

## **Special Session 16: AI Application in Planning and Management Control Technology for New-type Energy Storage Systems**

### **Session Organizers:**

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### **Brief Description of the Session Theme:**

The development of new energy storage systems is crucial for the future energy infrastructure, particularly in promoting low-carbon development. Artificial Intelligence (AI) technology has shown significant potential in planning and controlling these new energy storage systems. Traditional energy system planning often struggles to effectively integrate large-scale energy storage systems and respond to their complex operational needs and market fluctuations. Through advanced data analysis, machine learning algorithms, and predictive models, AI can dynamically optimize the operational strategies of energy storage systems.

AI enables intelligent decision-making based on multi-dimensional data, such as real-time energy demand, grid conditions, and market prices, to achieve optimal energy storage and release timing, thereby improving the efficiency and economy of the energy storage system. Additionally, AI plays a vital role in health monitoring and predictive maintenance of energy storage systems. By monitoring equipment status in real time and predicting potential failures, AI can implement maintenance measures in advance, ensuring stable system operation and extending equipment lifespan.

In market mechanism design, AI technology supports the development of more flexible and intelligent electricity market policies. This includes predicting load demand and price trends, optimizing the participation of energy storage systems in market activities, and maximizing their benefits in grid regulation and market transactions. Therefore, integrating AI with new energy storage system planning and control technologies not only enhances energy utilization efficiency but also promotes the integration of clean energy and the development of sustainable energy infrastructure, driving the future energy industry towards a more intelligent and sustainable future.

### **Topics and Keywords:**

1. AI-driven optimization of resource allocation in new-type energy storage systems
2. AI-based enhancement of power grid stability and reliability through new-type energy storage systems
3. Application of AI in the planning of new-type energy storage systems
4. AI-based operation and mechanism design for new new-type energy storage systems in the power market
5. AI-based control technologies and applications for new-type energy storage systems
6. Prospects of AI application in the planning of new-type energy storage systems
7. Carbon emission monitoring technology using AI in the control of new-type energy storage systems