Literature on Smart Microgrids

Overview

This systematic review, following the PRISMA 2020 methodology, analyzed 66 studies focused on advanced energy storage systems, intelligent control strategies, and optimization techniques. Additionally, they reduce the load on the utility grid. However, given that they depend on unplanned environmental factors, these systems have an unstable generation. Microgrid (MG) technologies offer users attractive characteristics such as enhanced power quality, stability, sustainability, and environmentally friendly energy through a control and Energy Management System (EMS). Microgrids are enabled by integrating such distributed energy sources into the. This paper presents a comprehensive review of energy management techniques in smart microgrids, highlighting their evolution, challenges, and opportunities. These strategies and measures monitor the processes within the control variables and coordinate the system dynamics.

Article Content

Microgrids: A review, outstanding issues and future trends

The literature review includes research articles, conference papers, and technical reports, among others. The scope of this review spans from the initial stages of MG research to the ...

A Comprehensive Review of the Smart Microgrids'' Modeling and ...

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 ...

Review of Smart Microgrid Platform Integrating AI and Deep ...

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 ...

A comprehensive review of microgrid challenges in ...

Discover the latest articles, books and news in related subjects, suggested using machine learning. Microgrids have emerged as a key interface for tying the power generated by ...

A brief review on microgrids: Operation, applications, ...

The two control approaches for microgrids namely hierarchical control and distributed control are presented in Reference 207, where, the main features of ...

Smart Microgrid Management and Optimization: A ...

This review aims to provide a structured synthesis of recent advancements in the management and optimization of smart microgrids, with a ...

Communication Technologies for Interoperable Smart Microgrids in ...

In this view, this paper first reviews various state-of-the-art developments related to smart grids and then provides extensive insights into communication standards and technologies, issues/challenges, and ...

A Comprehensive Review of Microgrid Technologies and Applications

As our reliance on traditional power grids continues to increase, the risk of blackouts and energy shortages becomes more imminent. However, a microgrid system,

Frontiers | Microgrid energy management and monitoring systems: A ...

This work presents an extensive literature analysis of the issues of stability, control, and power management of AC, DC, and hybrid AC/DC microgrids. According to the research, AC and DC ...

A comprehensive review on energy management techniques in ...

The focus of this literature review is to explore key energy management techniques in smart microgrids, examining challenges and opportunities, while providing a chronological account of advancements in ...

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