Part 3

RECOMMENDATIONS FOR IMPROVING LOCAL SOLAR PERMITTING

This section recommends streamlining the permitting of small, simple solar PV installations and provides materials to help local governments make their solar permit process as efficient and cost-effective as possible.

Many local governments in California have already taken steps to streamline solar permitting. Also, several regional efforts among local governments are under way across the state to standardize solar permitting across jurisdictional lines. These existing efforts have helped to inform the recommendations made below.

Streamlined Permitting for Small, Simple PV Systems

A streamlined permit process for small solar PV systems simplifies the structural and electrical review of the PV system, can minimize the need for detailed engineering studies, and avoids unnecessary delays.

The model permit process outlined below is based on "Expedited Permit Process for PV Systems," prepared by Bill Brooks, P.E. in 2011 for the **Solar America Board for Codes and Standards** (also called the Solar ABCs). More information on this report is available in the Resources section of this guidebook.

The model streamlined permit process recommended is not intended to apply to all PV systems, but rather to PV systems under 10 KW maximum power output. As PV systems increase in size and complexity, the ability to handle these projects via a standard framework diminishes. However, it should be noted that larger PV systems can still be approved in a timely manner through a clear and efficient permit review process.

It is not the intent of an expedited process to circumvent the engineering process. Rather, the intent of a streamlined process is to recognize the similarities among these smaller systems and establish guidelines to determine when a PV project is within the boundaries of typical, well-engineered systems.

A streamlined permit process for solar PV projects under 10KW includes, but is not limited to, the following elements:

- Use of a concise submittal checklist for solar PV permit applications. The checklist provides permit applicants a clear understanding of the written materials that must be provided with the permit applications.
- Use of a standard plan to describe the proposed solar PV project in the permit application. A standard plan that applicants complete for solar PV systems can simplify the review of the permit application.
- Permit application materials and paperwork are made available through the Internet.
- Electronic submittals and permit issuance are completed using the Internet.
- When a submittal checklist and standard plan are used, plan review and permit issuance are completed "over the counter" for walk-in applications. If over the counter approval is not offered, a maximum timeframe in which to review the permit application is provided.
- If the capability exists for a local enforcing agency, permit payments are completed electronically.

A streamlined inspection process for solar PV systems should include the following:

- Coordinated inspection among the various agencies to allow for a single inspection or inspections by

the agencies to occur at the same time. This step typically involves coordination between the main local enforcing agency and the local fire authority.

- Use of concise inspection checklist that provides permit applicants a clear understanding of what elements of the solar installation will be inspected before final approval of the installation.
- Enable inspection requests to be submitted online.
- Provide for on-site inspection during the next business day after being notified that the solar system has been installed.
- Provide a scheduling time window for on-site inspection of no more than two hours, and utilize phone and/or e-mail communication to provide information on anticipated inspection time.
- The most streamlined permit process also ensures close coordination between the local enforcing agency and the local utility to coordinate on-site inspections in the most time efficient manner possible.

Efficient permitting requires cooperation among local permitting staff and solar contractors. Many local enforcing agencies have provided informational trainings for solar contractors to explain local requirements. These trainings have resulted in more educated contractors, reducing permit application errors and saving time and resources for the local permitting agency.

Toolkit for Local Governments

Several template documents are provided in this section that local enforcing agencies can customize for their own use in order to improve their permitting processes. These materials form an optional toolkit that local governments can utilize to reduce their costs of permit review and approval and ensure a predictable and efficient process for permit applicants.

Use of these materials is optional for local governments. However, local governments are encouraged to give substantial weight to the statewide goals and benefits that a streamlined permit process offers to their own agencies, local contractors, businesses, and residents. Enforcing agencies are encouraged to use these standardized plans and processes whenever possible to provide uniformity across jurisdictional lines.

Materials for streamlining permitting of small systems under 10kw on single family homes:

- **Local information bulletin** that outlines the necessary steps to secure permits for solar PV installations under 10kw. This information bulletin details what materials must be submitted in the permit application and key points of the on-site inspection. Several local permitting agencies have successfully issued similar bulletins to clarify their permit processes.
- **Standard plans** that enable applicants to "fill in the blanks" to explain the electrical configuration of a solar PV system. By doing so, these standard plans reduce omissions and errors within permit applications. This toolkit offers two standard plans that can be used for small solar PV installations: one for systems using a central inverter and the other for systems utilizing micro-inverters. Enforcing agencies are encouraged to use these plans as a base document to develop other standard plans and procedures that cover other types of PV installations.

Materials to further improve permitting of solar PV systems of all sizes:

- **Example MOU (memorandum of understanding)** that provides a template agreement between two local agencies to coordinate permit review and approval. It can be used, for example, to streamline review between a local building department and a local fire service.

- **Technical information bulletin for solar PV installations on single-family residences** that provides consistent and comprehensive information regarding current state requirements for solar PV systems on single-family residences. It could be issued as a departmental advisory or as an informational handout and can be used by solar installers as a reference document. Enforcing agencies can modify the information bulletin based on local needs or policies.
- **Technical information bulletin for solar PV systems on all types of buildings, including commercial buildings**, that provides information regarding current state requirements for solar PV systems on all buildings, including commercial buildings, in a local jurisdiction.

TOOLKIT DOCUMENT

City/County of [NAME OF CITY]
Department of [NAME OF DEPARTMENT]

Submittal Requirements for Permit Application Solar Photovoltaic Installations under 10KW in Single-Family Dwellings

Departmental Information Bulletin [IDENTIFYING NUMBER]
Effective: [DATE]

This information bulletin is published to guide applicants through a streamlined permitting process for solar photovoltaic (PV) projects under 10 KW in size. This bulletin provides information about submittal requirements for plan review, required fees, and inspections.

Note: Language in **BOLD FONT** *below indicates where local jurisdiction needs to provide information specific to the jurisdiction.*

1. Approval Requirements

The following permits are required to install a solar PV system under 10KW:

a) [LIST TYPE OF PERMIT(S) REQUIRED BY THE LOCAL JURISDICTION, i.e. ELECTRICAL OR BUILDING PERMIT].

Planning review [IS/IS NOT] required for solar PV installations of this size.
Fire Department approval [IS/IS NOT] required for solar PV installations of this size.

2. Submittal Requirements

a) Completed permit application form. This permit application form can be downloaded at [WEBSITE ADDRESS]

b) A completed Standard Electrical Plan [THIS GUIDEBOOK RECOMMENDS DEVELOPMENT OF A STANDARD PLAN THAT ALLOWS PERMIT APPLICANTS TO SIMPLY FILL IN INFORMATION REGARDING A SOLAR SYSTEM'S ELECTRICAL CONFIGURATION. A TEMPLATE STANDARD PLAN IS PROVIDED IN THIS GUIDEBOOK]. The standard plan may be used for proposed solar installations under 10KW in size and can be downloaded at [WEBSITE ADDRESS].

If a standard electrical plan is not available for use, an electrical plan shall be submitted that includes the following:

- Locations of main service or utility disconnect
- Total number of modules, number of modules per string, and the total number of strings
- Make and model of inverter(s) and/or combiner box if used
- One-line diagram of system
- Specify grounding/bonding, conductor type and size, conduit type and size, and number of conductors in each section of conduit
- If batteries are to be installed, include them in the diagram and show their locations and venting

- Equipment cut sheets including inverters, modules, AC and DC disconnects, combiners, and wind generators
- Labeling of equipment as required by CEC, Sections 690 and 705
- Site diagram showing the arrangement of panels on the roof or ground, north arrow, lot dimensions, and EXISTED SHADING ELEMENTS the distance from property lines to adjacent buildings/structures (existing and proposed)

c) Demonstrate compliance with structural requirements. [THIS GUIDEBOOK RECOMMENDS THAT LOCAL JURSDICTION ADOPT PRESCRIPTIVE APPROACH TO ESTABLISHING MINIMAL STRUCTURAL REQUIREMENTS THAT AVOIDS THE NEED FOR STRUCTURAL CALCULATIONS.]

If a prescriptive approach has not been developed to ensure structural requirements, structural support information for roof-mounted systems including the following SHOULD INCLUDE:

- The type of roof covering and the number of roof coverings installed
- Type of roof framing, size of members, and spacing
- Weight of panels, support locations, and method of attachment
- Framing plan and details for any work necessary to strengthen the existing roof structure
- Any relevant calculations (if required)
- Where an approved racking system is used, provide documentation showing manufacturer of the rack system, maximum allowable weight the system can support, attachment method to the roof or ground, and product evaluation information or structural design for the rack system

3. Plan Review

Permit applications can be submitted to [DEPARTMENT NAME] in person at [ADDRESS] and [IF APPLICABLE] online through the following website: [WEBSITE].

Permit applications utilizing standard plan may be approved over the counter at [ADDRESS]. Permit applications can also be submitted electronically [IF APPLICABLE] at the following website: [WEBSITE]. Permits not approved over the counter are typically reviewed in [NUMBER OF] days.

4. Fees

[PROVIDE CLEAR FEE SCHEDULE]

5. Inspections

Once all permits to construct the solar installation have been issued and the system has been installed, it must be inspected before final approval is granted for the solar system. On-site inspections can be scheduled by contacting [DEPARTMENT] by telephone at [PHONE NUMBER] or electronically at [WEBSITE OR E-MAIL ADDRESS]

Permit holders must be prepared to show conformance with all technical requirements in the field at the time of inspection. The inspector will verify that the installation is in conformance with applicable code requirements and with the approved plans.

Below are common points of inspection with which the applicant should be prepared to show compliance:

- Number of PV modules and model number matches plans, and specification sheets number matches plans and specification sheets
- Array conductors and components are installed in a neat and workman-like manner.
- PV array is properly grounded
- Electrical boxes are accessible and connections are suitable for environment