Special Session Proposal VI

Special Session Basic Information:

专栏题目 **Session Title**	中文：数据和市场价格驱动的新型电力系统规划与运行优化 英文：Planning and Operational Optimization for New Power Systems Drived by Data and Market Price

中文：随着新型电力系统结构向高比例可再生能源转型，以及电力市场运营的不断深入，电力系统的规划与运行面临不确定性增强、灵活性需求提升等挑战。数据驱动技术和市场价格形成机制成为破解这些难题的关键抓手。本专题聚焦大数据、人工智能与电力市场协同优化，探讨如何通过先进算法、电力市场运营和商业模式创新，提升新型电力系统的经济性、可靠性和低碳性。

征稿主题如下：

1、数据驱动的电力系统低碳转型优化
2、电力市场动态定价机制下系统运行协同优化
3、高比例可再生能源渗透下的电力系统规划方法创新
4、人工智能在新型电力系统运行优化中的应用
5、新型电力系统跨区域协同与多能互补优化
6、电力系统韧性提升与极端事件应对策略
7、分布式能源聚合与虚拟电厂商业模式研究

英文：As the power system structure transitions towards high-penetration renewable energy integration and electricity market operations continue to deepen, power system planning and operation face increasing uncertainties and growing flexibility demands. Data-driven technologies and market price formation mechanisms have become key solutions to these challenges. This special topic focuses on the synergistic optimization of big data, artificial intelligence, and electricity markets, exploring how advanced algorithms, electricity market operations, and innovative business models to enhance the economic efficiency, reliability, and low-carbon performance of new power systems.

Key Research Areas Include:

1、Data-Driven Optimization for Low-Carbon Power System Transition
2、Coordinated System Operation Optimization Under Dynamic Electricity Market Pricing Mechanisms
3、Innovative Planning Methods for Power Systems with High Renewable Energy Penetration
4、Applications of Artificial Intelligence in New Power System Operation Optimization
5、Cross-Regional Coordination and Multi-Energy Complementarity Optimization in New Power Systems
6、Power System Resilience Enhancement and Extreme Event Response Strategies
7、Business Models for Distributed Energy Aggregation and Virtual Power Plants

Special Session Chair(s):

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单位 **Organization**	国家能源发展战略研究院 National Institute of Energy Development Strategy Research
城市/地区 **City/Region**	北京市 Beijing

Organizer's Brief Biography

中文：华北电力大学国家能源发展战略研究院专职研究员，在能源系统低碳转型、电力系统建模与分析领域开展了系统性研究，《可再生能源法》修改组成员，《电力法》修改组成员，主持国家重点研发计划研究任务 1 项，参与国家自然科学基金项目 2 项，发表 SCI、EI、中文核心等论文数十篇，20 余份研究报告被中国人民政治协商会议全国委员会、中国国家能源局等部门采纳、接收。

英文：Full-time Researcher at the National Institute of Energy Development Strategy Research at North China Electric Power University, specializing in systematic research on low-carbon energy system transition, power system modeling, and analysis，Member of the Renewable Energy Law Amendment Working Group, Member of the Electricity Law Amendment Working Group. He has led one research task under the National Key R&D Program of China and participated in two projects supported by the National Natural Science Foundation of China. He has published dozens of papers indexed in SCI, EI, and Chinese core journals, with over 20 research reports adopted or received by the The National Committee of the Chinese People's Political Consultative Conference(NCCPPCC), the National Energy Administration of China, and other government departments.

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Organizer's Brief Biography

中文：IEEE Member，中国能源研究会会员、中国电机工程学会会员、中国电工技术学会会员。主持国家资助博士后研究人员计划项目 1 项，参与多项国家重点研发计划、国家自然科学基金联合基金等项目。参编 IEEE Press 英文专著“Microgrids: Theory and Practice”，在 IEEE Transactions on Power Sytsems、IEEE Transactions on Smart Grid、IEEE Transactions on Industry Applications、中国电机工程学报等国内外相关领域的高水平期刊和会议发表论文 20 余篇，ESI 高被引论文 1 篇。

英文：IEEE Member, member of China Energy Research Society, Chinese Society for Electrical Engineering, and China Electrotechnical Society. Served as principal investigator for one project under the National Postdoctoral Researchers Funding Program and participated in several national-level research initiatives including the National Key R&D Program and Joint Funds of the National Natural Science Foundation of China. Contributed as a co-author to the IEEE Press English monograph "Microgrids: Theory and Practice". He has published over 20 papers in prestigious international journals and conferences, including IEEE Transactions on Power Systems, IEEE Transactions on Smart Grid, IEEE Transactions on Industry Applications, and Proceedings of the CSEE, with one paper recognized as an ESI Highly Cited Paper.