

Efficient Financing for Mobile Energy Storage Containers Used in Emergency Rescue





Overview

What is mobile energy storage?

Mobile energy storage (MES) is a typical flexible resource, which can be used to provide an emergency power supply for the distribution system. However, it is inevitable to consider the complicated coupling relations of mobile energy storage, transportation network, and power grid, which can cause issues of complex modeling and low efficiency.

Do mobile energy storage units provide power resilience?

Upon the arrival of mobile energy storage units, these resources collectively provide power support to critical loads in the distribution system. This scenario demonstrates superior resilience recovery capability in the initial stages of power resilience compared to Scenario II.

Can deep reinforcement learning improve emergency mobile energy storage allocation?

Existing methods for emergency mobile energy storage (EMES) allocation often struggle to balance resilience enhancement and economic feasibility under large-scale disasters effectively. To address these challenges, this paper presents an advanced optimization framework for EMES deployment based on multi-agent Deep Reinforcement Learning (DRL).

Can mobile energy storage improve power system safety and stability?

This article proposes an integrated approach that combines stationary and vehicle-mounted mobile energy storage to optimize power system safety and stability under the conditions of limiting the total investment in both types of energy storages.



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