

The need for energy security, along with reliable, affordable, low-carbon power, has never been greater. AI is helping to meet rising demand and support this goal.

This paper examines how hour-ahead forecasting uncertainty propagates to microgrid operation under intermittent renewable generation. Using hourly public data for Ontario and focusing ...

Pacific small island states, contributing only 0.03% of global emissions, are leading with ambitious renewable energy projects and net-zero goals by 2050.

This research seeks to enhance energy management systems (EMS) within a microgrid by focusing on the importance of accurate renewable energy prediction and its strong correlation with...

The paper presents a new multi-layered framework for smart energy management in microgrids by bringing together advanced forecasting, decentralized decision-making, evolutionary ...

First, a broad overview of the field's fundamentals is provided for microgrids. Then, a comprehensive literature assessment of the various techniques used for energy management ...

Tennessee's Chattanooga Metropolitan Airport recently became the first U.S. airport powered by 100 percent solar energy. Started in 2010, the \$10 million microgrid project includes a ...

Amid an electricity crisis, many Nigerian small businesses run on petrol generators. This solar-microgrid start-up is working to connect them to clean energy.

Abstract: Predicting electrical load is crucial for microgrid energy management. Short-term load forecasting (STLF) helps in optimizing energy management and load balancing within microgrids.

Microgrids have emerged as a promising solution for enhancing energy sustainability and resilience in localized energy distribution systems. Efficient energy management and accurate load ...

Microgrids can step in when the main electricity grid fails. And as they can be powered by renewables, they are a sustainable and affordable option, too.

ABSTRACT The increasing adoption of distributed energy resources has greatly amplified interest in microgrids, whose effective, reliable and resilient operation relies on the ...

Renewables-based microgrids and peer-to-peer (P2P) energy trading can boost energy security as they are self-sufficient and run independent of large grids.

Dutch cyclists rode down the world's first bike path made entirely of discarded plastic this week, in a move aimed at reducing the millions of tonnes wasted every year.

The developed forecasting software, integrated as a forecasting subsystem within the decision support system of microgrid energy management, showcases exceptional accuracy and efficiency in ...

XENDEE is the team and technology supporting distributed energy and microgrid energy solutions. It is a comprehensive distributed energy resource (DER) design and operation software platform. Its ...

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