

IEEE Power and Energy Society Entity Annual Report 2021

Entity: Intelligent Grid and Emerging Technologies Coordinating Committee (iGET)
Website:
Chair: Jim Follum, Pacific Northwest National Laboratory
Vice-Chair: Theo Laughner, Lifescale Analytics
Secretary: Daniel Molzahn, Georgia Institute of Technology
Immediate Past Chair:

1. Significant Accomplishments:

The February 2022 PES Trending Tech Email was submitted by IGETCC, with primary contributions from Daniel Mozahn, the committee's Secretary. The email focused on the trending topic of distributed optimization.

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

The committee had very few accomplishments in 2021. Moving forward, the Emerging Technology White Paper will be updated to provide PES members across technical committees with a valuable perspective of which technologies are on the horizon. By identifying these emerging technologies, iGET can help them find a home in the appropriate technical committee. iGET will also organize tutorials and articles on emerging technology issues to help bring about solutions.

3. Benefits to Volunteer Participants from the Committee Work:

Benefits for volunteers were also very limited in 2021. Moving forward, the authors and presenters of iGET-sponsored papers and tutorials will benefit from increased visibility in their companies, the power industry, and PES. Because the scope of iGET is so broad, volunteers will be exposed to emerging technologies much sooner than they would otherwise, making them more effective in their careers and PES contributions.

4. Recognition of Outstanding Performance:

Daniel Molzahn, the Committee's Secretary, wrote an excellent piece on distributed optimization for the February 2022 PES Trending Tech Email.

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

There was no coordination with other entities during 2021, but coordination is expected to increase in 2022 as the committee's activities increase.

6. New Technologies of Interest to the Committee:

Distributed optimization. Applications of distributed optimization to electric power systems are a growing interest. The computational techniques needed to make distributed optimization more practically suitable for industrial applications (improving cybersecurity and convergence speed, ensuring privacy, considering stochastic problem formulations, etc.) are beginning to be investigated.

Applications of machine learning to power systems optimization. There is a lot of activity working to integrate machine learning into optimization algorithms in order to exploit the advantages of machine learning while maintaining the solution quality and explainability provided by a physical power systems model.

Synchronized waveform measurement. The community engaged in the development and application of synchrophasor technology over the past two decades has begun to shift focus to synchronized waveform measurements. The high speed behaviors of inverter based resources are one of the key drivers for this technology.

7. Global Involvement

PES is looking to increase involvement with members from Regions 8, 9 and 10 (Africa, Europe, Middle East, Latin America, Asia and Pacific). Please provide the following information.

Total Number of committee members 33	Officers from regions 8,9 and 10 0	Subcommittee officers from regions 8, 9 and 10 NA (no subcommittees)	Subcommittee members from regions 8,9, and 10 NA (no subcommittees)
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8. Significant Plans for the Next Period:

The next planned activity is the development of an Organization & Procedures Manual for the committee. Defining and purpose and scope of the committee will guide the activities moving forward. The manual will be distributed before the General Meeting so that the in-person committee meeting can serve as a launching point for these activities. One expected activity is an update to the committee’s Emerging Technology White Paper, which was last updated in 2020.

Submitted by: Jim Follum, Chair

Date: 1/27/2022