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ISGF India Smart Grid Forum

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NITI Aayog | MINISTRY OF POWER | ENERGY DEPARTMENT GOVERNMENT OF MAHARASHTRA | Government of India Ministry of Power Central Electricity Authority | AIDA

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MAHAVITARAN Maharashtra State Electricity Distribution Co. Ltd. | TATA TATA POWER

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BSES Rajdhani Power Limited | BSES Yamuna Power Limited | NPCL

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AGENDA

DISTRIBUTION UTILITY MEET DUM 2025

9th Annual Conference of Power Distribution Utilities for Collaborative Growth

04 - 05 NOVEMBER 2025

HOTEL SAHARA STAR, MUMBAI

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SESSION 1: SPECIAL PLENARY SESSION - INNOVATIVE POLICIES AND REGULATORY INTERVENTIONS FOR SUSTAINABILITY OF DISCOMs

11:30 ~ 13:00 IST

Session Partners: Power Foundation of India (PFI) and All India DISCOMs Association (AIDA)

Session Background

Distribution Companies (DISCOMs) are the backbone of India's power sector, but they face chronic issues—high AT&C losses, poor cost recovery, subsidy delays, ageing infrastructure, and mounting debt. While big programs like Revamped Distribution Sector Scheme (RDSS), Smart Metering, PM-KUSUM, Battery Energy Storage Systems (BESS) and Firm and Dispatchable Renewable Energy (FDRE) Projects, PMSG: MBY etc are underway, long-term sustainability of DISCOMs need innovative and progressive policies and regulatory measures. Innovative models such as network strengthening through TOTEX/OPEX contracts, and function-specific outsourcing have shown improvements in revenue collection, loss reduction, and infrastructure upgrades in some DISCOMs. Alongside, regulatory interventions like cost-reflective tariffs, time-of-day (ToD) pricing, market-based procurement, and enabling distributed energy integration can strengthen DISCOM operations.

This session will explore practical pathways combining innovations in business models with supportive policies to achieve financial stability, operational efficiency, and consumer satisfaction in DISCOMs.

Discussion Points

1. Innovative Business Models for DISCOM Sustainability
- TOTEX/OPEX contracts for loss reduction projects
- Infrastructure upgrades through BOOT projects
- Risk-sharing and consumer protection

2. Policy and Regulatory Innovations
- Supreme Court order on regulatory assets and its impact on tariffs
- Cost-reflective tariffs with targeted subsidies
- Time-of-day/dynamic pricing and service quality benchmarks
- Prosumer enablement, peer-to-peer (P2P) trading of green energy, and DER integration
- Market participation and innovative financing - green bonds, securitisation

3. Technology as an Enabler
- Prepaid smart meters and its impact on DISCOM finances
- AI-driven demand forecasting, asset optimization and predictive maintenance
- Digital consumer service platforms

4. Case Studies from Successful Utility Reform Programs
- Maharashtra
- Delhi
- Odisha
- International examples—Brazil, UK, Australia

5. Way Forward
- State-specific business models and sustainable frameworks
- Short-term v/s long-term regulatory roadmap
- Balancing efficiency, affordability, and consumer protection

Chair	**Pankaj Agarwal**, Secretary, Ministry of Power
Presentations	1. **Himanshu Chawla,** Head - Regulatory, Power Foundation of India (PFI) 2. **Ashish Goel**, Chairman – UPPCL and Gen Secretary – AIDA
Moderator	**Alok Kumar**, DG, AIDA
Speakers	**1. P Ravi Kumar,** Chairperson, Karnataka ERC 2. **Srikant Nagulapalli**, DG, Power Foundation of India (PFI)/Additional Secretary, Ministry of Power, GOI 3. **Jaipraksh Shivhare**, MD, GUVNL* 4. **Nilesh Kane**, Chief – Transmission and Mumbai Distribution, Tata Power Company 5. **Abhishek Ranjan,** CEO, BRPL 6. **D Radhakrishna,** Former Chairperson, Tripura ERC 7. **Ravi Seethapathy**, Chairman, Biosirus, Inc and ISGF WG Chair

SESSION 5: GRID INTEGRATION OF DISTRIBUTED RE (DRE)
10:00 ~ 11:30 IST

Session Background

The fast growth of Distributed Renewable Energy (DRE) resources is transforming the electricity distribution landscape in India. Ambitious national targets for renewable energy and programs such as PM-KUSUM and PMSG: MBY are creating millions of power generation sources connected to the DISCOM grid – medium voltage (MV) and low voltage (LV) segments of the grid. This power injections to the distribution grid from numerous points is leading to reverse power flows, voltage fluctuations beyond permissible limits, huge variations in power flows patterns between the day and the night. DISCOMs should prepare for unprecedented changes in demand profiles, bidirectional power flows, and new operational complexities. Integration of rooftop solar (RTS), energy storage systems and other DRE into low- and medium-voltage networks demands advanced grid planning, automation, and data-driven decision-making. Demand response, and flexible grid architectures will be the key to ensure grid stability.

MSEDCL has successfully installed a record number of solar agriculture pumps across Maharashtra — the highest in the country. To recognize and showcase this large-scale achievement at a global level, MSEDCL, in association with Guinness World Records (GWR), proposes to attempt a new world record titled: **"Most Solar Agriculture Pumps Installed in One Month."** For this challenge MSEDCL is targeting to install 30,000 Solar Agriculture Pumps in One Month across all districts in Maharashtra.

Emerging technologies such as AI and ML can significantly help in grid management to integrate DRE, improve demand and generation forecasting, help plan the most optimal grid upgrades and outage response. Exploring strategies for harmonizing DRE integration and grid resilience, will ensure reliable, sustainable, and customer-centric power distribution for the energy transition.

Discussion Points

1. Leveraging AI-driven forecasting to anticipate DRE output variability and demand fluctuations for improved grid stability
2. Advanced analytics to enhance predictive maintenance, optimize DREs, and reduce outages
3. Application of data analytics and automation to support voltage regulation, load optimization, and demand management in distribution networks
4. Integrating flexible grid solutions such as energy storage, demand response, and intelligent control systems to manage bidirectional power flows
5. Deployment of advanced field technologies to improve inspection, monitoring, and maintenance of DRE infrastructure
6. Enhancing workforce capability through immersive digital tools and simulation-based training for DRE integration with distribution grid

Chair	**Abha Shukla**, ACS – Energy, Maharashtra
Moderator	**Ravi Seethapathy**, Chairman, Biosirus, Inc; and ISGF WG Chair
Presentations	1. **Dhananjay Aundhekar,** Executive Director – SP Projects, MSEDCL - Presentation on Solar Irrigation Pumps 2. **Reji Kumar Pillai**, President, ISGF - Presentation on National Registry of Rooftop Solar
Speakers	1. **Manu Srivastava**, ACS – Renewable Energy, Madhya Pradesh* 2. **Satyendra R Pandey**, Member, GERC 3. **JVN Subramaniam**, Joint Secretary, MNRE* 4. **Anoop Kumar Singh,** CMD, MPPaKVVCL* 5. **Mohammad Rihan**, DG, NISE* 6. **MM Dhakate,** Chief Engineer (Renewable Project Monitoring Division), CEA* 7. **Nidhi Narang,** Former Director – Finance, UPPCL 8. **Amit Kumar**, Director–Clean Power, Shakti Sustainable Energy Foundation 9. **Moez Cherif,** India Energy Lead, World Bank 10. **Devanand Pallikuth,** Chief – Tech Services and PSCC, TPREL **Q&A**
Concluding Remarks by Chair	
Session Coordinator: Anand Singh | +91 99252 18036 | anand@indiasmartgrid.org	

SESSION 8: EXTREME WEATHER EVENTS AND THE URGENT NEED FOR REVISION OF STANDARDS AND SPECIFICATIONS OF GRID EQUIPMENT
15:30 ~ 17:00 IST

Session Background

The frequency and intensity of extreme weather events including cyclones, floods, heatwaves, landslides and heavy storms have increased significantly in recent years. It is posing severe threats to India's power distribution infrastructure. Climate change is accelerating the rate of such events, exposing vulnerabilities in grid equipment, overhead lines, substations, and associated assets. According to a study report by the Centre for Earth Sciences (CES), in 2024, out of 366 days, 322 days recorded extreme weather events in some or the other part of India that resulted in the death of 3472 people and hundreds of billions of dollars of damages to properties including power grids assets. Many existing standards and specifications for distribution network equipment were developed under historical climatic conditions of the 20th century that are not adequate to ensure power system resilience anymore.

For DISCOMs, the damages caused by extreme weather events leads to prolonged outages, high restoration costs, and severe impacts on customer trust. There is an urgent need to review, upgrade, and harmonize equipment standards to withstand new environmental realities. Advanced materials, robust engineering designs, and predictive asset management can help improve preparedness. Revising grid equipment specifications in line with future climatic challenges requires a revision of technical standards, and operational strategies, across DISCOMs.

Discussion Points

1. Assessment of current equipment performance under extreme weather conditions and identification of failure patterns
2. Need for revising BIS standards and CEA rules as well as utility-level specifications for poles, conductors, transformers, and switchgear to enhance resilience
3. Incorporation of climate risk modelling and disaster impact simulations in equipment design and procurement processes
4. Creation of an Infrastructure Resilience Fund to finance projects/interventions enhancing infrastructure durability and adaptability and develop a Resilience Cost-Benefit Analysis (RCBA) tool for eligibility of such funds
5. Adoption of advanced materials, coatings, and structural reinforcements for improved durability and weather resistance
6. Undergrounding distribution lines prone to repeated cyclones
7. Strategies for preventive maintenance, predictive analytics, and rapid restoration to minimize downtime after extreme events
8. Regulatory frameworks, investment models, and collaborative approaches for implementing upgraded standards across DISCOMs
9. Standardization of specifications of important grid equipment (DTs, wires, cables, poles, switchgear) all cross the country

Chair and Moderator	**Ravi Seethapathy**, Chairman, Biosirus, Inc; and ISGF WG Chair
Presentations	1. **Ramraj Narasimhan,** Senior Director – Program Management and Technical Support, Coalition for Disaster Resilient Infrastructure (CDRI)* 2. **Daniel Karmel Fernando Tampubolon,** Executive Vice President Aneka Energi Baru Terbarukan, PT PLN (Persero)*
Speakers	1. **Gajanan S Kale**, CEO, Tata Power, Odisha 2. **Prudhvitej Immadi,** CMD, AP Eastern Power Distribution Company Ltd 3. **P Surendra**, Director – Technical, KSEBL* 4. **Sujit Pathak,** General Manager, CESC, Kolkata 5. **Vivek Goel,** Chief Engineer – Distribution Planning, CEA* 6. **Aneesh Thomas**, Associate Director - National Sales MV, Eaton Power Quality 7. **Aakash Saxena,** COO, CESC Rajasthan 8. **Deepti Sharma**, Addl Vice President, BRPL **Q&A**
Concluding Remarks by Chair	

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