



PV SUBMITTAL REQUIREMENTS

Submittal Requirements Bulletin — Solar Photovoltaic Installations 10 kW or Less in One- and Two-Family Dwellings

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

*Note: Language in **ALL CAPS** below indicates where local jurisdictions need to provide information specific to the jurisdiction. Language in italics indicates explanatory notes from the authors of this Guidebook.*

1. Approval Requirements

The following permits are required to install a solar PV system with a maximum power output of 10 kW or less:

- 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) Demonstrate compliance with the eligibility checklist for expedited permitting. These criteria can be downloaded at [WEBSITE ADDRESS].

This Guidebook recommends use of a simple checklist to clearly identify eligibility criteria for expedited permitting, where established.

- c) A completed Standard Electrical Plan. The standard plan may be used for proposed solar installations 10 kW in size or smaller and can be downloaded at [WEBSITE ADDRESS].

This Guidebook recommends use of a standard plan that allows permit applicants to simply fill in information regarding a solar system's electrical configuration. Template standard plans are provided in this Guidebook (PV Toolkit Documents #3 and #4).

If standard electrical plans are not provided for use, an electrical plan should 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 the distance from property lines to adjacent buildings/structures (existing and proposed)*
- d) A roof plan showing roof layout, PV panels and the following fire safety items: approximate location of roof access point, location of code-compliant access pathways, PV system fire classification and the locations of all required labels and markings. Examples of clear path access pathways are available in the State Fire Marshal Solar PV Installation Guide. <http://osfm.fire.ca.gov/pdf/reports/solarphotovoltaicguideline.pdf>.
- e) Completed expedited Structural Criteria along with required documentation. Structural Criteria can be downloaded at [WEBSITE ADDRESS].

For non-qualifying systems, provide structural drawings and calculations stamped and signed by a California-licensed civil or structural engineer, along with the following information.

- 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
- Site-specific structural calculations
- 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

This Guidebook recommends that local jurisdictions adopt a prescriptive approach to establishing minimal structural requirements that avoids the need for structural calculations. A simple list of criteria is provided in this Guidebook (PV Toolkit Document #5). A full explanation of the methods and calculations used to produce these criteria can be found in the Structural Technical Appendix for Residential Rooftop Solar Installations, which is available at

http://www.opr.ca.gov/docs/Solar_Structural_Technical_Appendix.pdf.

3. Plan Review

Permit applications can be submitted to [DEPARTMENT NAME] in person at [ADDRESS] and [IF APPLICABLE] electronically through: [WEBSITE/EMAIL/FAX].

Permit applications utilizing standard plan may be approved “over-the-counter” at [ADDRESS]. Permit applications may also be submitted electronically for “over-the-counter” approval [IF APPLICABLE] through: [WEBSITE/EMAIL/FAX].

Permits not approved “over-the-counter” should be reviewed in [ONE TO THREE] 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 EMAIL ADDRESS]. Inspection requests received within business hours are typically scheduled for the next business day. If next business day is not available, inspection should happen within a five-day window.

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.

The inspection checklist provides an overview of common points of inspection that the applicant should be prepared to show compliance. If not available, common checks include the following.

- Number of PV modules and model number match plans and specification sheets number match 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.
- Array is fastened and sealed according to attachment detail.
- Conductor's ratings and sizes match plans.
- Appropriate signs are property constructed, installed and displayed, including the following.
 - Sign identifying PV power source system attributes at DC disconnect
 - Sign identifying AC point of connection
 - Sign identifying switch for alternative power system
- Equipment ratings are consistent with application and installed signs on the installation, including the following.
 - Inverter has a rating as high as max voltage on PV power source sign.
 - DC-side overcurrent circuit protection devices (OCPDs) are DC rated at least as high as max voltage on sign.
 - Switches and OCPDs are installed according to the manufacturer's specifications (i.e., many 600VDC switches require passing through the switch poles twice in a specific way).
 - Inverter is rated for the site AC voltage supplied and shown on the AC point of connection sign.
 - OCPD connected to the AC output of the inverter is rated at least 125% of maximum current on sign and is no larger than the maximum OCPD on the inverter listing label.
 - Sum of the main OCPD and the inverter OCPD is rated for not more than 120% of the bus bar rating.

6. Departmental Contact Information

For additional information regarding this permit process, please consult our departmental website at [WEBSITE] or contact [DIVISION NAME] at [PHONE NUMBER].