

Special Session 02

Electricity Markets for Smart Cities: Trading Models, Integration, and Resilience

The transition toward smart and green cities is transforming the way electricity is generated, traded, and consumed. Rapid urbanization, the proliferation of distributed renewable energy resources (DERs), and the electrification of transportation require new market mechanisms that ensure efficiency, flexibility, and sustainability. Electricity markets are at the core of this transition, serving as the platform where advanced control strategies, renewable energy integration, demand response programs, and energy storage participation converge.

This special session aims to bring together researchers and policymakers to explore innovative electricity market designs tailored for smart cities. It will highlight the role of electricity markets in enhancing grid resilience, improving urban sustainability, and accelerating the low-carbon energy transition. Key themes include dynamic pricing mechanisms, demand-side flexibility, peer-to-peer (P2P) and community-based trading models, as well as cross-sectoral coordination between electricity, transportation, and environmental systems. This session will also investigate policy incentives and regulatory frameworks that support the integration of renewable energy, electric vehicle charging infrastructure, and distributed energy resources in urban contexts.

Topics of interest include but are not limited to:

1. Market design for smart cities: dynamic pricing, real-time markets, and ancillary service mechanisms
2. Peer-to-peer and community energy trading frameworks
3. Integration of renewable generation, storage, and demand response in market operations
4. Electricity markets for electric vehicle charging and mobility services
5. Cybersecurity, data privacy, and blockchain applications in energy trading
6. Regulatory frameworks and policy incentives for urban energy transition
7. Computational intelligence and AI-driven market forecasting, optimization, and control

SPECIAL SESSION CHAIRS



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PAPER SUBMISSION & PUBLICATION



Submission Guideline

Submissions will be reviewed by the conference technical committees, and accepted papers will be published in ICSCGE 2025 International Conference Proceedings, which will be submitted for inclusion in the IEEE Xplore Digital Library, and submitted for indexing by EI compendex and Scopus.

Submission Link: <https://easychair.org/conferences/?conf=icscge2025>

Submission Deadline by October 10, 2025



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