
Energy Internet Technical Committee Panel session guide

Session Name	Topic	Session Number	Time	Location
Energy Internet Technical Committee Panel session 1	Key technologies of low carbon planning and operation optimization of modern integrated energy system	EI1	Oct. 24th, Sunday 10:00-12:00	Shuyu Hall(2F)
Energy Internet Technical Committee Panel session 2	Energy Internet Technology for Offshore Renewable Energy	EI2	Oct. 24th, Sunday 10:00-12:00	Yongle Hall(2F)
Energy Internet Technical Committee Panel session 3	Energy Internet equipment and operation from the perspective of low carbon	EI3	Oct. 24th, Sunday 8:00-10:00	Shuyu Hall(2F)
Energy Internet Technical Committee Panel session 4	Cyber-attack Defense Measures and Intelligent Supporting Technologies of Power Cyber-physical System	EI4	Oct. 24th, Sunday 8:00-10:00	Yongle Hall(2F)
Energy Internet Technical Committee Panel session 5	Business Model of Energy Internet for Carbon Neutrality	EI5	Oct. 23th, Saturday 13:00-15:00	Shuyu Hall(2F)
Energy Internet Technical Committee Panel session 6	Energy Internet Project Construction from the perspective of low carbon	EI6	Oct. 23th, Saturday 15:00-17:00	Shuyu Hall(2F)
Energy Internet Technical Committee Panel session 7	Key Technologies on the Demand Side of New Power Systems	EI7	Oct. 23th, Saturday 13:00-17:00	Yongle Hall(2F)

Energy Internet Technical Committee Panel session details

Energy Internet Technical Committee Panel session 1:

Key Technologies of Low Carbon Planning and Operation

Optimization of Modern Integrated Energy System

Oct. 24th, Sunday 10:00-12:00, Shuyu Hall(2F)

Session Introduction:

Under the background of double carbon goals, how to use advanced technology and development models such as digital information and integrated energy to build a modern energy system, and fully mobilize various flexible resources such as demand response resources to participate in the coordination and interaction of the system is a current research hotspot. We invite five experts from universities and enterprises to report their achievements from the perspectives of integrated energy system planning, system operation optimization and demand response resources, so as to promote scientific research exchange and common progress.

Chair(s):

Ming Zeng
Professor
North China Electric Power University ;
Yongli Wang
Associate professor
North China Electric Power University

Panelist:

- | | |
|-------------|--|
| 10:00-10:25 | E11-01
<i>Application of cloud edge collaborative computing in demand side digitization</i>
Junyu Liang
senior engineer
Electric Power Research Institute of Yunnan Power Grid Co., Ltd |
| 10:25-10:50 | E11-02
<i>Research on optimal operation of hybrid AC/DC microgrid</i> |

based on uncertain master-slave game

Peng Li

Professor/Doctoral tutor

North China Electric Power University (Baoding) .

10:50-11:15 EI1-03

Harnessing the Operational Flexibility of Public Transport Hubs to Improve Reliability and Economic Performances of Urban Multi-Energy Systems

Bo Zeng

Associate professor

North China Electric Power University.

11:15-11:40 EI1-04

Simulation study on market behavior process of flexible resources in new power system

Shuo Zhang

Associate professor

North China Electric Power University.

11:40-12:00 EI1-05

Research on Typical Scenarios and Optimization Technologies of Integrated Energy System Planning under Low-carbon Requirements

Yongli Wang

Associate professor

North China Electric Power University.

Contact Person: Yingxin Liu

Phone Number: 15101653843

Energy Internet Technical Committee Panel session 2:

Energy Internet Technology for Offshore Renewable Energy

Oct. 24th, Sunday 10:00-12:00, Yongle Hall(2F)

Session Introduction:

With the “carbon neutrality” goals proposed by different countries these years, carbon emission reduction and renewable energy development are becoming more and more important globally. As one of the key components of renewable energy categories, offshore renewable energy usually includes offshore wind farm, wave energy, tidal energy etc, also require energy internet technology to help improve its utilization rate, economy and efficiency. The panelists will discuss some potential energy internet technology applied in offshore renewable energy development, including generation/electrical collector system planning, related transmission network expansion planning and electric-gas coupling design for offshore wind energy or tidal energy.

Chair(s):

Xinwei Shen
Ph. D., Research Scientist
Shenzhen International Graduate School, Tsinghua University

Panelist:

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|-------------|--|
| 10:00-10:30 | EI201
<i>Feasibility analysis on the offshore wind-to-hydrogen technology</i>
Jiarong Li
Dr
Tsinghua University. |
| 10:30-11:00 | EI2-02
<i>Tidal Current Power Generation Farm Planning</i>
Zhouyang Ren
Associate professor
Chongqing University. |
| 11:00-11:30 | EI2-03
<i>Transmission Network Expansion Planning Considering Penetration of Clustering Offshore Wind Farms</i> |

Shuxin Tian

Teacher

Shanghai University of Electric Power.

11:30-12:00 EI2-04

Collector System Planning for Offshore Wind Farm

Tengjun Zuo

Lecturer

Nanjing Institute of Technology.

Contact Person: Zhaoyuan Chai

Phone Number: 13520324579

Energy Internet Technical Committee Panel session 3:

Energy Internet equipment and operation from the perspective of low carbon

Oct. 24th, Sunday 8:00-10:00, Shuyu Hall(2F)

Session Introduction:

The session entitled Energy Internet equipment and operation from the perspective of low carbon includes five reports: Research on controllable current source converter based on reverse blocking IGCT, Coordination of regional electric and gas systems: a peer-to-peer energy trading model, Research on technology of electric vehicle charging station based on Smart Grid, Parameter Estimation of Railway Traction Power System Based on Impedance Measuring Equipment, Deep Reinforcement Learning Based Fast Prediction of Special Protection Strategies for HVDC Blocking.

Chair(s):

Tao Lin
Professor
Wuhan University

Panelist:

- | | |
|-----------|---|
| 8:00-8:20 | <p>EI3-01
<i>Research of Controllable Current Source Converter based on Reverse-blocking IGCT</i>
Xiaoguang Wei
Deputy Director
State Grid global energy interconnection research institute.</p> |
| 8:20-8:40 | <p>EI3-02
Coordination of regional electric and gas systems: a peer-to-peer energy trading model
Guoqiang Sun
Professor
Hohai University.</p> |
| 8:40-9:00 | <p>EI3-03
<i>Research on technology of electric vehicle charging station</i></p> |

based on Smart Grid

Haiping Xu

Researcher/ PhD supervisor/Director of research

Department

Institute of Electrical Engineering, Chinese Academy of Sciences(CAS).

9:00-9:20

EI3-04

*Parameter Estimation of Railway Traction Power System
Based on Impedance Measuring Equipment*

Yitong Song

Southwest Jiaotong University.

9:20-9:40

EI3-05

*Deep Reinforcement Learning Based Fast Prediction of
Special Protection Strategies for HVDC Blocking*

Tao Lin

Professor

Wuhan University.

Contact Person: Tao Lin

Phone Number: 86-13971163510

Energy Internet Technical Committee Panel session 4:
Cyber-attack Defense Measures and Intelligent Supporting
Technologies of Power Cyber-physical System

Oct. 24th, Sunday 8:00-10:00, Yongle Hall(2F)

Session Introduction:

Under the vision of carbon peak and carbon neutrality, the construction of the next generation of power system with renewable energy as the main body will surely cause profound changes in the power system structure, system characteristics, operation modes and major risks, and will also bring new challenges to the security and stability of operation of the power system. In particular, the large-scale penetration of digitization and information technology in the perception and control of power systems, such as data acquisition and monitoring and control systems (SCADA), wide area measurement systems (WAMS), etc., as well as increased demand for the integration of generation, power grid, load and storage, will make the control system of the power system more susceptible to man-made external damage, and cyber-attacks are also more likely to cause large-scale power outages.

This session mainly focuses on the risks and countermeasures brought by cyber-attacks to the operation of the power system. The speakers will respectively introduce their latest research results on issues such as the identification of abnormal states of power system, the cyber-attacks and defense measures in power system, the intelligent information technology of power system, and the cyber-physical-social system supporting intelligent and low-carbon power system.

Chair(s):

Yingjun Wu
Associate Professor
Hohai University ;
Can Wan
Principle Investigator
Zhejiang University

Panelist:

8:00-8:24 EI4-01
Anomaly State Detection for Power Systems based on

Bilateral Cyber-physical Information

Qi Wang

Associate Professor/Doctoral supervisor
Southeast University.

8:24-8:48

EI4-02

*Cyber-physical-social System for Supporting Low-carbon
Energy Transition*

Junhua Zhao

Associate Professor
The Chinese University of Hong Kong, Shenzhen.

8:48-9:12

EI4-03

*Research on Intelligent Power Distribution System from the
Perspective of "Cyber-physical-social"*

Nian Liu

Professor
North China Electric Power University.

9:12-9:36

EI4-04

*Distributed Autonomous Collaborative Cyber Attack of
Multiple Substations with Logic Bomb*

Sheng Su

Changsha University of Science and Technology.

9:36-10:00

EI4-05

*Identification of Malicious Data Injection Attack in AGC
System*

Yingjun Wu

Associate Professor
Hohai University.

Contact Person: Yingjun Wu

Phone Number: 18305165095

Energy Internet Technical Committee Panel session 5:

Business Model of Energy Internet for Carbon Neutrality

Oct. 23th, Saturday 13:00-15:00, Shuyu Hall(2F)

Session Introduction:

In order to achieve the goal of carbon neutrality, Energy Internet focuses on building a clean, low-carbon, safe and efficient energy system by using "Internet +" as a means. We should promote the deep integration of energy and information and realize the development of new technologies, new models and new business forms of the Energy Internet. Meanwhile, we should promote the constriction of energy market and industrial upgrading to form new economic growth points for achieving the carbon neutrality. This session focuses on the business model of Energy Internet for carbon neutrality. Experts in the field of Energy Internet are invited to discuss the operation mechanism and business model of Energy Internet.

Chair(s):

Heping Jia
Associate Professor
North China Electric Power University;
Dunnan Liu
Professor
North China Electric Power University

Panelist:

- 13:00-13:18 EI5-01
Researches of dimensional reduction equivalent based approaches of hybrid AC/DC power systems planning with high renewable energy resources penetrations
Tao Niu
Assistant Professor
Chongqing University.
- 13:18-13:35 EI5-02
Development trends and planning tools of integrated energy systems
Ning Zhang
Senior Engineer/ Senior Researcher
State Grid Energy Research Institute.

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- 13:35-13:52 EI5-03
*Real-time Local Electricity Market Considering
High-Penetration Distributed Energy Resources and Flexible
Loads*
Hongxun Hui
Post-doc
University of Macau.
- 13:52-14:09 EI5-04
*New power system planning with new energy as the main
body under multi-agent game*
Jia Liu
Ph.D
Hangzhou Dianzi University.
- 14:09-14:26 EI5-05
*Optimal economics measurement of hydrogen production
from renewable energy among provinces under
carbon-neutrality*
Chuanbo Xu
Lecturer/ Post-doc
North China Electric Power University.
- 14:26-14:43 EI5-06
*Coordination Method of Fault Current Suppression and
Clearance in DC Grid*
Xibei Zhao
Engineer
China Electric Power Planning and Engineering Institute
(EPPEI).
- 14:43-15:00 EI5-07
*Dynamic pricing method of virtual power plants based on
Reinforcement Learning*
Heping Jia
Associate professor
North China Electric Power University.

Contact Person: Heping Jia
Phone Number: 18911271725

Energy Internet Technical Committee Panel session 6:
Energy Internet Project Construction from the perspective of
low carbon

Oct. 23th, Saturday 15:00-17:00, Shuyu Hall(2F)

Session Introduction:

In a series of energy Internet demonstration projects, there are still problems in the construction standards and evaluation systems that are difficult to quantify. The existing evaluation system of energy Internet engineering practice and benefit evaluation is easily interfered by subjective factors, which is not conducive to the development of energy Internet engineering practice. In order to support for the construction of energy Internet projects from the perspective of low carbon, this panel will create a platform for the research on the technologies of the comprehensive benefit assessment of energy internet projects and promote the establishment of a comprehensive benefits evaluation system for energy internet projects. Mainly discuss how to reduce project operating costs and achieve greater profits through operations, which is beneficial for continuous improvement of the comprehensive benefits of the energy internet demonstration projects.

Chair(s):

Fengquan Zhou
Professional Title Chief Expert of Energy Internet
Organization Xu Ji Group Co. LTD

Panelist:

- 15:00-15:30 EI6-01
Improvement and Practice of Load Toughness of Power Transformer Based on Digital Twin Technology
Xianjun Shao
Deputy director of equipment technology Center
Electric Power Research Institute of State Grid Zhejiang Electric Power Company.
- 15:30-16:00 EI6-02
New Energy Cloud services for green development and carbon peak carbon neutralization
Chongjian Zhang
Expert

Xu Ji Group Co. LTD.

16:00-16:30 EI6-03
Smart Energy Internet technology and demonstration applications in Shanxi
Jinhao Wang
Expert
Electric Power Research Institute of State Grid Shanxi
Electric Power Company.

16:30-17:00 EI6-04
Power Electronic Transformer Development and Experimental Technology Research
Chongfu Xu
Senior Engineer
XI' AN XD POWER SYSTEMS CO., LTD

Contact Person: Hongxin Ju
Phone Number: 13683660131

Energy Internet Technical Committee Panel session 7:

Key Technologies on the Demand Side of New Power Systems

Oct. 23th, Saturday 13:00-17:00, Yongle Hall(2F)

Session Introduction:

Provide a platform for scientific research and technical personnel in the field of demand side to display and communicate through academic reports and seminars. The topics of the seminar include but are not limited to: Load resource modeling and regulation potential evaluation methods, Optimization methods of large-scale load resources participating in interactive with the power grid under the penetration of high proportion of new energy, Load control technologies based on 5G and the Internet of Things, Load control technologies based on data-driven and digital twins, Load resource coordinated control technologies in multiple energy forms, Emerging load control technologies such as electrocatalysts for hydrogen production, Modeling and quantitative evaluation technology of low-carbon energy use for load resources, Mechanism design of load resource participation in power market and carbon emission market.

Chair(s):

Jian Qin
Professorate senior engineer
China Electric Power Research Institute

Panelist:

14:30-14:55 EI7-01
Development and Prospect of Hydrogen Production Technology
Changchun Yu
Professor
China University of Petroleum (Beijing).

14:55-15:20 EI7-02
Research on Resilience Enhancement Method of Power Grid Based on Distributed Resource Response
Yingjun Wu

Associate Professor
Hohai University.

- 15:20-15:45 EI7-03
Industrial load modeling and control for new energy consumption
Siyang Liao
Associate Professor
WuHan University.
- 15:45-16:10 EI7-04
Exploration and Practice of Normalized and Active Demand Response for Multiple Users in the Electricity Market
Yixuan Huang
Senior Engineer
State Grid Jiangsu Electric Power Co., Ltd. Marketing Service Center.
- 16:10-16:35 EI7-05
Load resource modeling and regulation potential evaluation method
Ji Li
Senior Engineer
China Academy of Building Research.
- 16:35-17:00 EI7-06
Mining and application of adjustable load on demand side
Songsong Chen
Director , Senior Engineer
China Electric Power Research Institute.

Contact Person:

Phone Number: