

# PURPOSE AND USE OF THIS GUIDE

This Guidebook is designed to help local governments and their permitting agencies improve permitting of small solar energy systems. It is also designed to help building owners and solar installers navigate permitting as efficiently as possible. Practices recommended in this Guidebook apply to permitting agencies of all sizes. The Guidebook is also written for permit applicants with all levels of expertise.

The Guidebook is organized into five main sections.

Part  
**1**

**CURRENT LAWS, REGULATIONS AND CODES:** This section explains current legal requirements for solar installations in California.

Part  
**2**

**THE PROJECT APPROVAL PROCESS:** This section describes important aspects of permit review and project inspection.

Part  
**3**

**RECOMMENDATIONS FOR EXPEDITED LOCAL SOLAR PERMITTING:** These sections recommend a streamlined local permitting process for small, simple solar PV and solar water heating installations (including both solar domestic water heating [SDWH] and solar pool heating [SPH]) and provide standard forms that can be used to streamline permitting.

Part  
**4**

Part  
**5**

**RESOURCES AND INFORMATION:** This section provides informational materials that can help local governments clarify current state requirements for all solar installations.

The Guidebook concludes with a glossary of terms and a list of helpful information sources for local governments and permit applicants.

This Guidebook focuses on the permit review and approval to install a rooftop solar system. It does not address zoning, land use approvals or environmental review that may be required for larger solar projects.

This Guidebook addresses both solar photovoltaic (PV) and solar water heating (SWH) technologies. These technologies have many fundamental similarities, as well as several important differences. Where requirements are discussed that apply to only one of these technologies, the text will note this.

In the course of the Guidebook, several types of solar installation are discussed, including systems on residential and commercial building rooftops, in parking lots and on parking structures and mounted on the ground. It is important to note that each installation type has a certain set of installation requirements. In addition, rooftop installations have some differing requirements depending on whether they are installed on a commercial or residential building.

The toolkit sections of this Guidebook recommend an expedited permitting process for simple PV systems 10 kilowatts (kW) or less and a process for SWH systems 30 kilowatts thermal (kWth) or less. An expedited permitting process refers to streamlining the permit process for simple, typical solar installations so that

permits can be issued in an “over-the-counter” or similar manner. This Guidebook uses the terms expedited and streamlined synonymously. These thresholds capture approximately 90% of the solar systems that are currently being installed. Above this size threshold, a system’s design considerations become more complex.

Assembly Bill 2188 (2014, Muratsuchi) requires jurisdictions to adopt an expedited permitting process that “substantially conforms” with that laid out in Parts 3 and 4 of this Guidebook. Jurisdictions may modify these documents as specified and should review these sections of the Guidebook for a more detailed discussion of this process.

An electronic version of this Guidebook that includes clickable links to Internet resources can be found on the websites of several California entities: [The Governor’s Office of Planning and Research](#), [California Building Standards Commission](#), [Office of the State Fire Marshal](#), [California Department of Housing and Community Development](#) and [Center for Sustainable Energy](#).

## State Code Requirements

California's state building codes provide uniform requirements for buildings throughout the state. These requirements are contained in Title 24 of the California Code of Regulations (CCR). The CCR is divided into 28 separate titles based on subject matter or state agency authority. Title 24 is the 24th title within the CCR and is reserved for state regulations that govern the design and constructions of buildings, associated facilities and equipment. These regulations are also known as the state's "building standards."

Title 24 applies to all building occupancies and related features and equipment throughout the state. It contains requirements for a building's structural, mechanical, electrical and plumbing systems, in addition to measures for energy conservation, sustainable construction, maintenance, fire and life safety and accessibility. A common misunderstanding is that Title 24 relates only to energy conservation or accessibility requirements. In fact, it covers a much wider range of requirements for buildings. Specific areas within Title 24 identify certain requirements for solar PV installations such as the California Electrical Code, California Building Code, California Plumbing Code, California Mechanical Code and California Residential Code (which applies to residential buildings of one or two units).

State regulations should not be confused with state laws enacted through the legislative process. State regulations are adopted by state agencies where necessary to implement, clarify and specify requirements of state law. The California Building Standards Commission and the other state adopting agencies review the codes and update Title 24 as appropriate. Title 24 is updated every 18 months with a model code update every three years.

Several portions of Title 24 govern installation of a solar energy system.

[California Building Code, Title 24, Part 2](#)

[California Residential Code, Title 24, Part 2.5 \(One- and Two-family dwellings\)](#)

[California Electrical Code, Title 24, Part 3](#)

[California Mechanical Code, Title 24, Part 4](#)

[California Plumbing Code, Title 24, Part 5](#)

[California Energy Code, Title 24, Part 6](#)

[California Fire Code, Title 24, Part 9](#)

The intent of this Guidebook is to provide consistent interpretation of these Title 24 requirements throughout the state. This Guidebook is not intended to create, explicitly or implicitly, any new requirements.

While current Title 24 requirements establish several legal standards for installation of solar energy installations, Title 24 may be amended through the state's code update process to further clarify requirements for solar PV installations or SWH systems. Updated information regarding new code requirements, as well as the code updating process, is available on the [California Building Standards](http://www.bsc.ca.gov) website at [www.bsc.ca.gov](http://www.bsc.ca.gov).

## Limits on Local Modifications

### Building Codes

Cities and counties in California are required by state law to enforce Title 24 building standards. However, cities and counties may adopt local laws (also called "ordinances") to modify these state building standards under limited circumstances because of local climatic, geological or topographical conditions. This limited

allowance means that a city or county may have local ordinances that modify or add to the provisions of Title 24 for solar systems. The [California Building Code \(Sections 1.1.8 and 1.1.8.1\)](#) outlines the specific findings that a city or county must make for each amendment, addition or deletion to the state building codes.

Cities, counties and local fire departments file these local amendments to the state building code with the California Building Standards Commission. Findings that are prepared by fire protection districts must be ratified by the local government and are then filed with the California Department of Housing and Community Development.

## **PLANNING AND ZONING REQUIREMENTS**

California's cities and counties have authority to adopt laws that govern local land use. Local governments typically enforce their own general plans and other comprehensive plans that guide development in their communities and then adopt local ordinances and zoning regulations to enforce these plans.

Local governments generally can adopt local laws regarding where certain land uses, such as large commercial energy generation, can be located within their communities. A more detailed conversation regarding land use and zoning for solar projects is addressed in a 2012 guide produced by the [California Planning Directors Association \(CPDA\)](#), which is referenced in the Resources section of this Guidebook. This guide recommends several steps to streamline land use decisions regarding solar energy.

## **REQUIREMENT TO ADOPT AN EXPEDITED PERMITTING PROCESS FOR SMALL ROOFTOP SOLAR**

Assembly Bill 2188 (Muratsuchi, 2014) requires local governments to adopt an administrative ordinance that creates a streamlined permitting process for small rooftop solar system installations on or before September 30, 2015. It also limits the number of inspections that may be required.

These requirements are applicable to solar energy systems that

1. Are no larger than 10 kilowatts alternating current nameplate rating or 30 kilowatts thermal
2. Conform to all applicable state fire, structural, electrical and other building codes as adopted or amended by the city, county or city and county and paragraph (3) of subdivision (c) of Section 714 of the Civil Code
3. Are installed on a single-family or duplex family dwelling
4. Do not exceed the maximum legal building height as defined by the authority having jurisdiction

The law also requires that this streamlined process “substantially conform” to the permitting process laid out in this Guidebook. See Parts 3 and 4 of this Guidebook for an explanation of this process.

Finally, the law sets limits on the cost and efficiency impacts that homeowner associations may have on proposed solar projects. The full text of this bill can be found [here](#).

## **RESTRICTIONS TO LOCAL LIMITS ON SOLAR ENERGY**

Where solar energy is generated for on-site use, state law clearly limits local governments' ability to unreasonably prohibit solar systems. The following state laws place limits on local regulation of solar energy systems.

### **California Solar Rights Act**

The California Solar Rights Act is a state law, passed in 1979, that elevates the timely and cost-effective installation of solar energy systems as a matter of statewide importance. The law establishes the right of homeowners and businesses to access sunlight in order to generate solar energy, limits the ability of local governments and homeowner associations (HOAs) to prevent the installation of solar systems and prohibits a public entity from receiving state funding for solar energy programs if it unreasonably restricts the installation of solar energy systems.

The act's preamble provides the overarching intent of the act by stating:

*It is the intent of the Legislature that local agencies not adopt ordinances that create unreasonable barriers to the installation of solar energy systems, including, but not limited to, design review for aesthetic purposes, and not unreasonably restrict the ability of homeowners and agricultural and business concerns to install solar energy systems. It is the policy of the state to promote and encourage the use of solar energy systems and to limit obstacles to their use. It is the intent of the Legislature that local agencies comply not only with the language of this section, but also the legislative intent to encourage the installation of solar energy systems by removing obstacles to, and minimizing costs of, permitting for such systems.*

The Solar Rights Act also requires that local governments use an administrative, nondiscretionary review process for on-site solar energy systems. As indicated above, no restrictions related to visual or aesthetic concerns are permitted. Section 65850.5 (c) of the act also prohibits local governments from denying a use permit for a solar energy system “. . . unless it makes written findings based upon substantial evidence in the record that the proposed installation would have a specific, adverse impact upon the public health or safety, and there is no feasible method to satisfactorily mitigate or avoid the specific, adverse impact. The findings shall include the basis for the rejection of potential feasible alternatives of preventing the adverse impact.”

Specific requirements of the Solar Rights Act have been refined through a series of court cases in recent decades. For a more detailed understanding of specific legal requirements of this act, please consult a [report](#) completed by the Energy Policy Initiatives Center at the University of San Diego School of Law, which is detailed in the Resources section at the end of this Guidebook.

Requirements of the Solar Rights Act are contained in the following sections of California law: California Civil Code, Sections 714 and 714.1; California Civil Code, Sections 801 and 801.5; California Government Code, Section 65850.5; California Health and Safety Code Section 17959.1; California Government Code, Sections 66473.1 and 66475.3.

### **California's Solar Shade Control Act**

California's Solar Shade Control Act, enacted in 1978, is a state law intended to protect solar systems from being shaded from sunlight by neighboring trees or buildings. A 2008 amendment of this act limits the application of this law to situations in which a neighbor receives a notice that a solar energy system will be installed that they might shade if they plant trees or remodel their building.

Requirements of the act are contained in California Public Resources Code, Sections 25980 through 25986.

### **CEQA Exemption for Certain Solar Installations**

Senate Bill 226, passed in 2011, is a state law establishing that certain solar energy systems are exempt from environmental review under the California Environmental Quality Act (CEQA). To qualify under this statutory exemption, a solar energy project must be located either on the roof of an existing building or on an existing parking lot. SB 226 makes clear the legislative intent that rooftop and parking lot solar projects do not require in-depth environmental review.

This CEQA exemption is contained in Section 21080.35 of the Public Resources Code.

## **Permit Fees**

Current state law requires that fees charged by a local enforcing agency for permit processing and inspection cannot exceed the reasonable cost of providing the service for which the fee is charged. In other words, fee revenue must only be used to defray the cost of permit processing and enforcement and cannot be used

for general revenue purposes. These requirements are contained in Government Code Section 65850.55, Government Code Section 66016 and State Health and Safety Code Section 17951.

Government Code Section 66015 further sets specific limits on the amount local enforcing agencies can charge for solar PV permit fees. Fees in excess of these limits must be explicitly justified and are prohibited unless the municipality determines that it has already adopted a streamlined permit approval process.

### Permit Fee Limits for PV

Residential		Commercial	
15 kW or less	\$500	50 kW or less	\$1000
More than 15 kW	\$500 + \$15 per kW above 15	50 kW – 250 kW	\$1000 + \$7 per kW above 50 kW
		More than 250 kW	\$2400 + \$5 per kW above 250 kW

While some local governments have yet to comply with these laws, other local governments have reduced or even waived fees to install solar systems, recognizing the many benefits created by expansion of solar energy in their communities.

There is no state requirement for permit fees for solar water heating systems. However, a clear fee schedule should be provided that considers shorter counter time for issuing streamlined permits.

## THE PROJECT APPROVAL PROCESS

Securing approval for a solar energy project involves several basic steps. First, a permit application is submitted to a local permitting agency, known within government as the “enforcing agency” and reviewed by that agency. Typically, a permit is submitted on behalf of a building owner by the contractor installing the solar energy system. Once the permit application is approved, the applicant has permission to build the solar installation. After the solar installation is constructed, it is inspected by the enforcing agency to ensure it complies with applicable building codes and local ordinances. Each of these steps is described in more detail below.

### STEPS FOR PERMIT REVIEW AND APPROVAL

#### Local Enforcing Agency Review

Submit permit application and materials



Permit review and approval



Construction of solar PV system



Site inspection and final approval

#### Local Utility Approval

Submit request to “interconnect” the solar installation to the local electricity grid



Site inspection and interconnection approval

For solar PV installations, during the local agency project approval process the permit applicant should also contact the local utility provider to request permission to connect the solar installation to the local distribution grid. The solar PV system cannot be “turned on” until approval is granted by both the local agency and the local utility. Solar water heating systems do not require utility approval unless a grid-connected PV system is included (hybrid systems have both grid-connected PV and thermal energy collection).

Well-informed solar installers and knowledgeable, well-trained local agency staff are critical to achieve an efficient permit approval process. Please consult the Resources section of this Guidebook for information on training available to both solar contractors and agency staff. Effective training is one of the most important steps that local governments and the solar industry can take to ensure efficient permitting.

### Permit Application and Plan Review

This section explains the permit review process for solar energy installations and common issues that must be addressed to minimize unexpected delays in the permit review process.

#### Enforcing Agency Review

The first step to build a solar installation requires applying for a permit to construct the installation from the local enforcing agency, which is most often the local building department. Each local enforcing agency is organized slightly differently, but all have an established process for receiving, reviewing and approving permits.