, APPEARANCE, AND OPERATION

(a) Visual Appearance

i. If a Solar Energy Project is mounted on a principal building or accessory building, the project may not exceed the maximum principal building height or accessory building height specified for the building type in the underlying zoning district.

ii. A ground-mounted Solar Energy Project shall not exceed the maximum building height for accessory buildings.

iii. Solar energy equipment must be substantially screened from public view (including adjacent properties and public rights of way) by fencing, plantings, or a combination thereof, as determined by the **[Zoning Officer or Code Enforcement Officer]**. Mechanical equipment shall be screened from any adjacent property that is residential/commercially zoned or used for residential/commercial purposes. The screen shall consist of shrubbery, trees, or other non-invasive plant species which provides a visual screen. In lieu of a planting screen, a decorative fence meeting the requirements of the Zoning Ordinance may be used. Mechanical equipment shall not be located within the minimum front yard setback of the underlying zoning district.

iv. A solar energy project shall not be used to display advertising, including signage, streamers, pennants, spinners, reflectors, ribbons, tinsel, balloons, flags, banners or similar materials. The manufacturers and equipment information, warning, or indication of ownership shall be allowed on any equipment of the solar energy project provided they comply with the prevailing sign regulations.

v. Solar panels shall be placed such that concentrated solar radiation or glare shall not be directed onto nearby properties or roadways. Solar panels shall not be placed in the vicinity of any airport in a manner that would interfere with airport flight patterns. Acknowledgement from the Federal Aviation Administration may be necessary.

(b) Noise

Noise requirements for Solar Energy Projects shall be no more stringent than noise requirements for other types of development in the underlying zoning district.

(c) Setbacks and Location

Solar Energy Projects shall be set back to an extent no greater than that required of other types of construction in the underlying zoning district. A ground mounted project or project attached to an accessory building shall not be located within the required front yard setback.

6. SAFETY AND CONSTRUCTION

In the construction and installation of a Small-Scale Solar Energy Project, the project owner shall, to the greatest extent practicable, adhere to the following requirements:

(a) The design and installation of Solar Energy Projects shall conform to applicable industry standards, including those of the American National Standards Institute (ANSI), Underwriters Laboratories (UL), the American Society for Testing and Materials (ASTM), or other similar certifying organizations, and

shall comply with the Municipal Building Code and with all other applicable fire and life safety requirements. The manufacturer specifications shall be submitted as part of the application.[5]

(b) The Solar Energy Project shall comply with all applicable **[Town/Village]** of **[Municipality]** Ordinances and Codes so as to ensure the structural integrity of such Solar Energy Project.

7. DECOMMISSIONING

(a) If a Solar Energy Project has been determined to be unsafe by the **[Town/Village]** of **[Municipality]** Building Code Official, the Solar Energy Project shall be required to be repaired by the project owner or other responsible party to meet federal, state and local safety standards, or be removed by the project owner or other responsible party within the time period allowed by the Building Code Official. If the project owner or other responsible party fails to remove or repair the unsafe solar energy project, the **[Town/Village]** may pursue a legal action to have the Project removed at the responsible party's expense.

(b) When the project owner or other responsible party decommissions a Solar Energy Project, he shall handle and dispose of the equipment and other project components in conformance with state and local requirements.

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1. The term "small-scale" is offered here to describe projects addressed by this model ordinance. Local governments are urged to utilize terminology that best communicates the scope of their particular solar ordinances.

2. Local officials may wish to define what they mean by "previously-disturbed area." This term may have different connotations in different settings. If a local government does not wish for agricultural land to be deemed "previously disturbed" because trees were removed, then it may want to define "previously disturbed" along the following lines: "Has undergone mechanical land-forming, construction, or demolition activities within the past 50 years."

3. Localities may want to consider framing the Small-Scale Solar Ordinance to complement the scope of the Large-Scale Solar Ordinance. That is, if the locality's Small-Scale ordinance addresses solar projects with a disturbance zone of 2 acres and less, then the Large-Scale Ordinance could address projects larger than these specifications, as well as projects that do not meet any of the listed categorical criteria (*e.g.*, mounted on a building).

4. Land uses that are permitted "by right" are those that can be approved administratively by staff because the zoning ordinance allows it. By right development is regulated by the zoning ordinance and by the subdivision ordinance. Approval is a ministerial act typically carried out by the Zoning Administrator (Code Enforcement Officer) who implements the law or policy by applying the facts in a particular case. When the requirements of the law or policy are satisfied, approval is required. The zoning administrator has no discretion to deny an application. **This model ordinance recommends using by right permitting for small-scale solar energy projects, as those projects are defined in this document.**

5. Alternative: "The design of the solar energy project shall conform to applicable industry standards. A building permit shall be obtained for a solar energy project per the New York State statewide Uniform Fire Prevention and Building Code. All wiring shall comply with the applicable version of the National Electric Code (NEC). The local utility provider shall be contacted to determine grid interconnection and net metering policies. The Applicant shall submit certificates of design compliance obtained by the equipment manufacturer from a certifying organization and any such design shall be certified by an Engineer registered in the State of New York."

APPENDIX C

MODEL ORDINANCE FOR LARGE-SCALE SOLAR ENERGY PROJECTS

BACKGROUND:

This Model Solar Ordinance provides suggested language for consideration by municipalities in framing their own local solar ordinance for large-scale solar energy projects. To the extent practicable, explanatory comments and issues of concern are noted in endnotes at the end of this document. The use of **[brackets]** around certain provisions (1) indicates points at which a local government should supply locality-specific information or (2) signals a decision point at which a local government may adopt the suggested provision and/or may wish to give special consideration to local circumstances and preferences in framing the provision.

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1. TITLE

This ordinance shall be known as the **[Large-Scale]** Solar Energy Project Ordinance for the **[Town/Village]** of **[Municipality]**.[1]

2. PURPOSE

The purpose of this ordinance is to provide for the siting, development, and decommissioning of large-scale solar energy projects the **[Town/Village]** of **[Municipality]**, subject to reasonable conditions that promote and protect the public health, safety and welfare of the community while promoting development of renewable energy resources.

3. DEFINITIONS

"Applicant" means the person or entity who submits an application to the locality for a permit to install a solar energy project under this ordinance.

"Disturbance Zone" means the area within the site directly impacted by construction and operation of the solar energy project.

"Integrated PV" means photovoltaics incorporated into building materials, such as shingles.

"Operator" means the person responsible for the overall operation and management of a solar energy project.

"Owner" means the person who owns all or a portion of a solar energy project.

"Photovoltaic" or "PV" means materials and devices that absorb sunlight and convert it directly into electricity.

"Rated capacity" means the maximum capacity of a solar energy project based on the sum total of each photovoltaic system's nameplate capacity.

"Site" means the area containing a solar energy project.

"Solar Energy System", "Solar Energy Project," or "Project" means a renewable energy project that **either**

(a) generates electricity from sunlight, consisting of one or more PV systems and other appurtenant structures and facilities within the boundaries of the site, **or**

(b) utilizes sunlight as an energy source to heat or cool buildings, heat or cool water, or produce mechanical power by means of any combination of collecting, transferring, or converting solar-generated energy, **and**

(c) does <u>not</u> meet any of the following criteria: has a disturbance zone equal to or less than **[two acres]**, is mounted on or over a building or parking lot or other previously-disturbed[2] area, or utilizes integrated PV only.[3]

4. PERMITTING[4]

(a) Special use permit approval for **LARGE**-scale solar projects in **AGRICULTURAL,** residential**,** and commercial zones.

i. Large-scale solar energy projects may be installed if approved by a special use permit in residential and commercial zones.

ii. The general procedures for applying for a special use permit as set forth in the **[Town/Village]** of **[Municipality]** zoning ordinance shall apply in addition to the applicable provisions of this ordinance.

(b) Permit by Right approval for large-scale solar projects in agricultural and industrial zones.

i. Large-scale solar energy projects may be installed if permitted by right in industrial zones.

Table I: Permitted Uses[5]				
	Zoning District			
Project Type	**[Agricultural]**	**[Residential]**	**[Commercial]**	**[Industrial]**
Level 1 [6] [>2 acres to 4 acres]	[S]	[S]	[S]	[P]
Level 2 [>4 acres to 20 acres]	[S]	[S]	[S]	[P]
Level 3 [>20 acres]	[S]	[S]	[S]	[P]
P= Permitted by Right		S= Requires Special Use Permit		

5. APPLICATIONS AND PROCEDURES

In addition to the requirements of **[local site plan citation]** and **[local special use permit citation, if applicable]**, applications for a large-scale solar energy project shall include the following information:

(a) Project Description.

A narrative identifying the applicant, owner and operator, and describing the proposed solar energy project, including an overview of the project and its location; approximate rated capacity of the solar energy project; the approximate number, representative types and expected footprint of solar equipment to be constructed; and a description of ancillary facilities, if applicable.

(b) Site Plan.

The site plan shall conform to the preparation and submittal requirements of **[local site plan citation]**, including supplemental plans and submissions, and shall include the following information:

i. Property lines and setback lines.

ii. Existing and proposed buildings and structures, including preliminary location(s) of the proposed solar equipment.

iii. Existing and proposed access roads, drives, turnout locations, and parking; however, this requirement shall not exceed VDOT requirements for other types of projects in the underlying zoning district.

iv. Location of substations, electrical cabling from the solar systems to the substations, ancillary equipment, buildings, and structures (including those within any applicable setbacks).

v. Fencing or other methods of ensuring public safety.

vi. Additional information may be required, as determined by the **[Planning Board, ZBA or Town/Village Board** (whichever is responsible for Special Use Permits)**],** such as a scaled elevation view and other supporting drawings, photographs of the proposed site, photo or other realistic simulations or modeling of the proposed solar energy project from potentially sensitive locations as deemed necessary by the **[Planning Board, ZBA or Town/Village Board** (whichever is responsible for Special Use Permits)**]** to assess the visual impact of the project, landscaping and screening plan, coverage map, and additional information that may be necessary for a technical review of the proposal.

(c) Documentation of Right to Use Property for the Proposed Project.

Documentation shall include proof of control over the land or possession of the right to use the land in the manner requested. The applicant may redact sensitive financial or confidential information.

(d) Glint and Glare.

Solar panels shall be placed such that concentrated solar radiation or glare shall not be directed onto nearby properties or roadways. Solar panels shall not be placed in the vicinity of any airport in a manner that would interfere with airport flight patterns. Acknowledgement from the Federal Aviation Administration may be necessary.

(e) Decommissioning Plan.

The application shall include a decommissioning plan and other documents required by the Decommissioning section of this ordinance.

(f) Liability Insurance. [7]

The applicant shall provide proof of adequate liability insurance for a large-scale solar energy project prior to issuance of a zoning or building permit **[or prior to beginning construction].**

6. LOCATION, APPEARANCE, AND OPERATION OF A PROJECT SITE

(a) Visual Impacts.[8]

The applicant shall demonstrate through project siting and proposed mitigation, if necessary, that the solar project minimizes impacts on the visual character of a scenic landscape, scenic vista, or scenic corridor as identified in the comprehensive plan.[9]

(b) Signage.

Warning signage shall be placed on solar equipment to the extent appropriate. Solar equipment shall not be used for displaying any advertising except for reasonable identification of the manufacturer or operator of the solar energy project. All signs, flags, streamers or similar items, both temporary and permanent, are prohibited on solar equipment except as follows: (a) manufacturer's or installer's identification; (b) appropriate warning signs and placards; (c) signs that may be required by a federal agency; and (d) signs that provide a 24-hour emergency contact phone number and warn of any danger. Educational signs providing information about the project and benefits of renewable energy may be allowed as provided in the local sign ordinance.

(c) Noise.

Noise requirements for Solar Energy Projects shall be no more stringent than noise requirements for other types of development in the underlying zoning district.

(d) Setbacks and Location.

Solar Energy Projects and associated equipment shall be set back to an extent, at a minimum, that is in compliance with the setback requirements for other types of development in the underlying zoning district.

(e) Fencing.

The minimum required fencing for a ground-mounted system is a perimeter chain link fence meeting minimum setback requirements, however, the **[Planning Board, ZBA or Town/Village Board** (whichever is responsible for Special Use Permits)**]** may require additional or alternative specific types of fencing, screening, and/or walls appropriate to the site and surrounding land use(s) not otherwise prohibited by this ordinance.

(f) Vegetation.

A vegetated buffer is required that consists of a landscaped strip at least **[50]** feet wide measured from each boundary line of the property around the entire perimeter of the property. This buffer should be made up of plant materials that are mature enough to effectively screen the view, to **[eight feet]** above ground level, of the solar panels from adjacent properties all year around. A landscape berm properly prepared to accept plants, up to **[four feet]** high, may be used to assist reaching the required screening height. The screening must be fully established within **[five years]** and effectively maintained for the life of the project. Non-invasive plant species must be used. Any fencing must be installed on the interior of the buffer. A recommendation that the screening and / or buffer creation requirements be waived may be made by the **[Planning Board, ZBA or Town/Village Board** (whichever is responsible for Special Use Permits)**]** when the applicant proposes to use existing wetlands or woodlands, as long as the wetlands or woodlands are permanently protected for use as a buffer. Existing vegetation may be removed only as authorized during the site plan review process to permit vehicular and utility access during construction of the facility and installation of power transmission lines.

7. DECOMMISSIONING

(g) Decommissioning Plan.

As part of the project application, the applicant shall submit a decommissioning plan, which shall include the following: (1) the anticipated life of the project; (2) the estimated decommissioning cost in current dollars; (3) how said estimate was determined; and (4) the manner in which the project will be decommissioned.

(h) Unsafe or Abandoned Projects.

i. If a Solar Energy Project has been determined to be unsafe by the [**Town/Village]** of **[Municipality]** Building Code Official, the Solar Energy Project shall be required to be repaired by the owner or operator to meet federal, state and local safety standards, or be removed by the owner or operator within the time period allowed by the Building Code Official. If the owner or operator fails to remove or repair the unsafe solar energy project, the **[Town/Village]** may pursue a legal action to have the Project removed at the owner's or operator's expense.

ii. When the project owner or other responsible party decommissions a Solar Energy Project, he shall handle and dispose of the equipment and other project components in conformance with state and local requirements.

iii. At such time that a solar energy project is scheduled to be abandoned, the owner or operator shall notify the [**Town/Village]** of **[Municipality]** Building Code Official.

iv. Within **[365 days]** of the date of abandonment, the owner or operator shall complete the physical removal of the solar energy project, if requested by the [**Town/Village]** of **[Municipality]** Board. This period may be extended at the request of the owner or operator, upon approval of the [**Town/Village]** of **[Municipality]** Board.

v. **[For Level 3 projects]**,[10] the [**Town/Village]** of **[Municipality]** may require reliable methods of secured funding sources to ensure that performance obligations under the local government approvals are satisfied, up to and including the costs for decommissioning.

[1] The term "large-scale" is offered here to describe projects addressed by this model ordinance. Local governments are urged to utilize terminology that best communicates the scope of their particular solar ordinances.

[2] Local officials may wish to define what they mean by "previously-disturbed area." This term may have different connotations in different settings. If a local government does not wish for agricultural land to be deemed "previously disturbed" because trees were removed, then it may want to define "previously disturbed" along the following lines: "Has undergone mechanical land-forming, construction, or demolition activities within the past 50 years."

[3] Localities may want to consider framing the Large-Scale Solar Ordinance to pick up where the Small-Scale Solar Ordinance left off. That is, if the locality's Small-Scale ordinance addresses solar projects with a disturbance zone of two acres and less, then the Large-Scale Ordinance should address projects larger than those. The suggested definition of "large-scale project" is designed to communicate that projects meeting any of the criteria of "small-scale projects" should be addressed under the ordinance for "small-scale projects" and not under this ordinance.

[4] Localities have several options for allowing the use of solar energy projects, with and without zoning designations. In general, these options may be described as follows:

1) **By right permitted use – This model ordinance recommends by right permitting for large-scale projects that are located in industrial zones.** Land uses that are permitted "by right" are those that can be approved administratively by staff because the zoning ordinance allows it. By right development is regulated by the zoning ordinance and by the subdivision ordinance. Approval is a ministerial act typically carried out by the Zoning Administrator (Code Enforcement Officer) who implements the law or policy by applying the facts in a particular case. When the requirements of the law or policy are satisfied, approval is required. The zoning administrator has no discretion to deny an application.

2) **Special Use Permitting – This model ordinance recommends the special use permitting requirement for large-scale solar energy projects in agricultural, residential, and commercial zones.** The term Special Use Permit refers to land uses that are allowed in certain zoning districts with special permission or conditions. Uses allowed by special use permit are those considered to be generally consistent with the by right uses, but ones that may have a potentially greater impact on neighboring properties or the public. Approvals are conditioned upon the applicant's complying with specific requirements intended to address or mitigate anticipated impacts. These cases generally require case-by-case review by the planning board, with recommendation for final action by the governing body. The governing body may revoke a special use permit for willful noncompliance with the zoning ordinance or the adopted conditions of the permit, or for failure to commence the use, structure, or activity within the prescribed period of time. Acting on a request for a special use permit is a legislative act made only by the governing body, after public hearing. Many localities will already have language in place regarding special use permitting processes. Localities may, however, want to include additional provisions for a special use permit for large-scale solar energy projects specifically. It is generally recommended that procedural timelines be consistent with those already in place for facilities of similar size and scope.

[5] This table is a template to be adjusted by localities as they deem appropriate. It should be noted that localities may adjust the Table in a variety of ways, including requiring different types of permitting within a given zone according to the size of the project. Localities should substitute their own zone designations if they do not use "residential, commercial, agricultural, industrial" (*e.g.* some localities have special zones for institutions).

[6] It is suggested that strata within the Table begin where the locality's Small-Scale Solar Ordinance leaves off. Although the suggested Table utilizes size of disturbance zone (in acres) as the criterion for defining project categories (that is, Level 1 = >2 acres to 4 acres; Level 2 = >4 acres to 20 acres; Level 3 = > 20 acres), a locality might instead choose to utilize the project's rated capacity (for example, Level 1 = >500 kW to 1 MW; Level 2 = > 1MW to 5 MW; Level 3 = > 5MW). For example, approximately 2 ½ MW of electricity can be generated by 10 acres of PV panels, with current technology.

[7] Localities will need to decide what "adequate liability insurance" means in the context of local land use requirements. Typically, insurance requirements will be subject to the amount of investment, including installation costs, in the facility. Rather than providing a specific dollar amount, localities might want to develop a sliding scale based upon investment amount or some other indicator used by the locality in other contexts. It is suggested that localities require no greater amount of liability insurance for large solar projects than they do for other comparable types of development.

[8] Very large solar energy projects have a visual presence in the landscape. Some communities may be concerned about the visual impact of these facilities. The language provided is designed to enable localities to explicitly address visual impacts without restricting access to solar resources.

[9] This provision assumes designation of scenic resources in a local comprehensive plan. If no such designation has occurred, then this provision is not applicable and not recommended. If the comprehensive plan is not a useful tool for identifying which scenic resources should be protected, then a locality is encouraged to utilize another approach that it deems more appropriate.

[10] It is recommended that sureties be required for Level 3 projects, which would have a disturbance zone >20 acres. Local governments may want surety for all projects in the large-scale category, and not just for Level 3 projects. Hence, there are brackets around "Level 3."