

# Microgrids Technology Implementation and Standardization

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## Abstract

Microgrid is a small energy system usually containing loads, distributed generations and energy storage devices, capable of operating in a controlled and coordinated way either by being connected to the main grid or islanded. The energy storage device is a key component in microgrid. The unpredictable and random features of the renewable energy resources inside microgrid increase the complexity of microgrid power control. Meanwhile, the distributed generation resources usually connect to the microgrid via power electronic device causing low inertia in microgrid. Otherwise, requirements such as grid-connected/isolated modes transition and parallel operation of multiple converters are more the difficulty to realize safe and stable operation of microgrid. Abundant projects and practices have proven the crucial role of energy storage device in enabling safe and stable operation of microgrid and enhancing the efficient utilization of renewable energy. This presentation, on the basis of a review of microgrid technology, focuses on introducing the typical use cases of energy storage application in Chinese microgrid projects with two implementation examples with different kinds of energy storage, and the domestic standardization work with a background overview of international standardization status.