



IEEE PES Policy Technical Support Summary of Activities 2017

The IEEE Power & Energy Society Policy Technical Support Task Force (PTSTF) was formed to provide support to and cooperate with governments and regulatory organizations globally on technical issues related to power and energy topics. The IEEE PES PTSTF works closely with IEEE Standards Association (SA), IEEE USA, and other societies on a needed basis. The objective is to tap on IEEE membership and various organizations (e.g. Technical Committees, Smart Grid and Smart Cities, chapters) to provide required support. Joint IEEE efforts have resulted in cooperative relationships with the organizations noted below through each signing of a Memorandum of Understanding (MoU) with IEEE, which includes specific implementation plan.

- [US Federal Energy Regulatory Commission](#) (FERC) FERC is an independent agency that regulates the interstate transmission of electricity, natural gas, and oil. FERC also reviews proposals to build liquefied natural gas (LNG) terminals and interstate natural gas pipelines as well as licensing hydropower projects
- [North American Electric Reliability Corporation](#) (NERC) - NERC is a not-for-profit international regulatory authority whose mission is to assure the reliability and security of the bulk power system in North America.
- [US Department of Energy](#) (DOE) The mission of the Energy Department is to ensure America's security and prosperity by addressing its energy, environmental and nuclear challenges through transformative science and technology solutions.
- [Ministerio de Electricidad y Energia Renovable del Ecuador](#) (MEER) The Ministry of Electricity and Renewable Energy is the governing body of the electricity sector, and of the renewable and nuclear energy in Ecuador.
- [North American Transmission Forum](#) (NATF) - NATF members include investor-owned, state-authorized, municipal, cooperative, U.S. federal, and Canadian provincial utilities. The NATF's mission is to promote excellence in the reliable and resilient operation of the electric transmission system.

2017 Highlights

US Federal Energy Regulatory Commission (FERC)

A Standards and Conformity Assessment Workshop on IEEE 1547 DER Interconnection with Electric Power Systems was held on August 9th at the FERC facility in Washington. Participants were informed about the major changes to the IEEE 1547™. Additionally, the participants were informed about utility concerns/solutions to adopt the revised IEEE 1547™ standard and of the difference between a type test and a commissioning test.



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The PES Energy Storage and Stationary Battery Committee is developing a Tutorial on Energy Storage which will be held at the FERC facility in Washington in February 2018. The session will focus on the Factors Driving the Need for Energy Storage & Its Effect on the Grid.

FERC has also asked for guidance regarding the feasibility of “universal” specs for transformers (i.e., plug-n-play transformers that can be shared across the industry). The PES Transformers Committee will be approached about providing comments on this topic.

North American Electric Reliability Corporation (NERC)

IEEE and NERC, under the leadership by IEEE SA have identified a list of priority topics have made a plan to address them. One of the examples is a working group to look into the impact of large penetration of inverter-based resources on the power system. This includes both impacts on short-circuit current availability, and other dynamic performance issues as a consequence of this. By the second quarter 2018, the task force will produce an industry guidance document that will identify/define the issues/impact of having large penetrations of inverter based-resources on the power system with a longer range scope to develop standards, guides and technical papers to help guide the power industry as more wind and solar energy is being deployed. For more information visited the [PES website](#).

Another topic that will be discussed is the development of a technical report regarding power plant modeling & verification.

US Department of Energy (DOE)

Following the support IEEE provided on Quadrennial Energy Review, our team members have been speaking with representatives from the DOE Grid Modernization Laboratory Consortium on interoperability, metrics and other key topics. Additionally, the group reviewed and provided feedback on the 3 volumes of DOE’s Next Generation Distribution System Platform (DSPx). Comments have also been provided to DOE – GWAC on updating the Transactive Energy Framework and updating a DOE Smart Inverter White Paper.

IEEE provided input to U.S. DOE on the Digitization of the Electric Grid by the PES Smart Buildings, Loads and Customer Systems Committee and the PES Power System Operations, Planning & Economics Committee.

PES is also working with DOE in the organizing of Conferences. Michael Pesin, Deputy Assistant Secretary at US DOE, is Conference Organizing Committee Chair for the 2018 PES Innovative Smart Grid Technologies (ISGT) Conference.

Ministerio de Electricidad y Energia Renovable del Ecuador (MEER)

IEEE PES and MEER have formally agreed to work together on matters of mutual interest pertaining to the electricity system. Both groups will seek to effectively align their efforts to address reliability and resiliency challenges due to significant changes in energy supply, energy transfer, demand and technology. Cooperation may include (1) sharing technical needs & addressing challenges for infrastructure planning, modeling, systems operations and cyber/physical security (2) identifying existing and emerging technological requirements and approaches for addressing them (3) Developing, disseminating and sharing information related to planning, operation and maintenance of electricity systems and their component parts.



IEEE PES Policy Technical Support Summary of Activities 2017

North American Transmission Forum (NATF)

IEEE PES and NATF will facilitate interactions on matters of mutual interest pertaining to the electric transmission system. Both groups seek to more effectively align their efforts to address reliability and resiliency challenges due to significant changes in energy supply, demand, and technology. Cooperation includes but isn't limited to (1) Sharing technical needs and addressing challenges for infrastructure planning, modeling, system operations, and cyber/physical security; (2) Identifying existing and emerging technological requirements and needs and approaches for addressing them; and (3) Developing, disseminating, and sharing information related to the planning operations, and maintenance of electric transmission systems and their component parts.

Cooperation Task Areas

- 1. Standards and Interoperability** - Support grid modernization and improve communications and interoperability through timely development of standards.
This team participated in several face to face meetings and conference calls with the liaison team for interoperability and provided comments on several documents related to interoperability. Future plans for the team include (a) participation in development of the final cost/benefit white paper and presentation (b) work on the Interoperability Maturity Model.
- 2. Technology** - Support technology advancement through working with existing IEEE Technical Committee working groups or work with IEEE Technical Council and Committees to develop new working groups.
This team coordinated the response from PES Technical Committees and provided input to the IEEE European Public Policy Initiative Position Statements on the following topics.
 - Electrification of Transportation in the European Union
 - Energy Storage for Renewable Integration in the European Union
 - Renewable Energy in the European Union
 - Heating and Cooling Future of Europe and Interactions with Electricity
 - DC Electricity Distribution in the European Union
- 3. Conferences and Meetings** - Facilitate Participation at IEEE PES conferences, including organizing workshops, panel sessions, and project reviews.
This team increased PES participation in non IEEE conferences and was able to get PES representative to participate in the following events:
 - DOE-OE Smart Grid Communications R&D Roadmap Workshop
 - FERC Technical Conference
 - FERC Software Conference
 - Ohio PUC, Ohio's Grid Modernization Initiative - Panel on Distributed Energy Resources



IEEE PES Policy Technical Support Summary of Activities 2017

- IEEE through the San Francisco chapter organized a well-attended (over 140 participants) workshop at California Public Utility Commission to address opportunities and challenges with DER system integration.

Additionally, the team is working with DOE, NERC and FERC representatives to provide opportunities for individuals to contribute to PES Conferences.

- FERC, NERC, DOE, NATF and ENTSO-E representatives participated in a Panel Session at 2017 PES General Meeting.
- FERC, NERC, DOE and NATF representatives will participate in a panel session "IEEE Initiatives to Strengthen Grid Resiliency and Reliability" at ISGT 2018 in Washington D.C.
- FERC, NERC, DOE and NATF representatives will participate in a panel session at the 2018 PES T&D Conference & Exposition on Industry Collaboration and Standards Organizations supporting the Grid of the Future.

4. Education - Develop and/or deliver educational and informational materials, such as Webinars, On-demand Tutorials, Publications and Newsletter articles

PES is developing the Next Generation Energy Educational Initiative (Next GenEEI). This is a global on-line power system community & educational platform which will be integrated with the IEEE PES Resource Center. A successful test of the Next GenEEI platform was at the PES General Meeting in July on an IEEE PES Cascading Failure Working Group Tutorial.

IEEE Team Members

- Bill Ash (IEEE Standards) – Representative to FERC & NERC
- Julio Romero Aguero (Quanta Technology) - Conferences and Meetings
- Miroslav Begovic (Texas A&M University) – Education
- Emanuel Bernabeu (PJM Interconnection) - Representative to FERC
- William Chiu (Southern California Edison) – Representative to FERC
- William Hederman (University of Pennsylvania) – Representative to DOE
- Doug Houseman (Burns & McDonnell)- Standards and Interoperability and Representative to DOE
- Jay Liu (PJM Interconnection) – Representative to NERC
- John McDonald (GE – Grid Solutions) - Standards and Interoperability
- Jeff Nelson (Tennessee Valley Authority) – Technology
- Dagmar Niebur (Drexel University) - Technology
- Damir Novosel (Quanta Technology), 2017 PES President – Lead Officer
- Erik Nunnally (Southern California Edison) - Standards and Interoperability
- Tom Pierpoint (Exelon) - Conferences and Meetings
- Veronika Rabl (Vision & Results) - IEEE-USA Representative
- Daniel Toland (IEEE PES) - Program Director
- Marianna Vaiman (V&R Energy) - Education & NATF representative