
ENERGY CODE REQUIREMENTS FOR PHOTOVOLTAIC AND BATTERY SYSTEMS

Disciplines: All

History: Issued 02/22/23

Division of the State Architect (DSA) documents referenced within this publication are available on the [DSA Forms](#) or [DSA Publications](#) webpages.

PURPOSE

This Interpretation of Regulations (IR) clarifies Photovoltaic (PV) and Battery/Energy Storage Systems (BESS) requirements of project submittals to promote uniform statewide criteria for Title 24 Part 6, Energy Code compliance for K–12 and Community College projects under DSA jurisdiction. This IR was created by DSA as a means for the architect/engineer in general responsible charge to demonstrate code compliance when developing and submitting construction documents for DSA approval.

The provisions of this IR are intended to be a tool to identify, highlight and clarify Energy Code requirements that must be considered and incorporated into the design, as applicable, to provide a complete and consistent set of construction documents accepted at all DSA regional offices. For alternatives not specifically prescribed in the code, refer to CBC Section 104.11- Alternative materials, design and methods of construction and equipment. The PV requirements in the energy code contain mandatory measures and provides for compliance through either a performance analysis or through specific prescriptive measures. The prescriptive in the Energy Code for PV and Battery Storage measures are considered baseline values for a performance-based analysis.

SCOPE

The provisions of this IR apply to project submittals for new buildings and additions to buildings submitted to DSA under the 2022 CBC on or after January 1, 2023 and are limited to the Energy Code regulations for PV and battery/energy storage systems required under the 2022 Energy Code. For battery/energy storage information related to Fire Life Safety and Structural Safety refer to *IR N-4: Modular Battery Energy Storage Systems: 2022 CBC and CFC*. For PV panel information related to Structural and Fire Life Safety refer to IR 16-8.

BACKGROUND

As of January 1, 2023, California Energy Code requires that PV and battery systems to be installed on all new buildings. New buildings and additions to existing buildings include solar readiness requirements. The requirements provided in this document are neither regulations nor law and are not appropriate for verbatim inclusion in project specifications. The architect/engineer in general responsible charge is responsible for specifying and detailing requirements for each project.

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REQUIREMENTS

1. SOLAR READINESS REQUIREMENTS – MANDATORY MEASURES

- 1.1** All new building must meet the requirements of Energy Code 110.10 mandatory requirements for solar readiness unless buildings meet exceptions found in 110.10.
- 1.2** Additions must meet the requirements of Energy Code 110.10 mandatory requirements for solar readiness.
- 1.2.1** Additions that increase the area of the roof by 2,000 square feet or less are exempt from the requirements of Section 110.10.
- 1.3** All projects must submit form NRCC-SAB-E except alterations, and additions with less than 2000 square feet of roof area.

2. PHOTOVOLTAIC PRESCRIPTIVE REQUIREMENTS

- 2.1** All newly constructed buildings must meet the requirements of Energy Code 140.10 Requirements for Photovoltaic and Battery Storage Systems unless buildings meet exceptions found in 140.10, as summarized below.
- 2.1.1** Exception 1: When all available roof area is considered per 140.10(a)2 total SARA is less than three percent (3%) of total conditioned floor area of the building.
- 2.1.2** Exception 2: Where total required PV system size for the project is less than 4KWdc.
- 2.1.3** Exception 3: When all available roof area is considered per 140.10(a)2, SARA contains less 80 contiguous square feet.
- 2.1.4** Exception 4: Where snow loads make PV infeasible to install as substantiated by the structural engineer of record and approved by DSA.
- 2.1.5 Exception 5:** School buildings are not considered to be multi-tenant buildings for the purposes of this exception.
- 2.2** PV systems must be designed in compliance with the baseline values provided in the section 140.10 unless specifically allowed to be modified through performance energy modeling and completely detailed as part of project submittals.
- 2.3** All buildings that are placed under the same project shall be calculated separately for both total roof area and total conditioned floor space. 140.10(a)1
- 2.4** For the comparative analysis required by 140.10, the SARA, per 140.10(a)2 shall be based upon all available roof area included in the project including other buildings, covered walkways, carports, parking structures, parking areas and similar structures capable of supporting PV excluding structures designed specifically to support only PV, as compared to the conditioned floor area (CFA) required by equation 140.10-A for each individual building.
- 2.5** The amount of PV required for the building shall be the lesser of SARA and equation 140.10-A.
- 2.6** PV may be either ground mount or building mounted and may be located in a single location or in multiple locations, provided the total solar area provided at that location, or multiple locations, is the aggregated total of all PV required for the project.
- 2.7** Drawings shall indicate the total aggregated power required and total provided power by each PV area.

3. BATTERY STORAGE PRESCRIPTIVE REQUIREMENTS

- 3.1** Battery systems must be designed and completely detailed as part of project submittals.

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3.2 All buildings required to provide PV must also provide battery storage systems unless exempted by the exceptions listed in 140.10 (b) Battery storage system requirements as summarized below.

3.2.1 Exception 1: Where PV systems installed are less than 15 percent of size calculated by equation 140.10-A.

3.2.2 Exception 2: Where battery storage system requirements are calculated to be less than 10KWh.

3.2.3 Exception 3: School buildings are not considered to be multi-tenant buildings for the purposes of this exception.

3.2.4 Where school projects are proposed in Climate Zone 1

References:

California Energy Code (CCR Title 24, Part 6)

This IR is intended for use by DSA staff and by design professionals to promote statewide consistency for review and approval of plans and specifications as well as construction oversight of projects within the jurisdiction of DSA, which includes State of California public schools (K–12), community colleges and state-owned or state-leased essential services buildings. This IR indicates an acceptable method for achieving compliance with applicable codes and regulations, although other methods proposed by design professionals may be considered by DSA.

This IR is subject to revision at any time. Please check DSA's website for currently effective IRs. Only IRs listed on the webpage at www.dgs.ca.gov/dsa/publications at the time of project application submittal to DSA are considered applicable.