

Cooperation plan with energy storage companies







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.

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 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.

What is the proposed energy cooperation problem?

The proposed energy cooperation problem requires minimizing the social energy costs, which includes all the individual energy costs of prosumers and CESSs. The energy cooperation problem is stated as: (21) Subject to: $\{(1)$ - (7), (9), (10) - (20) $\{(22)$ (23).

What is the difference between cooperation and non-cooperation?

In the non-cooperation, prosumers sell the surplus energy to the distribution operator and buy the insufficient energy from the distribution operator. While in the cooperation, the surplus energy is shared with other players and part of the insufficient energy is filled by other players in cooperation.



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.



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