

This review presents a comprehensive analysis of control strategies in MG systems, addressing both conventional and advanced methodologies.

The most relevant control methods identified for microgrid applications are the intelligent, robust, predictive, adaptive, linear, and non-linear control methods.

Effective control systems are essential for ensuring smooth integration, managing energy storage systems, and maintaining microgrid safety. In this study, a review of recent control methods ...

Microgrids can include distributed energy resources such as generators, storage devices, and controllable loads. Microgrids generally must also include a control strategy to maintain, on an ...

To maximize energy source utilization and overall system performance, various control strategies are implemented, including demand response, energy storage management, data management, and ...

Microgrids (MGs) technologies, with their advanced control techniques and real-time monitoring systems, provide users with attractive benefits including enhanced power quality, stability, ...

Hybrid storage solutions combining battery systems, hydrogen technologies, and pumped hydro storage were identified as effective approaches to mitigate RES intermittency and balance ...

Advanced control strategies are essential to ensure stability, power quality, and optimal energy management in microgrids. These strategies leverage power electronics to regulate voltage, ...

MG control methods can be categorized as centralized, decentralized, or distributed, as shown in Fig. 1.2. A short explanation of these control structures is given below. A central controller ...

Smart grid technologies possess innovative tools and frameworks to model the dynamic behaviour of microgrids regardless of their types, structures, etc. Various control and estimation ...

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