



BRIGGS & STRATTON  
ENERGY SOLUTIONS

# UNDERSTANDING CALIFORNIA'S ENERGY CODE:

Title 24 Battery Storage Requirements  
for Businesses



Californians use 31% less energy than the average American, that is partly to the energy-efficient building codes that the state enacted in the late 1970s. California's Energy Code was established by the California Energy Commission to reduce California's energy consumption.

Also called Title 24, the Building Energy Efficiency Standards for Residential and Nonresidential Buildings was implemented in 1978 to set the standards for new buildings. The code is updated every three years; the last update was in 2022.



# Core Pillars of Title 24



## Expansion of PV Systems and Battery Storage Standards

Mandating nearly all new commercial buildings and high-rise residential projects to incorporate solar power and battery storage to offset their energy footprint.



## Promotion of Heat Pump Technologies

Encouraging the use of heat pumps for more efficient heating and cooling.



## Electric-Ready Requirements

Requiring new buildings to be equipped for future electric appliance installations when natural gas is used.



## Improved Air Quality Standards

Implementing new ventilation standards to enhance indoor air quality.



# Title 24 Compliance

Title 24, the Building Energy Efficiency Standards for Residential and Nonresidential Buildings, currently states that all buildings required to have a PV system installed must also have a battery storage system installed in tandem that meets the minimum qualification requirements for rated energy capacity and rated power capacity, determined by two equations: the Rated Energy Capacity (Equation 170.2-E) and Rated Energy Capacity (Equation 170.2-F).

## Businesses Affected:

- Hotels
- Offices
- Health Clinics
- Medical Buildings
- Grocery Stores
- Restaurants
- Schools
- Civic Spaces
- Retailers

## Benefits of Commercial Battery Storage

Commercial battery storage systems offer numerous benefits to businesses, including:



### Cost Savings

Optimizing energy consumption patterns to reduce energy expenses through demand response and peak shaving.



### Enhanced Grid Stability

Providing a consistent electricity supply by storing excess renewable energy and making it available during periods or peak demand.



### Sustainability

Supporting renewable energy sources and reducing greenhouse gas emissions to support sustainability goals.

# Energy Code Calculations for Battery Sizing

The new battery storage system standards are based on the required solar PV system size and varies by building type. The two calculations that battery storage systems must meet minimum qualification requirements include the rated energy capacity and the rated power capacity.

## Equation #1

### Rated Energy Capacity for Battery Storage Systems (Equation 170.2-E)

The rated energy capacity of a battery is the energy that it can deliver during the discharge process. The rated energy capacity equation for Title 24 is based on the required solar PV system size, the energy capacity factor, and the battery system's total round trip efficiency.

$$\mathbf{kWh\ batt = kW\ PVdc \times B / D\ 0.5}$$

**kWh batt** = Rated usable energy capacity of the battery storage system in kWh.

**kW PVdc** = PV system capacity required by Section 170.2(g) in kWdc.

**B** = Battery energy capacity factor specified in Table 170.2-V for the building type.

**D** = Rated single charge-discharge cycle AC to AC (round-trip) efficiency of the battery storage system.

PV/Battery Capacity Equation Reference Tables 170.2-V and 170.2-U.

Storage to PV Ratio	Factor B Energy Capacity	Factor C Power Capacity
	Wh/W	W/W
Grocery	1.03	0.26
High-Rise Multifamily	1.03	0.26
Office, Financial Institutions, Unleased Tenant Space	1.68	0.42
Retail	1.03	0.26
School	1.87	0.46
Warehouse	0.93	0.23
Auditorium, Convention Center, Hotel/Motel, Library, Medical Office, Clinic, Restaurant, Theater	0.93	0.23

## Equation #2

### Rated Energy Capacity for Battery Storage Systems (Equation 170.2-E)

The rated energy capacity of a battery is the energy that it can deliver during the discharge process. The rated energy capacity equation for Title 24 is based on the required solar PV system size, the energy capacity factor, and the battery system's total round trip efficiency.

$$\mathbf{kW\ batt = kW\ PVdc \times C}$$

**kW batt** = Power capacity of the battery storage system in kWdc **kW**

**PVdc** = PV system capacity required by Section 170.2(g) in kWdc.

**C** = Battery power capacity factor specified in Table 170.2-V for the building type.

### Title 24 Minimum Performance Requirements for Battery Storage Systems

#### Battery Performance Specification

Usable Capacity > 5kWh

Single Charge-discharge Cycle AC to AC (round-trip) Efficiency > 80%

Energy Capacity of 70% of Nameplate Capacity after 4,000 cycles Covered by Warranty or 70% of Nameplate Capacity Under 10-year Warranty

#### Prescriptive



#### Performance



# BATTERY STORAGE INCENTIVES

## Offset Battery Storage System Costs

The California Public Utility Commission's (CPUC) Self-Generation Incentive Program (SGIP) offers rebates for installing energy storage technology at multi-family residential and non-residential facilities. This includes an additional 20% off approved battery storage systems manufactured in California, such as select Briggs & Stratton Energy Solutions Batteries.

Learn more about available incentives, and view our SGIP guide, at [energy.briggsandstratton.com/incentives](https://energy.briggsandstratton.com/incentives)

# We're Here To Help

Let our team of C&I solutions experts guide you through a solution to meet your business' needs. Contact us today or visit [energy.briggsandstratton.commercial](https://energy.briggsandstratton.commercial) for more information.

**Contact us today at (877) 881-0429.**



**SCAN HERE**

## Modular, Customizable Battery Storage Solutions

Briggs & Stratton's commercial battery storage solutions are completely customizable to meet each businesses' unique needs. Our high voltage and low voltage batteries are compact and modular, allowing them to be installed in a wide range of locations, both indoors and out. Being recognized by the CPUC as a California Manufacturer\* of energy storage solutions, Briggs & Stratton batteries are ideal for government and municipal buildings that require domestically sourced products.



### Sources

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\*All specifications listed are typical/nominal and subject to change without notice.

\*Applies to select products.

Briggs & Stratton has a policy of continuous product improvement and reserves the right to modify its specifications at any time and without prior notice. Please visit [energy.briggsandstratton.com](https://energy.briggsandstratton.com) for the latest information.

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