Microgrid power generation prediction and analysis method

Experimental results show that the method outperforms existing approaches in reducing operational costs, improving efficiency, and mitigating prediction uncertainty.

Finally, the feasibility of the photovoltaic power generation forecasting model and the microgrid power system dispatch optimization model, as well as the validity of the solution ...

To enhance photovoltaic (PV) generation prediction accuracy, researchers have developed a forecasting algorithm based on LSTM (Hossain and Mahmood, 2020).

Advanced Hybrid Model"s feature extraction and prediction outperform other models. This study introduces an innovative framework designed to forecast the fluctuating short-term generation ...

This research explored the use of machine learning to forecast renewable energy generation and improve the operation of microgrids, which are small-scale power grids.

This article proposed machine learning-based short-term PV power generation forecasting techniques by using XGBoost, SARIMA, and long short-term memory network (LSTM) algorithms.

Our methodology underwent rigorous evaluation using the Micro-grid Tariff Assessment Tool dataset, with Root Mean Square Error (RMSE), Mean Absolute Error (MAE), and the coeficient of ...

The growing integration of renewable energy sources into grid-connected microgrids has created new challenges in power generation forecasting and energy management. This paper explores the use of ...

This research delves into a comparative analysis of two machine learning models, specifically the Light Gradient Boosting Machine (LGBM) and K Nearest Neighbors (KNN), with the objective of ...

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