

IEEE Power and Energy Society Entity Annual Report

2025

Entity: Renewable System Integration Coordination Committee (RSICC)

Chair: Aidan Tuohy

Vice-Chair: Miaolei Shao

Technical Committee Program Chair: Junbo Zhao

Liaison Coordinator: Rui Yang

Secretary: Sudipta Dutta

Award Rep: Junbo Zhao and Rui Yang

Webmaster: Mengmeng Cai

The role of RSICC is to serve as a focal point within the Power and Energy Society (PES) for the identification of challenges associated with the integration of renewable energy resources, related energy carriers (storage, fuels, heat) and related electrification applications (transportation, buildings, industry.)

1. Significant Accomplishments:

In 2025, RSICC contributed to IEEE PES activities in a number of ways – the annual general meeting, contribution to various working groups and engagement with relevant activities.

At the annual IEEE PES general meeting, RSICC, in collaboration with other partners, organized two panel sessions, chaired a super session and contributed to other panel sessions dedicated to addressing the emerging challenges stemming from the integration of renewable energy sources. These sessions covered important topics, including *AI and Renewable Energy Nexus*, *Power System Monitoring and Stability with High IBR Penetration* and the Super Session on *New Technologies*. The committee also contributed to a range of different sessions on Renewable Systems Integration across the meeting. All panel sessions have received great attention and participations. Panelists representing diverse sectors including industry, academia, government, and other relevant entities, shared their insights and perspectives on the technological requirements for managing power systems with substantial renewable energy integration and simultaneous electrification of various sectors. During these sessions, participants have also identified challenges and outlined future directions.

In the annual meeting, RSICC determined it would be helpful to cover several key technical topics and hear what IEEE PES and other groups are working on in those specific areas, on top of the regular liaison reports. The topics covered included:

- Operating and Planning future high renewable grids for large loads and colocation
- Power system stability with Inverter Based Resources – New stability phenomena, new controls incl. grid forming, operator tools
- Integrated planning for high RES systems – resource adequacy, load forecasting, long term planning
- Nexus between renewables and AI



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Contributors included liaisons from six IEEE PES technical or coordinating committees (MSCC, iGETCC, PSRC, EDPG, AMPS and PSDP). It also included contributions from NERC, ESIG, DOE Wind, NEI and EPRI describing their ongoing activities in the relevant areas, and opportunities to coordinate with IEEE PES. Where relevant, ongoing standards activities and opportunities for engagement were highlighted.

RSICC also contributed to the Alternative Energy Generation and Storage initiative, a cross cutting initiative. This included meetings at the PES General Meeting in 2025 in Austin. RSICC also engaged in SetCom towards the end of 2025, and plans to do so into 2026.

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

RSICC provided an opportunity for different standard activities to report out to a broader group and coordinate with other technical committees and coordinating committees, as well as industry organization. The liaison reports provide opportunities for others to understand latest activities, while it also provides a venue for industry and IEEE committees to identify and mitigate the gaps within all the existing renewable integration standards

3. Benefits to Volunteer Participants from the Committee Work:

As a coordinating committee, RSICC does not write standards or conduct technical work. Rather, it coordinates renewable integration related activities among PES Technical Committees; this includes PES GM activities, scoping of new TF/WGs, updates between WG/TFs and coordination on standards development. RSICC is a resource for members who want to get more involved with integration of renewable systems integration. RSICC can help direct members who are seeking deeper involvement in specific technical areas, and often directs interested volunteers to relevant activities they can engage in.

4. Recognition of Outstanding Performance:

RSICC was recognized with by the PES Technical Council with the outstanding Technical or Coordinating Committee Award at the IEEE PES General Meeting.

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

RSICC established and extended list of liaisons from other IEEE committees and external organizations who works on renewable systems integration. As well as the PES Technical Committees, RSICC has established liaisons with the following organization or groups to bring awareness of their efforts in renewable systems integration to IEEE PES for other committees to digest and utilize

- IEEE Alternative Generation and Storage
- UNIFI consortium
- NERC
- ESIG
- DOE

RSICC is continuing the identification and tracking of the activities of our liaison groups, both inside and outside of IEEE. We are also coordinating with DOE, national labs, EPRI and other organizations.



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6. Coordination and Involvement with Young Professionals:

RSICC has not directly engaged in the YP activities, but welcomes YOUng Professionals and will ensure they can be considered for future officer roles.

7. New Technologies of Interest to the Committee:

The RSICC is focusing on coordinating broad, system level issues related to the grid of the future and technologies such as storage, buildings, and other systems that are coupled with renewable integration. We are focusing on coordinate activities related to integration of all forms of renewable energy as we work towards a clean power grid. RSICC is also intending to stay very engaged in discussions related to energy systems issues, such as integration of storage, coordination with other energy systems and integration of new loads with renewables. We're interested in helping to broadly coordinate as much as we can to help all involved parties and technologies without encroaching on any technical committee's scope.

8. Global Involvement

There is ongoing activities in the China Satellite Committee, and in 2026, RSICC plan to engage with this activity more. RSICC has members from various countries, and will also ensure that such activities are discussed in the meeting, including standards activities through SETCOM, as well as engagement with CIGRE, the China Satellite Committee and others.

9. Problems and Concerns:

At this time, there are no specific problems or concerns to mention, other than the issue of lower engagement in past several years in the meetings. With the prevalence of renewables across the industry, the earlier role of RSICC to coordinate technology specific standards may be lower, and focus can be more on systems integration issues. Ensuring RSICC can support broader IEEE PES needs requires continuing to update the member list and refresh leadership.

10. Significant Plans for the Next Period:

In 2026, RSICC is expecting to add a virtual meeting several weeks after the IEEE PES GM, in order to better facilitate liaison reports. The in person meeting can then focus on new technical issues. RSICC will also consider setting up a task force to develop out future work lines and support coordinate across PES>

Submitted by: Aidan Tuohy, Chair

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