

# Coordination and optimization control of hybrid microgrid based on layered event triggering

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## Abstract

In the centralized communication and distributed control of hybrid microgrid, a hierarchical event triggering control strategy with the participation of the microgrid central control (MGCC) is presented to solve the problem that the control method depends heavily on the communication network. It can effectively reduce the communication load of the distributed cluster and ensure the reliability of the power network. This strategy divides the control system of the hybrid microgrid into two layers, the bottom layer is the local control layer, which uses distributed collaborative control. The local controller collects data information from adjacent measurement units, controls update output status in place, and achieves the distributed autonomous operation of the hybrid microgrid. In addition, an event triggering strategy is introduced in the upper control layer of the microgrid, which coordinates MGCC to obtain global information of the hybrid microgrid, thereby issuing predefined control instructions to local controllers to achieve flexible dispatch of the hybrid microgrid, especially in response to power grid emergencies. Finally, the hybrid microgrid model is built using MATLAB and simulated to verify the effectiveness of the proposed control strategy.

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