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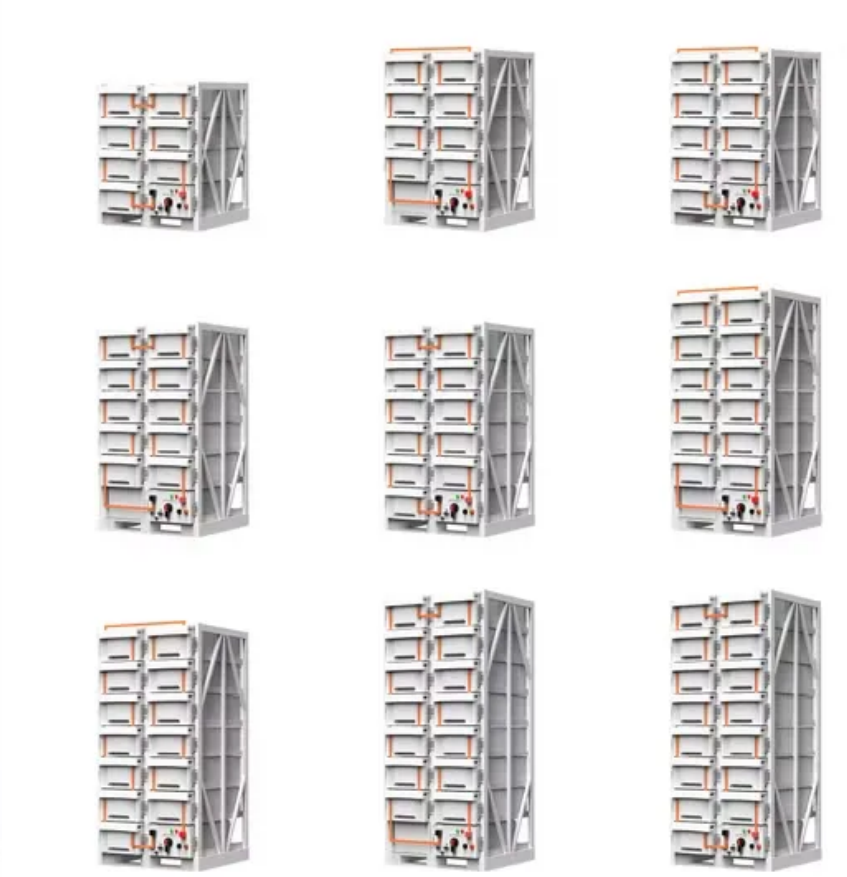
**SolarTech Power Solutions**

# Actual energy storage battery capacity



## Overview

Rated capacity represents the actual energy storage and delivery capacity specified by the manufacturer under standard test conditions. Unlike nominal capacity, rated capacity accounts for real-world factors such as temperature variations, discharge rates, and aging effects.

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In the United States, cumulative utility-scale battery storage capacity exceeded 26 gigawatts (GW) in 2024, according to our January 2025 Preliminary Monthly Electric Generator Inventory. Generators added 10.4 GW of new battery storage capacity in 2024, the second-largest generating capacity.

The proposed method is based on actual battery charge and discharge metered data to be collected from BESS systems provided by federal agencies participating in the FEMP’s performance assessment initiatives. Long-term (e.g., at least one year) time series (e.g., hourly) charge and discharge data.

Understanding how to calculate actual battery capacity versus nominal capacity involves testing the battery under specific conditions, analyzing discharge times and currents, and accounting for factors such as temperature and battery age. Nominal capacity is a rated figure often under ideal.

When selecting a lithium battery, understanding the nominal capacity vs rated capacity of lithium battery is crucial. Nominal capacity represents the theoretical maximum energy a battery can deliver under ideal conditions, often calculated based on lithium metal oxide or lithium iron phosphate.

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