



## COSUMNES FIRE DEPARTMENT

10573 E Stockton Blvd.  
Elk Grove, CA 95624

(916) 405-7100  
Fax (916) 685-6622  
[www.yourcsd.com/fire](http://www.yourcsd.com/fire)

COSUMNES FIRE DEPARTMENT	
FIRE PREVENTION HANDOUT	
<b>Standard Title:</b> Residential Dwelling Solar System with Battery Backup Submittal Guideline	
<b>Code Section:</b> California Fire Code	
<b>Effective Date:</b> 1/15/2021	<b>Last Reissue/Revision Date:</b> 2/19/2021

### RESIDENTIAL ONE OR TWO-FAMILY DWELLING SMALL SOLAR SYSTEM WITH BATTERY BACKUP PLAN SUBMITTAL GUIDELINE

#### **PURPOSE**

The purpose of this guideline is to advise applicants of the minimum information needed to submit for a permit under the solar system eligibility program for expedite review.

#### **SCOPE**

This solar system plan submittal guideline for expedite review is specific to one and two-family dwelling homes and other residential structures located within the Cosumnes Fire Department boundaries for roof-mounted solar systems that do not exceed a maximum power output of 10 kW but do contain a battery storage system.

Residential roof mounted systems that do not have a battery storage system as part of the solar installation and do not exceed a maximum power output of 10 kW do not need to apply for a permit through the fire department. A submittal to the applicable building department is still required. Please see eligibility checklist below.

**NOTE:** Roof mounted systems on commercial buildings, residential projects greater than 10 kW, solar systems with stored energy, ground mounted systems for commercial or residential parcels, and systems that do not meet the California Fire Code (CFC) requirements for access, pathways and setbacks are required to submit to the fire department for review through the regular permit process.

#### **SUBMITTAL PROCESS**

New submittals and corrected/revised plans for review, along with a plan review application, shall be submitted electronically to the Cosumnes Fire Department to [EPlan@csdfire.com](mailto:EPlan@csdfire.com). A separate application and plan shall be submitted for each building address.

Applications can be found on our website at [www.yourcsd.com](http://www.yourcsd.com).  
<https://www.yourcsd.com/DocumentCenter/View/18643/Plan-Review-Submittal-Application-PDF>

Payment of plan review fees are required at time of plan submittal and can be made through mailed check or via phone using an accepted credit card by calling 916-405-7100.

#### **PLAN REVIEW PROCESS**

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**The men and women of Cosumnes Fire Department strive to exceed expectations at all times**  
Committed to providing extraordinary service through prevention, preparedness and emergency response to the community

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Plans are reviewed in the order received. Typical turnaround time for first submittal is 5 business days for systems 10kW or less and 15 business days for systems greater than 10 kW.

Approved plans will be sent electronically to the applicant with the inspector's approval stamp along with a fire department permit. A *Building Department Permit Release Letter* will also be provided to the applicant, to forward to the reviewing building department, as documentation of fire department approval. A written plan review correction letter will be provided to applicants whose plans require additional information or further clarification prior to plan approval.

## **PROGRAM**

Project applications for systems with a maximum power output of 10 kW or less, containing a battery storage system below the thresholds and below the maximum allowable quantiles as adopted in 2019 CFC Chapter 12 and that meet the CFC requirements for fire department access, pathways, and setbacks, will be provided with a *Building Department Permit Release Letter* at a cost of \$50.00 without further review by the fire department. California Fire Code sections for solar photovoltaic power systems as outlined in 2019 CFC Chapter 12 and 2019 California Residential Code (CRC) still apply and will be reviewed by the applicable building department.

Battery storage systems greater than the thresholds and maximum allowable quantities as indicated in CFC Chapter 12 and systems greater than 10 kW will be reviewed for compliance with CFC, CRC, National Fire Protection Agency (NFPA) Standard 855, and the Cosumnes Fire Department Fire Code Ordinance. Plan review fees will be assessed based on the adopted fee schedule.

## **PLAN SUBMITTAL CHECKLIST**

### **GENERAL INFORMATION**

1. Plan review submittal application is provided, and fees are paid.
2. Plans stamped and signed by CA licensed design professionals(s).
3. Project plans are designed to the 2019 California Fire Code, Cosumnes Fire Code Ordinance, and 2020 NFPA 855.
4. Project plans clearly indicate the type of battery technology being utilized.
5. Project plans clearly indicate the size in kW of each Solar PV system.
6. Project plans clearly indicate the capacity in kWh of the battery system.
7. Project plans clearly indicate battery quantities in kWh.
8. Manufacturers data sheets for all solar PV system components are provided and indicate the UL listing information.
9. Manufacturers data sheets for the battery storage technology used are provided and indicate the UL listing information.

### **SOLAR PHOTOVOLTAIC SYSTEMS**

*Construction documents for solar PV systems shall contain the following information:*

1. Project name, address, vicinity map, and list of applicable project design codes.
2. Scaled site plan with north arrow and graphic scale.
3. System roof layout plan with roof type and material noted, roof fire classification, and roof slope noted.
4. Elevation views with building openings shown and roof access points noted.
5. Location of emergency escape and rescue openings.

6. Location of and dimension of pathways to ridge.
7. Location of and dimension of setbacks at the ridge.
8. Dimensions of roof module spacing requirements.
9. Make, model and total number of modules.
10. Make and model of inverters and manufactures data sheets indicating UL listings.
11. Standard electrical plans, diagrams, and calculations.
12. Location of main service/utility disconnect.
13. Stringing plan/diagram and one-line diagram of system.
14. Specify grounding/bonding, conductor type and size, conduit type and size, number of conductors in each section of conduit, and their locations.
15. Indicate that rapid shutdown is provided.
16. Graphically depict required system labels, markings, and signage and show their install locations.
17. Fire rated construction details, penetration details, and PV system fire classification.

### **ENERGY STORAGE SYSTEM (ESS)**

*Construction documents for energy storage systems shall contain the following information:*

1. Location and layout diagram of the room or area in which the ESS is to be installed.
2. Details on the hourly fire-resistance rating of assemblies enclosing the ESS.
3. The quantities and types of ESS to be installed.
4. Manufacturers specifications, ratings, and listings of each ESS.
5. Description of energy (battery) management systems and their operation.
6. Location and content of required signage.
7. Details on fire suppression, smoke or fire detection, thermal management, ventilation, exhaust, and deflagration venting systems, if provided.
8. Support arrangement associated with the installation, including any required seismic restraint.
9. Details on battery storage system threshold quantities and maximum allowable quantities based on the energy storage technology proposed.
10. Location and type of vehicle impact protection.

### **ELIGIBILITY CHECKLIST FOR NO FIRE DEPARTMENT REVIEW (Building Dept. Review Only)**

<b><u>Y</u></b>	<b><u>N</u></b>	
<input type="checkbox"/>	<input type="checkbox"/>	System size is 10 kW alternating current nameplate rating or less.
<input type="checkbox"/>	<input type="checkbox"/>	The solar array is roof-mounted on a one-or two-family dwelling or accessory structure.
<input type="checkbox"/>	<input type="checkbox"/>	Solar system is utility interactive without battery storage.
<input type="checkbox"/>	<input type="checkbox"/>	PV system is not a hybrid or bipolar system.
<input type="checkbox"/>	<input type="checkbox"/>	Code compliant fire access, pathways and setbacks are provided.

If you marked NO to any of the items in the eligibility checklist you will need to revise your plans to meet the checklist or submit your plans to Cosumnes Fire Department.