REGIONAL CONFERENCE

INCLUSIVE ENERGY TRANSITION IN SOUTH ASIA AND BEYOND

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IEEE SA STANDARDS ASSOCIATION

IEEE and IEEE SA

Standards Ecosystem Enabling Energy Transition

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IEEE

GLOBAL IMPACT

Accelerating innovation

Leading change for human values and ethical consideration

Driving sustainable solutions for a planet positive for generations to come

Building bridges between policy markers, government and institutions

Promoting technology governance

Protecting children’s data

IEEE GOVERNMENT ENGAGEMENT PROGRAM ON STANDARDS (GEPS)

- Grounded in an open, direct participation model, IEEE GEPS assists government bodies meet their technology, standards and policy goals.
- Tailored program for government officials from around the world where they gain strategic insights into IEEE standardization and contribute to discussions at the intersection of technology, standards, policy and regulation – from enabling technical excellence and global interoperability to promoting safety, sustainability and innovation to foster economic growth and society prosperity.

Currently there are 74 participants from 47 countries

Sustainability & Energy Transition

Sustainability & Energy Transition

- **Impact of sustainability has been felt far more greater more recently, accelerating the need to look at critical solutions**
- **Sustainability considerations are not only from geographic or socio-economic perspectives but also need to be seen through time**
  - Can we create sustainability across future generations?
  - Sustainability is also based on the context of the individual (or the region) – point of view
- **Technology and Digital Resilience have been some of the key parameters in the post covid-19 era**
  - Technology has enabled lot of activity to progress despite lockdowns
- **There are many challenges need to be solved for more than couple of decades, but criticality of these challenges have increased**

Addressing the Fundamentals

Water

- Smart Water Management: Water bodies, rivers and oceans
- Technology to help address severe water challenges and crisis being faced by several cities: Atmospheric water, and recycling the water in communities

Health

- Recent pandemic has exposed several shortcoming in healthcare systems and need to address these efficiently
- Technologies such as Big Data Analytics, Drones, AI have been applied to address COVID-19
- Addressing Preventable diseases, vaccinations for containing the preventable deceases and pandemics, reduce infant mortality continues to be a challenge

Waste Management

- Progressive public policies and technological solutions to manage electronic waste
- Alternate solutions to replace single use plastic

Economic Drivers

Power

- DC systems also have significant impact on reduced carbon emissions
- Low Voltage DC distribution system – Progress in India towards standardization through IEEE enabling off grid solutions for unconnected communities
- Technology and standards focus in areas of Green ICT
- Energy Efficiency is a critical consideration: Emerging technologies such as blockchain, AI require more energy to be consumed and needs to be managed meaningfully
- E-Mobility and its impact on sustainability and impact on renewable
- Focus on reduction of heating/cooling needs – reconsiderations of real estate
- Integration of renewables to the power grid and off-grid DC powergrids as part of Energy Transition

Agriculture

- IoT based agriculture, hydroponics, aquaponics – Reduce food transportation (consumption of food close to the point of generation)
- Food processing technologies and usage of sensors to enhance the shelf life and preserve the nutrition value of food.
- Usage of solar energy in food preservation and processing
- Sustainable Agriculture

Community Development & Education

- **Early education on hygiene, personal care and usage of technology to improve the quality of life**
- **Sustainable programs for engineering community/engineering education**
  - Importance of online development platforms (IEEE BLP, IEEE ILN, IEEE SWEBOK)
- **Technologies to improve the quality of life (Healthcare)**
- **Engaging in developing key public policies which can help to improve the sustainable development programs**
- **Moving to a 4P model: Public-Private-People Partnership**
  - Village Level Entrepreneurship program in India managing “Personal Data Offices” on the IEEE 802.11 infrastructure
  - Development of training programs to enable VLEs (Building Wireless Community Networks)

Other Key Considerations

- **Recent Pandemic is perhaps triggering a “de-urbanization” process (in India) where there is movement away from Urban**
  - Need to ensure economic opportunities and activities in the villages
- **Moving production outside of mega cities help to decongest and reduce pollution**
- **Redesigning of public facilities**
- **Importance of Circular Economy**
  - Circular manufacturing vs Linear manufacturing
  - Zero waste product design and manufacture
  - 3R: Reduce, Reuse, Recycle vs Take, Make, Use, Dispose

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planet positive 2030
Imagine The Future We Can Build Together

THE INITIATIVE

What is Planet Positive 2030?

Planet Positive 2030 is an open, global initiative that is focused on developing practical paths to achieve a sustainable planet —a Planet Positive future for 2030 and beyond.

What do we mean by “Planet Positive?”

“Positive” = identifying how to ‘give back’ more to the Planet than is ‘removed’ (versus “climate neutral”) and not harming the biosphere/planet.

IEEE SA: PLANET POSITIVE 2030

- **The Sustainable Infrastructures and Community Development program (IEEE SICDP)**

- The IEEE SA has created Planet Positive 2030, an output of The Sustainable Infrastructures and Community Development program (IEEE SICDP), that brings together a global, open community of experts to chart a path for all people to achieve a flourishing future for 2030 and beyond.
- The program has also inspired a number of standards ideas, including the recently approved Standards Working Groups:
  - ✓ IEEE P7800, Addressing Sustainability, Environmental Stewardship and Climate Change Challenges in Professional Practice.
  - ✓ IEEE P7801, Technical Knowledge Commons Initiatives and Platforms
  - ✓ IEEE P7802, Measurement and Verification of Reduction of Greenhouse Gases for Climate Action Projects and Solutions
  - ✓ IEEE P7803, Inclusive Sustainable Smart Cities

IEEE Standards Enabling Energy Transition

IEEE SCC21 1547 Series of Standards

IEEE Std 1547™(2018) Standard for Interconnecting Distributed Resources with Electric Power Systems

IEEE Std P1547™(full revision) Draft **Standard** for Interconnection and **Interoperability** of Distributed **Energy** Resources with **Associated** Electric Power Systems **Interfaces**

IEEE Std 1547.1™(2005 and 2015 Amendment 1) Standard for Conformance Tests Procedures for Equipment Interconnecting Distributed Resources with Electric Power Systems

IEEE Std P1547.1 (full revision) Draft **Standard** for Conformance Tests Procedures for Equipment Interconnecting Distributed **Energy** Resources with Electric Power Systems **and Associated Interfaces**

IEEE Std 1547.2™(2008) Application Guide for IEEE 1547 Standard for Interconnecting Distributed Resources with Electric Power Systems

IEEE Std 1547.3™(2007) Guide for Monitoring Information Exchange, and Control of Distributed Resources with Electric Power Systems

MicroGrid >>

IEEE Std 1547.4™(2011) Guide for Design, Operation, and Integration of Distributed Resource Island Systems with Electric Power Systems

IEEE Std 1547.6™(2011) Recommended Practice for Interconnecting Distributed Resources with Electric Power Systems Distribution Secondary Networks

IEEE Std 1547.7™ (2013) Guide to Conducting Distribution Impact Studies for Distributed Resource Interconnection

IEEE Std 1547.8™ Recommended Practice for Establishing Methods and Procedures that Provide Supplemental Support for Implementation Strategies for Expanded Use of IEEE Std 1547-2003

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THANK YOU

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