

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.

Do EMES and microgrids provide power support under extreme events?

To assess the resilience and economic benefits of the proposed allocation strategy, this study analyzes the power support provided by different combinations of EMES and microgrids for distribution networks under extreme events. Four scenarios are investigated.

What happens if a microgrid doesn't have mobile energy storage dispatch?

In Scenario I, without mobile energy storage dispatch, the islanded microgrid solely supplies its own loads, resulting in no resilience benefits for load nodes and NEB and AR. Scenario II shows positive AR, however, it still results in negative NEB for some distribution network load nodes. Additionally, the scenario is marked by high costs for CE.

How many critical load nodes are in a microgrid?

Three microgrids are connected to nodes 11, 19, and 23, respectively, with each microgrid containing one critical load node. In addition, as shown in Fig. 1, the distribution system is divided into three rapid response zones based on emergency response distances.

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