

IEEE Power and Energy Society AMPS Annual Report

2021

Entity: Committee on Analytic Methods for Power Systems (AMPS)

Website: <http://sites.ieee.org/amps/>

Chair: Kwok W. Cheung

Vice-Chair: Stephen S. Miller

Secretary: Yanfeng Gong

Past Chair: Kevin P. Schneider

TCPC: Zhenyu (Henry) Huang

1. Significant Accomplishments:

This committee is composed of six subcommittees:

- Big Data Analytics Subcommittee (BDAS)
- Computing and Analytic Methods Subcommittee (CAMS)
- Distribution System Analysis Subcommittee (DSAS)
- Intelligent Systems Subcommittee (ISS)
- Reliability, Risk and Probability Applications Subcommittee (RRPA)
- Transient Analysis and Simulation Subcommittee (TASS)

The AMPS Committee and its subcommittees met virtually around the time of the IEEE PES General Meeting (GM) on July 30, 2021. Officer rotations occurred at the end of 2020. The table below shows the 2020 officers and 2021 officers. Next officer rotation will occur at the end of 2022.

Position	2020	2021
Chair	Kevin Schneider	Kwok Cheung
Vice-Chair	Kwok Cheung	Stephen Miller
Secretary	Stephen Miller	Yanfeng Gong
TCPC	Yanfeng Gong	Zhenyu (Henry) Huang
Past-Chair	Alex Schneider	Kevin Schneider
Awards Chair	Joydeep Mitra	Kevin Schneider
Standards Coordinator	Alex Schneider	Chris Dent
Web Master	Dagmar Niebur	Dagmar Niebur

For PESGM 2021, AMPS reviewed over 168 technical papers for the GM and accepted 87, plus 32 transaction papers. AMPS has had the highest or second highest number of papers among technical committees for several years. The number of submissions for the 2021 PES GM was down by approximately 50%, which was consistent with submissions from other committees, and is attributed to the virtual format of the conference. For 2022 GM which is planned to be an in-person meeting, AMPS has received a total of 239 conference papers and 47 transaction abstracts submission. It is about a 40% of increase in submission when compared to the previous year.



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The Technical Council of PES has established paper quotas which impact committees with higher numbers of papers, namely the greater of 40 papers or one half of those reviewed. Each subcommittee has been requested to accept no more than half of the papers sent to them for review, although the committee TCPC retains overall control of the review process.

With few exceptions, accepted papers are presented at the GM in one of three formats: in a poster session; in a paper forum, or at a panel session. At the 2021 GM, the AMPS Committee sponsored 32 panel sessions and 3 sessions were cancelled due to time conflict. All conducted panel sessions are 2-hr sessions. 14 of those panel sessions are live while the remaining are recorded sessions. For 2022 GM, AMPS has 28 2-hour panel sessions approved, per the quota by PES.

The AMPS Committee is the sponsor of record for four IEEE Standards, namely IEEE 762-2006, IEEE 859-2018, IEEE 1729-2014 and P2882. There was an active review by the full Working Group (WG) to extend 762 to include variable energy resources while maintaining consistency with the established concepts for conventional generation in February 2021. The standard of 859 was reviewed recently, resulting in the new 2018 edition, which made no significant changes to the main text but added several new explanatory notes. The current edition of Recommended Practice (RP) of 1729 expires in 2.5 years, and the DSAS is considering whether the necessary review will be a relatively light touch revision with few changes anticipated, or whether a more substantial revision is needed. Approved in September 2020, P2882 is a Guide for the validation of software models for renewable and conventional generators used for power system studies. Note that the four Standards discussed above are under the *individual* process in which the WG comprises Standards Association (SA) individual members participating as individuals. However, AMPS is often time requested to be engaged in oversight of standards activity under the *entity* process, in which organizations participate in the standards WG who are corporate members of the SA. AMPS currently oversees one entity activity with a draft currently in balloting, namely IEEE 2869: Synchronous Monitoring of Direct Current (DC) Bias Magnetic current Distribution in Power Grid.

Within the AMPS Committee, and the Subcommittee, there are a number of WGs and Task Forces (TF). In 2021, a couple of proposals for new WGs/TFs were evaluated. 1 TF was elevated to become a WG with extended scope. 1 WG and 4 TFs were terminated but 1 new WG and 4 new TFs were also formed. Current AMPS has a total of 22 WGs and 27 TFs.

Historically, most members of the AMPS Committee came to membership as ex officio members representing one or another subcommittee within its jurisdiction and have accepted the responsibility of ongoing service after their ex officio terms were completed. There are numerous active committee members that are not able to routinely attend meetings at the PES GM due to supporting AMPS coordinating activities. They are still considered active members because of their ongoing work, despite the conflict caused which prevents them from attending GM meetings.

As with other Technical Committees, the AMPS Committee maintains an Awards Working Group, but the structure was changed in 2020. In the new WG structure, the chair is the AMPS past-chair, and its members are the subcommittee past-chairs. This structure ensures that the members are aware of recent activities occurring in the subcommittees. A few new members including a new chair have rotated in for the WG in 2021.



The Committee continues to hold administrative meetings of Committee officers virtually. Multiple AMPS officers attended the meeting virtually.

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

The work of the AMPS Committee facilitates publication and presentation of technical work within the scopes of the subcommittees within its jurisdiction, by forming a structure for scheduling paper and panel sessions as well as reviewing papers and technical reports. Where a sufficient body of “best practice” exists, the Committee organizes a Working Group to propose new IEEE Standards and continue to revise existing Standards.

3. Benefits to Volunteer Participants from the Committee Work:

The subcommittees under AMPS provide a network of engineers with common technical interests. Participation in WG/TF activities and technical paper/report reviews exposes members to the latest developments and advances in many topics of technical interests. Participants also have the great opportunities to co-work with and learn from many top-tier, experienced engineers and researchers of our industry.

4. Recognition of Outstanding Performance:

The Committee plans to systematically nominate retiring Committee and Subcommittee officers for appropriate recognition where appropriate. This will be executed by the awards working group, chaired by the AMPS past-chair, but will require nominations from the greatest cross section of members as possible. An Award WG meeting was conducted on January 27, 2022 to discuss among the award nominations.

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

At the end of 2021 the coordinating committee representatives were renewed and will begin to reengage with the various technical committees. While the Committee is still searching for an official representative of RSICC, the current representatives are shown in the table below.

Coordinating Committee Representatives	
Energy Internet Coordinating Committee (EICC)	Stephen McArthur
Intelligent Grid & Emerging Technologies (iGET)	Yanfeng Gong
Marine Systems (MSCC)	Kevin Schneider
Renewable Systems Integration (RSICC)	Kwok Cheung (Acting)

6. New Technologies of Interest to the Committee:

Because AMPS is primarily a “methods” committee, there is significant interest in coordinating with other committees which are leading new technologies. One example of this is machine learning and artificial intelligence (ML/AI). AI/ML is a fast-growing area of research that AMPS is examining and is ensuring that the formation of new working groups and task forces on this topic are in line with other existing efforts



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in. Due to the popularity and significant interests in Big Data, the TF on Big Data Webinar Series is elevated to become a WG in 2021.

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).

Total Number of AMPS committee members	AMPS Officers from regions 8,9 and 10	AMPS Subcommittee officers from regions 8, 9 and 10	AMPS Subcommittee members from regions 8,9, and 10
129	1	4	Unavailable in 123signup

8. Significant Plans for the Next Period:

As 123Signup had been shut down, the structure for AMPS has been prepared to transition into the new Association Management System (AMS), memberPlanet, in January 2022. Work will continue to fully transition over to AMS throughout the course of 2022.

**Submitted by: Kwok W. Cheung, Chair
Steven S. Miller, Vice Chair
Yanfeng Gong, Secretary
Kevin Schneider, Past Chair
Zhenyu (Henry) Huang, TCPC**

Date: January 30th, 2022