Research on key technologies of smart microgrid

Due to the potential importance of MGs, this survey explores the key technologies used in MGs. This review also classifies MGs into seven groups according to their applications, infrastructure, and end ...

Although grid-connected microgrids (MGs) are gaining increasing popularity with the development of power and intelligent technologies, there has been no clear c

This review article (1) explains what a microgrid is, and (2) provides a multi-disciplinary portrait of today"s microgrid drivers, real-world applications, challenges, and future prospects.

Regarding the smart technologies used in the production of renewable energy for applications in microgrids, two main approaches predominated--artificial neural networks (ANN) and multi-agent systems ...

Smart microgrids are emerging as a pivotal solution within this framework, offering localized energy management that aligns with sustainability goals. These systems leverage diverse distributed energy resources (DERs), ...

The transition toward smart cities, electric vehicle charging infrastructure, and net-zero energy targets is driving demand for flexible and scalable microgrid architectures. Technological progress in power electronics, AI ...

State-of-the-art frameworks and tools are built into innovative grid technologies to model different structures and forms of microgrids and their dynamic behaviors. Smart grids" dynamic models were developed by reviewing ...

Using peer-reviewed publications from 2013 to 2024 using the most commonly used reporting items for Systematic Reviews and Meta-Analyses approach, this study examines developments in MG ...

This paper explores recent advancements in microgrid technologies, emphasizing renewable energy integration, fault tolerance, and control optimization.

The paper concludes by summarizing key findings, outlining avenues for future research, and offering a comprehensive perspective on the current state and future directions of MG research.

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