



www.ieee-pes.org



IEEE

420,000+ members

Founded 1963

PES Governing Board includes
Vice Presidents which oversee

38

Other IEEE
Societies

IEEE PES

37,000+ members

Current President
Damir Novosel
Quanta Technology

230+

Chapters
Across 10
Global Regions

New
Initiatives
& Outreach

Publications

Membership &
Image

Education

Technical
Activities

Meetings

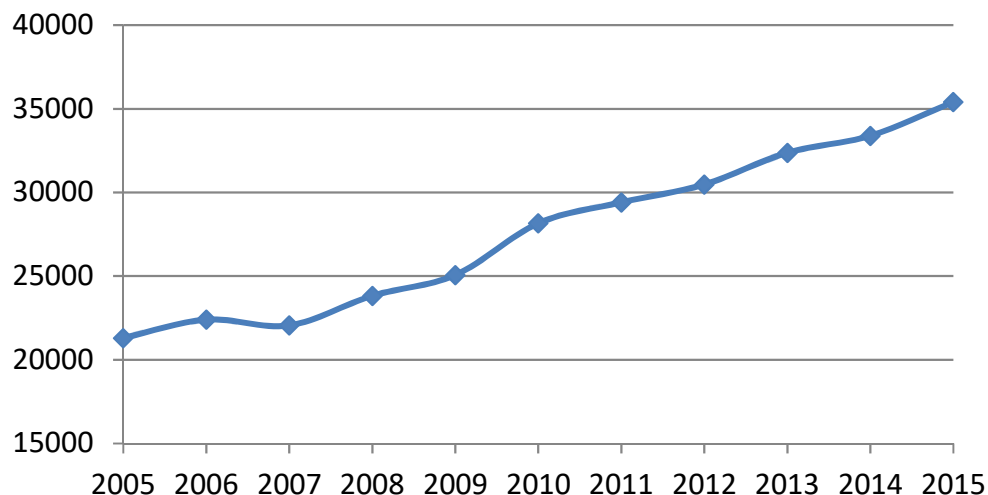
Standing
Committees

Technical
Committees

Standards Developing
Technical Committees

Coordinating
Committees

Another Year of Record Membership Growth!



Official PES Membership: 37,035

Recognize Volunteering Work (e.g. Awards) and Bring New Members (e.g. Merit Scholarship)

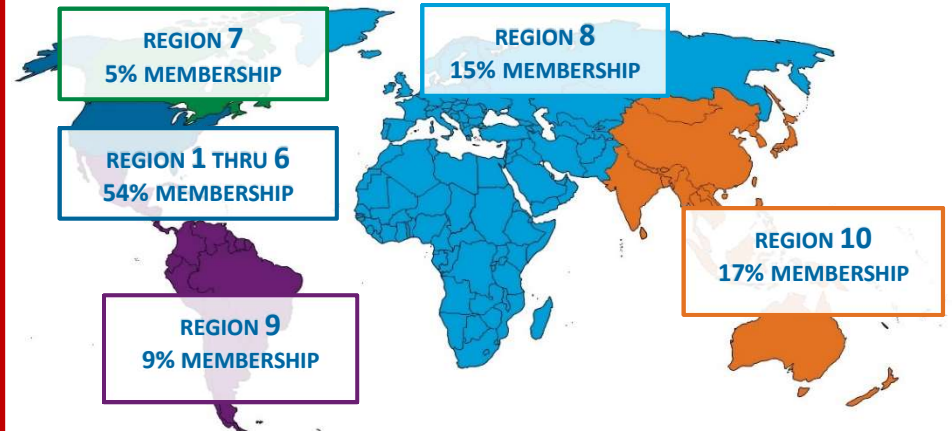
Going Forward...

- Increase Industry Participation – **Members to Volunteers**
- Promote Value, Products & Services
- Increase Global Participation
- Provide objective technical leadership, globally
 - Respond to changing industry needs
 - Focused standard development
 - Cooperation with U.S. DOE, NERC, FERC, EU Commission, and other global agencies

“More Power to the Future”

Industry Engagement

- ❑ Executive Advisory Board
 - Created in Regions 1-7
 - Region 8 started
 - Regions 8 and 10
- ❑ Address Emerging Topics and Industry Standards, including fast-tracking
- ❑ Satellite Global WGs to expand knowledge base and sharing best practices
- ❑ Technical Support to Regulatory & Policy Agencies



Benefit from the strength of our diversity and backgrounds

- Utilities, Municipalities, RTOs
- Academics and Research
- Equipment Manufacturers, System Suppliers, Testing Labs, Cons.
- Government and Regulatory
- And more

2016 Milestones: IEEE Industry MOUs



IEEE & U.S. DOE MOU to address grid modernization challenges

IEEE & FERC MOU to address energy infrastructure and market challenges

IEEE & NERC MOU (led by SA) to perform and promote regional and international standardization

Expand to other global agencies:

- EU Commission
- State Grid China Corp
- California PUC, etc.

IEEE Technical Policy Support Task Force

- **Task 1: Standards and Interoperability**
Cooperation with NIST and SGIP
Lead: J. McDonald and D. Houseman ,
- **Task 2: Technology**
Lead: J. Nelson and D. Niebur
- **Task 3: Conferences and Meetings**
Lead: T. Pierpoint and J.R. Aguero, M. Proetto
- **Task 4: Education**
Lead: M. Begovic and M. Vaiman, S. Koval

Involvement by:

IEEE Standards Association

IEEE USA

IEEE Policy Committee

IEEE Smart Grid

Other IEEE Societies

“More Power to the Future”

Invest in and Engage with Our Global Community

- ☐ Organize industry-focused conferences & workshops globally (panels, tutorials)
- ☐ Expand Generation, Transmission, & Distribution Trade Shows, e.g. GTD Latin America and GTD Asia
- ☐ Conference Steering Committees for Regions 8, 9, and 10 focusing on industry engagements



“More Power to the Future”

Value Provided – Corporate Engagements

- ❑ Training - PES University
- ❑ Tutorials on Emerging Topics and Standards, CEUs & PDHs
- ❑ Resource center as the content repository
- ❑ Integrating New On-Line tools: GenEEI (Next Generation Energy Educational Initiative) platform and Data PORT



Over 1,000 Products
40,000+ Visitors in the Past 12 Months
from 158 Countries

- Easy Access to sharing best practices, education, industry trends, etc.
- Distribution tool for **digital** products (complements Xplore)

Visit: *resourcecenter.ieee-pes.org*

Recent Tutorials and Webinars on Standards

- IEEE Std. 1547 - Standard for Interconnecting Distributed Energy Resources
- IEEE Std. C37.238 IEEE Standard Profile for Use of IEEE 1588 Precision Time Protocol in Power System Applications
- IEEE Std. C62.2- Surge Protection of Power Systems
- IEEE Std. 998 – Guide for Direct Lightning Stroke Shielding of Substations
- IEEE Std. C122.4 Guide for Application and User Guide for Gas-Insulated Transmission Lines (GIL), Rated 72.5 kV and Above
- IEEE Std. C37.122.6- IEEE Recommended Practice for the Interface of New Gas-Insulated Equipment in Existing Gas-Insulated Substations Rated above 52 kV
- IEEE 2030.5 (Smart Energy Profile 2.0): An Overview and Applicability to Distributed Energy Resources
- IEEE Standards Enable a Reliable, Secure, Interoperable Smart Grid
- IEEE Std. C37.242 Guide for Synchronization, Calibration, Testing, and installation of (PMU) for power system protection and control

Topics for Standards and Guides

- **Requirements and Metrics for DER Penetration**
 - Low fault current levels
 - Inertia requirements and frequency regulation
 - Voltage and transient stability
 - System restoration (black-start) and Reliability
- **Grid Modernization Needs for DER Penetration Levels**
 - Infrastructure improvements
 - Sensors and SW Tools for forecasting, planning, operations, & maintenance
 - Integrated T&D planning
- **Storage Integration**
 - Battery EES System requirements, Management, and Control systems
 - Flow Batteries, Flywheels,
 - EES Installation, Testing, and Maintenance
 - Cost-benefits, combined applications

Other Topics and Next Steps

- System requirements for electrical vehicles integration
- Home automation, grid edge integration, Home Plug networking, etc.
- Architecture needs and Information sharing
- Markets
- Smart cities
- Offshore wind
- ...

**Fast Track
Needs?**