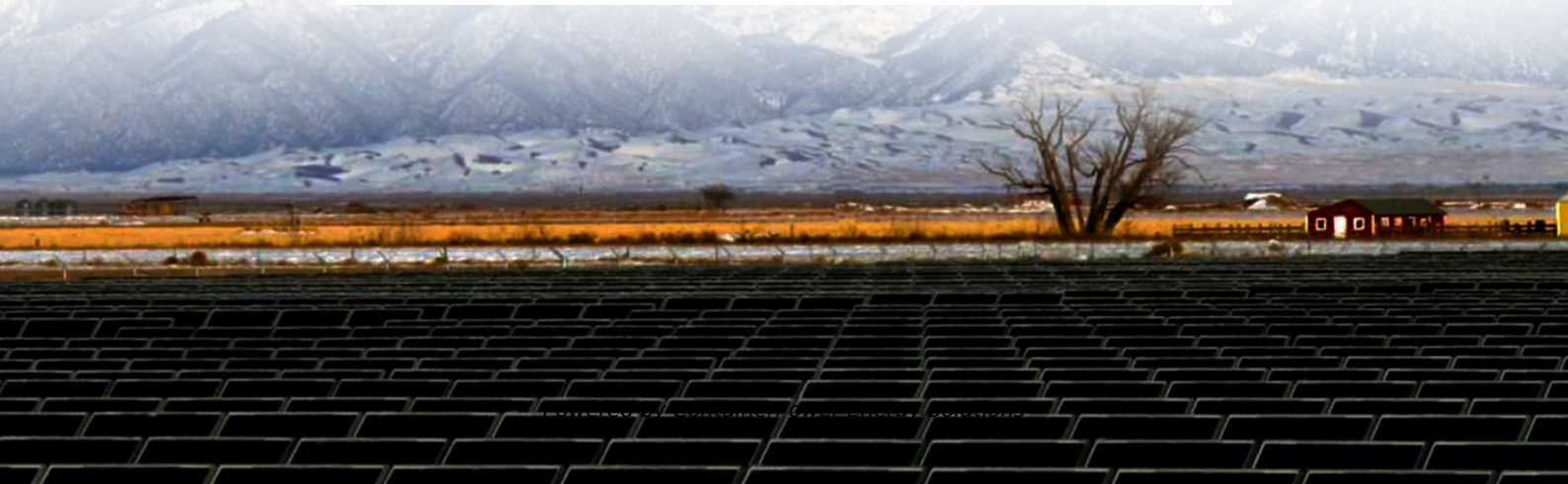
ContainerPower Energy Solutions

North American outdoor energy storage cabinet cooperation model



Overview

What is a new energy cooperation framework for energy storage and prosumers?

A novel energy cooperation framework for energy storage and prosumers is proposed. A bi-level energy trading model considering the network constraints is presented. A profit-sharing mechanism is designed with the asymmetric Nash bargaining model. The adaptive alternating direction method of multipliers is applied efficiently.

How can a community energy storage system benefit prosumers?

An applicable way to solve the problem is to build multiple high-capacity community energy storage systems (CESSs) for shared use by prosumers . Both prosumers and CESSs can gain profits from energy sharing.

Can a new energy cooperation framework improve the energy economy?

A novel energy cooperation framework for CESSs and prosumers is proposed with an energy cooperation platform as an intermediary, improving the energy economy and solution efficiency.

What is a two-stage model for energy storage sharing?

For example, formulated a two-stage model for energy storage sharing between CESSs and prosumers, where CESSs decide the price of virtual storage capacity in the first stage and prosumers decide the capacities and charging/discharging power in the second stage.

What is energy cooperation platform?

To achieve efficient sharing between CESSs and prosumers, the energy cooperation platform is introduced as a manager to ensure efficient cooperation operation. The feasibility and rationality of similar P2P platforms have been demonstrated in the reference .

Can an adaptive ADMM solve the energy cooperation problem?

Additionally, an adaptive ADMM is deployed to solve the energy cooperation problem by adaptively changing the penalty factor to speed up the convergence. The simulation results verify the feasibility and rationality of the proposed energy cooperation strategy, the fairness of the profit-sharing mechanism, and the efficiency of the algorithm.

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