ICSCGE 2024
SPECIAL SESSION 06

ICSCGE

The 4th International Conference on Smart City and Green Energy

December 10-13, 2024 | Sydney

Data-Driven Approaches for Flexible Resources Utilization in Sustainable Urban Power Systems

Introduction and Topics

The transition towards sustainable and decarbonized urban power systems requires the effective integration and coordinated utilization of a diverse portfolio of flexible energy resources, which mainly includes distributed renewable generation, energy storage systems and flexible load based on Electric Vehicle(EV). Harnessing the full potential of these flexible resources is critical for enhancing the resilience, reliability, and efficiency of future smart city power networks. However, the large-scale, heterogeneous, and intermittent nature of these flexible assets presents significant challenges in terms of monitoring, forecasting, optimization, and control. Traditional approaches are no longer sufficient, necessitating the development of advanced data-driven methodologies that can leverage the wealth of information generated by the evolving urban energy infrastructure.

List of topics of interest includes, but are not limited to the following:

- Novel data driven approach for EV charging load prediction in multiple scales of city.
- Charging station siting and sizing in sustainable urban power systems.
- Reinforcement learning-based coordination of EV charging and discharging for peak demand reduction and resilience improvement.
- Advanced electricity grid models and tools for flexibility management;
- Machine learning and optimization theory to achieve more efficient market clearing and Optimal Power Flow (OPF) algorithms;
- Data analytics and game theory to quantify the trade-off among various future energy markets' requirements.

Special Session Chairs

Dr. Ying Du
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Dr. Honglin Wen
Shanghai Jiao Tong University, China

IMPORTANT DATES

- **Submission Deadline** September 10, 2024
- **Notification Deadline** October 10, 2024
- **Camera-Ready Deadline** November 30, 2024

Publication

Submissions will be reviewed by the conference technical committees, and accepted papers will be published in ICSCGE 2024 International Conference Proceedings, which will be submitted for inclusion in the **IEEE Xplore Digital Library**, and submitted for indexing by EI compendex and Scopus.

PAPER SUBMISSION

Submit your full paper or abstract via the following link: **https://icscge.org/sub.html** or scan the QR code on the right.

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