



The Key Technology of Flexible DC Distribution in Load-intensive Areas

Load-intensive areas play a pivotal role in achieving carbon peaking and carbon neutrality goals. The development of smart grids serves as a crucial catalyst for the widespread implementation of carbon peaking and neutrality strategies. This significance is exemplified in the National Outline Development Plan for the Guangdong-Hong Kong-Macao Greater Bay Area, which envisions the establishment of a world-class city cluster. Currently, the Greater Bay Area is witnessing a surge in interconnectivity and power grid expansion to meet the escalating electricity demand. For instance, regions like Macao and Guangdong face challenges in load-intensive zone, including limited grid capacity expansion, and the need for network losses optimization. One promising solution involves the integration of DC technology into existing AC systems. However, existing flexible distribution equipment exhibits drawbacks such as large physical size and high costs. Furthermore, the imperatives of green and low-carbon standards also demands the adoption of more environmentally-friendly equipment. This panel session investigates recent developments in compact, efficient, and eco-friendly flexible distribution systems, aiming to address the challenges faced in load-intensive areas and contribute to the advancement of sustainable power grids.

Panel Session Chairs



Ying Huang Zhejiang University

Ying Huang received her Ph.D. degrees in electrical engineering from Zhejiang University, Zhejiang, China, in 2005. She has been with China Southern Power Grid South Electric Power Research Institute, since 2005 and has been a Professor in the Department of Electrical Engineering, Zhejiang University, Zhejiang, China since 2022. Her research areas include HVDC transmission, power system dynamics, and grid integration of renewable energy. She is a senior member of IEEE and IET Ceng for her contributions to integration design based HVDC transmission systems. She is currently Associate Dean of the Department of Electrical Engineering in Zhejiang University.



Ningyi Dai University of Macau

Ningyi Dai (Senior Member, IEEE) received the B.Sc. degree in Electrical Engineering from Southeast University, Nanjing, China, in 2001, and the M.Sc. and Ph.D. degrees in Electrical and Electronics engineering from University of Macau, Macau, China, in 2004 and 2007, respectively. She is currently an Associate Professor with the Department of Electrical and Computer Engineering and SKL of Internet of Things for Smart City, University of Macau. She is also the assistant Dean of Faculty of Science and Technology, University of Macau. She has authored or co-authored more than 100 technical journals and conference papers in power systems and power electronics. Her research interests include the application of power electronics in power systems, control of power converters and integrated energy system. Dr. Dai was the coreipient of the Macao Science and Technology Award in 2012, 2018 and 2022.

SPONSORS



中国电机工程学会
CHINESE SOCIETY FOR ELECTRICAL ENGINEERING



浙江大学
ZHEJIANG UNIVERSITY

海南研究院
Hainan Institute, China



清华大学
Department of Electrical Engineering
Tsinghua University



台湾理工大学
TAIWAN UNIVERSITY OF TECHNOLOGY



能源互联网创新研究院
Energy Internet Research Institute
Tsinghua University



清华大学
Tsinghua University

ORGANIZERS



浙江大学
ZHEJIANG UNIVERSITY



三亚纵横能源研究院
Sanya Global Energy Research Institute



浙江大学电气工程学院
College of Electrical Engineering, Zhejiang University

CO-ORGANIZERS



郑州轻工业大学
ZHENGZHOU UNIVERSITY OF LIGHT INDUSTRY



International Copper
Association Asia
Copper Alliance

