

IEEE Power and Energy Society Entity Annual Report

2023

Entity: Smart Buildings Loads and Customer Systems Technical Committee

Website: <https://site.ieee.org/pes-sblc/>

Chair: Yashen Lin, National Renewable Energy Laboratory

Vice-Chair: Qun Zhou Sun, University of Central Florida

Secretary: Sumit Paudyal, Florida International University

Immediate Past Chair: Johanna Mathieu, University of Michigan

1. Significant Accomplishments:

IEEE P2783 – Quick Response Systems – guide was approved by the Loads Subcommittee and SBLC Adcom. It was approved by IEEE SA Board on Nov. 8, 2023, and will be published in 2024.

IEEE P2418.5 – Blockchain in Energy - guide was approved by the Architecture Subcommittee and SBLC Adcom. It was sent to IEEE SA for balloting.

Developed the Trending Tech: Energy Equity and Energy Justice in Power Systems (Dec 2023).

<https://ieee-pes.org/trending-tech/energy-equity-and-energy-justice-in-power-systems/>

Task Force on Behind-The-Meter Distributed Energy Resources – published technical report: Behind-The-Meter Distributed Energy Resources: Estimation, Uncertainty Quantification, and Control.

Task Force on Demand Response in the DER Era (co-sponsored by the Power System Economics Subcommittee of IEEE PES PSOP and the Loads Subcommittee of IEEE PES SBLC) – working on a report/paper redefining “demand response” for the DER era.

Task Force on Flexible Grid-interactive Efficient Buildings – hosted IEEE PES Technical Webinar titled “Benchmarking Demand Flexibility for Grid-interactive Efficient Buildings.”

The committee coordinated 5 panels, reviewed 47 and accepted 23 papers at the IEEE PES GM 2023.

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

The committee, through its subcommittees, task forces, and working groups addresses specific topics of concern related to the edge of the grid and integration at grid boundaries, for example, building to grid integration, and the related technologies. These activities are often interdisciplinary and based on a variety of technologies, so there is a rich interaction between the SBLC groups and related groups in IEEE PES and beyond.

3. Benefits to Volunteer Participants from the Committee Work:

Volunteer participants are able to engage in the interdisciplinary work of the committee and to help shape the activities through the panel sessions organized for the PES GM.

4. Recognition of Outstanding Performance:

At the PES GM 2023, certificates of appreciation were given to:

- Johanna Mathieu, SBLC past chair
- Karan Kalsi, Loads SC past chair

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

- Past chair Dr. Johanna Mathieu serves on the Editorial Board of IEEE Transactions on Control of Network Systems (an IEEE Control System Society (CSS) journal), IEEE CSS Conferences, and IEEE CSS Technology Conferences. She is also an active participant in the IEEE CSS Technical Committee on Smart Grids.
- Past chair Mr. Shawn Chandler serves on the Editorial Board of the IEEE Internet of Things Magazine.
- Past chair Dr. Ron Melton is serving as the Conference Chair for the IEEE PES ISGT 2023 Conference.
- Committee secretary Dr. Qun Zhou and TCPCs Dr. Bishnu Bhattacharai and Dr. Sumit Paudyal serve on the Editorial Board of IEEE Transactions on Smart Grid and IEEE Power Engineering Letters.
- Smart Buildings and Customer Systems SC past chair Dr. Linqun Bai serves on the Editorial Board of IEEE Transactions on Sustainable Energy and IEEE Power Engineering Letters.
- Loads SC past chair Dr. Mads Almassalkhi serves on the Editorial Board of IEEE Transactions on Power Systems and IEEE Power Engineering Letters. He is also chair of the IEEE Control System Society Technical Committee on Smart Grids.
- Architecture SC chair Dr. Masoud Nazari serves on the Editorial Board of IEEE CSS Technology Conferences.

6. New Technologies of Interest to the Committee:

The committee is interested in new technologies related to distributed systems integration, integration and interconnection of distributed energy resources at the edge of the electric power system or on or within customer premises, technologies associated with automation of building energy systems and controls (“smart buildings”) including commercial and residential buildings and loads, associated technologies for implementing such systems, for example, communications technologies and computer technologies including machine learning and distributed ledgers.

7. Global Involvement & YP 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.

Please also provide information on the number of young professionals that are involved in your committee.

Total Number of committee members	Number of Young Professionals (under 35 years of age) – Including committee & subcommittee	Officers from regions 8,9 and 10	Subcommittee officers from regions 8, 9 and 10	Subcommittee members from regions 8,9, and 10
~150	~30	0	0	~50

8. Problems and Concerns:

The name of the committee is long, and sometimes provides wrong impression on the scope of the committee. The committee has started discussions on a potential name change.

9. Significant Plans for the Next Period:

- Co-sponsor (with AMPS) the Working Group on Distribution System Behind-The-Meter Distributed Energy Resources: Visibility, Analytics and Control.
- Engage other committees and societies with Task Force on EV charging.
- Dr. Farrokh Rahimi and Dr. Ron Melton will represent PES as Governing Board Members of the IEEE Blockchain Technical Community.
- Dr. Farrokh Rahimi will serve as the Conference Chair for the IEEE PES ISGT 2023 Conference.

Submitted by: Yashen Lin, IEEE PES SBLCS Chair

Date: Jan. 31, 2023