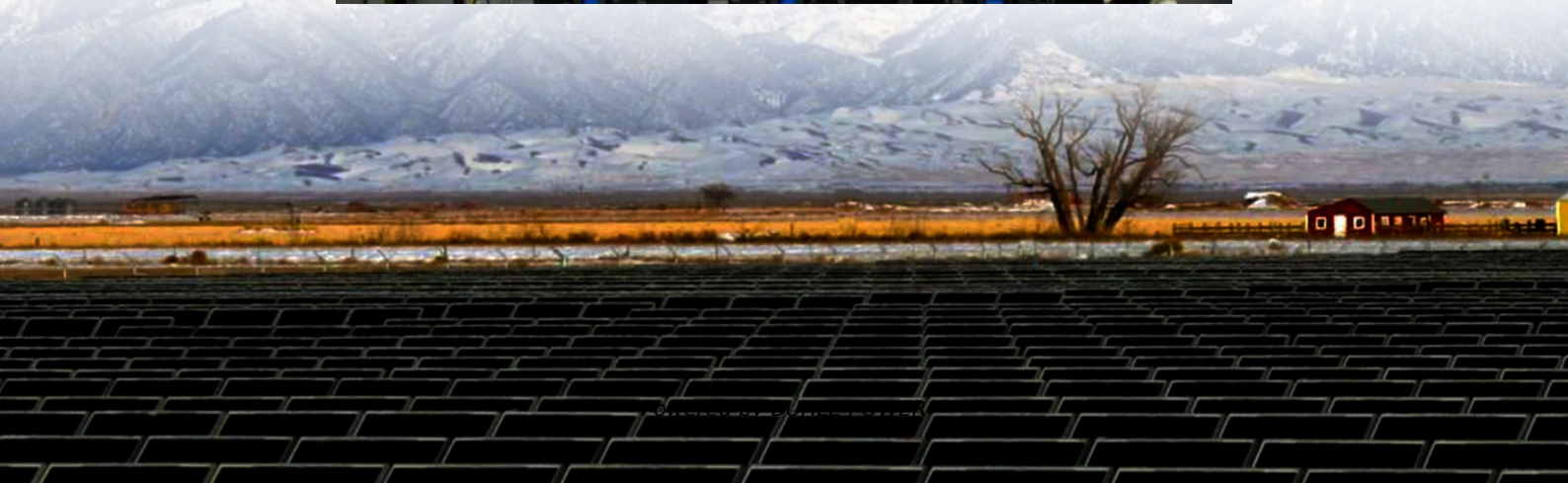


Requirements for the proportion of energy storage in solar power stations





Overview

With the consumption of fossil fuels and the impact of the greenhouse effect, renewable energies are ushering in a huge development opportunity, thus the optimal configuration of energy storage is essential.

What is the optimal configuration of energy storage capacity?

The optimal configuration of energy storage capacity is an important issue for large scale solar systems. A strategy for optimal allocation of energy storage is proposed in this paper. First various scenarios and their value of energy storage in PV applications are discussed. Then a double-layer decision architecture is proposed in this article.

Should batteries be sized only in photovoltaic energy plants?

In [1], different methods are presented for sizing batteries only in photovoltaic energy plants to maximize the total annual revenue and try to find cost-effective storage sizes. In [2], the maximization of economic indexes are evaluated to obtain a hybrid plant, but with PV generation and storage, which is the only asset to be sized.

What are the technical parameters of energy storage?

Main technical parameters of different types of energy storage. In recent years, pumped storage exhibits the highest technical maturity, boasting multiple functions and optimal economic characteristics. However, the exploitable site resources are limited, and it needs long construction period for about 6–7 years.

What is the investment cost of energy storage system?

The investment cost of energy storage system is taken as the inner objective function, the charge and discharge strategy of the energy storage system and augmentation are the optimal variables. Finally, the effectiveness and feasibility of the proposed model and method are verified through case simulations.



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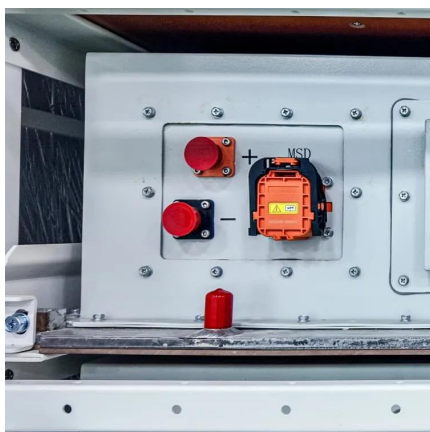


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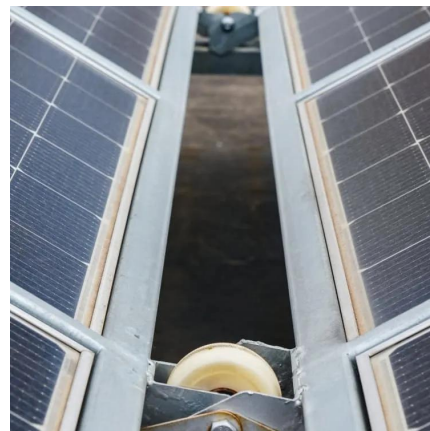
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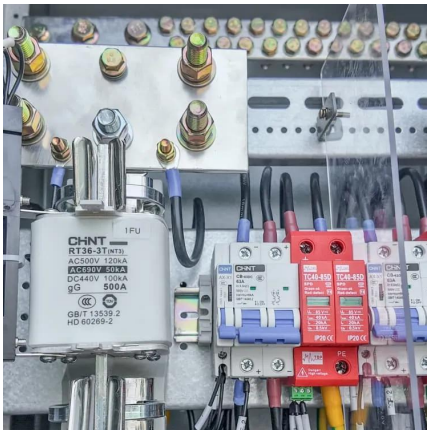
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