

## //// Panel Session 08 ////

**Models, Methods and Key Technologies for  
Flexible Resources Integrating and Interacting within Multi-Energy Systems**

## ○ INTRODUCTION AND TOPICS ○

With the rapid development of industries such as electric vehicles, energy storage, and distributed generation, a large number of flexible resources will need to be integrated into the multi-energy system (MES). Renewable energy sources such as wind and solar have characteristics such as randomness, volatility, and intermittency; meanwhile, electric vehicle users have disordered charging and discharging characteristics, and their charging and discharging behavior often deviates from the fluctuation trend of the load curves of energy systems, causing certain problems related to the security, reliable and low-carbon operation of energy systems. Firstly, the operating mechanisms of flexible resources are different, and the adaptability and potential for carbon reduction and efficiency enhancement of decentralized integration into MES need to be explored. Secondly, there is a lack of planning and operation methods that can fully leverage the collaborative benefits of scaled flexible resources. Flexible resource integration can effectively reduce the operational risks brought about by access to the MES, and flexible interaction with various energy systems can effectively improve the economy and reliability of MES. Finally, flexible resources are coupled with MES, which need to consider the interaction among the systems, as well as the constraints and the interests of the multi parties.

## ○ PANEL SESSION CHAIRS ○

**Dr. Xiaohong Dong** Hebei University of Technology, China

Xiaohong Dong received the M.S. and Ph.D. degrees in electrical engineering from Tianjin University, Tianjin, China, in 2020. She is currently a Lecturer with the State Key Laboratory of Reliability and Intelligence of Electrical Equipment, Hebei University of Technology. Dr. Dong Xiaohong is also a member of the Electric Vehicle and Energy Transportation System Integration Technology Subcommittee of the IEEE PES China Electric Vehicle Technical Committee, a member of the Electric Vehicle Charging and Swapping System and Testing Professional Committee of the China Electrotechnical Society, and a senior member of the China Electrotechnical Society.

Her research interests include electric vehicle(EV) charging infrastructure planning, EV charging load control, cooperation of power system and transportation and distribution network planning. She has presided over the Hebei Nature Foundation Project, the National post-doctoral project, and enterprise projects. She has published more than 40 SCI/EI journal papers.

**Dr. Chenhui Song** Changsha University of Science and Technology, China

Chenhui Song received the Ph.D. degree in Electrical Engineering from Tianjin University, Tianjin, China, in 2022. Afterwards, he worked as a researcher at State Grid Energy Research Institute. He is currently a lecturer and a supervisor with the National Key Laboratory of Power Grid Disaster Prevention and Reduction, Changsha University of Science and Technology.

In the past five years, he has presided over the projects of National Natural Science Foundation of China and State Grid Corporation Development Department, Participated in the projects of National Natural Science Foundation of China and National Key Research and Development Program of China. He has published more than 30 SCI/EI journal papers and Received National Business Association Science and Technology Progress Award. He is the special issue editor of the Energies journal and the young editorial board member of the Electric Power Construction journal. His current research interests include security analysis, planning and operation of Multi-Energy Systems.

**Prof. Yunfei Mu** Tianjin University, China

Yunfei Mu was born in Hebei, China. He received the Ph.D. degree in electrical engineering from the School of Electrical Engineering and Automation, Tianjin University, Tianjin, China, in 2012.

He is currently a Professor with School of Electrical Automation and Information Engineering, Tianjin University, Deputy Director of the Department of Electrical Engineering, Executive Deputy Director of the National and Local Joint Engineering Research Center for the Development and Application of Micro-grid and Intelligent Distribution System. He has been engaged in research on integrated energy system and intelligent power distribution for a long time. He has published more than 100 academic papers and granted 13 invention patents. He has presided over or participated in 12 provincial and ministerial level science and technology projects. He has obtained two first prizes of Tianjin Science and Technology Progress and one first prize of China Electric Power Science and Technology Progress.

## ○ PAPER SUBMISSION ○

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## ○ ORGANIZATIONS ○

