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Call for Papers for the Special Session on

INTEGRATION OF RENEWABLE ENERGY SOURCES AND ENERGY STORAGE OPERATIONS FOR SUSTAINABLE AND RELIABLE POWER SYSTEM

Organized and co-chaired by

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Technical Outline of the Session and Topics

The rapid integration of Renewable Energy Sources (RES) in modern grids is creating unprecedented challenges in stability, reliability, and protection, particularly in low-inertia and weak systems. The flexible and reliable Energy Storage Systems (ESS) are essential to mitigate these issues. However, their coordinated operation with RES demands advanced converter control, robust stability analysis, and reliable protection strategies. This special session invites original and unpublished cutting-edge research and practical developments in converter control, power electronics, and system-level protection and coordination to ensure reliable and sustainable power system operation with RES–ESS integration from researchers, engineers, and industry leaders.

Topics of the session include, but are not limited to:

- Converter control and modulation for grid-forming and grid-following ESS
- Coordinated RES–ESS control in low-inertia and weak grids
- Stability analysis and enhancement using storage-interfaced power electronics
- Protection challenges in RES–ESS coordinated operation, including Grid-forming inverter protection, Fault ride-through (FRT) and protection–control interaction, and DC-side and hybrid AC/DC protection for ESS
- Hybrid and multi-port energy storage systems: control and operation
- Embedded control, real-time simulation, HIL, and experimental validation
- **Timeline for Authors**

All the instructions for paper submission are available on the conference website. Please visit www.iecon2026.org or scan the QR code for the timeline.