

Special Session 07

Market Mechanism Innovation and Governance Reform for New-Type Power Systems

Introduction and Topics

The global transition toward carbon neutrality is driving profound structural changes in modern power systems. The large-scale integration of renewable energy, distributed energy resources (DERs), virtual power plants (VPPs), electric vehicles, and flexible loads is fundamentally reshaping market participation structures and regulatory boundaries. Against this backdrop, traditional market rules and governance frameworks — designed for centralized, fossil-fuel-dominated systems — are increasingly inadequate to address the complexity and dynamics of emerging power system paradigms.

New challenges have emerged across multiple dimensions. Price signals fail to reflect real-time system flexibility needs. Incentive structures remain misaligned with low-carbon and demand-side objectives. Market access barriers restrict the effective participation of distributed and aggregated resources. Meanwhile, the coordination across energy, ancillary service, and carbon markets remains fragmented, undermining overall system efficiency and market fairness.

This special session invites contributions that advance market mechanism design, regulatory reform, and governance innovation for new-type power systems. We welcome interdisciplinary research integrating economic modeling, institutional analysis, engineering methods, and policy evaluation.

Topics including but not limited to:

1. Electricity Spot Market Design and Pricing Mechanism Reform
2. Virtual Power Plant Market Participation Rules and Aggregation Mechanism Design
3. Ancillary Service Market Innovation for High-Penetration Renewable Systems
4. Demand Response Market Mechanisms and Flexible Load Incentive Design
5. Carbon Market Integration and Cross-Market Coordination Mechanisms
6. Green Electricity and Certificate Trading Mechanism Design
7. Regulatory Reform and Performance-Based Incentives for Distribution Network Operators
8. V2G Integration: Market Barriers, Institutional Design, and Commercialization Pathways
9. Local Energy Markets, Peer-to-Peer Trading, and Community Energy Governance
10. Market Transparency, Data Governance, and Digital Platform Regulation

// Special Session Chairs //



Prof. Haoyong Chen

South China University of Technology



Prof. Xiao-Ping Zhang

University of Birmingham



Dr. Zhenjia Lin

The Hong Kong Polytechnic University



Dr. Minglei Bao

Zhejiang University



Dr. Yuxiang Huang

Guangzhou Development Group



Dr. Bifei Tan

Wuyi University

// Paper Submission //

Submission Method



* View paper submission instruction on website
<https://www.ieee-icps.com/sub.html>

* Submit your paper through the website or QR code
<https://easychair.org/conferences/?conf=ieeeticpsasia2026>

Important Dates

Submission Deadline	May 25, 2026
Notification Deadline	June 10, 2026
Early-bird Registration Deadline	June 15, 2026
Author Registration Due	June 15, 2026

Publication

Submissions to IEEE I&CPS 2026 will be peer reviewed on the basis of technical quality, relevance to conference topics, originality, significance, clarity, etc. Accepted papers will be submitted for inclusion into IEEE Xplore subject to meeting IEEE Xplore's scope and quality requirements.

Excellent papers will be recommended for review by IEEE Trans on Industry Applications (proportion can reach up to 50%), Global Energy Interconnection and DeCarbon.