

Energy storage design scheme for a building





Overview

This study aims to analyze and optimize the photovoltaic-battery energy storage (PV-BES) system installed in a low-energy building in China. A novel energy management strategy considering the battery cy.

What is the design optimization model of energy storage system?

In the design optimization model, equipment investment is considered based on the operational optimization model, and particle swarm optimization (PSO) is employed to achieve the design optimization of energy storage system.

What is the energy management strategy for residential PV-BES systems?

The energy management strategy for residential PV-BES systems is also developed considering the matching of thermostatically controlled demand and battery charging. The case study shows that the system energy consumption is reduced by 30% while maintaining the power supply quality and extending the battery lifecycle .

Why do we need electrical energy storage?

Electrical energy storage such as battery is therefore required to store surplus renewable energy during off-peak hours and supply to electric appliances in peak time to assure a reliable power supply to buildings.

Can energy management improve the PV-BES system installed in a real building?

Based on these management algorithms and targets, this study proposes an innovative energy management strategy considering the battery cycling aging, grid relief and local time-of-use pricing through a joint modeling platform of TRNSYS and jEPlus + EA to improve and optimize the PV-BES system installed in a real building.



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[\(PDF\) A methodical approach for the design ...](#)

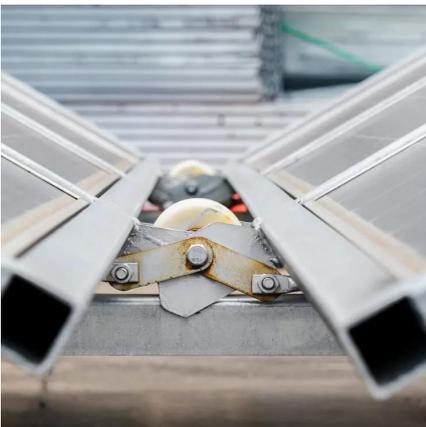
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