

EV-RES Convergence: Intelligent and Scalable Energy Ecosystems for Decarbonized Futures

Organized and co-chaired by:

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Call for Papers



This special session addresses the critical and emerging intersection of Electric Vehicles (EVs) and Renewable Energy Sources (RES) as a foundational pillar of future smart grids. While decarbonization efforts accelerate globally, integrating EVs with intermittent renewables presents unique technical challenges, including bidirectional energy flow, dynamic load management, grid stability, vehicle-to-grid (V2G) coordination, and energy pricing optimization. Key focus areas include co-optimizing EV charging with renewable generation, Al-driven energy management, hybrid RES-powered charging infrastructure design, and regulatory frameworks for seamless deployment. Emphasizing multidisciplinary approaches that combine power systems, Al/ML, IoT, and cyber-physical control, the session invites researchers, industry professionals, and policymakers to share innovations and best practices. It supports IEEE-STPEC's mission to accelerate clean, resilient, and intelligent energy systems through collaborative, forward-looking research.

Topic of the Session includes, but are not limited to:

- Co-optimization of EV charging schedules with intermittent renewable generation.
- Integration of EVs as mobile energy storage units for grid support (V2G/V2H).
- Impact of large-scale EV-RES integration on grid stability, reliability, and planning.
- Intelligent energy management strategies involving AI/ML, forecasting, and optimization.
- Design of charging infrastructure powered by hybrid renewable sources.
- Policy, regulatory, and economic frameworks enabling seamless integration.

Important Dates:

- Special Session Paper Submission Due : June 15, 2025
- Notification of Paper Acceptance : July 31, 2025
- Camera Ready Paper Submission Due : August 31, 2025
- Regular Registration Due : October 30, 2025

Author

guidelines as

per regular

paper

submission.



Submission Portal

https://nitgoa.ac.in/STPEC2025/specialsessions.html

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