

Energy Storage Project Benchmark Rate of Return





Overview

What is the system value of a storage project?

The actual system value of a storage project depends highly on the existing power system it is added to. If there is very little storage currently in the power system, adding a storage project might create a lot of system value, for example, by replacing peaking capacity or deferring transmission investment.

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 is the energy storage framework?

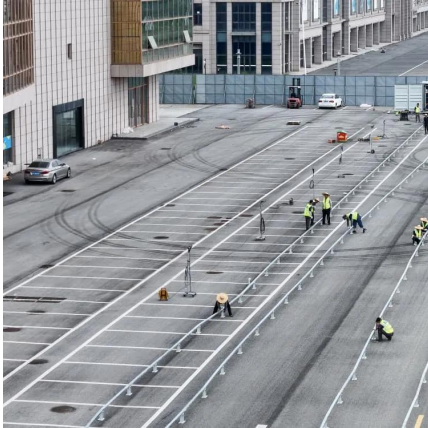
The framework considers: a) the value electricity storage brings to the power system; b) ways to optimally utilise electricity storage; and c) an approach to ensuring that the monetisable revenues for the identified amount of storage are higher than costs, to ensure deployment and reduction of total system cost.⁶

What are base year costs for utility-scale battery energy storage systems?

Base year costs for utility-scale battery energy storage systems (BESSs) are based on a bottom-up cost model using the data and methodology for utility-scale BESS in (Ramasamy et al., 2023). The bottom-up BESS model accounts for major components, including the LIB pack, the inverter, and the balance of system (BOS) needed for the installation.



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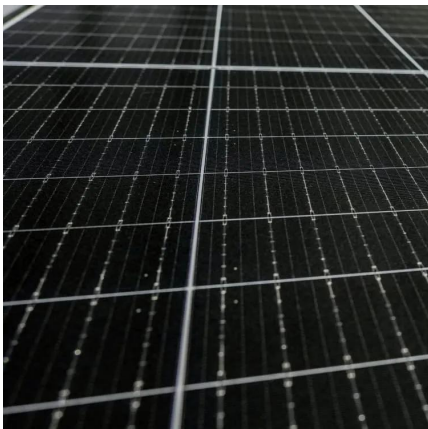


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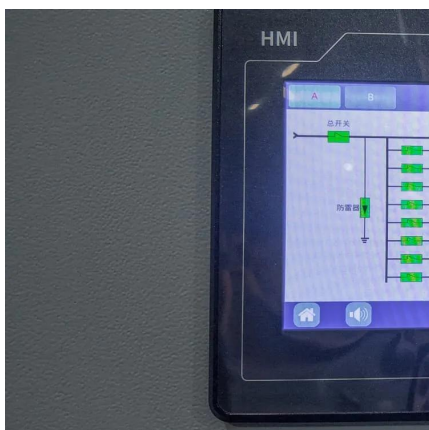
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Utility-Scale Battery Storage , Electricity , 2024 , ATB , NLR

The battery storage technologies do not calculate levelized cost of energy (LCOE) or levelized cost of storage (LCOS) and so do not use financial assumptions. Therefore, all parameters are ...

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481237_1_En_12_Chapter 149.

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Keywords Energy storage Internal rate of return Investment ...



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