IEEE Power Electronics Society

FIVE-YEAR STRATEGIC PLAN

2026-2030

Approved: TBD

Rev: 2025-1

IEEE POWER ELECTRONICS SOCIETY
Powering a Sustainable Future

IEEE
Advancing Technology for Humanity

IEEE PELS Strategic Plan 2026-2030 Executive Summary

The Strategic Planning Committee has identified six strategic goals where increased activities will be developed over the next 5 years. Not listed are the continued pursuit of excellence in the portfolios of the Society.

Vision Statement

To be THE global resource that all people turn to for education, knowledge sharing, technical events, and networking in the power electronics field.

Mission Statement

IEEE PELS's core purpose is to foster power electronics technological innovation and excellence for the benefit of humanity.

2026 - 2030 Goals

1. Global Membership, Influence and Impact	2. Next-Generation Products and Services	3. Conference Evolvement and Support	4. Trusted Source for Lifelong Education	5. Sustainable and Resilient Future for All	6. Long-Term Structural and Operational Excellence
To advance global impact through strong membership and strategic alliances.	To enhance products and services to our members and the broader public, through technological innovations and leadership in energy-efficient AI.	To reorganize and refocus conferences to grow long-term impact and engagement.	To develop high-value educational materials that enable universal access and engagement.	To enable global energy transition through innovation and technical leadership for a sustainable, resilient, and equitable future.	To provide for the governance structure, resource planning, and support of the operational agility to ensure the long-term success of the Society.

Key Strategies

1.1 Form strategic alliances with national societies, industry, and global organizations 1.2 Customize member benefits by region and career stage 1.3 Invest in marketing campaigns to raise awareness of PELS and the benefits of power electronics among the public, members, and other stakeholders	2.1 Enhance next-generation publishing experience and products 2.2 Enhance PELS operations through the strategic use of AI and other emerging technologies and tools 2.3 Provide personalized member experience 2.4 Lead in energy-efficient AI and integration in power electronics	3.1 Reorganize regional comprehensive conferences to improve accessibility 3.2 Emphasize and align with industry needs 3.3 Encourage consolidation or co-location of TC-level conferences and workshops 3.4 Improve processes and support tools for conference organizers 3.5 Leverage critical and emerging technologies and tools	4.1 Support and develop educational activities for global and regional engagement 4.2 Create educational materials to train and cultivate skill-building for members throughout their careers 4.3 Increase awareness of the societal value of power electronics 4.4 Support future workforce development by leveraging emerging tools	5.1 Enable Energy Access and resilience through societal-impact driven programming for transparent and measurable impact 5.2 Drive environmentally sustainable research, practices and universal metrics in power electronics ecosystems 5.3 Build relevant partnerships with IEEE societies and beyond to address multidisciplinary challenges and amplify impact	6.1 Align people, funding, and technological resources with strategic priorities 6.2 Strengthen communication channels among PELS leaders, chapters, and members 6.3 Provide training, tools, and support 6.4 Enhance governance structures, policies and procedures 6.5 Position PELS to serve members across academia, industry, and regions

Introduction

The Power Electronics Society (PELS) remains one of the fastest-growing societies of the Institute of Electrical and Electronics Engineers (IEEE). For over 30 years, PELS has facilitated and guided the development and innovation in power electronics technologies. The technologies encompass the effective use of electronic components, the application of circuit theory and design techniques, and the development of analytical tools toward efficient conversion, control, and conditioning of electric power. Our membership includes researchers, practitioners, and students, and many are distinguished award winners. IEEE PELS publishes several top reference journals, including the *IEEE Transactions on Power Electronics*, *IEEE Power Electronics Magazine*, *IEEE Open Journal of Power Electronics*, *IEEE Transactions on Transportation Electrification*, and *IEEE Journal of Emerging and Selected Topics in Power Electronics* etc.

During the period of 2021 – 2025 the IEEE Power Electronics Society has thrived. PELS is a vibrant society with a growing membership with a strong global presence and has achieved strong financial performance. Service to our membership has become broader, offering an ever-expanding variety of high-quality conferences, publications, educational programs, and engaging activities. The Society has proactively sought new opportunities to engage our greater community and encourage collaborative partnerships, and to foster power electronics innovation. Globally, power electronics is regarded as a key essential technology to facilitate the structural changes needed for energy transition and sustainability. In view of this important role that PELS must play, a mechanism to enable the impact of PELS as a global influencer was introduced, namely a strategic technology workshop: IEEE Future of Electronic Power Processing and Conversion (FEPPCON). FEPPCON is held in alternate years to the PELS Long Range Planning (LRP) meetings. FEPPCON has become the vehicle to revitalize PELS technical programming, identify emerging technologies and serve as a springboard for new initiatives, while the LRP meeting is mainly focusing on developing 5-year goals and strategies of PELS.

Vision Statement

To be THE global resource that all people turn to for education, knowledge sharing, technical events, and networking in the power electronics field.

Mission Statement

IEEE PELS's core purpose is to foster power electronics technological innovation and excellence for the benefit of humanity.

The objectives of the Power Electronics Society shall be scientific, literary, and educational in character. The Society shall advance the theory and practice of electrical and electronics engineering and of the allied arts and sciences, and it shall promote a high level of technical excellence among its members. PELS shall aid in promoting close cooperation and exchange of technical information among its members and affiliates, and to this end shall hold meetings for the presentation of papers and their discussion, shall sponsor periodicals and special publications, and through its committees shall study and provide the needs of its members and affiliates.

Motto

Powering a Sustainable Future

Field of Interest

The field of interest of the Society shall be the development and application of power electronic systems and technologies, which encompass the effective use of electronic components, the application of circuit theory and design techniques, and the development of analytical methods and tools toward efficient electronic conversion, control, and conditioning of electric power to enable the sustainable use of energy.

Purpose and Values

The PELS Strategic Plan was developed to be directly in line with the IEEE Strategic Plan, including the core purpose, values, and overarching goals. Each of these constructs has been enhanced to be more reflective and specific to PELS. The strategic goals are unique to this plan.

PELS' core purpose is to foster the development and facilitate the exchange of scientific and technological knowledge in our field of interest that benefits members, the profession, and humanity.

PELS' core values are:

- Collaboration and Engagement – Embracing the multitude of members and their careers, globally, and respecting each other's needs and values with honesty and transparency.
- Networking – Creating and sustaining an engaged, interactive international community of power electronics professionals.
- Professionalism – Maintaining the highest level of professional and ethical standards.
- Excellence – Disseminating high-quality power electronics information in a timely, equitable and objective manner.
- Volunteerism – The driving force of the organization. Providing volunteer opportunities that are rewarding to members and their employers.
- Advocacy – Promoting power electronics to engineers, government, and society.

The PELS overarching goal is to be the most recognized, respected, and visionary global organization in the Society's stated field of interest. This is accomplished by being:

- essential to the global power electronics community, serving as the home for power electronics professionals,
- the place where innovators and practitioners meet,
- recognized globally as the leading organization for forming new knowledge communities, delivering quality information and supporting power electronics professionals,
- the preferred place to go for timely, relevant power electronics information, and
- the place to go to seek innovation and new ideas for energy advances.

In addition, it is the objective of PELS to have every power electronics professional and stakeholder be a member. PELS wants students to join and become active volunteers throughout their careers.

PELS aims to build and sustain a global community of professionals dedicated to advancing power electronics through the creation, validation, and exchange of high-quality technical knowledge for the betterment of humanity and the profession. This strategic plan envisions the establishment and maintenance of a holistic environment to serve the needs of practicing engineers while providing lifelong learning, career development, and leadership opportunities.

This also includes promoting the identification, creation, development, standardization, and application of power electronics technologies and disseminating the knowledge to the membership, the profession, and the public.

Numerous different communities have an interest in the products and services provided by PELS. According to their professional interests and needs, those constituencies include:

Researchers

- Educators and researchers in academia
- Graduate students
- Industrial researchers
- Researchers in government laboratories

Practitioners

- Technologists (developers of technologies, products, and services)
- Practitioners in design, manufacturing, marketing, operation, and application
- Consultants
- Managers

Others

- Undergraduate students
- Policy makers and government agencies (technocrats & politicians)
- Media (scientific/technical & general)
- General public

Within most of these communities, there are subgroups which may have different professional interests and needs according to their professions, age, gender, or geographic and cultural identities. Power electronics researchers and practitioners, irrespective of their other affiliations, are our core constituency and members, and hence it is essential that PELS widely engage with these communities to continuously evaluate their needs and provide the best possible professional services inclusively to all of them. Furthermore, it is also a keen interest of the core constituency that PELS provides appropriate, high-quality quality, and timely services to other communities with interest in or influence on our profession, whether within IEEE or outside.

At present, PELS is providing outstanding services to researchers, is striving to improve services to practitioners, and continuously seeks to adopt new programming and services to engage and benefit the global community. Such efforts directly tie back to and focus efforts on our Mission: *IEEE PELS' core purpose is to foster power electronics technological innovation and excellence for the benefit of humanity.*

2026 - 2030 Strategic Goals

1. Global Membership, Influence and Impact

To advance global impact through strong membership and strategic alliances.

1.1 Form strategic alliances with national societies, industry, and global organizations

- Establish MOUs, joint events, and mutual recognition programs to enhance regional engagement and global influence
- Facilitate joint whitepapers, roadmaps, standards, and professional development programs
- Provide unbiased information and data about fields in the scope of PELS to facilitate decisions with a positive impact on humanity

1.2 Customize member benefits by region and career stage

- Develop success targets and track KPIs to measure: membership (growth, engagement, and satisfaction at each member grade), global impact (policy making, corporate engagement, standards, white papers), and regional outreach effectiveness
- Develop differentiated offerings for students, early-career professionals, industry, and retirees, tailored by geography, such as webinars, language-accessible resources, and local chapter support to enhance relevance and engagement across diverse geographic areas
- Offer value-driven packages for companies, including marketing, workforce development, and technical engagement
- Create effective member retention programs that transition students into full-grade members

1.3 Invest in marketing campaigns to raise awareness of PELS and the benefits of power electronics among the public, members, and other stakeholders

- Leverage region-specific social media, how-to videos, and member apps to increase awareness and engagement
- Share success stories, technical content, and PELS opportunities in engaging formats
- Develop public outreach and educational awareness about the role of power electronics to benefit humanity

KPIs (Success Criteria)

- MOUs and agreements with other organizations and companies
- Joint events with other national societies, industry, and global organizations
- Whitepapers and roadmaps for industry and government etc.
- Creation of a metric to measure membership satisfaction
- Percentage of membership that has engaged in PELS events

- Increase industry membership
- Percent of PELS Leaders trained on how IEEE measures success
- Press articles and digital media posts

2. Next-Generation Products and Services

To enhance products and services to our members and the broader public, through technological innovations and leadership in energy-efficient AI.

2.1 Enhance next-generation publishing experience and products

- Leverage AI in semantic article search (including materials such as webinars datasets, translated abstracts, Industry Content Platform, etc. related to a paper), literature review, publication/product translations, and use of appropriate language
- Exploit proper use of AI and other emerging tools in publications and paper review (plagiarism and deepfake detection, editor support including reviewer selection, etc.)
- Provide AI Summaries in Open Access Journals for the industry
- Develop deep search and machine learning tools for literature organization and custom review paper production
- Develop AI products to support PELS engineers, researchers, and students

2.2 Enhance PELS operations through the strategic use of AI and other emerging technologies and tools

- Enhance PELS operations through the strategic use of AI
- Implement AI-powered search and user interaction tools for the PELS website (e.g., conversational search, individualized search and services)
- Utilize AI to identify and engage potential volunteers based on interests; develop onboarding and training resources to support involvement in conferences, publications, committees, and leadership roles
- Deploy AI tools to support and streamline Society operations by identifying key information across committees and generating summaries of projects, actions, initiatives, and cross-committee communications – enhancing transparency, consistency, and decision-making through relevant metrics
- Identify broader collaboration and engagement opportunities across IEEE and other societies using AI-driven insights to inform PELS leadership
- Create multi-format educational content (e.g., video, audio, multilingual) from a single source using AI-based generation tools

2.3 Provide personalized member experience

- Conduct marketing and market research to identify key member segments, target outreach efforts, and analyze engagement data (e.g., from LinkedIn and other platforms)
- Deliver individualized membership content through personalized outreach, tailored interactions, customized products, and benefit offerings

- Develop an AI-powered interactive membership experience that aligns PELS products and services with individual member interests
- Utilize AI and other tools to identify members eligible for elevation to Senior Member (SM) or Fellow based on experience and outcomes; recommend suitable reviewers or supporters; and generate targeted contact lists to support outreach by the VP for Membership

2.4 Lead in energy-efficient AI and integration in power electronics (Advancing AI-enabled development in power electronics while leading the development of energy-efficient systems that power AI)

- Identify opportunities to apply AI in power electronics research, recognizing that the field has traditionally been more analytical than data-driven
- Establish a Society-wide framework for dataset collection across power electronics R&D topics, including dataset templates, coordination through technical committees, competitions, and PELS publications integrated with a data portal
- Leverage PELS publications to advance AI applications in literature mining, trend analysis, and research forecasting within power electronics
- Develop guidelines and promote standards for the responsible and sustainable use of AI by power electronics researchers and engineers
- Create a curated repository of AI software, tools, and methods for power electronics, hosted on platforms such as GitHub, and contributed to and accessed by PELS members
- Position PELS as a global leader in research on energy-efficient AI and the power systems that support AI infrastructure

KPIs (Success Criteria)

- Paper views and downloads
- Dataset creation and download
- New products and services
- Volunteer/user feedback
- Measurable member interactions including onboarding
- Membership engagement on digital media platforms
- Member retention and elevation numbers
- AI Tools and software
- Publications and special sessions
- Guidelines, standards, and white papers
- Number of AI-related materials (webinars/courses/articles)

3. Conference Evolvement and Support

To reorganize and refocus conferences to grow long-term impact and engagement.

3.1. Reorganize regional comprehensive conferences to improve accessibility

- Explore co-founding (ECCE) Latin America conference with Industry Applications Society

(IAS)

- Refocus SPEC on Africa, the Middle East, South Asia, Oceania
- Create a cohesive strategy for South Asia (e.g. India)
- Support regional conferences by leveraging DLs and Regional DLs as speakers
- Support travel grants to enable participation through a unified, equitable award process

3.2. Emphasize and align with industry needs

- Identify and regularly assess industry priorities to ensure PELS activities support real-world challenges and help advance business goals
- Encourage all PELS-sponsored conferences to include industry-focused sessions and promote the inclusion of industry professionals on organizing committees
- Expand educational offerings to include industry-relevant and design-oriented content, and provide Professional Development Hours (PDHs, CEUs etc.) to support ongoing workforce training

3.3. Encourage consolidation or co-location of TC-level conferences and workshops

- Develop a flagship annual event (e.g., "PELS Congress") that brings together TC-level conferences under one umbrella – allowing TC organizers to focus on the technical program while a centralized team manages logistics, venue selection, and overall coordination.
- Create a process to sunset and consolidate conferences

3.4. Improve processes and support tools for conference organizers

- Create a conference management tool for paper management, registration, and demographics/performance reporting
- Develop a reporting template for conference demographics

3.5. Leverage critical and emerging technologies and tools to improve conference attendee experience and accessibility

- Explore live language translations
- Establish a dedicated subcommittee to identify quick-win opportunities and allocate budget to pilot selected AI initiatives

KPIs (Success Criteria)

- Regional comprehensive conferences reorganized by 2028
- Number of attendees at each regional comprehensive conference, targeting >400 attendees
- Industry participation/attendance at conferences >40% (on average)
- Reduced conference costs
- Co-located flagship TC events launched by 2030
- Conference management tool launched in 2026 with paper management capabilities
- Regular updates to the conference management tool to include registration, data reporting, etc.
- >50% of PELS financially co-sponsored conferences adopting the conference management tool
- Simultaneous interpretation for some conferences launched by 2027

4. Trusted Source for Lifelong Education

To develop high-value educational materials that enable universal access and engagement.

4.1 Support and develop educational activities for global and regional engagement

- Support chapter events, particularly in underrepresented areas worldwide
- Accommodate accessibility at events and enable resources in local languages
- Collaborate with other IEEE societies and external partners to expand and amplify impact

4.2 Create educational materials to train and cultivate skill-building for members throughout their careers

- Develop educational content, including fundamentals, emerging topics, professional development, hands-on skills, re-training, and best practices
- Develop and disseminate materials for experiential learning and ensure open-access resources
- Utilize tools to ensure accessibility

4.3 Increase awareness of the societal value of power electronics

- Develop introductory content aimed at both technical and non-technical communities
- Leverage digital media platforms to engage current and future members

4.4 Support future workforce development by leveraging emerging tools

- Develop AI-powered education tools and build technical and non-technical resources
- Strengthen scholarships for students

KPIs (Success Criteria)

- Education-related events in regions
- Educational materials (courses, videos, kits), enrollments/subscriptions for courses and webinars, equivalent financial value of course enrollment, views for videos, experiential learning kits sent out, hardware resource downloads, design contests
- Certificates and CEU tracking

5. Sustainable and Resilient Future for All

To enable global energy transition through innovation and technical leadership, fostering the impact of power electronics in building a sustainable, resilient, equitable future for all.

5.1 Enable Energy Access and resilience through societal-impact driven programming for transparent and measurable impact aligned with global, regional, and national agendas (e.g. SDGs – UN Sustainable Development Goals)

5.2 Drive environmentally sustainable research, practices, and universal metrics in power electronics ecosystems

5.3 Build relevant partnerships with IEEE societies and beyond to address multidisciplinary challenges and amplify impact

KPIs (Success Criteria)

- Universal embodied energy characterization
- PELS led standards for the sustainable design of power electronics
- Number of collaborations or partnerships formed with organizations focused on equitable energy access and sustainability

6. Long-Term Structural and Operational Excellence

To provide for the governance structure, resource planning, and support of the operational agility to ensure the long-term future of the Society.

6.1 Align people, funding, and technological resources with strategic priorities to remain adaptive to changing needs

- Conduct and document annual Society-level goal setting to address near-term tactical projects, programming, and services planning
- Address administrative office staffing and resource planning for volunteer and program area support functions
- Document and publish the Society Strategic Plan's program, project, and service progress via a Society dashboard

6.2 Strengthen communication channels among PELS leaders, chapters, and members for greater transparency, connection, and responsiveness

6.3 Provide training, tools, and support for volunteer engagement and Society leadership continuity

- Provide formal and consistent governance training for volunteers at both the Society and regional levels

6.4 Enhance governance structures, policies and procedures to support global reach, equitable participation, and effective Society operation

6.5 Position PELS to serve members across academia, industry, and regions as the global leader and professional home for the power electronics community

KPIs (Success Criteria)

- Systematic progress reporting including annual strategic goals completed on schedule
- Tools, training, continuity, succession planning (volunteer and staff)
- Number of volunteers formally trained and their retention rates
- Chapter satisfaction scores through surveys
- Number of policies and operational procedures reviewed and updated

(Note: here is where we mark the end of the formal strategic plan – what follows is addendum or ancillary)

Strategic Planning Committee - 2025

Strategic Planning Committee

Liuchen Chang, Senior Past-President
Brad Lehman, Immediate Past-President
Bruna Gehrke, Students and Young Professionals Committee Chair

Appointed Committee Members

Helen Cui
Lauren Kegley
Noriko Kawakami
JinJun Liu
Sanjib Kumar Panda
Jelena Popvic
Jian Sun
Brian Zahnstecher

Executive Team

Johan Enslin, President
Joseph Kozak, Treasurer
Pradeep Shenoy, VP Conferences
Marco Liserre, VP Technical Operations
Yunwei “Ryan” Li, VP Products
Mark Dehong Xu, VP Membership
Peter Wilson, VP Industry and Standards
Katherine Kim, VP Educational Activities
Isik Kizilyalli, Global Relations Chair
Giovanna Oriti, Constitution and Bylaws Chair

Staff

Mike Kelly, Executive Director
Brianna Fornaro, Operations Manager
Marissa Jadrosich, Senior Society Specialist

Strategic Plan History

- Prior to 2012 IEEE Power Electronics Society did not record a written Strategic Plan document
- Retreat of PELS Long Range Planning Committee prepared the first Strategic Plan, September 14-15, 2012

- Initial Release (Rev 0) Revision 2013-2014 approved by AdCom, March 22, 2013
- Revision 1: Biannual Retreat of PELS Long Range Planning Committee, September 23-25, 2014; Revision 2015-2016 Approved by AdCom, September 24, 2015
- Revision 2: Biannual Retreat of PELS Long Range Planning Committee, May 27-30, 2016; Revision 2017-2018 approved by AdCom, September 22, 2016
- Revision 3: Biannual Retreat of PELS Long Range Committee, June 6-9, 2018
- Revision 2018-2019: Mid-Cycle Review Version, July 23, 2018, approved by AdCom, September 28, 2018
- Five-Year Strategic Plan (2021-2025): virtual PELS Long Range Planning Meeting, July 14, 21 and 30, 2020, approved by AdCom, October 15, 2020
- Five-Year Strategic Plan (2021-2025) Mid-Cycle Review & Revision: PELS Long Range Planning Meeting, August 16-19, 2023, approved by AdCom 2024
- Five-Year Strategic Plan (2026-2030): PELS Long Range Planning Meeting, May 28-30, 2025, approved by AdCom, TBD (2026)

Addendums: TACTICAL IMPLEMENTATION PLAN

Note: Annually the PELS Executive Committee proposes a Tactical Implementation Plan (TIP). The annual TIP would become addendum to this Strategic Plan document. The components of the TIP are the action items, motions, staff directives, and any strategic or altruistic activities resulting from our Executive Committee Meetings and AdCom meetings.

The annual TIP will ensure a direct connection between our strategic planning and in-year activities and therefore form the basis of our budgeted programming and services.

Every program or service we run should be tied back to our Mission. Additionally, the TIP should document the strategies undertaken and define the mechanism or metric to gauge progress toward the Goals and Key Strategies outlined in the five-year Strategic Plan. Doing so will focus on our programming, provide for and allocate resources, and align our efforts to meet our Mission and Vision as well as the Strategic Plan.

TACTICAL IMPLEMENTATION PLAN 2026