Cloud Computing Base Microgrid

Overview

This review examines critical areas such as reinforcement learning, multi-agent systems, predictive modeling, energy storage, and optimization algorithms—essential for improving microgrid efficiency and reliability. Abstract—A Microgrid is a subset of smart grid, a small-scale electrical system powered with renewable energy resources that can operate either in a connected or a disconnected mode to/from the main grid. This systematic review, conducted using the PRISMA methodology, analyzed 74 peer-reviewed articles from a total. 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)., data perception, information transmission, and real-time control. One of the initiatives is the Climate Neutral Data Centre (CNDC) Pact in Europe for a demand matched by 75 percent renewable by 2025 and carbon neutral data center by 2030.

Article Content

Microgrid Energy Management System and Cloud Computing

Given its vital role, the paper presents different architectures of an EMS and discusses how cloud computing can be incorporated to the Microgrid architecture to improve the EMS efficiency.

Cloud Computing and Local Chip-Based Dynamic Economic ...

In this paper, we propose a cloud and edge computing-based framework to realize dynamic economic dispatch, which is conducted on a local Digital Signal Processor (DSP) chip ...

Cloud and machine learning experiments applied to the energy ...

Based on the review and considering the scenarios mentioned, this article presents a scalable and autonomous cloud-based architecture that allows power generation ...

Optimizing Microgrid Operation: Integration of ...

This review examines critical areas such as reinforcement learning, multi-agent systems, predictive modeling, energy storage, and ...

Cloud-fog architecture-based control of smart island microgrid in ...

For this purpose, an islanded microgrid with multiple agents which is using cloud-fog computing is proposed here, in order to reduce the computing burden on the central control unit as well as ...

Microgrid Group Control Method Based on Deep ...

Aiming at the economic benefits, load fluctuations, and carbon emissions of the microgrid (MG) group control, a method for controlling ...

A scalable cloud-integrated AI platform for real-time ...

A cloud-based monitoring platform that can manage and scale with demand becomes crucial for ensuring that the EV charging network operates efficiently while ...

Power flow adjustment for smart microgrid based on edge ...

The existing cloud computing paradigm is stubborn to address issues and challenges such as rapid response and local autonomy. Microgrids contain diverse and ...

Microgrid energy management and monitoring ...

Another approach to microgrid monitoring is based on the communication between powers sources and the monitoring platform ...

Microgrid and Battery Energy Storage

Integrated energy management systems of the microgrid and smart software solutions can track how all the interconnected assets of the microgrid-enabled data center perform and ensure ...

Contact Us

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