IEEE EI² 2024

THE 8TH IEEE CONFERENCE ON ENERGY INTERNET AND ENERGY SYSTEM INTEGRATION

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⁞⁞⁞ Special Session 09 ⁞⁞⁞

Advanced and Emerging Forecasting Technologies for Future Power and Energy Systems

○ INTRODUCTION AND TOPICS ○

The development of renewable-energy-dominated new power systems has introduced significant uncertainties across the entire power/energy system chain, encompassing sources, grids, loads, and auxiliary equipment. These uncertainties affect planning, operating, marketing and maintenance of systems. Forecasting is recognized as a crucial and direct technology to address such uncertainties. While forecasting of renewable energy and loads has advanced over decades, it encounters bottlenecks that necessitate revolutionary improvements in accuracy, efficiency, generalizability, and extension of time scales. Additionally, system-wide uncertainties introduce forecasting needs for new scenarios, such as electric vehicle charging loads, multi-vector energy loads, frequency reponse, carbon emissions, energy storage states, and device conditions.

This special session focuses on state-of-the-art forecasting technologies for whole-system elements across all time scales driven by the requirements of developing low-carbon, clean, and efficient future power and energy systems.

Topic of interests (including but not limited to):

• Advanced AI technologies for forecasting in power and energy systems
• Numerical weather prediction and calibration for energy system applications
• Renewable energy and load forecasting under extreme weather conditions
• Forecasting methods for distributed renewable power generation
• Medium- and long-term renewable energy and electricity price forecasting
• Predictability of forecasting targets and explainability of forecasting models
• Forecasting of new types of electric and energy loads
• Forecasting of operational states and dynamics of power systems
• Forecasting of state, condition and lifespan of system infrastructues and devices
• New application scenarios for forecasting technologies

○ SPECIAL SESSION CHAIRS ○

Assoc. Prof. Yongning Zhao
China Agricultural University, China

Prof. Haixiang Zang
Hohai University, China

Prof. Mingjian Cui
Tianjin University, China

Prof. Wei Zhang
Northeast Electric Power University, China

○ PUBLICATION & SUBMISSION ○

Submissions will be reviewed by the conference technical committees, and accepted papers will be published in IEEE EI² 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**.

Scan the QR code on the left or open the submission link to submit your paper.
‣ Submission link: https://easychair.org/conferences/?conf=ei22024

Submission Deadline: 31 October, 2024

ORGANIZATIONS

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