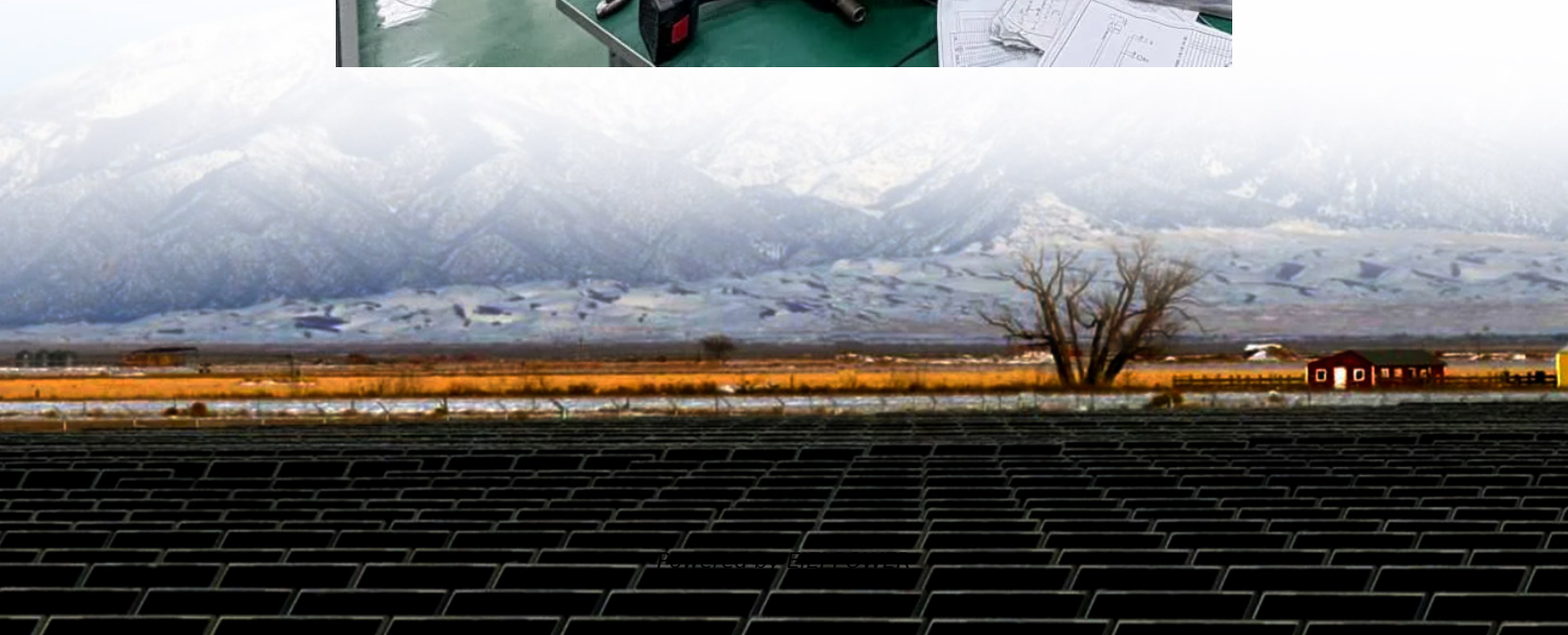


Air Energy Storage Society Distributed Energy Storage





Overview

Can distributed compressed air energy storage systems maximize profit?

This study aims at presenting a devised operational control strategy applied to distributed compressed air energy storage systems, as well as assessing the best scenario for optimal utilization of grid-integrated renewable energy sources at small scales in dynamic electricity markets. Profit maximization for the end consumer is the major goal.

How is distributed compressed air energy storage system based on regional microgrids?

Firstly, the architecture of distributed compressed air energy storage system based on regional microgrids is constructed. Then, considering the thermodynamic characteristics of the air storage device under constant volume and insulation, a cogeneration model of distributed compressed air energy storage is established.

How efficient is compressed air energy storage system?

Finally, the results of combined heat and power supply of distributed compressed air energy storage system are discussed by case study simulation in different air storage chamber models. The results show that constant volume insulation as the air storage device is the best choice, which improve the system efficiency by up to 25.6%.

How do distributed small-scale compressed air energy storage systems work?

Distributed small-scale compressed air energy storage systems are possible to build and apply in ways similar to electrical batteries. An iterative algorithm has been used, which attempts to maximize profits by properly managing the stored energy.



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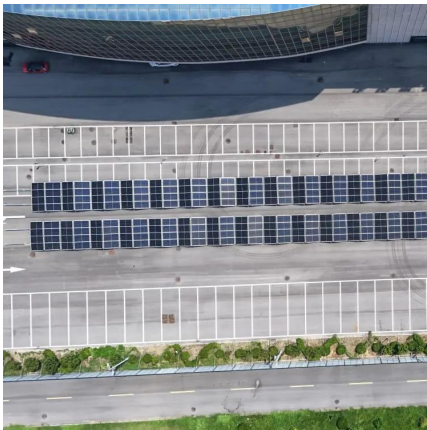


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