PLUMAS COUNTY BUILDING DEPARTMENT

555 Main Street
Quincy, CA 95971
www.plumascounty.us

voice **(530) 283-7011**
24/7 inspection request **(530) 283-6001**
fax **(530) 283-6134**

Photovoltaic and Stationary Storage Battery System Requirements

The following checklist has been prepared to streamline the process of applying for and obtaining a permit for your photovoltaic system. It is important that the installation be permitted and inspected to insure the safety of the installation. If you have any further questions regarding the structural or electrical items, please contact the Building Department at 530-283-7011 selection 1 for assistance. A permit application can be obtained through the website at

https://www.plumascounty.us/77/Building-Department

Important

The adopted 2019 California Electrical Code requires "Qualified Personnel" to install solar equipment and all associated wiring and interconnections. "Qualified Personnel", as defined by the CEC, is "One who has the skills and knowledge related to the construction and operation of the electrical equipment and installations and has received safety training to recognize and avoid the hazards involved". This requirement will not allow most homeowners to install these systems.

Permit Application Requirements:

1. Property Owner

2. Property Address

3. Contractor's Name and License Number

4. Size of the system (in KW); number of strings and quantity of modules in each string.

Two complete sets of plans for the system that you are proposing to install are required. The information required to provide in those sets include:

1. A site plan showing the location of all buildings on the property as well as the location of the unit on your property.

2. Specify the applicable codes: 2019 CRC, and 2019 CEC

3. Provide a note on the plans that the photovoltaic system shall be installed in accordance with CEC 690 and posted with all applicable warnings, signage and plaques per CEC Articles 690 and 705.

4. All freestanding units shall comply with CEC 690.33(b) for guarding against inadvertent contact by persons.

5. Provide and specify the disconnecting means of all equipment. This could include any electrical disconnects, lock-offs at breakers, or a service panel within sight of any photovoltaic equipment (CEC 422.30; CEC 690 Part 3- Disconnecting means). Rapid shutdown is required CEC 690.56(c) (1).

6. Provide an electrical one-line diagram of the service entrance system. Also included a three-line diagram showing individual conductor types and sizes, conduit sizes, as well as their connection points. Be sure to specify if the electrical service panel is existing or new and the size (in amps). Provide a roof plan showing new and existing equipment locations. Indicate on plan available fault current at AC disconnect to get fault current below 10K.

7. A load calculation worksheet for the residence is required if you are de-rating the main circuit breaker on the main electrical service.

8. Provide the existing roofing material and the existing slope (IRC Chapter 9)

9. Provide the size and weight of all roof top units. Be aware that the maximum allowable additional loading of all roof units supported by trusses is 5 pounds per square foot and a 50-pound point load. For conventionally framed roofs. The applicant will need to provide all framing member sizes, spacing, and any other pertinent information to the reviewer so they can determine the existing members can handle the additional loading.

10. Existing roof construction must be evaluated for local geographic and climatic design criteria as well as imbalanced load across the roof diaphragm for roof mount systems by an Engineer licensed in the State of California for structural elements. Any structural plan sheets must be stamped and signed by the Engineer.

11. Specify the anchoring method of all units

12. Specify and provide flashing at all roof penetrations (CRC R903).

13. Provide cut sheets and listings of all equipment from a nationally recognized testing agency.

14. Provide the specifications for installation on the job site.

15. All existing vents/flue's through the roof shall not be compromised by the installation of the new equipment.

16. Show the required module setbacks on the roof. (CRC 324).

Planning Department Requirements:

1. All freestanding units must meet accessory structure provisions for their particular zoning district.

2. Planning and Zoning regulations involving such requirements as setbacks, height limitations, reflectivity or other design considerations may apply. Contact the Planning Department at 530-283-7011 selection 2 for further information.

Permit Fees

Photovoltaic Systems Residential	Elect. $166.00, plus ½ Hr. plan review of $73.50 = $239.50.
Photovoltaic Systems Commercial	Elect. $298.00, plus ½ Hr. plan review of $73.50 = $371.50.
Service Upgrade for PV System	Residential $166.00: Commercial: $298.00
Stationary Battery System Residential	Elect. $166.00, plus ½ Hr. plan review of $73.50=$239.50
Stationary Battery System Commercial	Elect. $298.00, plus ½ Hr. plan review of $73.50=$371.50.
Generator	Residential $166.00: Commercial $298.00

2019 California Residential Code

SECTION 324 SOLAR ENERGY SYSTEMS

R324.1 General. Solar energy systems shall comply with the provisions of this section.

R324.2 Solar thermal systems. Solar thermal systems shall be designed and installed in accordance with Chapter 23 and the International Fire Code.

R324.3 Photovoltaic systems. Photovoltaic systems shall be designed and installed in accordance with Sections

R324.3.1 through R324.7.1, NFPA 70 and the manufacturer's installation instructions.

R324.3.1 Equipment listings. Photovoltaic panels and modules shall be listed and labeled in accordance with UL 1703. Inverters shall be listed and labeled in accordance with UL 1741. Systems connected to the utility grid shall use inverters listed for utility interaction.

R324.4 Rooftop-mounted photovoltaic systems. Rooftop mounted photovoltaic panel systems installed on or above the roof covering shall be designed and installed in accordance with this section.

R324.4.1 Structural requirements. Rooftop-mounted photovoltaic panel systems shall be designed to structurally support the system and withstand applicable gravity loads in accordance with Chapter 3. The roof on which these systems are installed shall be designed and constructed to support the loads imposed by such systems in accordance with Chapter 8.

R324.4.1.1 Roof load. Portions of roof structures not covered with photovoltaic panel systems shall be designed for dead loads and roof loads in accordance with Sections R301.4 and R301.6. Portions of roof structures covered with photovoltaic panel systems shall be designed for the following load cases: 1. Dead load (including photovoltaic panel weight) plus snow load in accordance with Table R301.2 (1). 2. Dead load (excluding photovoltaic panel weight) plus roof live load or snow load, whichever is greater, in accordance with Section R301.6.

R324.4.1.2 Wind load. Rooftop-mounted photovoltaic panel or module systems and their supports shall be designed and installed to resist the component and cladding loads specified in Table

R301.2 (2), adjusted for height and exposure in accordance with Table R301.2 (3).

R324.4.2 Fire classification. Rooftop-mounted photovoltaic panel systems shall have the same fire classification as the roof assembly required in Section R902.

R324.4.3 Roof penetrations. Roof penetrations shall be flashed and sealed in accordance with Chapter 9.

R324.5 Building-integrated photovoltaic systems. Building-integrated photovoltaic systems that serve as roof coverings shall be designed and installed in accordance with Section R905.

R324.5.1 Photovoltaic shingles. Photovoltaic shingles shall comply with Section R905.16.

R324.5.2 Fire classification. Building-integrated photovoltaic systems shall have a fire classification in accordance with Section R902.3.

R324.6 Roof access and pathways. Roof access, pathways and setback requirements shall be provided in accordance with Sections R324.6.1 through R324.6.2.1. Access and minimum spacing shall be required to provide emergency access to the roof, to provide pathways to specific areas of the roof, provide for smoke ventilation opportunity areas, and to provide emergency egress from the roof.

Exceptions:

1. Detached, non-habitable structures, including but not limited to detached garages, parking shade structures, carports, solar trellises and similar structures, shall not be required to provide roof access.

2. Roof access, pathways and setbacks need not be provided where the code official has determined that rooftop operations will not be employed.

3. These requirements shall not apply to roofs with slopes of two units vertical in 12 units horizontal (17-percent slope) or less.

R324.6.1 Pathways. Not fewer than two pathways, on separate roof planes from lowest roof edge to ridge and not less than 36 inches wide, shall be provided on all buildings. Not fewer than one pathway shall be provided on the street or driveway side of the roof. For each roof plane with a photovoltaic array, a pathway not less than 36 inches wide shall be provided from the lowest roof edge to ridge on the same roof plane as the photovoltaic array, on an adjacent roof plane, or straddling the same and adjacent roof planes. Pathways shall be over areas capable of supporting fire fighters accessing the roof. Pathways shall be located in areas with minimal obstructions such as vent pipes, conduit, or mechanical equipment.

R324.6.2 Setback at ridge. For photovoltaic arrays occupying not more than 33 percent of the plan view total roof area, not less than an 18-inch clear setback is required on both sides of a horizontal ridge. For photovoltaic arrays occupying more than 33 percent of the plan view total roof area, not less than a 36-inch clear setback is required on both sides of a horizontal ridge.

R324.6.2.1 Alternative setback at ridge. Where an automatic sprinkler system is installed within the dwelling in accordance with NFPA 13D or Section P2904, setbacks at ridges shall comply with one of the following:

1. For photovoltaic arrays occupying not more than 66 percent of the plan view total roof area, not less than an 18-inch clear setback is required on both sides of a horizontal ridge.

2. For photovoltaic arrays occupying more than 66 percent of the plan view total roof area, not less than a 36-inch clear setback is required on both sides of a horizontal ridge.

R324.6.2.2 Emergency escape and rescue opening. Panels and modules installed on dwellings shall not be placed on the portion of a roof that is below an emergency escape and rescue opening. A pathway not less than 36 inches wide shall be provided to the emergency escape and rescue opening.

R324.7 Ground-mounted photovoltaic systems. Ground-mounted photovoltaic systems shall be designed and installed in accordance with Section R301.

R324.7.1 Fire separation distances. Ground-mounted photovoltaic systems shall be subject to the fire separation distance requirements determined by the local jurisdiction.

SECTION R327 STATIONARY STORAGE BATTERY SYSTEMS

R327.3 Installation. Stationary storage battery systems shall be installed in accordance with the manufacturer's instructions and their listing, if applicable. Installations of stationary storage Battery systems shall meet all requirements of CRC Section R327, and CFC Chapter 12.
NOTE: The County of Plumas requires the listing and labeling for SSB systems to comply with the latest UL Standard UL 9540-A-2018. Use of systems to the UL 9540 standard may be installed if done in accordance to the requirements of NFPA 855 or contained within a standalone structure built of ignition resistant materials in accordance to CRC R337 or non-combustible construction.