

Economic Calculation of Energy Storage Power Station Investment





Overview

The Storage Financial Analysis Scenario Tool (StoreFAST) model enables techno-economic analysis of energy storage technologies in service of grid-scale energy applications. Energy storage technologies offering grid reliability alongside renewable assets compete with flexible power generators. How to calculate power storage costs per kWh?

In order to accurately calculate power storage costs per kWh, the entire storage system, i.e. the battery and battery inverter, is taken into account. The key parameters here are the discharge depth [DOD], system efficiency [%] and energy content [rated capacity in kWh]. ?

?

?

EUR/kWh Charge time: ?

?

?

Hours.

What is storage NPV in terms of kWh?

The storage NPV in terms of kWh has to factor in degradation, round-trip efficiency, lifetime, and all the non-ideal factors of the battery. The combination of these factors is simply the storage discount rate. The financial NPV in financial terms has to include the storage NPV, inflation, rising energy prices, and cost of debt.

Is energy storage a good investment?

The return of investment is an important metric about how attractive an investment may be. However this is an important note that energy storage



usually does not generate electricity savings directly, but allows the transport or trading of electricity. This usually results in storage not having a high ROI like solar investments, for example.

How is the NPV of a supertitan battery calculated?

For an electricity cost of €0.15/kWh and a timeframe of 20 years, the results are: SuperTitan battery NPV: +€233.91 LFP battery: -€6.87 IRR is calculated using the same concept as net present value (NPV), except it sets the NPV equal to zero.



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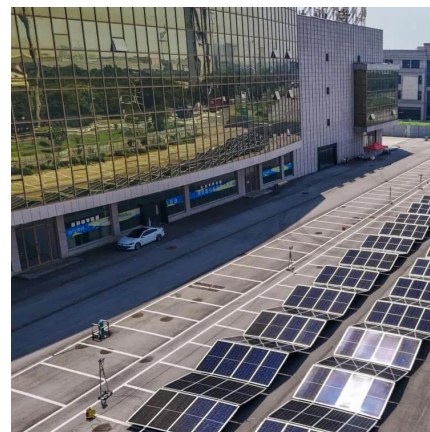


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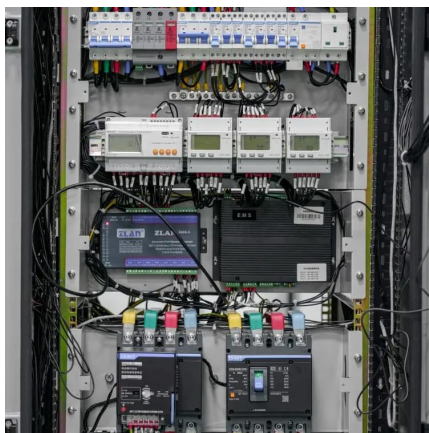


energy storage hybrid system is ...



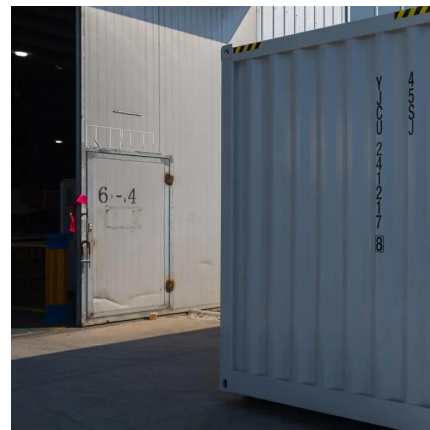
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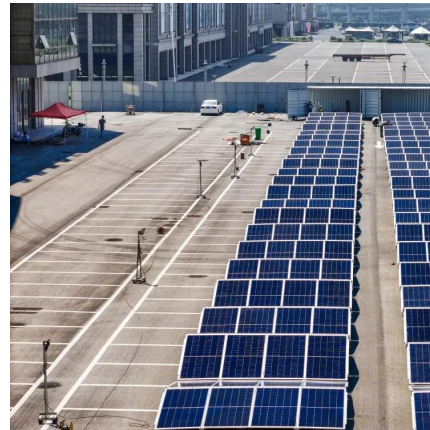
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