Considerations for optimizing microgrid dispatch

How can a microgrid adaptive robust optimal dispatch model be improved?

By increasing the lower bound of the loop, the upper and lower bounds of the Benders algorithm can reach the same value faster, and the final optimization result can be obtained faster. This paper proposes a microgrid adaptive robust optimal dispatch model with different robust adjustment parameters.

What is optimal dispatching of a microgrid?

As a core technology of microgrid, optimal dispatching of the microgrid is an important support to deal with the uncertainty of renewable energy and load and ensure the economic and reliable operation of the microgrid [5, 6]. Regarding the optimal dispatch of microgrids, a large number of references have been studied.

What is the optimization dispatch method of microgrid?

According to the optimization method,the optimization dispatch method of microgrid can be divided into deterministic methodand uncertainty method. The deterministic method takes the predicted value of renewable distributed power as an accurate known quantity and then optimizes the dispatch of the microgrid.

What is a multi-objective interval optimization dispatch model for microgrids?

First,a multi-objective interval optimization dispatch (MIOD) model for microgrids is constructed,in which the uncertain power output of wind and photovoltaic (PV) is represented by interval variables. The economic cost,network loss,and branch stability index for microgrids are also optimized.

How can a microgrid be optimized?

Through optimization,different robust adjustment parameters for different uncertain parameters are obtained adaptively,which cannot only ensure the robustness of the microgrid,but also better ensure the economy. The robust adjustment parameters of different uncertain parameters are more in line with the actual conditions of microgrid operation.

Can deep reinforcement learning solve the optimal dispatch of microgrids under uncertaintes?

This paper presents an improved deep reinforcement learning (DRL) algorithm for solving the optimal dispatch of microgrids under uncertaintes. First, a multi-objective interval optimization dispatch (MIOD) model for microgrids is constructed, in which the uncertain power output of wind and photovoltaic (PV) is represented by interval variables.

Based on real wind and solar power outputs and load data from a low-latitude coastal region, this paper conducts a comprehensive study on the economic dispatch optimization of microgrid cluster (MGC) systems. This ...

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parameters. The robust equivalent characterization method is used to convert uncertain parameters ...

Several studies in the literature incorporate CHP considerations into microgrid design and dispatch decisions. Specifically, [65] propose a multi-period stochastic optimization ...

In recent years, the energy form of microgrids is constantly enriching, while the decentralization requirements of microgrids are constantly developing. Considering the economic benefits of an integrated energy ...

This paper considers different distributed generation systems as a main part to design a microgrid and the resources management is defined in a period through proposed dynamic economic dispatch ...

have been studied. According to the optimization goals, the optimal dispatch of microgrids can be divided into microgrid-level optimization, demand-side response-level optimization and ...

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