

Special Session XII

Special Session Basic Information:

专栏题目 Session Title	中文：新型市场主体参与电力市场：机制设计、交易决策与协同运营 英文：Emerging Market Participants in Electricity Markets: Mechanism Design, Trading Decisions, and Coordinated Operation
专栏介绍和征稿主题 Introduction and topics	
中文：随着新能源、储能、虚拟电厂、负荷聚合商以及数据中心、智算中心、制氢等新型用能主体快速发展，电力市场参与主体呈现多元化、分布式和灵活化特征。不同主体在资源特性、响应能力、风险偏好和交易目标等方面存在差异，对市场准入、交易机制、价格形成、利益分配和决策方法提出了新的要求。如何充分挖掘新型市场主体的调节潜力与交易价值，面向中长期、现货、辅助服务等多时间尺度市场形成科学的交易决策，以及实现多主体之间的协同互动与风险管控，已成为新型电力系统市场建设中的重要研究方向。本分会聚焦“新型市场主体参与电力市场”，围绕机制设计、交易决策、协同运营与价值实现等关键问题，交流相关理论方法、关键技术与实践探索。征稿方向包括但不限于： 1. 新型市场主体参与电力市场的准入机制、交易规则与市场设计 2. 虚拟电厂、负荷聚合商与分布式资源的聚合交易与协同运营 3. 独立储能、电动汽车及分布式新能源的市场参与与价值实现 4. 数据中心、智算中心、制氢等新型用能主体的灵活性挖掘与市场交易 5. 中长期—现货—辅助服务等多时间尺度、多品种市场协同交易 6. 不确定性环境下的新型市场主体报价决策、风险评估与风险管理 7. 多主体博弈、竞合关系、市场均衡与策略互动 8. 需求响应、灵活性交易与用户侧资源市场化运营 9. 绿电、绿证、碳市场与电力市场协同交易机制 10. 数据驱动、人工智能与强化学习在市场交易决策中的应用 11. 新型市场主体利益分配、商业模式与市场监管机制 12. 新型市场主体参与电力市场的工程实践、政策机制与典型案例 欢迎相关领域专家学者、青年教师、研究生及业界人士踊跃投稿。 英文：With the rapid development of renewable energy, energy storage, virtual power plants (VPPs), load aggregators, and emerging energy-consuming entities such as data centers, intelligent computing centers, and hydrogen production facilities, electricity-market participants are becoming increasingly diversified, distributed, and flexible. These participants differ in resource characteristics, response capabilities, risk preferences, and trading objectives, creating new requirements for market access, trading mechanisms, price formation, benefit allocation, and decision-making methods. Fully exploiting their flexibility and trading value, developing effective trading decisions across medium- and long-term, spot, and ancillary-service markets, and enabling coordinated interaction and risk management among multiple participants have become important research topics in the development of new power-system markets. This special session focuses on “Emerging Market Participants in Electricity Markets” and invites contributions on mechanism design, trading decisions, coordinated operation, and value realization. Topics include, but are not limited to: 1. Market access mechanisms, trading rules, and market design for emerging market participants 2. Aggregated trading and coordinated operation of VPPs, load aggregators, and distributed energy resources 3. Market participation and value realization of independent energy storage, electric vehicles, and distributed renewable energy 4. Flexibility exploitation and market trading of data centers, intelligent computing centers, hydrogen production, and other emerging energy-consuming entities 5. Coordinated trading across multiple timescales and products, including medium- and long-term, spot, and ancillary-	

service markets

6. Bidding decisions, risk assessment, and risk management for emerging market participants under uncertainty

7. Multi-agent games, competition and cooperation, market equilibrium, and strategic interactions

8. Demand response, flexibility trading, and market-oriented operation of demand-side resources

9. Coordinated trading mechanisms among green electricity, green certificates, carbon markets, and electricity markets

10. Applications of data-driven methods, artificial intelligence, and reinforcement learning to market trading decisions

11. Benefit allocation, business models, and market supervision mechanisms for emerging market participants

12. Engineering practices, policy mechanisms, and representative cases of emerging market participation in electricity markets

Experts, scholars, young faculty members, graduate students, and industry professionals in related fields are warmly invited to submit their work.

Special Session Chair(s):

	姓名 Name	宋祯子 / Zhenzi Song
	称谓 Prefix	讲师（校聘副教授） / Lecturer (University-appointed Associate Professor)
	部门 Department	电气工程学院 / School of Electrical Engineering
	单位 Organization	东北电力大学 / Northeast Electric Power University
	城市/地区 City/Region	吉林市 / Jilin City

Organizer's Brief Biography

中文：宋祯子，东北电力大学校聘副教授，主要从事电力系统电-碳耦合运行、市场与规划，以及碳捕集、利用与封存（CCUS）技术在能源系统中的集成应用研究。参与国家重点研发计划、智能电网国家科技重大专项等国家级科研项目若干项。近年来发表 SCI、EI 及国际会议论文 10 余篇。担任 IEEE TSG、IEEE TIA、IEEE TEMPR、Applied Energy、IET GTD 等国际知名期刊审稿人。

英文：Song Zhenzi is a university-appointed Associate Professor at Northeast Electric Power University. His research focuses on coupled electricity-carbon operation, electricity markets and planning, and the integration of carbon capture, utilization, and storage (CCUS) technologies into energy systems. He has participated in several national-level research projects, including the National Key R&D Program of China and the National Science and Technology Major Project on Smart Grids. In recent years, he has published more than 10 SCI/EI journal and international conference papers. He serves as a reviewer for IEEE Transactions on Smart Grid, IEEE Transactions on Industry Applications, IEEE Transactions on Engineering Management, Applied Energy, and IET Generation, Transmission & Distribution.

	姓名 Name	王简 / Wang Jian
	称谓 Prefix	助理研究员 / Assistant Researcher
	部门 Department	智慧能源创新学院 / College of Smart Energy
	单位 Organization	上海交通大学 / Shanghai Jiao Tong University
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Organizer’s Brief Biography

中文：王简，上海交通大学助理研究员、上海市海外高层次人才。主要从事虚拟电厂智能运行与控制、储能系统优化运行方向。主持国家自然科学基金、上海市科委项目等纵向项目 6 项，发表 SCI/EI 论文 30 余篇，出版专著 2 本，授权/受理发明专利 10 余项，参编 IEEE 国际标准 1 项。担任国内外多个知名学术期刊青年编委。以主要完成人获上海市科技进步二等奖。

英文：Wang Jian is an Assistant Researcher at Shanghai Jiao Tong University and a recipient of the Shanghai Overseas High-Level Talent Program. His research focuses on intelligent operation and control of virtual power plants and optimal operation of energy storage systems. He has led six research projects, including projects funded by the National Natural Science Foundation of China and the Science and Technology Commission of Shanghai Municipality. He has published more than 30 SCI/EI papers, authored two monographs, obtained or applied for more than 10 invention patents, and contributed to one IEEE international standard. He serves on the young editorial boards of several academic journals and received the Second Prize of the Shanghai Science and Technology Progress Award as a major contributor.



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Organizer’s Brief Biography

中文：付麟博，博士，东北电力大学讲师。主要从事微电网能量管理与市场交易、配-微协同优化调度等方面的研究。近年来发表 SCI/EI 论文 20 余篇。作为项目骨干参与国家重点研发项目、国家自然科学基金项目、吉林省自然科学基金项目、国网和南网科技项目等 8 项。

英文： Fu Linbo, Ph.D., is a Lecturer at Northeast Electric Power University. Her research interests include microgrid energy management and market trading, as well as coordinated optimal scheduling of distribution networks and microgrids. In recent years, she has published more than 20 SCI/EI papers. As a key project member, she has participated in eight research projects, including the National Key R&D Program of China, projects funded by the National Natural Science Foundation of China and the Natural Science Foundation of Jilin Province, and science and technology projects of State Grid and China Southern Power Grid.