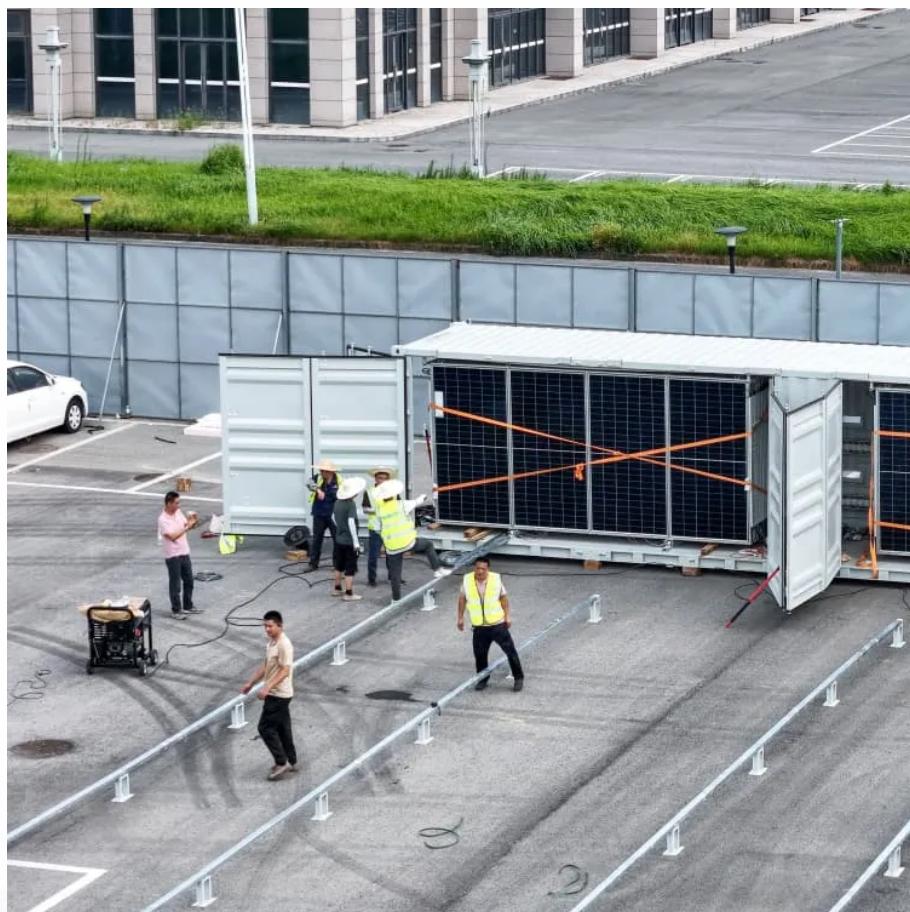




BUHLE POWER

Energy storage device output power loss





Overview

What are the merits of energy storage systems?

Two primary figures of merit for energy storage systems: Specific energy
Specific power Often a tradeoff between the two Different storage
technologies best suited to different applications depending on power/energy
requirements Storage technologies can be compared graphically on a Ragone
plot Specific energy vs. specific power.

What is a fully discharged power supply (SoC)?

The amount of energy stored in a device as a percentage of its total energy
capacity Fully discharged: SoC = 0% Fully charged: SoC = 100% Depth of
discharge (DoD) The amount of energy that has been removed from a device
as a percentage of the total energy capacity K. Webb ESE 471 6 Capacity.

How is energy storage capacity calculated?

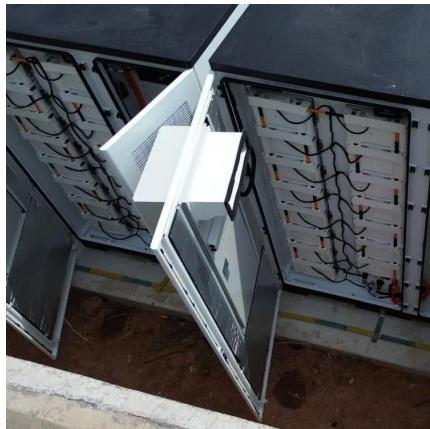
The energy storage capacity, E, is calculated using the efficiency calculated
above to represent energy losses in the BESS itself. This is an approximation
since actual battery efficiency will depend on operating parameters such as
charge/discharge rate (Amps) and temperature.

What are the performance characteristics of a storage system?

K. Webb ESE 471 9 Efficiency Another important performance characteristic is
efficiency The percentage of energy put into storage that can later be
extracted for use All storage systems suffer from losses Losses as energy
flows into storage Losses as energy is extracted from storage K. Webb ESE
471 10 Round-Trip Efficiency



Energy storage device output power loss

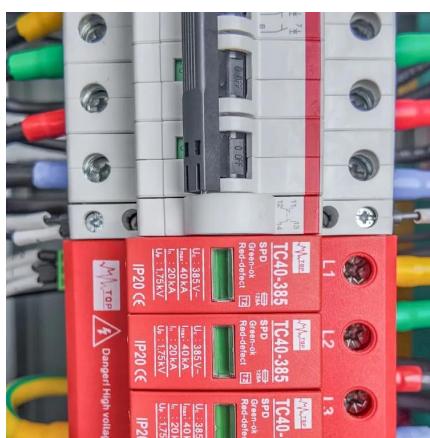


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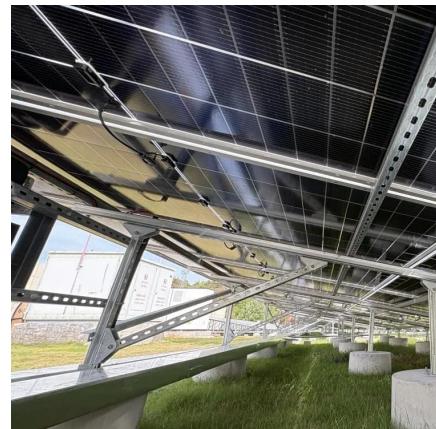
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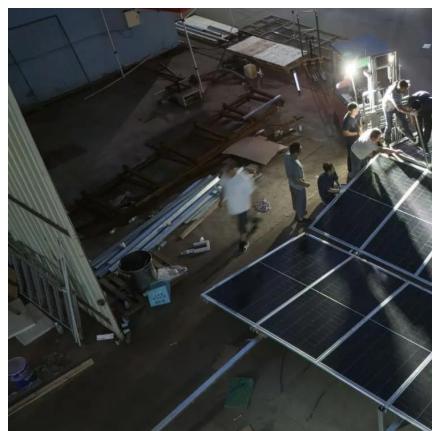
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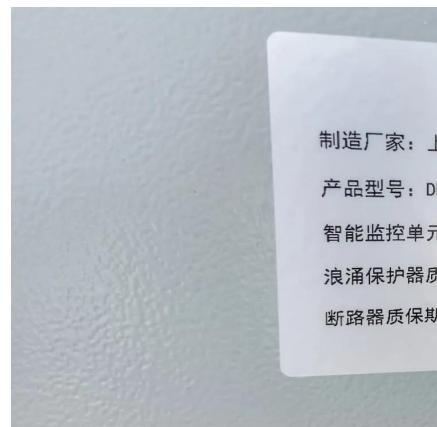


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