Hong Kong Microgrid Planning

Do interconnected microgrids make renewable generation planning by themselves?
We consider both noncooperative and cooperative cases,in which interconnected microgrids make renewable generation planning by themselvesand coopera-tively,respectively. We aim to study the benefit of cooperative planning,and to validate our proposed incentive mechanism for the interconnected-microgrid system.

How to encour-age cooperative planning among interconnected microgrids?
To encour-age cooperative planning among interconnected microgrids,we propose a cooperative planning and cost sharing scheme based on Nash bargaining solution. Before presenting the cooperative planning model,we first present a non-cooperative benchmark problem in the following.

How can microgrids benefit from renewable generation?
Through cooperative planning and later utilization of renewable generation,microgrids can leverage the diversities of renewable generation profiles. Those microgrids with larger renewable generation capacities and excessive local renewable generations can supply power to other microgrids in short of local power supplies.

How important is the microgrid concept?
The 84 published articles included are a testament to the importance of the microgrid concept for current and future energy systems worldwide. Further, the broad participation demonstrates the global reach of our joint research endeavour.

How does a microgrid work?
For electricity generation,microgrids typically use some combination of backup diesel generators and renewables such as solar panels. Microgrids can incorporate battery systems to store electricity and deploy it during outages or when grid demand spikes. Who can benefit from a microgrid?

What is the integrated planning framework for multi-carrier microgrids?
Azimian et al. [23]describe an integrated planning framework,formulated as a MILP problem,for the optimal planning of neighboring multi-carrier microgrids in the presence of DR with the aim of minimizing the total discounted cost of the networked microgrids.

incentivize cooperative planning, such that all microgrids will benefit from cooperative planning. Using realistic data obtained from the Hong Kong observatory, we validate the cooperative ...

Downloadable (with restrictions)! Microgrid solutions can incorporate clean renewable energy and operate autonomously to power remote areas unreachable by the main grid. While microgrids ...

The Research Centre for Grid Modernisation (RCGM) at PolyU serves as an international research platform dedicated to providing impactful, multidisciplinary research and development of secure, sustainable, and

affordable power and ...

This study, therefore, aims to develop assessment approaches to quantify microgrid performance, including the economics, reliability (i.e., system adequacy and security), and renewable energy ...

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