

# IEEE Power and Energy Society Entity Annual Report 2021

**Entity: Energy Storage Stationary Battery Committee (ESSB)**

**Website:**

**Chair: Babu Chalamala**

**Vice-Chair: Steve Vechy**

**Secretary: Jason Wallis**

**Immediate Past Chair: Curtis Ashton**

## **1. Significant Accomplishments:**

*(Please explain why these are significant and include details and examples)*

We continued the expansion of the technical activities of ESSB to include extensive engagement with other PES technical committees, IEEE coordinating committees, growing the technical programming at the PES General Meeting and T&D, development of new standards in emerging areas, and a greater reach out to membership across all areas of energy storage and battery technologies.

Significant accomplishments include:

- We continued the development of collaborations through the newly established Energy Storage Collaborative Team (ESCT). Close cooperation with SCC21 continues. The jointly sponsored project P1547.9 on interconnection of energy storage distributed energy resources (with SCC21 leading) is in the final stage of balloting and will soon be submitted to RevCom. The second jointly sponsored project, P2688 on energy storage management systems (with ESSB leading) is in the drafting process.
- ESSB has taken over EESAT an established technical conference on energy storage and completed plans for hosting EESAT as an IEEE Technical Conference in November 2022.
- Curtis Ashton, former chair of EESB, was recognized with IEEE Standards Association Lifetime Achievement Award for 2021.
- IEEE PES Technical Council Working Group Award, Recognition Award for Outstanding Standard or Guide was given to IEEE Std 1679-2020 (Chair: Jim McDowall, Vice Chair: Mike Nispel)
- ESSB is developing a cooperative engagement with ESSB China Satellite Committee to serve the needs for growing membership in China.
- Continued growth of ES related technical sessions and panels at IEEE PES GM and T&D.

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

*(Provide specific examples and explain what the benefits are)*

ESSB provides an excellent opportunity for the industry and PES members with continuing education, outreach, and the opportunity to develop IEEE led global standards. The committee is also a great avenue for outreach and engagement with regulatory bodies at the state and federal levels. The committee is also



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developing technical programming for the research community through the development of EESAT as a peer review technical conference and growing role in IEEE PES publications.

### **3. Benefits to Volunteer Participants from the Committee Work:**

*(Provide specific examples and explain what the benefits are)*

The EESB committee is in a technical domain with a rapidly growing interest across many cross-cutting areas including grid modernization, firming of renewables with energy storage, batteries for electrification of transportation, and a growing range of applications for stationary batteries. Participation in the committee work provides a range of opportunities for members and volunteers. Benefits include:

- Continuing education through seminars and tutorials offered by ESSB and content on the PES Resource Center.
- Networking opportunities through participation in the two semi-annual meetings of the ESSB. Increased knowledge-sharing, learning, and networking opportunities with the growing membership of the committee.
- Leadership roles in standards development through contribution to standards activity through various working groups and joint standards through SCC21 and other coordinating committees.
- Technical contribution to the new EESAT conference with peer reviewed papers.
- Opportunity to participate in a range of technical activities in PES conferences on topics related to energy storage, stationary batteries, electrification, and grid modernization.
- Expanded horizons of many seasoned volunteer members to the possibilities and opportunities in new areas including grid energy storage, long duration energy storage, energy management systems, charging infrastructure, and energy storage support for electrification of transportation.
- Expanded programming and networking opportunities for members through the China Chapter Satellite Committee.

### **4. Recognition of Outstanding Performance:**

EESB continues to expand in membership and the range of technical activities the committee support. With a large number of working groups and growing collaborative work, the committee has a number of dedicated volunteers who provide tremendous service to IEEE PES and the industry through standards development and other technical activities. Here we would like to highlight recognize the following:

- Curtis Ashton, former chair of EESB was recognized with IEEE Standards Association Lifetime Achievement Award for 2021. This award is presented annually to an individual having a 15+ year commitment to standards development within IEEE and other national and international standards activities who provided significant technical contributions to a standards committee or in their field of interest.
- IEEE PES Technical Council Working Group Award, Recognition Award for Outstanding Standard or Guide was given to IEEE Std 1679-2020. This is recognition of outstanding work the working group has done in developing IEEE Std 1679-2020: Recommended Practice for the Characterization and Evaluation of Energy Storage Technologies in Stationary Applications (Chair: Jim McDowall, Vice Chair: Mike Nispel)

- Technical Committee Working Group recognition award for Outstanding Standard or Guide was awarded to IEEE-946-2020 Recommended Practice for the Design of DC Power Systems for Stationary Applications (Chair: Haissam Nasrat, Secretary: Richard Hutchins)
- 1526 Working Group – Rob Rallo, Jim McDowall, Tom Basso, Mark Siira, Dan Seidel, and Jim Midolo were presented with Working Group Awards for their contributions to the recent revision of this standard.

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

ESSB has a range of collaborations with ILTSC, SCC21, IAS, the Energy Storage Committee of ASME, and NFPA.

**Energy Storage Collaborative Team (ECST):** A number of external collaborations such as ASME and IAS are coordinated through ESCT. An outreach effort by ESSB and SCC 21 to attempt to not duplicate efforts within the ESS standards arena, and to share knowledge. During 2021:

- ESCT added further representation from the electric utility side(including with EPRI) to better coordinate energy storage standards activities
- 3rd edition of IEEE 1635 / ASHRAE 21 joint standard for thermal management and gassing of batteries, now including Li-ion, went to ballot
- P2962 (Li-ion installation, operation and maintenance) is progressing and may be balloted later this year. This was a joint project with KEPIC (Korea Electric Power Institute Code)
- IEEE 2836 (entity standard sponsored by ESSB) on testing of PV-EV-ESS charging stations was published
- Close cooperation with SCC21 continues. The jointly sponsored project P1547.9 on interconnection of energy storage distributed energy resources (with SCC21 leading) is in the final stage of balloting and will soon be submitted to RevCom. The second jointly sponsored project, P2688 on energy storage management systems (with ESSB leading) is in the drafting process.

**ESSB Safety Codes and Standards Working Group:** This WG has grown in active numbers with significant participation in NFPA and IFC standards development affecting energy storage. The Vice-Chair of this WG also serves as Co-Chair of the recently constituted IEEE IAS/PES Joint Technical Coordination Committee that represents IEEE’s official position on NFPA standards, especially relating to the National Electric Code (NFPA 70, 70B and 70E).

## 6. **New Technologies of Interest to the Committee:**

There are a range of new topics of interest to the committee. These include the development and applications of energy storage for a range of new applications. We currently have new Working Groups coming up to address engine start batteries, supercapacitors, and extending 1679 documents to other emerging battery technologies.

## 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	Officers from regions 8,9 and 10	Subcommittee officers from regions 8, 9 and 10	Subcommittee members from regions 8,9, and 10
88	4	3	4

EESB Satellite Committee – China has over 600 PES members. We are working on developing a framework to coordinate activities with the China Satellite Committee.

### 8. Significant Plans for the Next Period:

- Continue recruiting new members. Continuing our excellent outreach work with tutorials.
- **Energy Storage Subcommittee:** Continue to expand fill in knowledge gaps in standards and recommended practice guides related to Lithium batteries, emerging technologies like flow batteries, zinc batteries, and battery management systems; and update existing documents.
- **DC Related Systems Subcommittee:** Revisions and updates planned for several documents.
- Keep building ESSB related technical program at the PEG GM, T&D, ISGT and other venues.
- **ESSB Electrical Energy Storage Applications & Technology (EESAT) Conference:** This conference, once under the domain of the DOE Office of Electricity, Energy Storage Association and Sandia National Laboratories, will hold its first conference under the leadership of the IEEE PES Society/ESSB Committee November 7-9, 2022, at the AT&T Conference Center, Austin, TX. It is expected to bring together a significant number of energy storage experts that will deal with new ES technologies, applications, and R&D efforts in these areas.
- Continue to grow the engagement with the ESSB Satellite Technical Committee – China.

**Submitted by:**  
**Babu Chalamala, ESSB Chair**  
**Steve Vechy, ESSB Vice Chair**  
**Jason Wallis, ESSB Secretary**

**Date: Jan 31, 2021**