Title: Microgrid Power Optimization
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Abstract--The increasing integration of renewable energy sources (RESs) is transforming traditional power grid networks, which require new approaches for managing decentralized en-ergy production ...

This paper presents a holistic data-driven power optimization approach based on deep reinforcement learning (DRL) for microgrid control, considering the multiple needs of ...

The different optimization techniques used in energy management problems, particularly focusing on forecasting, demand management, economic dispatch, and unit commitment, are ...

The concept of microgrids (MGs) as compact power systems, incorporating distributed energy resources, generating units, storage systems, and loads, is widely acknowledged in the ...

A primary function is the optimization of energy availability, wherein the EMS maximizes energy access and reliability for end-users while minimizing power losses, reducing operational ...

A comparative analysis of diverse metaheuristic algorithms for microgrid optimization is provided in this paper, which emulates natural phenomena, such as evolutionary processes and ...

These results demonstrate how the optimization framework balances multiple objectives, ensuring an efficient and cost-effective energy management strategy within the microgrid.

This review guides researchers interested in energy management in microgrids, covering aspects of power flow optimization, reliability assessment, and the application of advanced control ...

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