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The opening ceremony was held on the morning of August 9, 2025. Prof. Dong Yue, in his speech, pointed out the purpose and mission of this conference and expressed his sincere gratitude to the organizing institutions for their strong support and concerns. An online speech was delivered by Prof. Chi Yung Chung, Chair of IEEE PES, who discussed cutting-edge trends in intelligent grids and emerging technologies from an international perspective.



On August 9, 2025, following the opening ceremony, participating experts conducted panel discussions focusing on topics including “security defense and control of cyber-physical systems”, “optimal operation of energy-cyber-social systems”, “resilient power grids and aggregated regulation of distributed resources”, and “efficient electricity-hydrogen-heat coordination”.





2. Benefits to Industry and PES Members from the Committee Work:

(1) Advancing Academic Exchange: From July 4 to 7, 2025, the members of the Technical Subcommittee on Grid Resilience (Elasticity) attended the "7th International Conference on Power and Energy Technology (ICPET 2025)" and organized parallel sessions on "Risk Assessment and Resilience Enhancement of New Power Systems under Climate Change" and "Enhancing Power Systems Resilience by Considering Multi-Type Emergency Resources During Extreme Disasters".



(2) Organizing Academic Special Issues: Members of the Technical Subcommittee on Grid Resilience (Elasticity) served as guest editors for special issues on resilient power grid in related academic journals, calling for papers to promote the dissemination and sharing of relevant academic achievements.



(3) Establishing a Communication Platform: To further promote the development of smart grid technologies and accelerate the transformation and application of scientific achievements, a WeChat official account for the committee has been established, and an “industry-academia-research” cooperation and sharing platform integrating academic research, technological innovation, and industrial practice has been built. The logo design and registration for the official account have been completed, and it currently has 120 followers.



3. Benefits to Volunteer Participants from the Committee Work:

The committee will establish the “Best Volunteer Award”, initiated and hosted by the IEEE PES China Satellite Coordinating Committee - Intelligent Grid & Emerging Technologies. The specific award criteria and selection committee members are currently under discussion. This award aims to recognize individuals who have made remarkable contributions in the field of smart grid integration with new technologies. It



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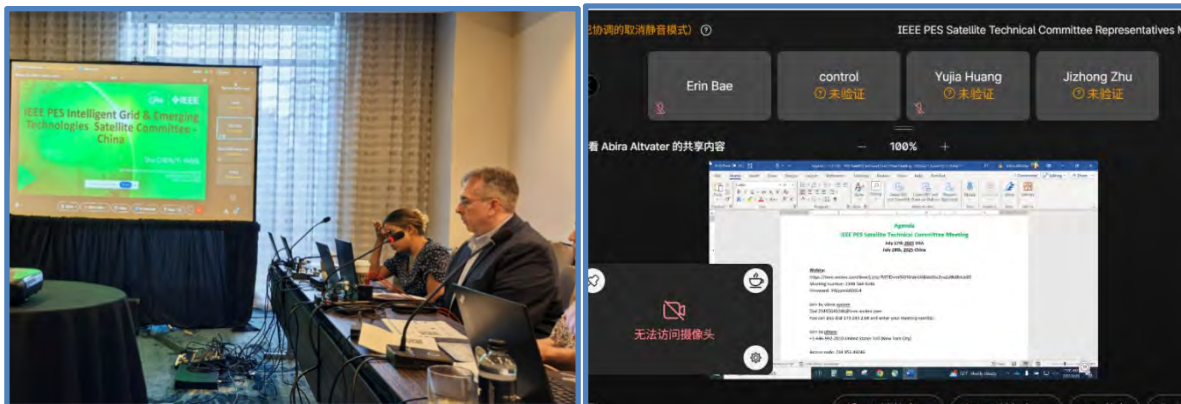
also provides volunteers with a platform for technical collaboration and exchange with global senior experts.

4. Recognition of Outstanding Performance:

The Secretariat has made significant contributions to the Committee's development. Its members coordinated and organized the committee's annual conference (including preparation, paper solicitation, review, and expert invitation), participated in numerous IEEE-sponsored international conferences, promoted membership growth and academic exchange, and actively disseminated new technologies and cutting-edge knowledge in smart grids to universities and enterprises.

5. Coordination with Other Entities (PES Committees, CIGRE, standards, etc.):

On July 27, 2025, members of the committee attended the representative meeting of the IEEE PES Satellite Technical Committee to report on the relevant work of this technical committee.



6. Coordination and Involvement with Young Professionals:

On August 10, 2025, the Committee, in collaboration with Nanjing University of Posts and Telecommunications, Xi'an Jiaotong University, East China University of Science and Technology, Zhejiang University, and other institutions, jointly organized the 2025 Open Symposium for Major Projects of the National Natural Science Foundation of China. This event provided an academic exchange platform for young scholars and graduate students.



7. New Technologies of Interest to the Committee:

Power Systems with Embodied Intelligence: Creating a new technological paradigm for embodied intelligent power control systems to address the disconnection between traditional control centers and physical systems, integrating intelligence into every edge and end device of the power grid. This enables them to interact with the environment, operate autonomously, collaborate, and evolve, building a safer, more efficient, flexible, and self-healing future power grid.

Large Language Models Empowering Power Systems: By understanding natural language instructions and processing complex data, the system can intelligently analyze dispatching demands, generate optimization strategies, and achieve efficient and coordinated regulation of multiple types of resources.

Digital Twin of Power Grids: By building high-precision mirror systems that synchronously map with the physical power grids, it enables real-time perception of distributed resource status, operational simulations, and risk early warning, significantly enhancing situational awareness.

Active Security Defense: By building a cloud-edge-end intelligent protection network and active security defense technology, it effectively achieves “accurate identification of security risks”, “rapid mitigation of risk intrusion impacts”, and “real-time and reliable guarantee of data transmission to meet the personalized needs of different services”.

8. Global Involvement

On April 14, 2025, committee members invited Sabin, the Chair of IEEE LTAC, to visit the committee's secretariat institution—Electric Power Research Institute of State Grid Jiangsu Electric Power Co., Ltd—and deliver a work exchange report on the Satellite Committee.



9. Problems and Concerns:

(1) The Efficiency of Transforming Technological Innovation Achievements Into Practical Applications Needs Improvement

Currently, most technological innovations remain confined to academic papers and patents, with a low rate of conversion into practical applications. This limits their contribution to industrial development. It is necessary to establish and improve incentive mechanisms for achievement transformation, strengthen collaboration with industrial enterprises, and promote the industrialization of more technological achievements.

(2) The Construction of Interdisciplinary Collaborative Research Platforms is Insufficient

Disciplinary barriers among research institutions and limited resource sharing restrict the ability to tackle comprehensive challenges. It is necessary to promote the development of cross-institutional collaborative platforms and facilitate the deep integration of methodologies and data resources.

(3) The Coverage and Influence of Social Services Need to be Enhanced

Most current science outreach and policy consultations are concentrated in traditional channels, with insufficient engagement with emerging groups and social trends. It is essential to develop new media sharing methods and provide targeted services in response to public concerns, thereby enhancing the accuracy of knowledge dissemination and social engagement.

10. Significant Plans for the Next Period:

(1) Establish Technical Subcommittees: Including the Electricity-Hydrogen-Heat Coordination Technical Subcommittee and the Power Grid Resilience (Elasticity) Technical Subcommittee to further expand influence.

(2) Build a Brand for Annual Conference Activities: Systematically promote various academic conferences to facilitate technical exchanges and university-enterprise cooperation.



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(3) Promote the Work of the Enterprise Committee/Industry Alliance: By leveraging the IEEE PES platform to attract relevant enterprises to join and actively address their needs.

(4) Organize Special Issues in High-Level Journals: By collaborating with experts from the Technical Committee to organize special issues in journals such as IEEE Transactions on Industrial Informatics, thereby expanding the committee's academic influence.

**Submitted by: Secretariat of IEEE PES China Satellite Coordinating Committee - Intelligent Grid
& Emerging Technologies**

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