



### Floating Offshore Wind Turbine and Island Multi-Energy Complementary Technology

This panel session is for reporting about the experience, state-of-the-art methodology and technologies of floating offshore wind turbines and island multi-energy complementarity systems. Due to the lack of connection to the large mainland power grids for power supply, the islands faces prominent challenges such as high cost, high carbon emission intensity, and poor stability in energy supply. Building and developing island multi-energy complementary systems based on floating wind power is one of the preferred solutions. However, such systems are facing special climate conditions, such as high temperature, humidity, salt mist, heavy precipitation, strong lightning, and strong typhoons. Therefore, it is urgent to develop key technologies, including dynamic simulation of floating offshore wind turbine generator sets and platforms, mooring system dynamics simulation based on floating wave energy generation platform, energy management and comprehensive assessment of floating wind power-based offshore multi-energy complementary system, etc, and form a replicable and scalable low-carbon power supply operation mode for offshore islands.

#### Panel Session Chairs



**Dr. Bin Wang** Tsinghua University

Bin Wang (Senior Member IEEE) received the B.S. and Ph.D. degrees in electrical engineering, Tsinghua University, Beijing, China, in 2005 and 2011, respectively. He is currently served as Associate Research Fellow with the Department of Electrical Engineering, Tsinghua University. His research interests include renewable energy optimal dispatch and control, automatic voltage control.

Dr. Bin Wang has published more than 80 SCI/EI-indexed papers in IEEE Xplore. He won the First-Class Prize, National Award for Technological Progress of China in 2018. Additionally, he has been awarded ten provincial/ministerial science and technology first-class prizes. Over the past five years, as the Principal Investigator (or co-PI), Dr. Bin Wang has led his research group in conducting more than 20 research projects with a total funding of 60 million CNY. He is serving as the Deputy Director at Distribution Network and New Energy Research Institute of Tsinghua Sichuan Energy Internet Research Institute from June 2021, and the Deputy Director at Tsinghua University - Towngas Energy Investment Limited Virtual Power Plant Technology Joint Research Center.



**Zhe Zhu** Electric Power Research Institute, China Southern Power Grid

Zhe Zhu is serving as the Deputy Director of the National Key Laboratory of DC Transmission Technology (China Southern Power Grid), Professor-level Senior Engineer, member of the CIGRE B4.69 Working Group of the International Large Power Grid Organization, expert of the IEC SC 22F MT33 (IEC62747) Revision Working Group. He has participated in several national and provincial-level major scientific research projects on flexible DC and power electronics, including the National 863 Project "Research and Development of Large-scale Wind Farm Flexible DC Transmission Access Technology" and the 13th Five-Year National Key R&D Program Project "High Voltage Large Capacity Flexible DC Transmission Key Technology Research and Engineering Demonstration Application", as well as scientific and technological projects of Southern Power Grid Company. He has won more than 10 provincial and ministerial level awards. As the chief editor/core drafter, he has compiled 3 national standards and multiple enterprise standards. He has published and co-published more than 20 papers and obtained more than 30 authorized patents.

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