SB 379 & SolarAPP+: Now What?

Introductions

- Doug Hensel
- Jeff Cook, Ph.D., SolarAPP+ Program Lead, National Renewable Energy Laboratory (NREL)
- Steven Jones, UL Codes and Regulatory Services Department
- Geoffrey Dobson, CalAPP Grant Program

CALIFORNIA BUILDING OFFICIALS

SB 379 Legislation

- Senator Wiener, Statutes 2022
- Requires local jurisdictions to implement an online, automated permitting platform that verifies code compliance and issues permits in real time for residential solar systems 38.4 kW or less
- SolarApp+ is one compliance option

CALIFORNIA BUILDING OFFICIALS

SB 379 Legislation

- Exempt:
  - Cities with a population less than 5,000
  - Counties with a population less than 150,000 *(County population includes the population of cities within the county)*

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SB 379 Legislation

- Effective Dates
  - City or County which is not exempt and a population greater than 50,000, September 30, 2023
  - City which is not exempt and a population of 50,000 or less, September 30, 2024

CALIFORNIA BUILDING OFFICIALS

NREL
NATIONAL RENEWABLE ENERGY LABORATORY

SolarAPP+

SolarAPP+
The US Residential Solar Permitting Solution

SolarAPP+

NREL
Transforming ENERGY

SolarAPP+ is a standardized plan review software *that can run compliance checks and process building permit approvals for eligible rooftop solar systems.*

The tool was developed through a collaborative effort to accelerate rooftop solar adoption by making it easier for local governments to quickly and safely approve rooftop PV projects for installation

SolarAPP+ Eligibility

SolarAPP+ can cover standardized systems as defined here.

Current Support Parameters

- Residential PV
- Approved equipment
- NEC 2017 & 2020
- 2018 & 2021 i-Codes
- Bus <225A
- Service <400A
- PV systems <4PSF
- Single phase utility supply
- No wood shake roofs
- No metal roofs w >15PSF snow load
- Main panel upgrades
- California's Title 24

Support In Progress

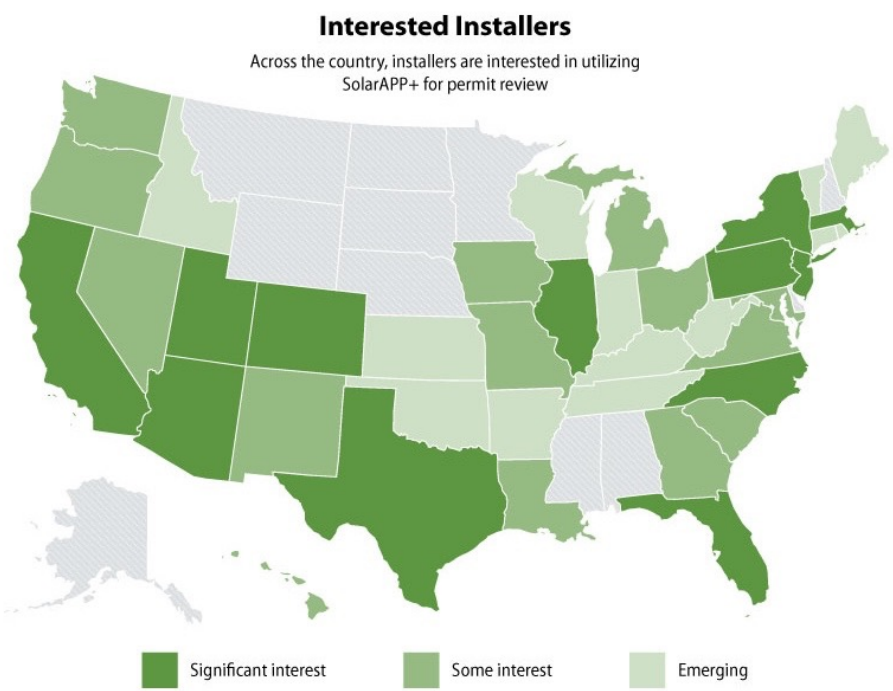
- Residential storage
- Add-ons for existing systems

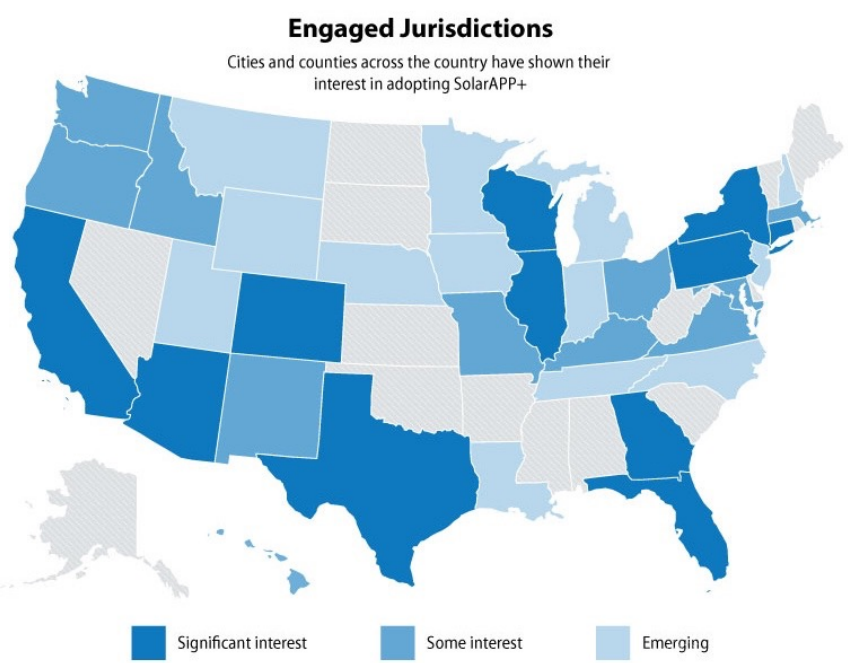
Planned

- EV chargers, electric appliances, roof tiles, and more…

Let us know what you'd like to see next!

Interest in SolarAPP+





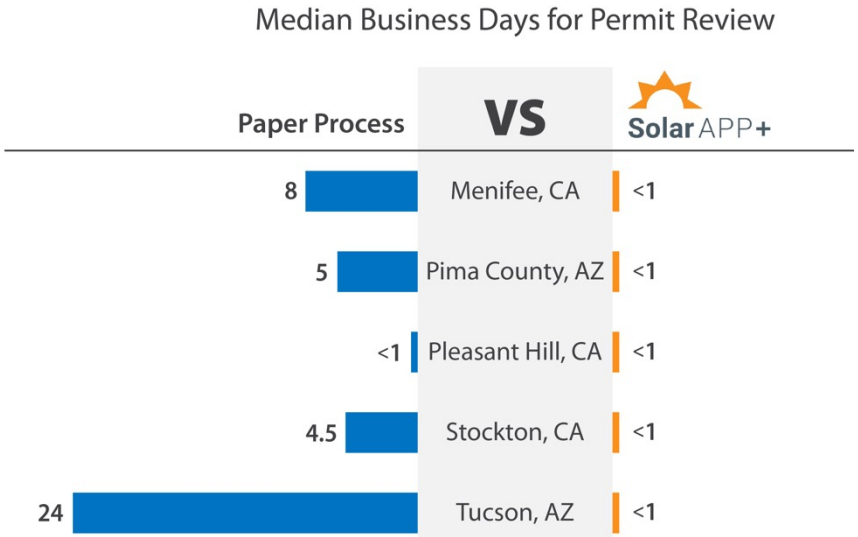
Tucson's Experience with SolarAPP+

- 2,400 PV permits issued to date
- 14,200+ kW approved via SolarAPP+
- Over 2,400 hours of staff time saved in plan review
- Piloting PV+ storage

"The permitting process was taking four weeks. Now with SolarAPP+ we give a permit the same day. We just approved about 450 installations in the last 60 days alone."

- Tucson Mayor Regina Romero

SolarAPP+ Performance Snap Shot



14,000+

Residential rooftop PV permits approved to date, including 1,500+ revisions

1,000+

Permits approved to date for Solar+Storage projects

By providing instantaneous review SolarAPP+ has reduced the average permit review time to

less than 1 day

saving jurisdictional staff over **15,000 hours** in review

No time added

to inspections of PV systems in the field, with comparable inspection passage rates to traditional inspections

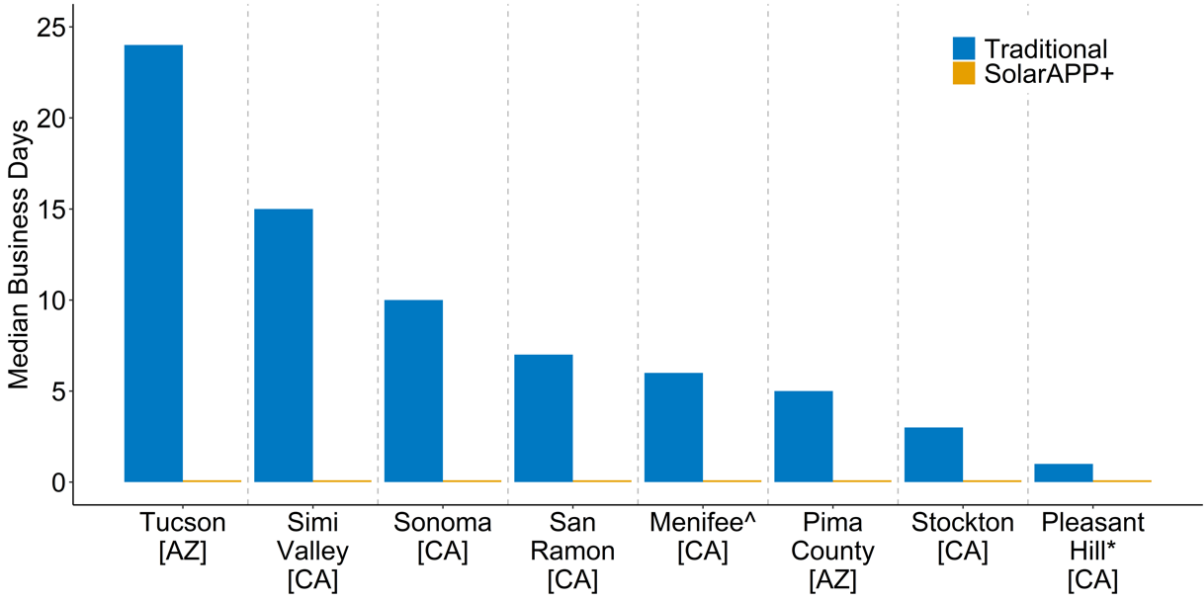
Projects submitted through SolarAPP+ were installed and inspected

12 days faster

on average than projects using the traditional process

Permit Review Durations

- Automated review and permit approval means permits are issued instantly through SolarAPP+.
- In contrast, the median permit review duration (application to issuance) for traditional projects was 9 business days.

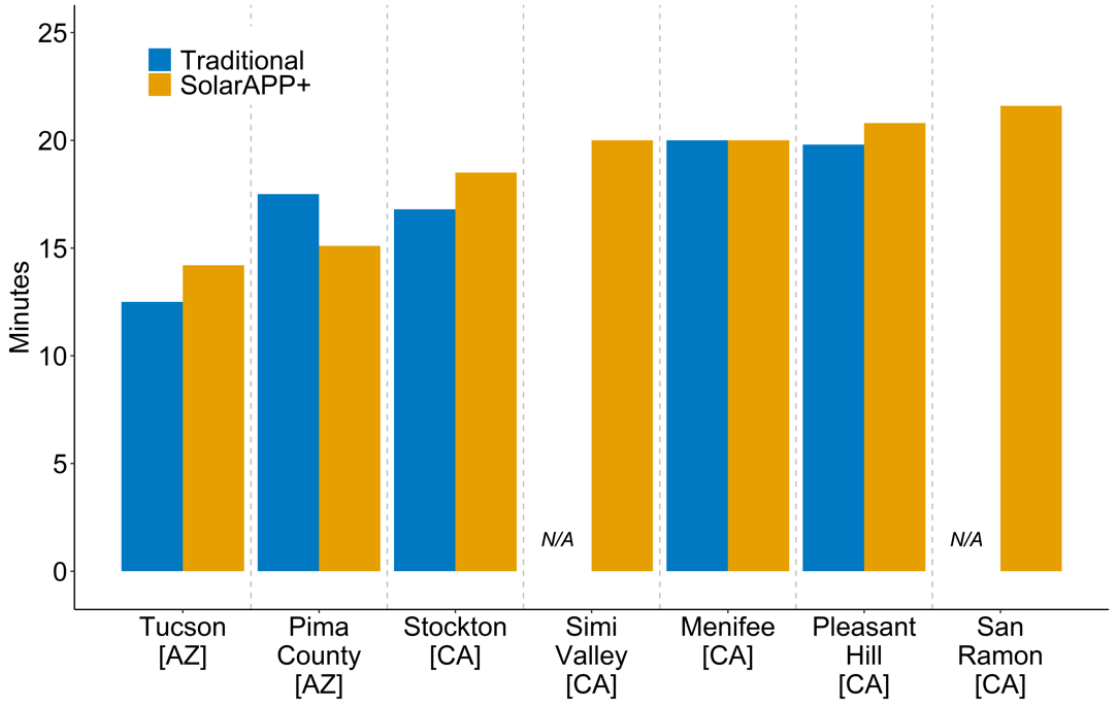


Median permit review times

Benicia and Modesto excluded because these AHJs began pilots late in 2021.
^ Based on 2021 data from Solar Trace.
* 2021 data unavailable, based on 2020 data.

Inspection Times

Inspection times are similar for traditional and SolarAPP+ projects, suggesting that expedited permitting has little or no impact on inspection times downstream.

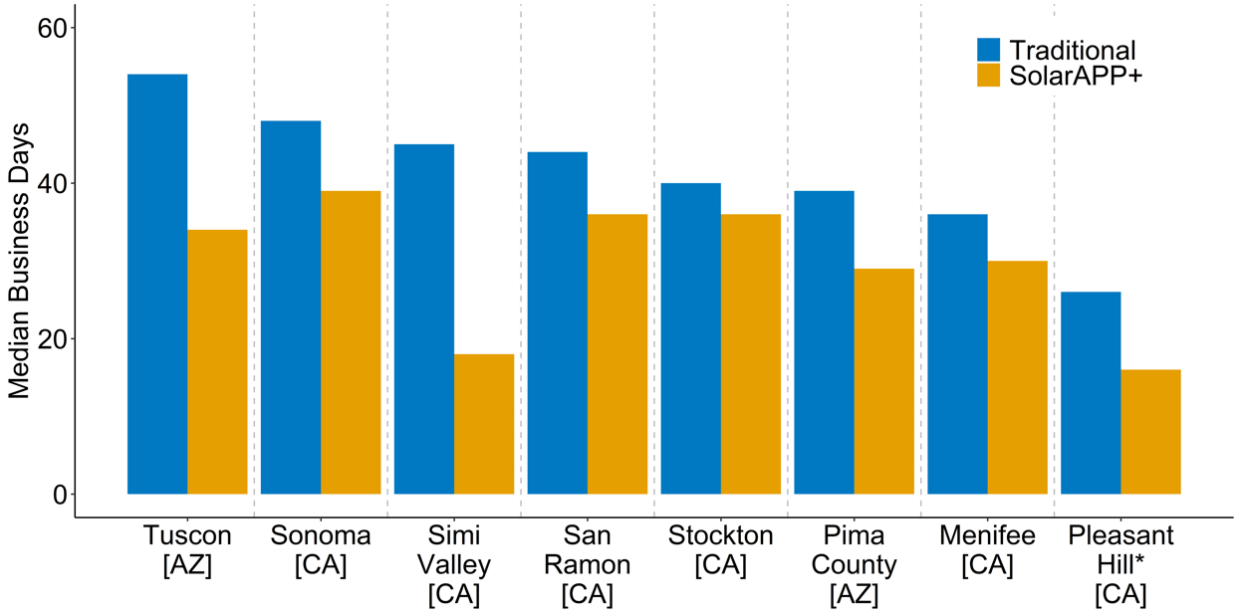


Average inspection times

Sonoma County is excluded because fewer than 10 inspections were performed by the end of 2021. No SolarAPP+ projects were inspected in Benicia and Modesto in 2021.

Solar Adoption Timeline Impacts

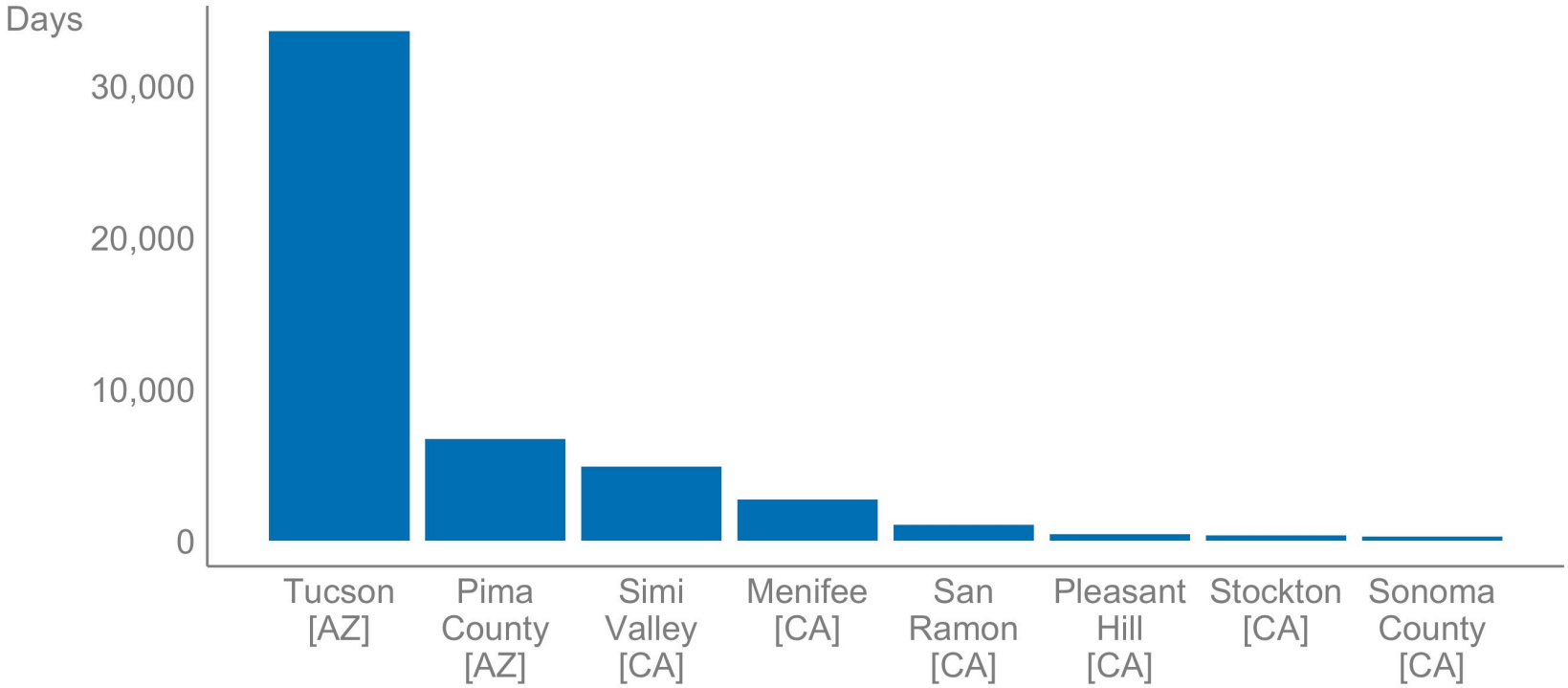
Across all AHJs in 2021, median project times were 13 days shorter for SolarAPP+ projects than for traditional projects (32 days compared to 45 days).



Median project time from permit submission to passed inspection by AHJ

Benicia and Modesto excluded because pilots began late in 2021. * Traditional durations based on 2020 data.

Accelerated Project Timelines



Cumulative estimated acceleration of project timelines across AHJs (permit submission to passed inspection)

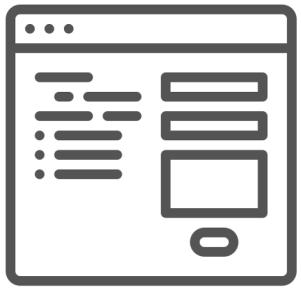
Benicia and Modesto excluded because pilots began in late 2021

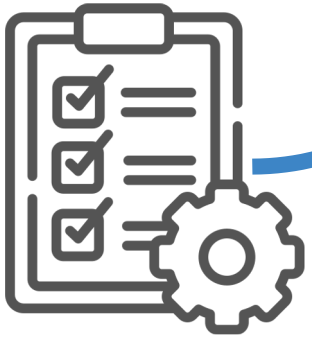
How it Works

SolarAPP+ Flow

Installer submits an application with design specifications through SolarAPP

1





2

SolarAPP checks the application to ensure the system design is code compliant

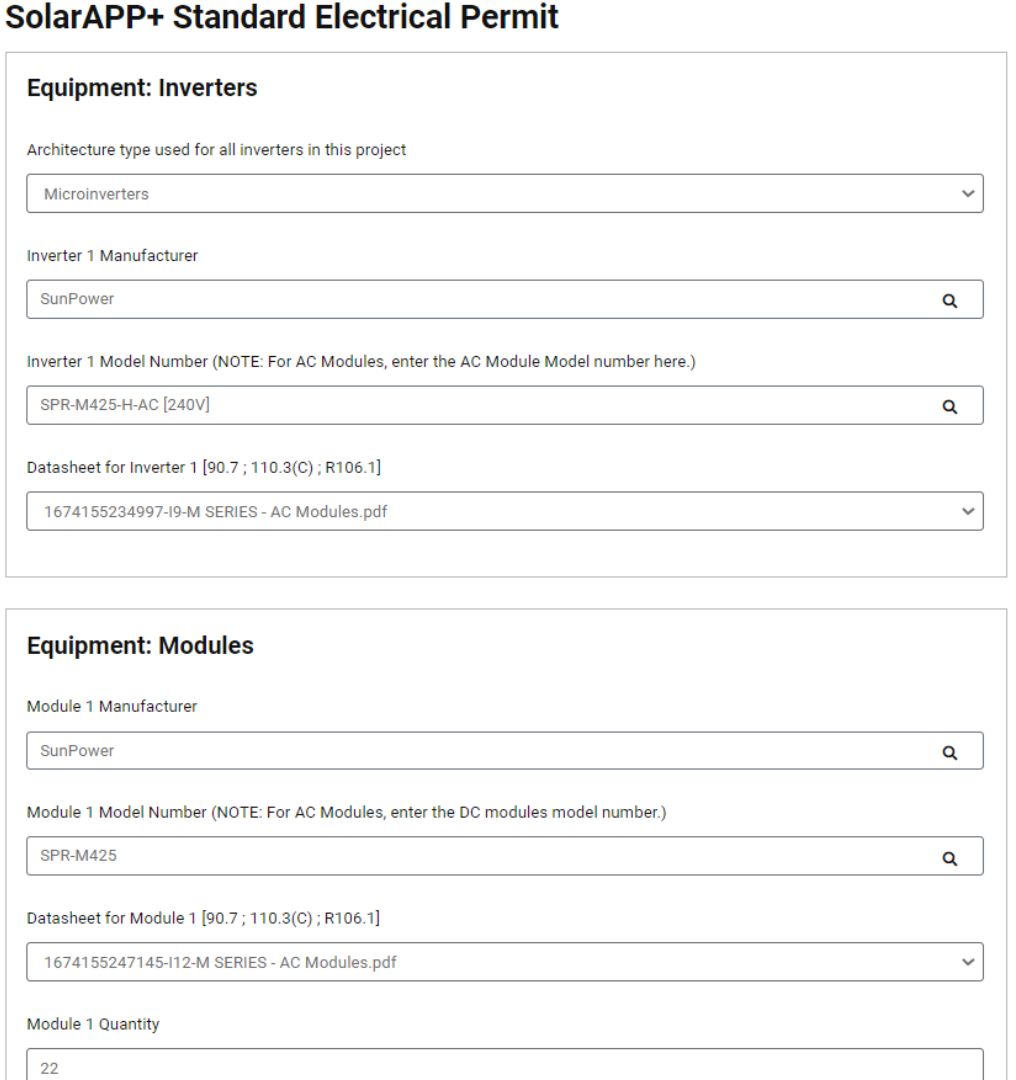
3

Code compliant applications are issued a permit instantly after fee payment

(Review sample approval docs here)

How it Works

- The contractor enters design information into the application.
- No diagrams are uploaded as a part of the submission process.



Real-time Error Notifications

There is a problem with your project design

Your project design does not meet SolarAPP+'s requirements. You will need to edit your project before you can continue. If you cannot modify your design to meet SolarAPP+ requirements you will need to apply for a permit directly with City.

Electrical Details

(Go to Permit)

- R72: The Racking System shall be UL 2703 listed for grounding and bonding in combination with the PV module models specified in this SolarAPP project. SolarAPP maintains a UL 2703 database of eligible combinations of racking systems and modules.
  If you are having trouble getting your combination approved, please reach out to the SolarAPP team for help at team@solar-app.org, and provide appropriate NRTL or manufacturer documentation to support your claim for a combination compatibility.

Previous

Go to Payment

here is a problem with your project design

Your project design does not meet SolarAPP+'s requirements. You will need to edit your project before you can continue. If you cannot modify your design to meet SolarAPP+ requirements you will need to apply for a permit directly with City.

Electrical Details

(Go to Permit)

- R67: The module you selected is not listed to UL 1703 or UL 61730. Please select a different module on the electrical page, or have the manufacturer become listed and provide evidence to the CEC. (NOTE: for AC Modules, a likely solution is to use the DC Module Model # as your SolarAPP Module #, and use your AC Module Model# as your SolarAPP Inverter Model #.)

Previous

Go to Payment

Inspection Checklist

- Inspectors are tasked with verifying the design meets the checklist. No plan review is done in the field.

Inspection Checklist

SolarAPP+

Address: **Approval ID:** **AHJ:**

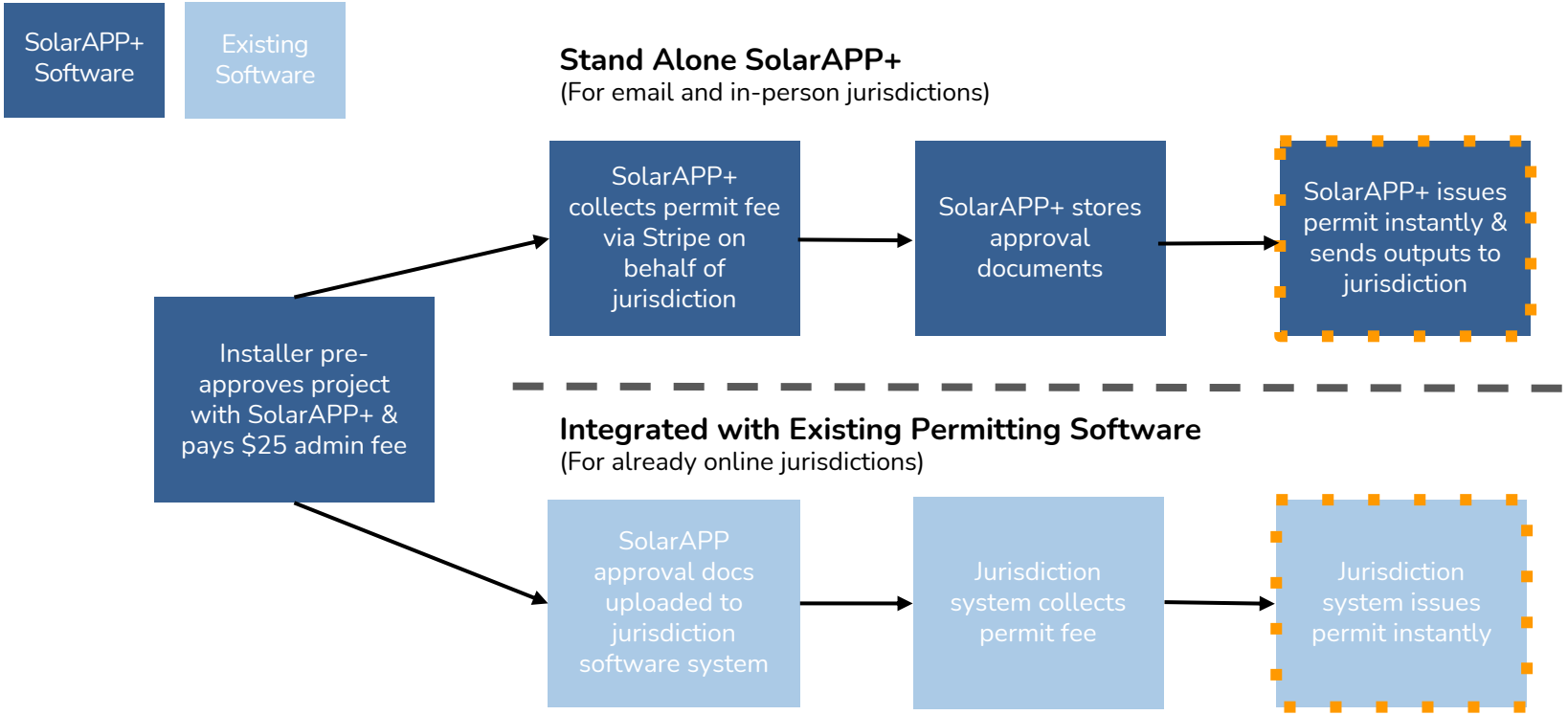
Scope of work:

General Guidelines
The installer shall follow the manufacturer's instructions for all installed equipment and shall have them available at the time of inspection.
All wire sizes shown are a minimum, unless indicated otherwise, and the installer may upsize them at their discretion.
All OCPD ratings shown must match the inspection checklist exactly, any ratings that do not match the inspection checklist are valid reasons for inspection failure.
Conduit sizing to be confirmed at time of inspection. Contractor to provide conduit fill calculations where requested by inspector

Main Service Panel Equipment		Pass
Main Breaker Ampere Rating Size	200 AMP	☐
Main Bus Ampere Rating Size	225 AMP	☐
Utility Service Rating	225	☐

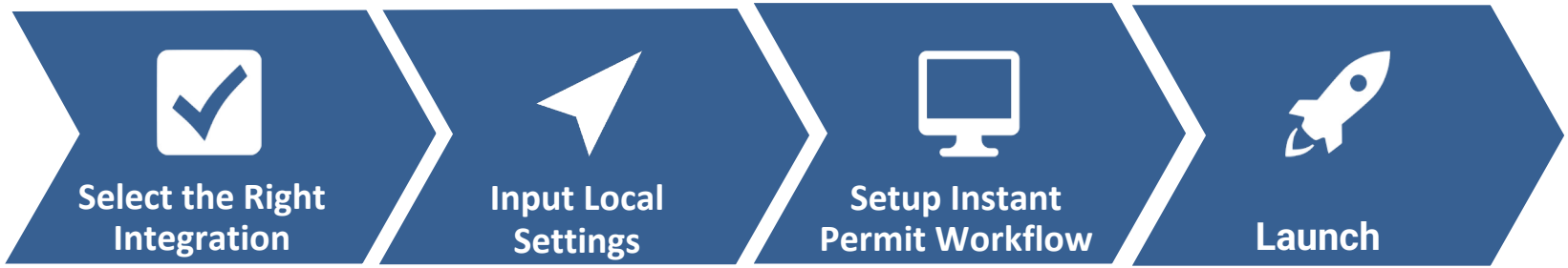
Inverter		Pass
Inverter architecture:	String Inverter with DC-DC Converters	☐
EGC Wire Size Inverter 1	10 AWG	☐
Overcurrent Protective Device rating: Inverter 1	30 AMP	☐
AC Wire size Inverter 1	10 AWG	☐
Maximum number of THWN-2 conductors in an PV inverter AC output circuit raceway, excluding any equipment grounding conductors.	3	☐
Inverter 1 model number	SE5000H-US [240V]	☐
Inverter 1 manufacturer	SolarEdge Technologies Ltd.	☐

Adoption Options



How to Adopt

Four Steps to Adopting SolarAPP+



Select the Right Integration

SolarAPP can be set up to:

- ***integrate*** *with your existing online permitting software*
- **stand alone** as a complete online permitting solution

Input Local Settings

These include:

- Permitting contacts
- AHJ boundaries
- Local wind and snow variables
- Model code years
- Terms and conditions

Setup Instant Permit Workflow

Depending on your integration, either:

- Set up an instant permit application in your software
- Set up permit payments in SolarAPP

Launch

This involves:

- Inviting 1-3 installers to use your SolarAPP permitting process
- Opening up SolarAPP+ permitting to all installers

CalAPP Grant

The California Automated Permit Process Program (CalAPP) is a $20 million funding program that provides grants to cities and counties to help implement SolarAPP+

CalAPP will be available in ~June 2022

Proposed Grant Sizes:

- Population <50,000: Up to $40K
- Population 50,000-99,999: Up to $60K
- Population 100,000-200,000: Up to $80K
- Population >200,000: $100K

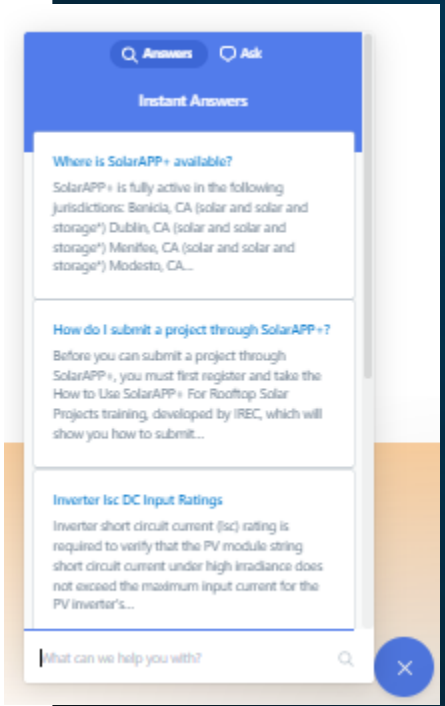
Grant Can Cover:

- IT staff time on adoption
- Inspector time on training
- Time spent meeting with NREL
- And more

For more information visit: https://www.energy.ca.gov/programs-and-topics/programs/california-automated-permit-processing-program-calapp

But, what if I need help?

- Standing Demonstration Calls
  - Tuesday: https://nrel.zoomgov.com/meeting/register/vJIsf-CgqjorGfnQwVFUXzBIAD1ipmNTpHc
  - Thursday: https://nrel.zoomgov.com/meeting/register/vJItduCrrToqHhXc8G2yVJ73uJ_nO5skb4E
- Standing Onboarding Calls
  - Tuesday: https://nrel.zoomgov.com/meeting/register/vJItcuyorDwsHUHD9mt6DcrQUGM13Yb-Hb4
  - Thursday: https://nrel.zoomgov.com/meeting/register/vJItd-2gqjwrHZuUlgC97ZVYWMYT3zOONUc
- Free, Online Training Materials
  - https://cleanenergytraining.org/code-official-training#solarapp
- Frequently Asked Questions
  - https://help.solar-app.org/
- Still have questions?
  - Contact us at: team@solar-app.org



SolarAPP Outreach Materials

- Website:
  - https://solarapp.nrel.gov/
- Performance Review
  - https://www.nrel.gov/docs/fy22osti/83046.pdf.
- Demonstration webinar:
  - https://youtu.be/xKhX_UAT8YQ
- Where is SolarAPP+ available?
  - https://help.solar-app.org/article/108-where-is-solarapp-available.
- SolarAPP Benefits Memo:
  - https://solarapp.nrel.gov/docs/SolarAPP_Benefits_Memo.pdf

Questions and Thank You!

For more information contact:

team@solar-app.org

www.nrel.gov

NREL is a national laboratory of the U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, operated by the Alliance for Sustainable Energy, LLC.

NREL
NATIONAL RENEWABLE ENERGY LABORATORY

California Energy Commission

California Automated Permit Processing (CalAPP) Program

March 6, 2023

Agenda

- CalAPP Program Overview
  - Scope of Work
  - Grant Process
  - Funding Structure
  - Reimbursable Costs
  - Application Form Overview
- Senate Bill 379
  - Annual Reporting & Data
- Next Steps and More Information

CalAPP Program Overview

Legislation & Budget	• Senate Bill 129 (Skinner, Budget Act of 2021) • "…support a grant program for cities, counties, or cities and counties to establish online solar permitting." • Budget: $20 million (up to $1 million for admin costs)
Eligibility	• All incorporated California cities (482) and counties (58)
Application Deadline	• May 1, 2023
Application Form	• https://www.energy.ca.gov/calapp

Scope of Work – Choose Either

1.	• Adopt SolarAPP+
2.	• Adopt software that meets these requirements:

Performs an automated plan review for residential solar energy systems that completes automatic code compliance checks based on user inputs (such as a contractor), thereby enabling or otherwise issuing permits instantly when the project is confirmed as code compliant, without the need for human review
Supports online, immediate fee payment once an application is complete, which may include auto-invoicing of permit fee costs
Supports immediate generation of a permit job card following payment confirmation
Blocks noncompliant applications from receiving a permit
EITHER: 1) Stand-alone permitting tool; **OR** 2) Integrates with current software and inspection platform already in use

Grant Process

CalAPP Funding Structure

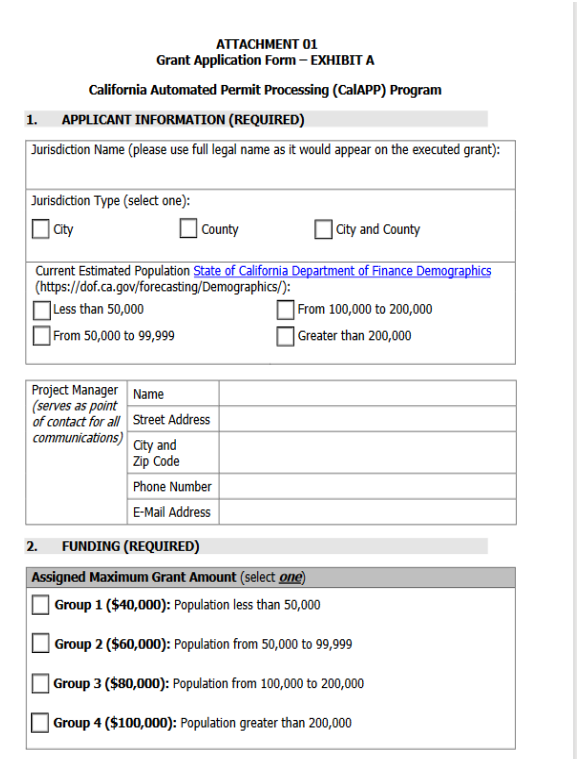
Applicant Population	Reserved Grant Amount
Less Than 50,000	$40,000
50,000 to 99,999	$60,000
100,000 to 200,000	$80,000
Greater Than 200,000	$100,000

Reimbursable Costs

Allowable	Unallowable
Staff time (IT, third-party consultation, etc.)	Costs incurred prior to grant agreement execution
In-house staff training	Costs not directly related to adoption of permitting platform
Costs to train installers	Typically excluded items such as food for training events
Maintenance and subscription costs for supporting software	All other

Application Form Overview

- Applications accepted via electronic email submittal
  - Submittal Deadline: **May 1, 2023**
- Application can be accessed at https://www.energy.ca.gov/calapp



ATTACHMENT 01
Grant Application Form – EXHIBIT A

California Automated Permit Processing (CalAPP) Program

1. APPLICANT INFORMATION (REQUIRED)

Jurisdiction Name (please use full legal name as it would appear on the executed grant):

Jurisdiction Type (select one):

☐ City ☐ County ☐ City and County

Current Estimated Population State of California Department of Finance Demographics (https://dof.ca.gov/forecasting/Demographics/):

☐ Less than 50,000 ☐ From 100,000 to 200,000

☐ From 50,000 to 99,999 ☐ Greater than 200,000

Project Manager *(serves as point of contact for all communications)*	Name	
	Street Address	
	City and Zip Code	
	Phone Number	
	E-Mail Address	

2. FUNDING (REQUIRED)

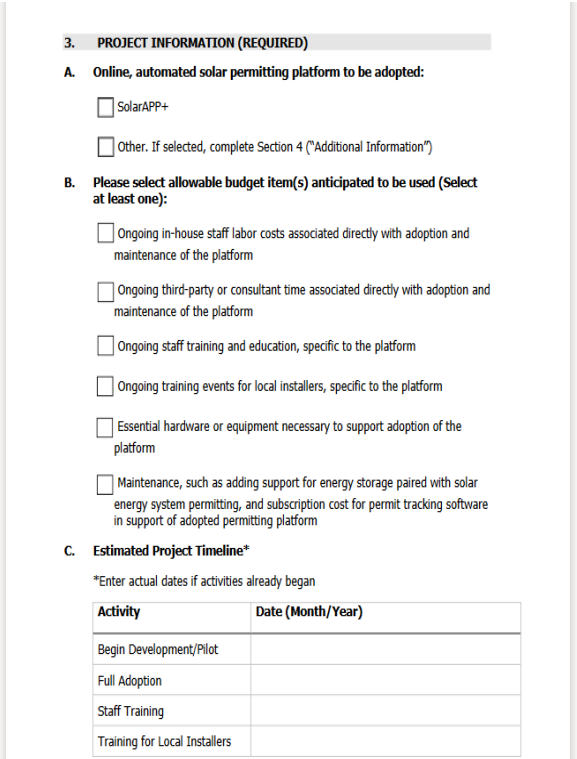
Assigned Maximum Grant Amount (select ***one***)

☐ **Group 1 ($40,000):** Population less than 50,000

☐ **Group 2 ($60,000):** Population from 50,000 to 99,999

☐ **Group 3 ($80,000):** Population from 100,000 to 200,000

☐ **Group 4 ($100,000):** Population greater than 200,000



3. PROJECT INFORMATION (REQUIRED)

A. Online, automated solar permitting platform to be adopted:

☐ SolarAPP+

☐ Other. If selected, complete Section 4 ("Additional Information")

B. Please select allowable budget item(s) anticipated to be used (Select at least one):

☐ Ongoing in-house staff labor costs associated directly with adoption and maintenance of the platform

☐ Ongoing third-party or consultant time associated directly with adoption and maintenance of the platform

☐ Ongoing staff training and education, specific to the platform

☐ Ongoing training events for local installers, specific to the platform

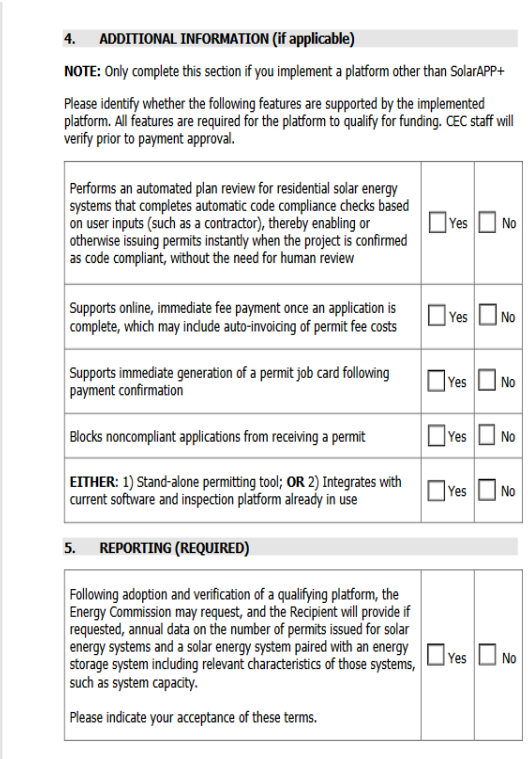
☐ Essential hardware or equipment necessary to support adoption of the platform

☐ Maintenance, such as adding support for energy storage paired with solar energy system permitting, and subscription cost for permit tracking software in support of adopted permitting platform

C. Estimated Project Timeline*

*Enter actual dates if activities already began

Activity	Date (Month/Year)
Begin Development/Pilot	
Full Adoption	
Staff Training	
Training for Local Installers	



4. ADDITIONAL INFORMATION (if applicable)

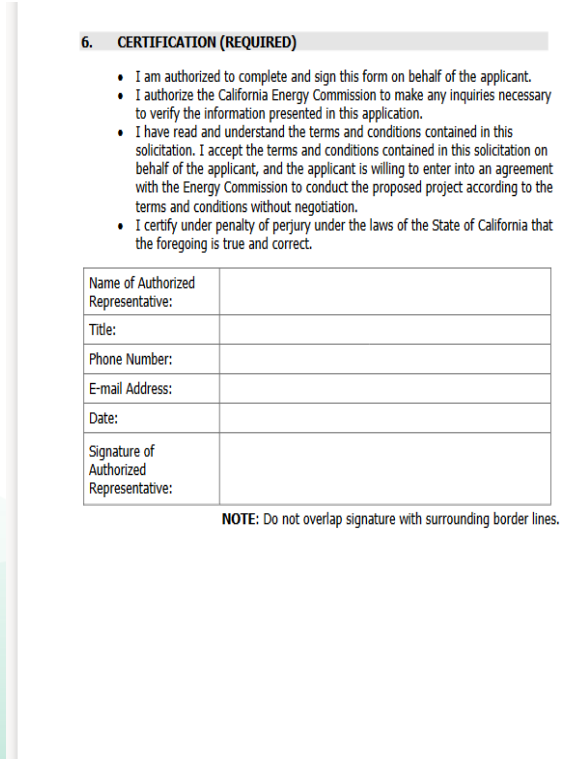
NOTE: Only complete this section if you implement a platform other than SolarAPP+

Please identify whether the following features are supported by the implemented platform. All features are required for the platform to qualify for funding. CEC staff will verify prior to payment approval.

Performs an automated plan review for residential solar energy systems that completes automatic code compliance checks based on user inputs (such as a contractor), thereby enabling or otherwise issuing permits instantly when the project is confirmed as code compliant, without the need for human review	☐ Yes	☐ No
Supports online, immediate fee payment once an application is complete, which may include auto-invoicing of permit fee costs	☐ Yes	☐ No
Supports immediate generation of a permit job card following payment confirmation	☐ Yes	☐ No
Blocks noncompliant applications from receiving a permit	☐ Yes	☐ No
EITHER: 1) Stand-alone permitting tool; **OR** 2) Integrates with current software and inspection platform already in use	☐ Yes	☐ No

5. REPORTING (REQUIRED)

Following adoption and verification of a qualifying platform, the Energy Commission may request, and the Recipient will provide if requested, annual data on the number of permits issued for solar energy systems and a solar energy system paired with an energy storage system including relevant characteristics of those systems, such as system capacity. Please indicate your acceptance of these terms.	☐ Yes	☐ No



6. CERTIFICATION (REQUIRED)

- I am authorized to complete and sign this form on behalf of the applicant.
- I authorize the California Energy Commission to make any inquiries necessary to verify the information presented in this application.
- I have read and understand the terms and conditions contained in this solicitation. I accept the terms and conditions contained in this solicitation on behalf of the applicant, and the applicant is willing to enter into an agreement with the Energy Commission to conduct the proposed project according to the terms and conditions without negotiation.
- I certify under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Name of Authorized Representative:	
Title:	
Phone Number:	
E-mail Address:	
Date:	
Signature of Authorized Representative:	

NOTE: Do not overlap signature with surrounding border lines.

Senate Bill 379

Annual Reporting

SB 379: "The Energy Commission shall set guidelines…to report on the number of permits issued and the relevant characteristics of those systems."

- Data submitted to CEC
  - Authorized representatives of non-exempt reporting jurisdictions shall provide information to the Energy Commission that satisfies the requirements of SB 379
- Non-exempt jurisdictions will submit annual reports by June 30th every year following compliance until June 30, 2034
- Data shall cover the previous calendar year from January 1 – December 31

Data Collection

- **Proposed Data Collection Fields:**
  1. Name of Jurisdiction
  2. Reporting Year
  3. Estimated population
  4. Total number of permits issued for **solar only**
     a) Number of permits through automated, online system
  5. Total number of permits issued for **solar paired with storage**
     b) Number of permits through automated, online system
  6. Electric utility service provider

Next Steps & More Information

- May 1, 2023: CalAPP Application deadline to reserve funding
  - Spring 2023: Anticipated adoption of SB 379 Guidelines
- CalAPP Program webpage: https://www.energy.ca.gov/calapp
  - Application Form accessible from this page
- SB 379 webpage: https://www.energy.ca.gov/programs-and-topics/programs/residential-solar-permit-reporting-sb-379
- Please join the CalAPP email list topic, available from our webpage or at https://public.govdelivery.com/accounts/CNRA/signup/31719
- CEC Contact: calapp@energy.ca.gov