# BEST PRACTICES or Permitting Processes

Southern California **Rooftop Solar Challenge** 

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## 1. INTRODUCTION

The Southern California Rooftop Solar Challenge (SCRC) supports the goals of the Department of Energy (DOE) Solar Energy Technologies Program and the SunShot Initiative, which seek to make solar electricity cost competitive without subsidies by the end of the decade by reducing balance of system costs for photovoltaics (PV). To encourage market transformation, the California Center for Sustainable Energy (CCSE) is leading a regional Southern California team that will focus on expanding financing options for residential and commercial customers, streamlining permitting processes, and standardizing net metering and interconnection standards across investor- and municipally-owned utilities in the region. The goals will be achieved by fostering cross-jurisdictional collaboration and information sharing.

In order to install a solar PV system on a home or business, a permit from the local jurisdiction must be granted to ensure that the design and installation is safe and follows local building codes. PV systems must comply with all applicable requirements and regulations, including zoning, structure height, and prior development permits governing the site. The interpretation of these requirements and the requirements themselves can vary dramatically from city to city, and jurisdiction to jurisdiction. Many solar installers will perform solar installations throughout a region and face vastly different processes from each local building department. For example, the County of San Diego has 19 different jurisdictions, each with their own building codes and permitting processes. Understanding the various permitting processes for solar PV systems can be a complex, challenging, and time-consuming undertaking. According to the DOE, paperwork and administrative processes, such as permit application processing and review, are responsible for 30-40% of the cost of a rooftop PV system. Consequently, standardizing the permitting process is an important strategy to reduce the cost of solar PV installations.

Standardizing permit processes across the Southern California region will reduce the time spent and cost associated with rooftop solar PV installation. Standardization will benefit contractors, customers, and jurisdictions by providing an efficient process to obtain information, submit permits, process permits, assess appropriate fees, inspect systems, and communicate with utilities for interconnection. This in turn will decrease the administrative burden faced by jurisdictions and contractors – and in turn reduce costs for the end user – helping to mature the rooftop PV market in Southern California.

#### ABOUT THIS REPORT:

This report, which follows the Policy Overview Document, provides a summary of the best practices in the four major permitting process categories among the local jurisdictions in the Rooftop Solar Challenge team area, including: (1) Application and Information Access, (2) Processing Time, (3) Fees, (4) Utilization of Model Processes, (5) Inspections, and (6) Communication with Utility.





# 2. INFORMATION/APPLICATION ACCESS & APPLICATION SUBMISSION

The goal of identifying and implementing the best practices in this category is to improve the ease with which an applicant can access permit information, and obtain, complete, submit, and track an application. Implementation of best practices should also decrease the administrative burden on a jurisdiction saving personnel hours and other resources.

#### 2.1 Information Access

To ensure that information about the permitting application and process is readily accessible, local jurisdictions should provide multiple avenues through which an applicant can obtain needed information. This includes providing access to information by an easy-to-access online information portal, or requests made by email, in person, or by mail. The model performers in the SCRC in this category are the Cities of Chula Vista and Long Beach.

The model performers in this category distinguish themselves from others in the region by providing information in an easily accessible online location that includes information for a single designated pointof-contact. In its efforts to identify ways to streamline the permitting process, the Department of Energy (DOE) has emphasized the need for easily accessible online permitting information. The DOE defines "easily accessible" as the availability of permitting information online in a single site location that can easily be accessed through the jurisdiction's or permitting office's home page. Consequently, local jurisdictions should focus on developing a single site location online that is easily accessed through the jurisdiction's home page.



An example of a SCRC jurisdiction that has easily accessible permit information is Pasadena Water and Power which provides a <u>single site location</u> with links and shortcuts to access solar permitting through the City of Pasadena, interconnection, and rebate information. Another prime example outside of the SCRC is the <u>City of Berkeley's website</u> which provides a comprehensive easy-to-access web portal with a <u>single site location</u> and comprehensive information regarding solar.



Designating a single point-of-contact to answer photovoltaic permitting questions also improves access to information on the permitting process. Contact information for the designated point-of-contact should include the address, phone number, and email of the department responsible for permitting. This information should be easily found online and listed on all forms, guides, webpages and applications. The City of Chula Vista provides an easy to find <u>single point of contact</u> on its Sustainability web portal. The City of Long Beach provides a <u>comprehensive contact information webpage</u> for their Department of Developmental Services.

Finally, the Interstate Renewable Energy Council's (IREC) Sharing Success: Emerging Approaches to Efficient Rooftop Solar Permitting<sup>1</sup> emphasizes information access best practices that provide comprehensive permitting requirements and information in one online location. According to IREC, the website should include but is not limited to the following information:



- Information Bulletins
- Inspection Requirements
  - Special Provisions
  - Solar Access Laws
- Frequently Asked Question Section

IREC also recommends that the website contains links to other regulatory or private entities involved in the permitting process and additional information resources including:

- Municipal or Investor-Owned Utility responsible for interconnecting the system
   Incentive programs of local Utility, the State of California and Federal Government
   The Public Utilities Commission's and Energy Commission's information or incentives and requirements

   Information related to determining solar irradiance
   How to find and evaluate a solar service provider, and
  - Available incentives and financing options.

The inclusion of this information on a jurisdictions website will provide comprehensive permitting information for quick and easy information access.

#### 2.2 Application Access

Accessibility of the permitting application is another important factor in the overall process. The regional best practice allows an applicant to obtain an application online, by email, in person, and by mail. The broad range of access options allows a jurisdiction to not only reach all applicants but to utilize its time and resources effectively to assist only those applicants that may need additional assistance. The model performers in the application subcategory that provide access to applications online, by email, in person, and by mail for residential and commercial applications are Chula Vista, Long Beach, Pasadena and San Diego.

Applications are most easily accessed online when located on a specific website for solar. <u>The City of Chula Vista</u> provides easy access to this information on their website. However, this information is also easily accessed when found among other permitting forms. The City of Los Angeles provides <u>an online repository</u> for all permitting information. This type of centralization makes application access easy and simple. To ensure easy access, a local jurisdiction should avoid locating its application in a separate permitting category (such as miscellaneous) or on its website in a place that makes finding the application confusing or challenging.

#### 2.3 Application Completion Time

Another factor in the permitting process is the time required to complete the permit application. The ease with which an application can be completed will lessen the time and energy spent by applicants while also decreasing the time a jurisdiction spends explaining or answering basic application questions. Among the cities and counties in the SCRC, the model performers in this category report that applicants complete an application in less than one day for residential and between two and four days for commercial. The Cities of Anaheim, Chula Vista, Long Beach, Pasadena, San Diego, Santa Ana, Santa Monica, Los Angeles and the County of Los Angeles are model performers for residential application completion time of one day or less. The Cities of Chula Vista, Pasadena, San Diego, Santa Monica and Los Angeles are model performers for commercial application times of less than one day.

## 2.4 Information Guides, Bulletins, Checklists, & Applicant Training for the Application Process

Perhaps the most important category in evaluating a permitting process is the time necessary for the local jurisdiction to review an application. The objective of improving the permit review time is to provide certainty to applicants and to decrease the cost and time associated with permit review. The best practices in the region follow a policy that requires the issuance of a decision in three days or less for residential and five days or less for commercial permits. Additionally, jurisdictions will track the number of days required to approve or deny a permit to ensure their policy is be upheld. Furthermore, the best practice in the region uses a mechanism to expedite the PV permit process: for example, an applicant can either pay an additional fee or use preapproved solar plans (generally for small PV under 10 kW) to expedite the permitting process.

These model performers track and consistently approve or deny a permit in three days or less for residential or five days or less for commercial. Jurisdictions maintain these processing times through the use of preapproved solar templates, such as the City of San Diego's Residential Solar Template, that expedite the review process and internally route the application for approval by all applicable departments. "Only three of the jurisdictions in the SCRC currently offer same day, over-the-counter solar permits for residential installations: the City of San Diego, the City of Pasadena, and the City of Los Angeles."

--Best Practices, Permit Application Submission



**Best Practices for Permitting Processes** 

Additionally, a comprehensive guide describing the entire process of completing a solar photovoltaic project is desirable. This guide should describe not only the permitting process, but the entire process of "going solar" from finding a solar contractor, applying for rebates, obtaining a permit, and completing the installation. The City of Pasadena's Pasadena Solar Initiative <u>Application Instructions</u> and Anaheim Public Utilities' <u>Anaheim Solar Advantage</u> <u>Residential Program Guidelines</u> are examples of this type of comprehensive guide.

The Governor's California Solar Permitting Guidebook<sup>2</sup> and IREC's Emerging Approaches to Efficient Rooftop Solar Permitting<sup>3</sup> both recognize and recommend the use of guides, bulletins and checklists as a best practice to educate installers about common errors and considerations. The California Solar Permitting Guidebook<sup>1</sup> also advocates providing training for applicants through additional simple and easy to understand media. For example, IREC identified the <u>City of Portland's Solar Permitting Process PowerPoint</u> as a simple and comprehensive explanation of the permitting process.

#### 2.5 Submission of a Permit Application

Offering various methods for an applicant to submit required documents to the local jurisdiction for review is another factor to consider in the permitting process. Allowing applicants to submit an application to a single department – as opposed to submitting copies of applications to multiple departments – serves as the best practice as it reduces redundant work and extraneous paperwork. Furthermore, allowing applicants to submit online, through email, in person, or by mail serves as the best practice in the region as it makes the process highly accessible to applicants, regardless of technological proficiency.

The model performers in the SCRC – Santa Monica, Santa Ana, and Palm Desert – offer application submission online, in person, and/or by mail. Each of these model performers and the City of Palmdale allow application submission to a single department.

Submission of an application to a single department streamlines the process for an applicant. In jurisdictions that allow one submission, applications are approved by two processes: the application is routed internally by the jurisdiction, or the applicant may receive approval overthe-counter. Applicants receiving approval over-the-counter are generally in jurisdictions that provide guides, standard plans, or checklists to applicants for small residential PV systems. These resources limit applicant and planner errors by standardizing review requirements. Another practice that some jurisdictions follow is to provide over-the-counter permit review and approval by appointment only. This provides certainty to the applicant and allows the jurisdiction to efficiently utilize its resources to review and approve plans as needed.

Online application submission options range from a local jurisdiction with a submission database through its website to the utilization of a third party provider. The City of Los Angeles offers <u>an online system</u> that allows a user to request an inspection, check on the status of an existing e-permit or online payment, calculate fees for an express permit, and make online payments.

<u>The Cities of Chula Vista</u>, <u>Palmdale</u> and <u>Santa Monica</u> use a third-party vendor called <u>Accela</u> <u>Citizen Access</u> for online application submissions. This service is used by thirty cities and six counties in California. The service requires a user to register and charges a processing fee. The service provides each city with its own webpage, which allows each city to include relevant permitting information and restrictions. Each webpage also includes links to Check/ Research Permits, Check/Research Inspections, and Apply for a Permit. Outside of the SCRC, the <u>City of Honolulu's HONline site</u> allows online submittal of solar permits for systems that do not require plan review.



### 3. PERMITTING PROCESS TIME

Perhaps the most important category in evaluating a permitting process is the time necessary for the local jurisdiction to review an application. The objective of improving the permit review time is to provide certainty to applicants and to decrease the cost and time associated with permit review.

The best practices in the region follow a policy that requires the issuance of a decision in three days or less for residential and five days or less for commercial permits. Additionally, jurisdictions will track the number of days required to approve or deny a permit to ensure their policy is be upheld. Furthermore, the best practice in the region uses a mechanism to expedite the PV permit process: for example, an applicant can either pay an additional fee or use preapproved solar plans (generally for small PV under 10 kW) to expedite the permitting process. The model performers in the SCRC are noted in Table 1 below:

	Long Beach	Pasadena	San Diego
Policy to Issue/ Deny permit in $\leq$ 3 day	Х	Х	X
Track processing?	Х	Х	X
S day average to issue or deny permit after submission	X	X	X
Mechanism to accelerate permitting process?	X	X	X

#### Table 1: Model Performers for Permitting Process Time

These model performers track and consistently approve or deny a permit in three days or less for residential or five days or less for commercial. Jurisdictions maintain these

processing times through the use of preapproved solar templates, such as the <u>City of San</u> <u>Diego's Residential Solar Template</u>, that expedite the review process and internally route the application for approval by all applicable departments.

The City of Los Angeles provides two options to expedite the residential plan review process First, an applicant can submit an Express Permit online by completing forms <u>E</u> and <u>Epv</u> for a one- and two-family dwelling thereby avoiding the regular plan check process. Los Angeles' Express Permit Counter then initializes the permit application, refers the application to the Los Angeles Fire Department for approval, creates a clearance summary sheet for Zoning approval, and directs customers to the Zoning Counter to obtain clearance. The second option allows an applicant to receive over-the-counter approval for one- and two-family dwelling solar installations for systems up to 14 kW by submitting a <u>LADBS</u>. Photovoltaic Standard Plan and related specifications to the Electrical Plan Check Counter. Other examples of expediting permits, include the City of Los Angeles fee-based expedited commercial plan checks and the City of Long Beach which provides same-day approval for residential applications and expedited plan checks for commercial applications. Finally, the Cities of Pasadena, Santa Monica, and Los Angeles offer expedited application review through an over-the-counter process.



4. FEES

As photovoltaic equipment costs decline over time, other non-equipment costs, such as the cost of obtaining a permit, comprise a larger overall portion of the total cost of a system. Access to fee information and the basis for fee rates are important factors in the overall permitting process as this practice provides transparency and a certainty to permit costs for applicants.

#### 4.1 Fee Information Access

The ability of an applicant to access fee information through an easy-to-access web portal, email, in person and by mail serves as the best practice in the region. The purpose of this practice is to provide ease of access to obtain needed information regarding processing costs.

Almost all model performers in this area – Anaheim, Chula Vista, Long Beach, San Diego and Santa Ana – provide fee information online, by email, in person and by mail. Fee information can be found online either through a fee schedule document that includes all fees or on the relevant application as a line item. In the SCRC, there are numerous means of displaying permitting costs: the City of Santa Monica provides a <u>complete fee schedule document</u> <u>online</u>, while the City of Chula Vista itemizes PV systems in their <u>fee schedule document</u>.

"Developing a permitting process with quick application approval times can reduce the cost of PV permitting. An accelerated application process that quickly provides an application decision (whether positive or negative) can save contractors time and give them a more accurate way of planning when to install PV systems."

-- Best Practices, Permit Processing Times



#### 4.2 Cost and Cost Calculation

The residential permit cost of \$250 or less, including complete fee waiver paid for by a utility subsidy, represents the best practice for residential systems. Commercial fees range from complete fee waiver to a flat fee for the first 100 kW and an additional flat fee for each additional 100 kW.

The best practice in the region focuses on developing a fee that recovers a jurisdiction's cost for the time and resources expended to review a permit. The calculation for cost recovery should align the services rendered based on the size of the system to ensure that the jurisdiction recovers its cost without adding unnecessary expense. Local jurisdictions should also keep in mind that California Government Code § 66016 and California State Health and Safety Code § 17951 state that a jurisdiction may only charge fees that offset costs based on the reasonable cost of providing services. Additionally, in 2012, the State of California passed <u>Senate Bill 1222</u> which limits the fees that cities and counties charge for permits related to the installation of rooftop solar energy systems. The model performers in the region are listed in Tables 2a and b.

	Long Beach	Palm Desert	Santa Ana
Total Cost:	\$233	\$0	Fees waived under Green Building Initiative
Basis For Fee:	Flat/Cost Recovery	Fees Waived	Fees Waived

Table 2a: Residential Model Performers for Cost and Cost Calculation

#### Table 2b: Commercial Model Performers for Cost and Cost Calculation

	San Diego	Santa Monica
Basis for Fee:	Flat Fee	Cost Recovery

The model performers in this subcategory have either waived fees or determined a permitting fee on a cost recovery or flat rate basis. The jurisdictions that have waived fees have done so with the intent of increasing the number of solar permits submitted and approved in their cities. The City of Santa Ana created a two-year pilot program, The Build Green Initiative, to encourage solar installation by temporarily waiving permitting fees. Santa Ana sought to decrease the high acquisition costs of PV systems and found that waiving plan check and inspection fees would create only a minimal revenue loss given the low volume of PV applications. This program has been in effect for four years in an effort to increase the number of rooftop PV in Santa Ana.



## 5. UTILIZATION OF MODEL PROCESSES

Review and consideration of the <u>Solar ABCs Expedited Permit Process for PV Systems</u> as well as the use of the Solar ABC optional template by a local jurisdiction represent a best practice in the SCRC. Using these processes and templates helps to simplify and unify the processes used across the region thereby reducing training time for applicants to understand different permitting processes across jurisdictions. Furthermore, by using an expedited permit process, smaller, less complicated systems whose characteristics are frequently duplicated by installers across installations can have simple and efficient application processes.

The model performers in the region currently utilize an optional Solar ABC's expedited permitting process template for a typical installation. The County of Los Angeles has placed the optional template on its <u>website</u>. Although this optional template has limited usage at this time, the willingness to allow its use demonstrates a shift towards the understanding that standardized processes can help reduce the soft costs of permitting. One consideration with implementing a standardized permit template such as the Solar ABCs is that training programs would need to be established for both applicants as well as jurisdictional plans examiners. By establishing training programs for applicants, the permitting process could be standardized to reduce complications arising from submitting entirely different applications across jurisdictions, thereby saving time and money. With plans examiners' training programs, a standard review process would be established across a region, which would reduce variation and eliminate subjectivity in processing applications.

<u>The Governor's California Solar Permitting Guidebook</u><sup>4</sup> also identified the Solar ABCs' Expedited Permit Process for PV Systems<sup>5</sup> as a best practice to streamline the permit process for PV systems under 10 kW. The Guidebook advocates for the use of concise submittal checklists and standard plans; online permit application material and paperwork; online submittal and issuance of permits; "over the counter" review for applicants submitting checklists and standard plans; and online permit payment<sub>5</sub>



## 6. INSPECTION

The model performers in this category all provide inspection information online, by email, in person, and by mail. All three cities – San Diego, Long Beach, and Chula Vista – provide a two-day or less response time after receiving an inspection request. Only the City of Chula Vista provides a specific time for residential final inspections. All three cities require one inspection trip for residential but only the City of Chula Vista requires a single comprehensive inspection for a commercial project. This is considered the best practices as it saves time for the jurisdiction, installer, and customer by not scheduling numerous time-consuming inspections for which each party must be in attendance.

The City of Long Beach provides a comprehensive inspection website including access to online Inspection Status Inquiry and Project Status. This website includes an inspection request hotline, information on the various methods to request an inspection, and specific information about when a requested inspection will be performed. The City of Chula Vista provides both a website with inspection information and a Interactive Voice Response line that allows an applicant to request, cancel, and obtain results about an online inspection request 24 hours a day. The City of San Diego includes inspection information in its Residential Photovoltaic Systems Inspection Guidelines as well as PowerPoint training for contractors on the inspection process and requirements.

IREC has also developed training guidelines for inspection. The Field Inspection Guidelines for PV Systems serves to improve inspection and installation competency. This is a response to the fact that many jurisdictions are simplifying their review process making inspection the focal point of regulating the permitting process for safety and code compliance.

	Chula Vista	Long Beach	San Diego
Average Number of Days Between Request and Actual Inspection	≤ 2 Days	≤ 2 Days	≤2 Days
Typical Window for Final Inspection	Specific Time	2 Hours	2 Hours
Number of Inspection Trips	Single Comprehensive	Single Comprehensive	Electrical Final

#### Table 3a: Residential Best Practices for Inspection

#### **Table 3b: Commercial Model Performers For Inspections**

	Chula Vista	Long Beach	San Diego
Average Number of Days Between Request and Actual Inspection	≤ 2 Days	≤ 2 Days	≤ 2 Days
Typical Window for Final Inspection	Specific Time	2 Hours	2 Hours
Number of Inspection Trips	Single Comprehensive	Electrical Rough-In Electrical Final Roof Penetration (Preinstall) Structural/Building Final	Electrical Rough-In Electrical Final

The model performers in this category all provide inspection information online and in person. The Cities of Long Beach and San Diego also go a step further by providing information by email and mail. All three cities – San Diego, Long Beach, and Chula Vista – provide a two-day or less response time after receiving a request. Only the City of Chula Vista provides a specific time for residential final inspections.

All three cities require one inspection trip for residential but only the City of Chula Vista requires a single comprehensive inspection for a commercial project. This is considered best practices as it saves time for the jurisdiction, installer, and customer by not scheduling numerous time-consuming inspections for which each party must be in attendance. The City of Long Beach provides a comprehensive inspection website including access to online Inspection Status Inquiry and Project Status. This website includes an inspection request hotline, the various methods to request an inspection, and specific information for when a requested inspection will be performed. The City of Chula Vista provides a 24/7 Interactive Voice Response line that allows an applicant to request, cancel, and obtain results as well as an online inspection request website. The City of San Diego includes inspection information in its Residential Photovoltaic Systems Inspection Guidelines as well as a power point training for contractors on the inspection process and requirements. A sample checklist is below:

#### Table 4: SDG&E Inspection Checklist

#### Inspection Checklist:

- Approved plans, inspection record card, and manufacturers' installations instructions shall be made available on site.
- □ Installation of equipments shall be as per approved plans. If the installation differs from approved plans, an additional plan review may be required.
- Work shall be ready for the inspection being requested.
- Roof and job site shall be accessible to perform the inspection requested.
- A ladder complying with CAL-OSHA requirements shall be made available and secured in place for inspection.
- □ When a required utility disconnect is located remotely, a SDG&E letter of authorization shall be available on site.
- For service upgrades, a SDG&E meter location approval and a completed City of San Diego circuit card shall be available on site.
- All required working clearances for electrical equipment must be provided and maintained.

#### **B. Service Equipment:**

- The service equipment and its verifiable bus rating shall be adequate and properly sized for the designed backfeed from the PV System.
- The service grounding and bonding connections shall be located and verified.
- □ All grounding requirements shall be verified on PV systems involving detached structures.

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## 7. COMMUNICATION PROTOCOL WITH UTLITY

Upon completion of a jurisdictional solar inspection, the installer must complete an interconnection inspection to ensure the system is properly connected to the utility's grid. Coordination of on-site times for permit and interconnection inspections by local jurisdictions and utilities represents the best practice in the region. This practice limits the number of inspections required to turn on a system and shifts the process of scheduling an inspection from the installer to the jurisdiction, saving time and money.

Jurisdictions with their own municipal utility company – including the cities of Anaheim, Pasadena, and Los Angeles in the SCRC – provide integrated inspections or automatically notify their utility after completing a final inspection. Jurisdictions without their own municipal utility company must develop a process to coordinate these inspections with the local investor-owned utility. The cities of Chula Vista and San Diego each coordinate with the investor-owned utility responsible for providing electricity and transmission services to their communities. For example, the best practice in the SCRC is with the Cities of Chula Vista, San Diego, and other local jurisdictions in the County of San Diego who notify SDG&E of a successful final permit inspection for a PV system at a specific address. This notice comes in the form of an electrical inspection release sent to SDG&E's New Service Department, who then sends email notification to the customer and contractor that the release was received. The local jurisdiction's electrical inspection release triggers SDG&E's interconnection inspection. SDG&E manages its interconnection process through an online Net Energy Metering Application Process for systems of 30 kW or less. Under this process an applicant uses an online submission platform to complete the interconnection application. This online platform incorporates all interconnection information and provides notice to customers by email and contractors of any issue in addition to the progress of their interconnection application.





## 7. CONCLUSIONS & NEXT STEPS

This document has provided a summary of the best practices in the four major permitting process categories among the local jurisdictions in the Rooftop Solar Challenge team area, including: (1) Application and Information Access, (2) Processing Time, (3) Fees, and (4) Inspections and Communication with the Utility. Although we cannot expect each local jurisdiction to completely standardize its permitting process to conform to the best practices identified here, it is important to identify the best-in-class practices as ways to improve the predictability and efficiency of the solar installation process.

This is the first report in a series in which the Rooftop Solar Challenge team will be identifying best practices in financing, net metering, and interconnection in the region. Subsequent activities include developing model resource tool kits to provide more practical information on how a local jurisdiction and utility can implement the best practices in each category.

For more information on the Southern California Rooftop Solar Challenge, please visit our website: www.energycenter.org/sunshot







1 Sharing Success: Emerging Approaches to Efficient Rooftop Solar Permitting, p. 26, http:// www.irecusa.org/wp-content/uploads/FINAL-Sharing-Success-w-cover-revised-final052012. pdf.

2 California Solar Permitting Guidebook, p. 16, http://opr.ca.gov/docs/California\_Solar\_ Permitting\_Guidebook.pdf

3 Sharing Success Emerging Approaches to Efficient Rooftop Solar Permitting, p. 19, http:// www.irecusa.org/wp-content/uploads/FINAL-Sharing-Success-w-cover-revised-final052012. pdf.

4 California Solar Permitting Guidebook, p. 14, http://opr.ca.gov/docs/California\_Solar\_ Permitting\_Guidebook.pdf

5 California Solar Permitting Guidebook, p. 15, http://opr.ca.gov/docs/California\_Solar\_ Permitting\_Guidebook.pdf

