



**India  
SMART UTILITY  
Week 2025**

**18 - 22 March 2025**

**📍 New Delhi**

ORGANIZER

**ISGF**  
India Smart Grid Forum

**ISUW 2025**

11th Edition of  
India Smart Utility Week, An International  
Conference and Exhibition on Smart Energy  
and Smart Mobility

[isuw@isuw.in](mailto:isuw@isuw.in)

[www.isuw.in](http://www.isuw.in)

**18 March 2025**

**Tuesday**

Special Workshops  
& Master Classes

**19 March 2025**

**Wednesday**

Conference and  
Exhibition

**20 March 2025**

**Thursday**

Conference and  
Exhibition

**21 March 2025**

**Friday**

Conference and  
Exhibition

**22 March 2025**

**Saturday**

Technical Tours and  
Cultural Tours

**9th ISGF INNOVATION AWARDS : 21 MARCH 2025**



**9th ISGF INNOVATION  
AWARDS 2025**

# **ISUW 2025 CONFERENCE DETAILED AGENDA (DRAFT)**



# CONFERENCE AGENDA SUMMARY

<b>EVENT DAY-1: 18 MARCH 2025 (TUESDAY) SPECIAL WORKSHOPS AND MASTER CLASSES</b>	
<b>Regency 1&amp;2</b>	
Full Day	<b>THE ROBOTS-AI-DRONE (RAID) OLYMPIAD</b>
	Coordinators: Anand Kumar Singh   anand@indiasmartgrid.org Bala Subramanyam   bala.k@indiasmartgrid.org Shashi Bala   shashi@indiasmartgrid.org Rohan Banik   rohan@indiasmartgrid.org
<b>Regency 3</b>	
AN	<b>OCPD TECHNICAL SESSION (In collaboration with Open Charge Alliance)</b>
	Coordinator: Anand Kumar Singh   anand@indiasmartgrid.org
<b>Regency 5</b>	
Full Day	<b>9th IEC-IEEE-BIS SMART ENERGY STANDARDIZATION COORDINATION WORKSHOP (in collaboration with BIS, IEC and IEEE)</b>  <b>Theme 1: Emerging Smart Energy Technologies and Standardization Landscape</b> <b>Theme 2: Future Trends and Challenges</b>
	Coordinator: Disha Khosla   disha@indiasmartgrid.org



<b>EVENT DAY- 2: 19 MARCH 2025 (WEDNESDAY)</b>	
<b>INAUGURATION OF ISUW 2025 CONFERENCE AND EXHIBITION</b>	
<b>India 10:00 to 12:30   Crystal 1&amp;2</b>	
Coordinator: Sumit Sharma   <a href="mailto:sumit@indiasmartgrid.org">sumit@indiasmartgrid.org</a>	
<b>CONFERENCE THEMATIC SESSIONS</b>	
<b>13:30 - 14:30</b>	<b>LUNCH</b>
14:30-16:00 <b>Crystal 1</b>	<b>First Meeting of All India DISCOMs Association (AIDA)</b>
	Coordinator: Shashi Bala   <a href="mailto:shashi@indiasmartgrid.org">shashi@indiasmartgrid.org</a>
<b>WORKSHOPS/ROUNDTABLES/SEMINARS</b>	
14:30-16:00 <b>Crystal 2</b>	<b>UK- India Workshop on ASPIRE Program</b>
	Coordinator: Bala Subramanyam   <a href="mailto:bala.k@indiasmartgrid.org">bala.k@indiasmartgrid.org</a>
16:00-17:30 <b>Crystal 2</b>	<b>UK- India Workshop on Energy Storage Systems</b>
	Coordinator: Anand Kumar Singh   <a href="mailto:anand@indiasmartgrid.org">anand@indiasmartgrid.org</a>
14:30-17:30 <b>Regency1&amp; 2</b>	<b>11th US – India Smart Energy Workshop (In Collaboration with US Commercial Services, and Underwriters Laboratories)</b> <b>Theme: Standardization</b>
	Coordinator: Disha Khosla   <a href="mailto:disha@indiasmartgrid.org">disha@indiasmartgrid.org</a>
14:30-17:30 <b>Regency- 5</b>	<b>Africa - India Smart Energy Roundtable</b>
	Coordinator: Aashima Chaney   <a href="mailto:aashima@indiasmartgrid.org">aashima@indiasmartgrid.org</a>
<b>ISUW 2025 WELCOME RECEPTION</b>	
<b>&amp;</b>	
<b>PARTNER RECOGNITION CEREMONY</b>	
<b>India 18:30 - 21:30</b>	



<b>EVENT DAY- 3: 20 MARCH 2025 (THURSDAY)</b>	
<b>CONFERENCE THEMATIC SESSIONS</b>	
10:00-13:00 <b>Crystal 1</b>	<b>SMART METERING Part A - Global and Indian Lessons</b> Coordinator: Jaydeep Sarkar   jaydeep@indiasmartgrid.org
14:00-17:00 <b>Crystal 1</b>	<b>SMART METERING Part B - AMISPs and DISCOMs, OEMs, System Integrators</b> Coordinator: Jaydeep Sarkar   jaydeep@indiasmartgrid.org
10:00-11:30 <b>Regency 1 &amp; 2</b>	<b>Rooftop PV Revolution in India and Impact on DISCOMs - National Registry of DERs and Smart Inverters</b> Coordinator: Disha Khosla   disha@indiasmartgrid.org
11:30-13:30 <b>Regency 1 &amp; 2</b>	<b>Unified Energy Interface (UEI) and the Evolving Era of Energy Internet</b> Coordinator: Shashi Bala   shashi@indiasmartgrid.org
10:00-13:00 <b>Crystal 2</b>	<b>Nuclear Renaissance and the Role of SMR for the Net Zero Power Systems</b> Coordinator: Bala Subramanyam   bala.k@indiasmartgrid.org
14:00-17:00 <b>Regency 5</b>	<b>Building Resilient Utility Assets for Congested Cities and Climate Resilience  Session Partners: CDRI</b> Coordinator: Anand Kumar Singh   anand@indiasmartgrid.org
14:30-17:00 <b>Crystal 2</b>	<b>Power System Flexibility and DERMS   Session Partner: AspenTech</b> Coordinator: Bala Subramanyam   bala.k@indiasmartgrid.org
15:00-17:30 <b>Regency 1 &amp; 2</b>	<b>Deep Dive Session on AI, ML and Robotics - Use Cases for Utilities</b> Coordinator: Disha Khosla   disha@indiasmartgrid.org
<b>13:00~14:00</b>	<b>LUNCH</b>
<b>WORKSHOPS/ROUNDTABLES/SEMINARS</b>	
10:30-13:00 <b>Regency 5</b>	<b>Indonesia - India Smart Energy Workshop</b> Coordinator: Aashima Chaney   aashima@indiasmartgrid.org Shashi Bala   shashi@indiasmartgrid.org
16:00-19:00 <b>Regency 5</b>	<b>2nd India - Brazil Smart Energy Workshop (In Collaboration with LATAM Smart Grid Forum and Brazil-India Chamber of Commerce*)</b>  <b>Themes:</b> 1. T&D Loss Reduction 2. Smart Metering 3. Biofuels  Coordinator: Aashima Chaney   aashima@indiasmartgrid.org
Full Day <b>Regency 3</b>	<b>Presentation of Selected Technical Papers (25 Technical Papers)</b> Coordinator: Aashima Chaney   aashima@indiasmartgrid.org Rohan Banik   rohan@indiasmartgrid.org
<b>FREE EVENING</b>	



<b>EVENT DAY- 4: 21 MARCH 2025 (FRIDAY)</b>	
<b>CONFERENCE THEMATIC SESSIONS</b>	
10:00-11:30 <b>Crystal-2</b>	<b>Digitalization of Utilities, Digitalization Roadmaps; Digital Twins</b>
	Coordinator: Shashi Bala   shashi@indiasmartgrid.org
11:30-13:00 <b>Crystal-2</b>	<b>Emerging Digital Technologies for Utilities</b>
	Coordinator: Shashi Bala   shashi@indiasmartgrid.org
10:00-12:30 <b>Crystal-1</b>	<b>Innovations in Regulations for the next round of Power Sector Reforms</b>
	Coordinator: Sumit Sharma   sumit@indiasmartgrid.org
10:00-12:00 <b>Regency 5</b>	<b>Grid Integrated Buildings</b>
	Coordinator: Disha Khosla   disha@indiasmartgrid.org
10:30-13:30 <b>Regency 1&amp;2</b>	<b>Power Markets and Carbon Markets</b>
	Coordinator: Bala Subramanyam   bala.k@indiasmartgrid.org
14:00-17:00 <b>Regency 1 &amp; 2</b>	<b>Workshop on Immersive Technologies: AR/VR, Digital Twins, Drones, and Assisted Reality for Enhanced Operations and Efficiency.</b>
	Coordinator: Shashi Bala   shashi@indiasmartgrid.org
14:30-16:30 <b>Crystal-2</b>	<b>Evolving Trends in Electric Mobility and V2G Demo</b>
	Coordinator: Anand Kumar Singh   anand@indiasmartgrid.org
<b>13:00~14:00</b>	<b>LUNCH</b>
<b>WORKSHOPS/ROUNDTABLES/SEMINARS</b>	
14:30-17:00 <b>Regency 5</b>	<b>Capacity Building in Utilities for Energy Transition (In collaboration with Skill Council for Green Jobs)</b>
	Coordinator: Yashika Maheshwari   yashika@indiasmartgrid.org
<b>17:00 ~ 18:00</b> <b>ISUW 2025 VALEDICTORY SESSION</b>	
<b>ISGF INNOVATION AWARDS CEREMONY</b> <b>&amp;</b> <b>GALA DINNER</b> <b>India 18:30 Onwards</b>	



EVENT DAY 5: 22 MARCH 2025 (SATURDAY)	
TECHNICAL TOURS AND DEMONSTRATIONS	
Tour-1 A	NRLDC + REMC and TPDDL LAB + 10 MWh BESS
	Coordinator: Bala Subramanyam   bala.k@indiasmartgrid.org
Tour-1 B	TPDDL LAB + 10 MWh BESS and NRLDC + REMC
	Coordinator: Disha Khosla   disha@indiasmartgrid.org
Tour-2	800 kV HVDC Station in AGRA + TAJ MAHAL
	Coordinator: Anand Kumar Singh   anand@indiasmartgrid.org
CULTURAL TOURS (ALL DAYS)	
Tour-3	TAJ MAHAL
Tour-4	DELHI
TOURS 1 AND 2 ARE PART OF ISUW & TOURS 3 & 4 ARE TO BE PAID SEPARATELY TO THE TRAVEL AGENCY	



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# ISUW 2025 DETAILED AGENDA

## EVENT DAY 1 18 MARCH 2025 (TUESDAY)



## EVENT DAY 1: 18 MARCH 2025 (TUESDAY)

### THE ROBOTS-AI-DRONE (RAID) OLYMPIAD

#### Venue & Time

Venue	Regency 1&2
Time	Full day



#### Session Background

The **Robots-AI-Drone (RAID) Olympiad** is a prestigious global initiative by **Ideas Matter Most (IMM)** that seeks to ignite innovation and foster creativity in the dynamic fields of robotics, artificial intelligence, and drone technologies.

The **2025 Spring edition, with a special focus on the Utility Sector, is a collaborative effort between IMM and the India Smart Grid Forum (ISGF)**. This Olympiad challenges participants to develop groundbreaking solutions addressing key utility sector challenges, such as infrastructure inspection and maintenance, energy efficiency, and smart management systems.

A distinguished panel of experts from India and around the globe will evaluate and judge the competition entries across various phases, ensuring a fair and rigorous assessment process.

#### Rewards and Opportunities for Participants

Winning teams, runners-up, and notable participants will receive:

- ISGF Innovation Awards on 21 March 2025
- Global recognition for their innovative contributions.
- Exciting awards celebrating their achievements.
- An exclusive invitation to appear on the Ideas Matter Most Talk Show, in collaboration with Hindustan Times.
- Mentorship and ongoing support to advance their ideas and careers.

Join us in shaping the future of the utility sector through innovation and ingenuity at the RAID Olympiad 2025

#### Discussion Points

- **Robotics: Grid Inspection and Repair Bot**
- **AI: Real-Time Power Load Balancing Advisor**
- **Drones: Damage Detection and Package Delivery**

#### JURY PANEL

Chair	Reji Kumar Pillai, President, ISGF and Chairman, Global Smart Energy Federation (GSEF)
International Chair	Amit Kumar Pandey, CTO - Robotics and AI, Rovial Space, France
International Juries	TBC

Coordinators: **Anand Kumar Singh** | [anand@indiasmartgrid.org](mailto:anand@indiasmartgrid.org)  
**Bala Subramanyam** | [bala.k@indiasmartgrid.org](mailto:bala.k@indiasmartgrid.org)  
**Shashi Bala** | [shashi@indiasmartgrid.org](mailto:shashi@indiasmartgrid.org)  
**Rohan Banik** | [rohan@indiasmartgrid.org](mailto:rohan@indiasmartgrid.org)





**EVENT DAY 1: 18 MARCH 2025 (TUESDAY)**  
**OCPP TECHNICAL SESSION**  
**(IN COLLABORATION WITH OPEN CHARGE ALLIANCE)**

**Venue & Time**

Venue	Regency 3
Time	14:00-17:00

**Session Background**

Open Charge Alliance (OCA), the global member-based organization headquartered in the Netherlands, developed and maintains the critical standard for the electric transportation industry, Open Charge Point Protocol (OCPP). This standard is a pivotal open data standard facilitating seamless communication between Electric Vehicle (EV) charging stations and centralized software platforms dedicated to real-time EV charging management and operational oversight. With notable participation from 368 stakeholders including charging station manufacturers, aggregators, electric utilities, and industry stakeholders, integration of their software platforms with OCPP versions 1.6, 2.0.1, and the latest OCPP 2.1 underscores its widespread adoption within the industry. OCPP 2.0.1 has been adopted as an IEC Standard as IEC 63584 in October 2024.

The OCPP fosters an environment of openness, enabling seamless transition within charging networks without necessitating an overhaul of existing infrastructure. Noteworthy advancements include smart charging support for load balancing in OCPP 1.6, while OCPP 2.0.1 boasts compatibility with ISO/IEC 15118 for enhanced communication and security capabilities with EVs. The latest iteration, OCPP 2.1, introduces support for ISO 15118-20 with bidirectional power transfer, enabling Vehicle-to-Grid (V2G) and Vehicle-to-Home (V2H) functionalities, as well as enhanced integration with distributed energy resources (DER). Additionally, OCPP 2.1 includes advanced tools for optimized energy distribution, extended transaction options, support for battery swapping, local cost calculation, and new authorization options for prepaid charge cards and ad hoc payments.

Anticipating future advancements, forthcoming versions of OCPP are poised to encompass bi-directional functionalities such as Vehicle-to-Grid (V2G) and Vehicle-to-Home (V2H) or Vehicle-to-Building (V2B), accentuating its adaptability to evolving industry paradigms. This workshop and session aim to elucidate the nuances of e-mobility and applications, with a focus on features relevant to Indian applications.

**Discussion Points**

**1. OCPP Overview**

- Explanation of OCPP and its importance in EV charging infrastructure
- Recent updates and advancements in OCPP (e.g., OCPP 2.1)

**2. Benefits of OCPP**

- How OCPP improves interoperability and efficiency in EV charging
- Case studies of successful OCPP implementations

**3. Vehicle-to-Grid (V2G) Technology**

- Introduction to V2G and its potential impact on the energy grid
- How V2G integrates with OCPP for seamless energy transfer
- Examples of V2G projects and their benefits



#### 4. Challenges and Solutions

- Common challenges faced in adopting OCPP
- Innovative solutions and best practices to overcome these challenges

#### 5. Future of OCPP & V2G

- Emerging trends and future developments in OCPP & V2G
- Potential impact on the EV charging industry and sustainability goals

<b>Chair</b>	<b>Rajeev Sharma</b> , DDG, BIS*
<b>Moderator</b>	<b>Suresh Babu</b> , Scientist – E, DST
<b>Theme Presentation</b>	<b>Lonneke Driessen</b> , Director, Open Charge Alliance
<b>Speakers</b>	<ol style="list-style-type: none"><li>1. BIS</li><li>2. ARAI</li><li>3. NITI Aayog</li><li>4. OEMs</li></ol>
<b>Key Takeaways by Moderator</b>	
Coordinator: <b>Anand Kumar Singh</b>   <a href="mailto:anand@indiasmartgrid.org">anand@indiasmartgrid.org</a>	



**EVENT DAY 1: 18 MARCH 2025 (TUESDAY)  
9<sup>TH</sup> IEC-IEEE-BIS SMART ENERGY STANDARDIZATION  
COORDINATION WORKSHOP  
(IN COLLABORATION WITH BIS, IEC AND IEEE)**

**Venue & Time**

Venue  
Time

**Regency 5  
Full Day**



**Background**

This is the 9<sup>th</sup> Edition of this BIS-IEC-IEEE Standardization Coordination Workshop which in the previous editions have brought together key experts working on standardization initiatives that has helped immensely in the finalization of BIS standards as well as adoption of IEC, IEEE and ISO standards in India. In this era of energy transition, a host of technologies from different domains are being integrated; and this confluence and interplay of different technologies from different domains require collaboration amongst standards development bodies across the globe. This workshop has emerged as a platform for discussing the development, harmonization, and implementation of standards that are crucial for the advancement and integration of smart energy systems worldwide. With advancement in technology AI and IoT are used in Power and Energy systems to improve efficiency, improved reliability of power quality and resiliency, enhanced power distribution efficiency, reduced costs for electric utilities, reduced unscheduled downtime, lower costs, and minimizing risks related to assets.

**Artificial Intelligence in Energy**

Artificial Intelligence (AI) is reshaping the energy sector, revolutionizing how power is generated, distributed, and consumed. From smart grid management to renewable energy forecasting, and even nuclear power plant safety, AI is fundamentally changing the way the energy industry operates, moving it towards a more efficient, sustainable, and secure future. Artificial intelligence is currently being used in renewable energy, smart grids, demand response management, predictive maintenance, energy storage, smart homes and buildings, nuclear power plant monitoring etc.

**IoT Solutions for Electric Power Industry**

IoT has the potential to transform the electric power industry significantly. It is all about asset digitalization, asset data collection, computational algorithms to manage the network created by interconnected assets and technology personalization. More and more devices and sensors are being connected to the digital world. By using post-time and real-time information with analytics, IoT can enhance the reliability of assets, reduce operational costs, and eliminate unplanned downtime, letting electric power companies achieve higher productivity.

**Distributed Energy Resource Aggregation Business System (ERAB)**

Electric power energy services allowing flexibility are becoming extremely important to provide a stable supply of electric power as per the situations where a large amounts of renewable energies and DERs had been installed. Energy.

Resource Aggregation Business (ERAB) system implements the demand response (DR) by managing the DERs and controllable loads according to the measurement by a smart meter at Point of Common Coupling (PCC). [IEC SRD 63443]



## OpenADR 3.0: Simpler and Advanced Automated Demand Response

OpenADR was created to automate and simplify DR and DER for the power industry with dynamic price and reliability signals that allow end users to modify their usage patterns to save money and optimize energy efficiency, while enhancing the effectiveness of power delivery across the Smart Grid. The OpenADR 3.0 Standard ("OADR 3.0") is not intended to replace the OpenADR 2.0a/b Profile Specifications [IEC 62746-10-1]. Rather, it provides an additional, simplified way to add OpenADR functionalities in current, as well as different new scenarios.

## Developing Smart Energy Ontologies

There have been many studies among semantic interoperability in power grid and energy ontology and different ontologies have been developed to improve energy data interoperability. However choosing a reference ontology which meets the requirement and covers the large domains in smart energy systems is a big challenge as not all ontologies represent the same energy data domains and at the same level of data details. This heterogeneity causes interoperability issues in implementation of these ontologies. Therefore, the determination of a unified Ontology is necessary for Smart Energy to go one step beyond the major innovations and improvements achieved in the past decade. [IEC SRD 63417]

## Architecture and Use-Cases for EVs to Provide Grid Support Functions

Assessment of how Electric Vehicles (EVs) may (or must) act as Distributed Energy Resources (DER) when they are interconnected to the electric power system through a charging station. Although clearly the main purpose for EV interconnection to the grid is to charge their batteries, EVs can provide grid support functions while interconnected, and in some situations, may be mandated or incentivized to do so. [IEC SRD 63460]

## Discussion Points

- 1. Emerging Smart Energy Technologies and Standardization Landscape:**
  - Global overview of the current state of smart energy standardization
  - Standardization of AI for Power Systems
  - Standardization of IoT for Power Systems
- 2. Future Trends and Challenges:**
  - Anticipating the evolution of standards in response to technological advancements
  - Interoperability and Compatibility
  - Regulatory and Policy Frameworks
  - Cybersecurity in Smart Energy
  - Case Studies and Best Practices
  - Roles and Contributions of BIS, IEC, and IEEE in the standardization process

10:30 ~ 11:15

### Inaugural Session

**Welcome Address: Reji Kumar Pillai**, President, ISGF and Chairman, Global Smart Energy Federation (GSEF)

### Special Address:

1. **Richard Schomberg**, Special Envoy on Smart Electrification, IEC
2. **Sreekanth Chandrasekharan**, IEEE\*
3. **Rajeev Sharma**, DDG – Standardization, BIS\*
4. **BA Sawale**, Director General, Central Power Research Institute\*

**Inaugural Address: Pramod Kumar Tiwari**, Director General, BIS\*

11:15 ~ 11:30

Tea Break



11:30 ~ 13:30	<p><b>Session 1: Emerging Smart Energy Technologies and Standardization Landscape</b></p> <p><b>Topics:</b></p> <ol style="list-style-type: none"> <li>1. Emerging Smart Energy Technologies and Standardization Landscape</li> <li>2. Role of BIS as National Standards Body of India &amp; Importance of Standards in Power System Interconnection</li> <li>3. Grid Modernisation: Role of IEEE 1547 in Supporting Renewable Energy Targets and Adaptation to Indian Requirements</li> <li>4. Interconnection and Inter-operability of Inverter Based Resource – IEEE 2800</li> </ol> <p><b>Chair:</b> BA Sawale, Director General, Central Power Research Institute*</p> <p><b>Moderator:</b> Richard Schomberg, Special Envoy on Smart Electrification, IEC</p> <p><b>Speakers:</b></p> <ol style="list-style-type: none"> <li>1. Abhishek Ranjan, CEO, BRPL</li> <li>2. Asit Kumar Maharana, Head-ETD, BIS</li> <li>3. Dinesh Chand Sharma, Director – Standardization, Policy and Regulation, SESEI</li> <li>4. Manjunath V Rao, Regional Standards Manager – South Asia and Sub-Saharan Africa, UL Standards &amp; Engagement Inc</li> <li>5. Amarjeet Kumar, India Representative, Ei-SUN Alliance; and Cofounder and CEO, COMMINT</li> <li>6. Brajnath Dey, DGM &amp; Head of Network Planning, Tata Power-DDL</li> <li>7. Neha Agarwal, ETD, BIS</li> <li>8. Ravindra Desai, Program Manager – Standards, IEEE</li> <li>9. LoRA Alliance</li> </ol> <p><b>BIS participation from following Sectional Committees:</b></p> <ul style="list-style-type: none"> <li>• ETD-13</li> <li>• ETD-46</li> <li>• ETD-50</li> <li>• ETD-51</li> <li>• ETD-52</li> <li>• FAD-11</li> </ul>
13:30 ~ 14:30	Lunch Break
14:30 ~ 16:30	<p><b>Session 2: Future Trends and Challenges</b></p> <p><b>Topics:</b></p> <ol style="list-style-type: none"> <li>1. Future Trends and Challenges</li> <li>2. Regulatory Framework Governing the Integration of Distributed Energy Resources (DERs)</li> <li>3. Testing and Certification for DER Interconnection</li> <li>4. Case Studies, Implementation Challenges and Way Forward</li> </ol> <p><b>Chair:</b> Richard Schomberg, Special Envoy on Smart Electrification, IEC</p> <p><b>Moderator:</b> Manjunath V Rao, Regional Standards Manager – South Asia and Sub-Saharan Africa, UL Inc</p> <p><b>Speakers:</b></p> <ol style="list-style-type: none"> <li>1. A K Rajput, Member (Power Systems), CEA</li> <li>2. Lonneke Driessen, Director, Open Charge Alliance</li> <li>3. Shanti Swarup K, Professor, IIT Madras</li> <li>4. Reena Garg, Head – LITD, BIS</li> </ol>



	<ol style="list-style-type: none"><li>5. <b>Kishore Narang</b>, Founder, Narnix Technolabs Pvt. Ltd</li><li>6. <b>Gopal Nariya</b>, Head - CES &amp; Automation, BSES Rajdhani Power Ltd</li><li>7. <b>Subhadip Raychaudhuri</b>, TPDDL</li><li>8. <b>Alismita Khag</b>, LITD, BIS</li></ol> <p><b>BIS participation from following Sectional Committees:</b></p> <ol style="list-style-type: none"><li>1. <b>LITD-10</b></li><li>2. <b>LITD-28</b></li><li>3. <b>LITD-29</b></li><li>4. <b>LITD-30</b></li><li>5. <b>LITD-31</b></li><li>6. <b>LITD-33</b></li></ol>
<b>16:30 ~ 17:00</b>	<b>Key Takeaways and Next Steps</b>
<b>Coordinator: Disha Khosla   +91 7838004339   <a href="mailto:disha@indiasmartgrid.org">disha@indiasmartgrid.org</a></b>	



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# ISUW 2025 DETAILED AGENDA

## EVENT DAY 2 19 MARCH 2025 (WEDNESDAY)





## EVENT DAY 2: 19 MARCH 2025 (WEDNESDAY)

### INAUGURATION OF ISUW 2025 CONFERENCE AND EXHIBITION

#### Venue & Time

Venue	<b>Crystal 1&amp;2</b>
Time	<b>10:00 – 12:30</b>

#### AGENDA

	<b>Lamp Lighting Ceremony</b>
	<b>ISGF Video (5 minutes)</b>
<b>Welcome Address</b>	<b>Reji Kumar Pillai</b> , President, ISGF and Chairman, Global Smart Energy Federation (GSEF)
<b>Special Address</b>	<ol style="list-style-type: none"> <li><b>Richard Schomberg</b>, Special Envoy on Smart Electrification, IEC</li> <li><b>Atalanta Kar</b>, GM for Growth Markets, Asia Pacific, Africa, Indian sub-Continent, GE Vernova</li> <li><b>Praveer Sinha</b>, MD and CEO, Tata Power Company Ltd</li> <li><b>Hervé Delphin</b>, Ambassador of European Union to India*</li> <li><b>Lindy Camaron</b>, High Commissioner of UK to India*</li> <li><b>Lokesh Chandra</b>, President, All India DISCOMs Association (AIDA) and CMD, MSEDCL*</li> <li><b>Ghanshyam Prasad</b>, Chairman, Central Electricity Authority*</li> <li><b>Nidhi Khare</b>, Secretary, MNRE</li> <li><b>Konstantin PAPAILIOU</b>, President, CIGRE*</li> <li><b>Pankaj Agarwal</b>, Secretary, Ministry of Power</li> <li><b>Liu Zehong</b>, Executive Vice Chairman, GEIDCO*</li> </ol>
<b>Inaugural Address</b>	<b>Manohar Lal</b> , Hon'ble Minister of Power and Housing and Urban Affairs <b>Pralhad Joshi</b> , Hon'ble Minister of New and Renewable Energy*
<b>Vote of Thanks</b>	<b>Reena Suri</b> , Executive Director, ISGF

**Coordinator:** Sumit Sharma | [sumit@indiasmartgrid.org](mailto:sumit@indiasmartgrid.org)

#### LAUNCH OF NEW INITIATIVES AND RELEASE OF WHITE PAPERS/REPORTS

1. Launch of V2G Technology Demonstration in India
2. Charging of EVs with Green Electricity and Generation of Certificate of Origin on Blockchain
3. Release of Study Report on Electrification of Agricultural Sector
4. MOU Signing

#### LUNCH BREAK + TOUR OF ISUW 2025 EXHIBITION

India 12:30 ~ 14:00





## EVENT DAY 2: 19 MARCH 2025 (WEDNESDAY) FIRST MEETING OF ALL INDIA DISCOMS ASSOCIATION (AIDA)

### Venue & Time

Venue	Crystal 1
Time	India 14:30 – 16:00

### Background

All India DISCOMs Association (AIDA) is a not-for-profit society formed by the DISCOMs under the patronage of Ministry of Power with Secretary - Power as the Patron. AIDA's objective is to bring all DISCOMs on a common platform to find solutions for several sectoral issues as well as help each other. The prime mandate of AIDA is:

- A new platform aimed at uniting all DISCOMs for experience sharing, capacity building, and finding collaborative solutions to sectoral challenges
- Promotion of Public-Private Partnerships (PPP) and sharing of best practices in AT&C loss reduction, training, and IT systems compatibility
- Development of a strategic vision for the power sector, standardization of equipment specifications, and sharing of cost data
- Sharing of equipment, spares, specialized tools and crew during emergency situations for network restoration

AIDA was officially launched by Hon'ble Minister of Power Shri Manohar Lal Ji on 14<sup>th</sup> November 2024 at the Distribution Utility Meet in Lucknow, UP.

More details at: [www.aida-india.org](http://www.aida-india.org)

This is the First General Body Meeting of AIDA that is being held in conjunction with ISUW 2025 in New Delhi.

Chair	Lokesh Chandra, President, All India DISCOMs Association
Co-Chair	Ashish Goel, General Secretary, All India DISCOMs Association
Participants	All member DISCOMs of AIDA

### Key Decisions and Next Steps

Coordinator: **Shashi Bala** | [shashi@indiasmartgrid.org](mailto:shashi@indiasmartgrid.org)



EVENT DAY 2: 19 MARCH 2025 (WEDNESDAY) UK - INDIA WORKSHOP ON ASPIRE PROGRAM	
Venue & Time	
Venue	Crystal-2
Time	India 14:30 – 16:00
<b>Session Background</b>	
<b>Discussion Points</b>	
Chair	
Moderator	
Theme Presentation	
Speakers	1. Laura Sandys, CEO, Challenging Ideas.com*
Key Takeaways by Moderator	
Coordinator: Bala Subramanyam   bala.k@indiasmartgrid.org	



## EVENT DAY 2: 19 MARCH 2025 (WEDNESDAY) UK - INDIA WORKSHOP ON ENERGY STORAGE SYSTEMS

### Venue & Time

Venue	Crystal-2
Time	India 16:00-17:30

### Session Background

### Discussion Points

Chair	
Moderator	
Theme Presentation	
Speakers	Julia Souder, Chief Executive Officer, Long Duration Energy Storage Council (LDES)
Key Takeaways by Moderator	
Coordinator: Anand Kumar Singh   <a href="mailto:anand@indiasmartgrid.org">anand@indiasmartgrid.org</a>	



**EVENT DAY 2: 19 MARCH 2025 (WEDNESDAY)**  
**11<sup>TH</sup> US – INDIA SMART ENERGY WORKSHOP**  
**(IN COLLABORATION WITH US COMMERCIAL SERVICES AND ULSE)**



**Venue & Time**

Venue	<b>Regency 1 &amp; 2</b>
Time	<b>India 14:30-17:30</b>

**Theme: Role of International Harmonization of Standards in Driving Safer and Secure Smart Grid**

**Session Background**

DER introduces a new business model for utilities, but the traditional grid was not designed to accommodate Distributed Energy Resources (DER) processes. Existing forecasting engines struggle with these complexities, making it challenging for distribution companies to manage dynamic demand and supply. Upgrading grid infrastructure to handle DER variations is a priority, as integration poses challenges due to infrastructure and regulatory frameworks built for centralized generation.

Vulnerabilities in DERs like EV charging and PV systems can be mitigated through standards. Cyber threats targeting DERs require advanced detection and mitigation strategies.

In summary, integrating DERs demands solutions for safe, reliable operation, emphasizing the need for global collaboration to share best practices.

There is further scope to make huge progress in this direction in India with the right intervention around standardization. Building awareness amongst key stakeholders on the various grid outage challenges, sharing best practices, and following through with the action plans developed together is a significant step towards **building smart utility, mobility, and infrastructure for tomorrow**.

**Key Participants**

- US Commercial Service, US Embassy
- UL Standards & Engagement (ULSE)
- India Smart Grid Forum (ISGF) Bureau of Indian Standards (BIS)
- The International Electrotechnical Commission (IEC)
- The National Institute of Standards and Technology (NIST)
- The National Renewable Energy Laboratory (NREL)
- Institute of Electrical and Electronics Engineers (IEEE-SA)
- Government & Regulatory Bodies - Ministries (MOP, MNRE, CEA)
- International organizations-International Solar Alliance (ISA)
- Power Distribution Companies (DISCOMs)
- Smart Grid Solution Providers
- Research Institutions: Organizations researching smart grid technologies, energy storage, and renewable energy systems



## Objectives

- Foster collaboration among key international stakeholders to harmonize standards and best practices for smart grid development
- Sharing best practices and encouraging global harmonization of smart grid standards and regulations to facilitate global trade and cooperation

## Discussion Points

ISGF, ULSE, IEEE, and CEA initiated conversation with key stakeholders on this topic in the second half of 2024 and realized the need to keep the momentum and awareness on specific standards that will aid in the flawless grid integration of DER in India. Our discussions brought forward a wide array of critical points for advancing DERs.

- **Voltage periods of Regulation:** DERs can cause voltage fluctuations on the distribution network, particularly during periods of high generation and low demand.
- **Grid Instability:** If DERS, such as solar inverters, were to disconnect immediately in response to a minor grid disturbance, the sudden loss of generation could lead to further instability. This is problematic, particularly if fluctuations there is a high penetration of DERS, as their collective disconnection could cause significant in voltage and frequency.
- **Cascading Failures:** If DERS disconnect and then attempt to reconnect all at once after a fault is cleared, this can lead to a surge in power that might trigger additional protective relays, causing a cascading effect that can lead to larger outages.
- **Maximizing Generation from Renewable Resources:** For renewable DERs, disconnecting from the grid during short disturbances means a loss of valuable clean energy generation.
- **Protection Coordination:** The bidirectional power flow introduced by DERs can interfere with traditional protection schemes, which are designed for unidirectional flow.
- **Challenges with Renewable Integration:** Integrating high levels of more renewable energy into the grid is challenging without storage, as it becomes difficult to manage the variability and intermittency of these resources.
- **Power Quality:** DERs can introduce harmonics, voltage sags, and swells, which can affect the power quality for other customers and the grid itself.
- **Frequency Regulation:** With less inertia in the system due to the displacement of synchronous generators by inverter-based DERs, maintaining frequency within acceptable bounds becomes more challenging.
- **Islanding:** Ensuring that DERs disconnect appropriately during grid outages to prevent "islanding" and protect utility workers and equipment.
- **Compromised Reliability:** Energy storage can enhance the reliability of power supply by providing a buffer against fluctuations in generation or demand. Without storage, the reliability benefits provided by DERS are less pronounced.
- **Wear and Tear:** Frequent disconnections and reconnections can cause wear and tears on DER equipment, reducing its lifespan and increasing maintenance costs.

## Progress Achieved

- **Adoption of IEEE 1547–2018 Standard for Smart Inverters** by BIS as **IS 18968-2025**
- **Smart Inverters for DER:** Suggested mandatory adoption of smart inverters with remote monitoring capabilities for all new Distributed Energy Resources (DER).
- **Communication Channel:** Highlighted the need for a robust communication channel to support effective monitoring.
- **Harmonization of Standards:** Called for consolidating best practices to prevent conflicts among different standardization organizations.



- **Area SLDC/Sub-SLDC:** Recommended enhancing the roles of State Load Dispatch Centers (SLDC) and sub-SLDCs.
- **Mandatory Harmonized Standards:** Suggested making harmonized standards compulsory across all relevant sectors.
- **Stakeholder Questionnaire:** Suggested creating a feedback questionnaire to improve applications and communication systems.

#### Proposed Suggestions

- Implementation of IS 18968 - 2025 which has test method and acceptance criteria defined in UL 1741 Standard for inverters, converters, controller, and interconnection system equipment for use with DER should be implemented
- Prepare proposal/rules to make smart inverters mandatory for new DER installations: Present a DRAFT regulatory guideline for implementation of safer grid integration of DER for CEA's consideration and bring out revised regulation
- Integration of National Solar Rooftop Registry with PM Surya Ghar Portal 2.0
- Initiate a study on harmonizing existing standards to resolve conflicts, if any
- Form a task force to coordinate with MEITY, TELECOM, CPRI, and BIS for indigenization initiatives
- Develop and circulate a stakeholder questionnaire to gather insights
- Conduct a gap analysis for existing testing facilities and protective gear

Time	Title/Topic
14:30 ~ 17:00	<b>Theme: Role of International Harmonization of Standards in Driving Safer and Secure Smart Grid</b>
14:30 ~ 14:40	Welcome Address: ISGF/US Commercial Services
14:40 ~ 14:50	Setting the context: <b>Sonya Bird</b> , VP International Standards, ULSE
14:50 ~ 15:30	<b>Keynotes on PM Surya Ghar Muft Bijli Yojana – Making it Safe</b> <ul style="list-style-type: none"> <li>• <b>Ghanshyam Prasad</b>, Chairperson, CEA*</li> <li>• <b>Nidhi Khare</b>, Secretary, MNRE*</li> </ul>
15:30 ~ 16:10	<b>Global Experience and Best Practices</b> <ul style="list-style-type: none"> <li>• European Experience: <b>Richard Schomberg</b>, Special Envoy on Smart Electrification, IEC</li> <li>• US Experience: NIST / NREL</li> <li>• India Experience: <b>Asit Maharana</b>, Head ETD, BIS</li> <li>• Recommendations for Safe Integration of DER: <b>Miguel Martinez</b>, UL Solutions</li> </ul>
16:10 ~ 16:50	<b>Roundtable Discussion: Building Tomorrow's Resilient Smart Grid Ecosystem in India</b> Perspectives from Regulators, IEEE, NREL, NIST, DISCOMs, OEMs and Subject Matter Experts
16:50 ~ 17:00	<b>Concluding Remarks and Way Forward: V Manjunath</b> , ULSE
Coordinator: <b>Disha Khosla</b>   <a href="mailto:disha@indiasmartgrid.org">disha@indiasmartgrid.org</a>	



## EVENT DAY 3: 19 MARCH 2025 (WEDNESDAY)

### AFRICA - INDIA SMART ENERGY ROUNDTABLE

#### Venue & Time

Venue	Regency- 5
Time	14:30-17:30

#### Session Background

Energy access remains a significant challenge for Africa, 600 million Africans still lack reliable access to electricity, which is nearly half the continent's population and more than 80 per cent of the global electricity access gap. Despite having substantial oil resources, Africa's refining capacity is limited, with Nigeria leading at 1.1 million barrels per day. This limitation underscores the importance of electric mobility to jumpstart sustainable transportation solutions. The declining prices of solar panels, which have become increasingly affordable, present a unique opportunity to promote green mobility across the continent.

Africa possesses vast renewable energy resources, particularly in solar and wind energy. The continent has the potential to become a global leader in renewable energy production, with initiatives like the African Renewable Energy Initiative (AREI) aiming to achieve 300 GW of renewable energy capacity by 2030. Renewable energy sources, such as solar and wind, provide decentralized and off-grid solutions that can bring electricity to remote and underserved areas, bridging the energy access gap. These sustainable energy solutions can power homes, schools, and businesses, transforming lives and boosting economic development. Additionally, the integration of renewable energy with electric mobility can revolutionize transportation, reducing dependency on fossil fuels and promoting clean, efficient alternatives. India, on the other hand, has emerged as a global leader in renewable energy, with ambitious targets to achieve 450 GW of renewable energy capacity by 2030. The International Solar Alliance (ISA), spearheaded by India, aims to promote solar energy adoption worldwide.

The roundtable discussion will focus on key themes such as policy and regulatory frameworks, Implementation process, roadmap, technology and innovation, investment and partnerships and collaboration. By working together, Africa and India can achieve their sustainable development goals and contribute to a greener, more sustainable future.

#### Discussion Points

Chair

Moderator

Theme  
Presentation

Theme: Renewable Energy

Speakers



Theme: E-Mobility	
Speakers	
Key Takeaways by Moderator	
Coordinator: Aashima Chaney   aashima@indiasmartgrid.org	





India  
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18 March 2025  
Tuesday

Special Workshops  
& Master Classes

19 March 2025  
Wednesday

Conference and  
Exhibition

20 March 2025  
Thursday

Conference and  
Exhibition

21 March 2025  
Friday

Conference and  
Exhibition

22 March 2025  
Saturday

Technical Tours and  
Cultural Tours

**9th ISGF INNOVATION AWARDS : 21 MARCH 2025**



**9th ISGF INNOVATION  
AWARDS 2025**

# ISUW 2025 DETAILED AGENDA

## EVENT DAY 3 20 MARCH 2025 (THURSDAY)



## EVENT DAY 3: 20 MARCH 2025 (THURSDAY) SMART METERING PART A – GLOBAL AND INDIAN LESSONS

### Venue & Time

Venue	<b>Crystal 1</b>
Time	<b>India 10:00-13:00</b>

### Session Background

Ministry of Power, Government of India (GOI) launched world's largest Smart Metering program covering 250 million customers in 2021. This program has a very innovative business model – **Metering as a Service** - first of its kind in the world. GOI is offering 15% of the project cost as grant; and the rest 85% of the project cost is paid by the utility to the AMI Service Provider (AMISP) as installments per meter per month for 93 months. Initially the program progressed well, and contracts for about 138 million meters have been awarded in the last 4 years. However, actual smart meters installed so far are about 21 million only owing to multiplicity of hurdles which demand course correction in the program rollout strategies in different states. This session will review the program's progress and evaluate the necessary interventions required to accelerate the rollout of smart meters.

Experts from international utilities who have successfully implemented multi-million smart meter projects and maintaining the AMI network for several years will present their experiences and way forward.

### PANEL -1: International Experiences (90 mins)

#### Discussion Points:

- Key Considerations in the Planning, Design and Rollout of Large AMI Systems
- Important Lessons from Rollout of Large AMI Projects in USA, France and Italy
- Challenges in Regular Upgrades, Network Expansions and Maintaining High SLAs for 10+ years
- Challenges with Customer Acceptance of Smart Meters

<b>Chair</b>	<b>Lokesh Chandra</b> , President, All India Discoms Association; and CMD, MSEDCL*
<b>Moderator</b>	ISGF
<b>Theme Presentations</b>	<ol style="list-style-type: none"> <li>1. EDF, France*</li> <li>2. <b>Glen Pritchard</b>, Manager – Advanced Grid Operations and Technology, PECO, USA</li> <li>3. Gridspertise, Italy*</li> </ol>
<b>Speakers</b>	<ol style="list-style-type: none"> <li>1. <b>Pankaj Kumar</b>, MD, UPPCL*</li> <li>2. <b>Gajanan Kale</b>, CEO, TPDDL*</li> <li>3. <b>Avner Matmor</b>, Cofounder, Yitran</li> <li>4. <b>Saurav Shah</b>, ED, PFC*</li> <li>5. <b>Anoop Kaur Bowdery</b>, CEO, EDX Wireless</li> <li>6. LoRA Alliance/SEMTECH</li> <li>7. <b>Abhijit Grewal</b>, Marketing Director, Silicon Labs*</li> <li>8. <b>Harikesh Meena</b>, MD, HPPCL*</li> <li>9. <b>Chavan Dabeedin</b>, GM, Central Electricity Board, Mauritius*</li> <li>10. <b>Mohamed Hamed Shaker Al-Marqabi</b>, Chairman of the Board of Directors, Egyptian Electricity Holding Company</li> </ol>

### Key Takeaways by Moderator



## PANEL 2: Indian Experiences (90 mins)

### Discussion Points:

- Challenges in Scaling up the AMI Rollouts in India
- Prepaid v/s Postpaid Debate
- Measures to Address the Key Challenges with AMI Rollouts – Customer Engagements, Inordinate Delays in SAT, Approval Process for Go-Live, Issues with Legacy Systems of the DISCOMs, Framework to Calculate SLAs
- OEM and Supply Chain Alignment for Mass Production and Testing of Smart Meters
- Infrastructure and System Readiness of Utilities for Integrating Smart Meters with Existing Billing Software and Other Utility Systems
- Financial and Operational Sustainability for AMISPs

### Chair

**Ashish Goel**, General Secretary, All India DISCOMs Association; and Chairman UPPCL

### Moderator

ISGF

### Theme Presentations

**Anil Rawal**, Chair of ISGF Working Group on AMI; and MD, IntelliSmart Infrastructure Pvt Ltd

### Speakers

1. **Aarti Dogra**, CMD, JVVNL, Rajasthan
2. **Rakesh Kumar**, MD, APCDL, Assam
3. **Ashish Tandon**, Chair of ISGF Working Group on AMI; and President, Genus
4. **Avinash Kumar**, JBVNL, Jharkhand
5. **Arun Mahesh Babu**, MD, UGVCL
6. **Bhim Singh Kanwar**, MD, CSPDCL
7. **Anay Dwivedi**, MD, MPPKVCL
8. **Vikas Gaba**, Partner, C&O Energy and Infra, KPMG\*
9. **Rizwan Murji**, PhD. Director of Applications Engineering, Low Power Connectivity Solutions, Texas Instruments Inc.
10. Fluent Grid
11. Kimbal/Polaris/BCITS

### Key Takeaways by Moderator

Coordinator: **Jaydeep Sarkar** | [jaydeep@indiasmartgrid.org](mailto:jaydeep@indiasmartgrid.org)



## EVENT DAY 3: 20 MARCH 2025 (THURSDAY)

### SMART METERING PART B – DISCOMs, AMISPs, OEMs and SIs

#### Venue & Time

Venue	<b>Crystal-1</b>
Time	<b>India 14:00 ~ 17:00</b>

#### Session Background

Smart metering has emerged as the foundation for digitalization of distribution utilities. To derive maximum benefits of smart meters beyond the obvious functionalities require meticulous planning and seamless integration with other automation and IT systems in a utility. The AMI architecture should be designed appropriately considering the existing systems and business processes in the utility. Further, selection and sizing of both hardware and software are critical for ensuring interoperability and scalability (covering several million meters). Smart metering is evolving as AMI 2.0 with multiple benefits to the utility such as Advanced Analytics, Grid Management Functionalities (Distribution Automation, Voltage Management), ADMS Integration, DT Monitoring, Demand Side Management and Demand Response, Smart Street Lights and other Smart City Applications.

In this context DISCOMs, AMISPs and their ecosystem partners such as meter OEMs, software OEMs, system integrators (SI) and cloud providers need close coordination to design the right systems that are appropriate and scalable. Cyber security is another key design element in the AMI system.

This session will bring together all stakeholders in the AMI ecosystem and the DISCOMs to brainstorm the immediate measures to be adopted for fast and successful deployment of scalable and interoperable AMI systems that can be upgraded with AMI 2.0 features at marginal cost.

#### Discussion Points

1. Ideal Architecture of Large AMI Systems
2. Reliable Communication Infrastructure to Meet the SLAs
3. Measures to Ensure Cyber Security
4. Architecture and Functionalities of Smart Meter Operations Center (SMOC) and Network Management System (NMS)

<b>Chair</b>	<b>Shashank Mishra, JS-Distribution, MOP</b>
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<b>Moderator</b>	<b>ISGF</b>
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<b>Theme Presentations</b>	<b>Rohit Pareek, Impresa.AI</b>
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<b>Speakers</b>	<ol style="list-style-type: none"> <li>1. <b>Rahul Dwivedi</b>, ED, REC</li> <li>2. <b>Santosh K Rao</b>, CMD, APSPDCL</li> <li>3. <b>Ganesh Kashyap</b>, CEO, Landis + Gyr India</li> <li>4. <b>Tejas Parmar</b>, MD, MGVL</li> <li>5. <b>R J Vala</b>, Chief Engineer (Projects), PGVCL</li> <li>6. <b>Phil Beecher</b>, Wi-SUN Alliance</li> <li>7. <b>Rizwan Murji</b>, PhD. Director of Applications Engineering, Low Power Connectivity Solutions, Texas Instruments Inc.</li> </ol>
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#### Key Takeaways by Moderator

Coordinator: Jaydeep Sarkar | [jaydeep@indiasmartgrid.org](mailto:jaydeep@indiasmartgrid.org)



## EVENT DAY 3: 20 MARCH 2025 (THURSDAY)

### ROOFTOP PV REVOLUTION IN INDIA AND IMPACT ON DISCOMs - NATIONAL REGISTRY FOR DERs AND SMART INVERTORS

#### Venue & Time

Venue	Regency 1 & 2
Time	India 10:00-11:30

#### Session Background

India's energy landscape is transforming with the rapid adoption of rooftop PV, driven by ambitious renewable targets, government policies like PM Surya Ghar Yojana, and the rapidly falling prices of solar PV systems. While utility-scale solar has progressed, rooftop PV faces challenges, particularly for DISCOMs concerned about revenue loss, grid stability, and power quality.

On this front, ISGF has been working with different stakeholders and prepared a **National Registry of Solar Rooftop PV systems**, that was launched at the Distribution Utility Meet (DUM 2024) by Hon'ble Minister of Power on 14 November 2024 in Lucknow, UP. This registry depicts rooftop PV systems feeder-wise, DT-wise, substation-wise and DISCOM-wise. The registry also has advanced analytical tools to showcase customized dash boards. This helps the DISCOMs, SLDCs and RLDCs in estimating and scheduling the generation from rooftop PV systems. MNRE has agreed to adopt this registry for integration with PM Surya Ghar Portal 2.0.

Another important step taken by ISGF is the work with Bureau of Indian Standards (BIS) and other stakeholders for adoption of IEEE 1547-2018 standards for smart inverters as an Indian standard. This has been achieved with the publication of **IS:18968-2025** recently. Presently efforts are underway to demonstrate the key functionalities of smart inverters and mandate **Smart Inverters** for all new DER connections, enabling real-time monitoring and grid flexibility.

#### Discussion Points

1. Current State of Rooftop PV in India – overview of installed capacity, growth trends, and sectoral contributions (residential, commercial, industrial)
2. Government Policies and Support Mechanisms – analysis of net/gross metering, subsidies, incentives, and state-wise challenges in promoting rooftop solar
3. Financing Models and Consumer Engagement – innovative business models like peer-to-peer (P2P) energy trading, infrastructure leasing and financing options to make rooftop PV more accessible to consumers
4. Experience sharing by PGVCL on initial real-world benefits realized using the registry
5. Ways to standardize SRTPV connections data capturing by DISCOMs for better alignment with Registry requirements
6. Role and importance of Smart Inverters and regulatory framework for mandating these for all new DER connections
7. Cyber Security - challenges of ensuring data security and privacy while maintaining the registry, especially as more real-time monitoring and control features are integrated with DERs
8. Future Roadmap and Global Best Practices – strategies to meet national target of 40 GW rooftop PV by 2026, lessons from international utilities, and collaborative efforts to drive adoption

Chair	Sudeep Jain, AS, MNRE
Moderator	Mani Khurana, Sr Energy Specialist, World Bank
Theme Presentations	1. ISGF 2. IEEE



<b>Speakers</b>	<ol style="list-style-type: none"><li>1. <b>KR Jyothilal</b>, ACS, Energy, Kerala</li><li>2. <b>Divyanshu Jha</b>, Deputy Secretary, MNRE</li><li>3. <b>K Balaraman</b>, Chairperson, ETD 46, BIS</li><li>4. <b>Kaleb Udupi</b>, Minister of Finance and Energy, Palau*</li><li>5. <b>R J Vala</b>, Chief Engineer (Projects), PGVCL</li><li>6. <b>Amit Singh Parihar</b>, SSEF</li><li>7. <b>Sachin Talewar</b>, Director Technical, MP Paschim Kshetra Vidyut Vitran Co Ltd</li><li>8. <b>Dinesh Agrawal</b>, Executive Director, MSEDCL</li><li>9. <b>Vivek Goel</b>, Chief Engineer – Distribution, CEA</li><li>10. <b>Neha Agarwal</b>, Scientist – D, BIS</li><li>11. <b>Jon Moore</b>, Chief Executive Officer, BloombergNEF*</li><li>12. <b>Ganzorig Shagdarsuren</b>, Director of Renewable Energy Division, Mangolia Ministry of Energy*</li><li>13. <b>OEMs</b></li></ol>
<b>Key Takeaways by Moderator</b>	
Session Coordinator: <b>Disha Khosla</b>   <a href="mailto:disha@indiasmartgrid.org">disha@indiasmartgrid.org</a>   +91 78380 04339	





## EVENT DAY 3: 20 MARCH 2025 (THURSDAY) UNIFIED ENERGY INTERFACE (UEI) AND THE EVOLVING ERA OF ENERGY INTERNET

### Venue & Time

Venue	Regency 1 & 2
Time	India 11:30-13:30

### Session Background

The convergence of decentralization, digitization, and rapidly increasing power demand is reshaping the energy landscape, presenting unprecedented opportunities along with formidable challenges. The power generation capacity is expected to more than triple in the next 3-4 decades as electrification has emerged as the fuel of choice for decarbonization. In 2024, about 80% of the new generation capacity added came from renewable resources with solar leading the way. The total installed capacity of solar power today is about 1610 GW of which 680 GW is rooftop solar. Per IEA estimates, the rooftop solar capacity is expected to be 3700 GW by 2035. This huge expansion in rooftop solar will be accompanied by growth in battery energy storage systems (BESS) which is estimated to grow from the present capacity of 89 GW to 850 GW by 2035; and 180 GW out of this would be behind the meter BESS. Grid Operators need to manage billions of distributed resources and electric vehicles (EVs) connected to the grid for which they require advanced automation systems, smart inverters, and digital tools such as network modelling software and Distributed Energy Resources Management Systems (DERMS) etc.

This revolution taking place in the electricity sector has opened up opportunities for digital technologies to structurally transform the traditional manner in which electricity networks are operated and power transactions are managed. **Peer-to-Peer (P2P)** transactions of rooftop solar energy is creating green energy communities globally. In India ISGF along with our technology partners have demonstrated three successful pilot projects of P2P transactions of rooftop solar energy on blockchain platform. Three states in India have issued enabling regulations for P2P transactions.

In order to scale up the P2P regime, ISGF along with our technology partners is presently working to demonstrate a digital energy grid through **Unified Energy Interface (UEI)** - creating a dynamic, scalable ecosystem in which new standards, tools and security methods can be incorporated without fracturing the legacy systems. It establishes a cohesive digital layer that invites every participant – from a prosumer in the remote village to a cutting-edge AI driven aggregator - to interconnect and execute energy and financial transactions through a common digital language. For example, paying a homeowner when his rooftop solar sends surplus power to his neighbours' battery. These mechanisms unlock new business models and take the P2P transactions to the next level.

A UEI pilot project is set to launch in Lucknow City to test and validate decentralized energy trading using blockchain technology, open digital protocols, and real-time settlement mechanisms. UEI Framework Components include:

1. **Transaction Layer** – A digital marketplace where energy buyers and sellers interact
2. **Data Trust Layer (Blockchain Layer)** – A decentralized ledger ensuring **secure, transparent, and tamper-proof transactions**
3. **BAP and BPP Platforms** – These digital platforms **facilitate real-time energy discovery, negotiation, and settlement**, ensuring a smooth transaction process

### Discussion Points

1. **P2P Pilot Projects in India** and the White Papers and Tool Kit
2. **P2P Regulations in India** – Uttar Pradesh, Delhi and Karnataka
3. **Digital Energy Grid Vision and UEI Framework**
4. **UEI Architecture** – Transaction Layer for trading, Blockchain Layer for security, and Open Digital Protocols for seamless operations
5. **UEI Pilot Demonstration in Lucknow** – Developing a decentralized energy trading framework using UEI Architecture



6. <b>Energy Internet and Digital Transformation</b> – Role of AI, IoT, Smart Grids, EVs, and DERs in modernizing energy markets. 7. <b>Challenges and Solutions</b> – Interoperability issues, cybersecurity risks, and regulatory considerations for decentralized energy trading 8. <b>Future Business Models and Scalability</b> – Monetization strategies, Utility integration, and large scale of P2P transactions on UEI framework	
<b>Chair</b>	<b>Arvind Kumar</b> , Chairman, UPERC
<b>Moderator</b>	ISGF
<b>Theme Presentation</b>	<b>Sujith Nair</b> , Cofounder and CEO, FIDE
<b>Speakers</b>	1. IEA 2. <b>Doug Arent</b> , Executive Director, NREL Foundation; and former Deputy Associate Lab Director, NREL* 3. <b>Sanjay Kumar</b> , Chairman, MERC 4. <b>Anil Mukim</b> , Chairman, GERC 5. <b>UN Behera</b> , Chairperson, OERC 6. <b>Ramesh Babu Veeravalli</b> , Member (Technical), CERC 7. <b>Nidhi Narang</b> , Director (Finance), UPPCL 8. <b>Gajanan Kale</b> , CEO, TPDDL 9. <b>Abhishek Ranjan</b> , CEO, BRPL 10. <b>Jean Francois Gagne</b> , Head of Secretariat, Clean Energy Ministerial* 11. <b>Hongpeng Liu</b> , Director, ESCAP* 12. <b>Rangan Banerjee</b> , Director, IIT-D* 13. <b>Paddy Padmanathan</b> , CEO, ACWA Power* 14. <b>Arshi Chadha</b> , Cofounder, Trillectric 15. <b>Adritha Subbiah</b> , Senior Program Manager Southeast Asia Energy Transition Partnership, UNOPS*
<b>Key Takeaways by Moderator</b>	
Coordinator: <b>Shashi Bala</b>   shashi@indiasmartgrid.org	





## EVENT DAY- 3: 20 MARCH 2025 (THURSDAY)

### NUCLEAR RENAISSANCE AND THE ROLE OF SMR FOR THE NET ZERO POWER SYSTEMS

#### Venue & Time

Venue	Crystal 2
Time	10:00-13:00

#### Session Background

As the global push for Net Zero power systems intensifies, driven by renewable energy (RE) sources and energy storage systems (ESS) to balance demand and supply, experts argue that large power systems cannot rely solely on RE and ESS. Nuclear energy, being emission-free, could play a significant role in achieving Net Zero power systems. Emerging technologies such as Small Modular Reactors (SMRs), which are smaller in size, more scalable, and designed for lower initial investment, offer enhanced safety features and are considered a promising addition to the energy mix, complementing large-scale nuclear plants.

Government of India's Budget FY 2025-26 outlines a significant push towards nuclear energy as part of India's long-term energy transition strategy. The budget includes a ₹20,000 crore allocation for the research and development of SMRs, with an ambitious target to operationalize at least five indigenously developed SMRs by 2033. This move is part of a broader strategy to expand India's nuclear energy capacity to 100 GW by 2047 (as of January 2025, India's nuclear capacity is 8180 MW).

To facilitate this expansion, the government has announced plans to amend the Atomic Energy Act and the Civil Liability for Nuclear Damage Act. These amendments aim to encourage private sector participation and attract overseas investment in the nuclear energy sector. By removing policy hurdles and making the sector more industry-friendly, these legislative changes are expected to play a crucial role in India's energy transition. This shift is expected to enhance innovation and efficiency in the sector, contributing significantly to India's goal of achieving Net Zero emissions by 2070.

It also underscores India's commitment to expanding its nuclear capacity, supported by significant budget allocations and legislative amendments to encourage private sector participation.

#### Discussion Points

1. 100GW Nuclear Energy by 2047- is it too ambitious or too little ?
2. Development of 5 SMRs indigenously by 2033.
3. ₹20,000 crore allocation for the Nuclear Energy Mission and its expected impact on India's energy landscape.
4. Roadmap for 100 GW Nuclear Energy by 2047 and indigenous development of 5 SMRs by 2033.
5. Advancements in SMR Technology – latest developments in SMR design, including improved safety features, modular construction, and operational efficiencies
6. Economic Viability of SMRs including cost, financing models, and the potential for integrating SMRs with other energy sources and industrial applications to optimize energy systems
7. Regulatory and Safety Considerations for SMRs including licensing processes, regulatory challenges, and public perception issues
8. International Collaboration and Best Practices – the role of global collaboration in advancing SMR technology, sharing lessons learned from international entities involved in SMR development and deployment
9. Thorium Reactors and Alternative Nuclear Technologies – evaluating the potential of thorium-based nuclear reactors along with their current state of development



10. Workforce training framework and complimentary role of AI/ML and Predictive Analysis 11. Amendment to Atomic Energy Act and Civil Liability for Nuclear Damage Act	
<b>Chair</b>	<b>VK Saraswat</b> , Member NITI Aayog
<b>Co-Chair</b>	<b>Bhuwan Chandra Pathak</b> , CMD, NPCIL*
<b>Moderator</b>	<b>Ganapati Myneni</b> , Co-Founder, BSCE Systems, Inc., USA, Professor of Science GITAM, Visakhapatnam India
<b>Theme Presentation</b>	ISGF
<b>Speakers</b>	<ol style="list-style-type: none"> <li>1. <b>Andrew Paterson</b>, Senior Fellow, US Nuclear industry Council; Board Member, Environmental Business International; and former Senior Analyst at Energy Office of Policy &amp; International Affairs, USA</li> <li>2. <b>Hemant Jain</b>, Member, CEA*</li> <li>3. <b>Everett Redmond</b>, Senior Director, Federal Affairs, Oklo Inc., Board Member USINC and Former Senior Technical Advisor, NEI</li> <li>4. <b>Kailash Mittal</b>, BSCE Bharat Ltd</li> <li>5. <b>Thierry Advocat</b>, Nuclear counsellor at the French Embassy</li> <li>6. <b>Maurin Matthieu</b>, EDF Representative in India</li> <li>7. <b>Akira Yamamoto</b>, Senior Scientist and Professor, Acceleratory Laboratory, KEK, Japan*</li> <li>8. <b>Prasenjit Pal</b>, Project Director, ASWINI, NTPC Ltd</li> <li>9. <b>L&amp;T</b></li> <li>10. <b>Ranganathan</b>, Tata Consulting Engineers</li> <li>11. <b>Ravi Seethapathy</b>, Advisor, ISGF; Executive Chairman, Biosirus Inc</li> <li>12. <b>Sylvain Nizou</b>, Chief Executive Officer, HEXANA*</li> <li>13. <b>Ted Jones</b>, Sr Director, Nuclear Energy Institute*</li> <li>14. <b>Hiroshi Okamoto</b>, Executive Vice President, TEPCO Power Grid Inc*</li> <li>15. <b>Laurence Tubiana</b>, CEO, European climate foundation*</li> <li>16. <b>Rana Ghoneim</b>, Chief, Division of Energy and Climate Action, UNIDO*</li> <li>17. <b>Paul Levisse</b>, Conventional Island Department Head, Naarea*</li> <li>18. <b>Sandro Baldi</b>, Commercial Director, Nuward SMR*</li> <li>19. <b>Tim Hunt</b>, NextLab*</li> </ol>
<b>Key Takeaways by Chair &amp; Moderator</b>	
Coordinator: <b>Bala Subramanyam</b>   <a href="mailto:bala.k@indiasmartgrid.org">bala.k@indiasmartgrid.org</a>	



## EVENT DAY 3: 20 MARCH 2025 (THURSDAY)

### BUILDING RESILIENT UTILITY ASSETS FOR CONGESTED CITIES AND CLIMATE RESILIENCE

**SESSION PARTNERS: CDRI**

#### Venue & Time

Venue	Regency 5
Time	India 14:00 – 17:00

#### Session Background

Rapid urbanization, congestion, and load growth together with climate change impact needs new attention on utility assets. EHV has entered our congested cities and so has proliferation of MV stations due to reliability, PV, BESS, EV and DERMS. Further, climate resiliency warrants asset preparedness against high impact events.

In the last decade digital and solid-state power technologies have progressed substantially in the electric power industry. Substations design-builds using solid-state switches/ breakers, solid-state transformers, fiber-optic sensors, 61850 communication protocols, easier undergrounding for cables are now possible. Environmentally protective “Cube/Shell” designs with smaller footprint (than current GIS stations) can be engineered using BIMS technology.

This session will hear from experts on how large and very congested cities can benefit from these advancements to meet load growth, RE integration as well as climate change resiliency needs.

#### Discussion Points

1. Equipment Specifications and Standards for Changing Weather Patterns
2. Infrastructure Redesign for Flood and Cyclone Protection
3. Undergrounding Grids, Sub-stations and Distribution Lines
4. Dynamic Line Rating (DLR)
5. Fiber Optic Sensors for Realtime Monitoring of Temperature of Grid Assets in NMS/DMS/ADMS
6. Advanced Weather Forecasting and Emergency Plans
7. Collaboration and Resources Sharing
8. Investment in Emergency Equipment and Reserves
9. Grid Forming Inverters
10. Islanding Schemes in Cities/States
11. Building Resiliency Against Cyber Attacks

<b>Chairs</b>	Ghanshyam Prasad, Chairman, CEA*
<b>Moderator</b>	Ravi Seethapathy, Advisor, ISGF& Executive Chairman, Biosirus Inc.
<b>Theme Presentations</b>	<ol style="list-style-type: none"><li>1. Tata Power, Odisha</li><li>2. L&amp;T PTD*</li><li>3. PT.PLN, Indonesia</li></ol>



<b>Speakers</b>	<ol style="list-style-type: none"><li>1. <b>Darmawan Prasodjo</b>, President Director, PT.PLN, Indonesia*</li><li>2. <b>Amit Prothi</b>, DG, Coalition for Disaster Resilient Infrastructure (CDRI)*</li><li>3. <b>Sanjay Banga</b>, President – T&amp;D, Tata Power Company Ltd</li><li>4. <b>Gajanan Kale</b>, CEO, TPDDL</li><li>5. <b>Husain Lootah</b>, EVP Transmission, Dubai Electricity and Water (DEWA)*</li><li>6. <b>R Srinivasan</b>, SVP Engineering, L&amp;T PT&amp;D*</li><li>7. <b>Abel Didier Tella</b>, Director General, Association of Power Utilities in Africa</li><li>8. <b>N Venu</b>, President APAC, Hitachi Energy*</li><li>9. <b>Jayant Kumar</b>, GM Digital Engineering, L&amp;T PT&amp;D*</li><li>10. <b>Cyro Boccuzzi</b>, President, Eco-EE and President, Latin American Smart Grid Forum, Brazil</li></ol>
<b>Key Takeaways by Moderator</b>	
Coordinator: <b>Anand Kumar Singh</b>   <a href="mailto:anand@indiasmartgrid.org">anand@indiasmartgrid.org</a>	



**EVENT DAY 3: 20 MARCH 2025 (THURSDAY)**  
**POWER SYSTEM FLEXIBILITY AND DERMS**  
**SESSION PARTNER: ASPENTECH**

**Venue & Time**

Venue	<b>Crystal 2</b>
Time	<b>India 14:30 ~ 17:00</b>

**Session Background**

As renewable energy penetration increases, managing grid flexibility has become essential to maintaining stability and reliability. Distribution Energy Resource Management Systems (DERMS) are advanced solutions that enable efficient integration, monitoring, and optimization of Distributed Energy Resources (DERs) such as solar, wind, battery storage, electric vehicles, and flexible demand-side resources. These systems provide real-time control to balance supply and demand, mitigate variability in renewable generation, and enhance grid resilience.

India has already achieved 100 GW+ grid connected solar generation resources including 15 GW of rooftop solar PV systems. The PM Surya Ghar Yojana launched in 2024 has a target of 10 million rooftop solar installations with a cumulative capacity of 30 GW on fast track by 2027. Besides, installation of EV charging stations are also accelerating fast. Managing millions of these distributed generation resources and EV charging load points will be impossible for DISCOMs without advanced digital tools to monitor and manage them efficiently. In this context, DERMS would play a crucial role in DER integration, improving grid flexibility, and avoiding curtailment of RE generation and help manage frequency regulation, voltage control, and demand response. This is essential for maintaining a stable and resilient grid as India accelerates its transition to a low-carbon energy future.

**Discussion Points**

1. Distributed Energy Resource Management Systems (DERMS) – importance of DERMS and how it integrates with the wider grid management systems and the benefits they bring in terms of operational flexibility and efficiency
2. Challenges of DISCOMs in implementing DERMS and supportive solutions available for facilitating integration with existing infrastructure, data management and interoperability
3. DER Registry and how it supports preparing foundation work for DERMS
4. How to develop a strategic roadmap – a practical and cost-effective – for implementation of DERMS in DISCOMs
5. Global Best Practices and Case Studies - examining successful DERMS deployments worldwide, highlighting key learnings and strategies for effective implementation in India
6. Cyber Security measures for the distribution grid with millions of DERs, EVs and Smart Meters

<b>Chair</b>	<b>RS Dillion</b> , Member, CERC*
<b>Moderator</b>	<b>Ravi Seethapathy</b> , Advisor, ISGF and Executive Chairman, Biosirus Inc.
<b>Theme Presentation</b>	<b>Anand S</b> , Principal Solution Consultant, Solution Consulting, AspenTech India Private Ltd.
<b>Speakers</b>	<ol style="list-style-type: none"> <li>1. <b>Lawrence Jones</b>, Sr Vice President, Edison Electric Institute, USA</li> <li>2. <b>Jaiprakash Shvahre</b>, MD, GUVNL*</li> <li>3. <b>Abhishek Ranjan</b>, CEO, BRPL</li> <li>4. <b>GE Vernova</b></li> <li>5. <b>Rahul Chakrabarti</b>, Director, Professional Services, AspenTech India Private Ltd.</li> <li>6. <b>Om Dubey</b>, Director, CCR, Australia</li> <li>7. <b>Akilur Rahman</b>, CTO, Hitachi India</li> <li>8. <b>Sylvie Tarnai</b>, Chief Strategy Officer, Energy Pool, France*</li> <li>9. <b>Zhibo Ma</b>, Market Manager, National Grid, UK*</li> </ol>



	<ol style="list-style-type: none"><li>10. <b>SC Saxena</b>, Director (Market Operation), Grid-India*</li><li>11. <b>KVS Baba</b>, CMD(Retd.), Grid-India*</li><li>12. <b>Terry Mohn</b>, Chair, Australian Microgrids; and Advising Executive, General MicroGrids*</li><li>13. Gridspertise, Italy</li><li>14. Tata Power</li><li>15.</li></ol>
Coordinator: <b>Disha Khosla</b>   <a href="mailto:disha@indiasmartgrid.org">disha@indiasmartgrid.org</a>	



## EVENT DAY 3: 20 MARCH 2025 (THURSDAY)

### DEEP DIVE SESSION ON AI, ML AND ROBOTICS

#### USE CASES FOR UTILITIES

##### Venue & Time

Venue	Regency 1 & 2
Time	India 15:00-17:30

##### Session Background

India's power sector plays a crucial role in the country's economic and social development, supporting industries and the daily lives of over 1.4 billion people. As India sets ambitious energy goals, such as 500 GW of non-fossil fuel capacity by 2030 and achieving net-zero emissions by 2070, it faces several challenges. These include integrating renewable energy sources like solar and wind, reducing network losses, managing the rising peak demand, bridging the demand-supply gap, and adapting to the rapid growth of Distributed Energy Resources (DERs), such as rooftop solar, battery storage, and electric vehicles. AI, ML, Blockchain, Metaverse and Robotics technologies are increasingly being adopted in the power sector for a variety of applications. From smarter grid management to renewable energy forecasting, and even nuclear power plant safety, AI is fundamentally changing the way the energy industry operates, moving it towards a more efficient, sustainable, and secure future. The session will cover AI's capability to predict demand, optimize supply, and enhance the monitoring and maintenance of the power infrastructure. Metaverse is the new addition that offers the convergence of physical and digital realities, creating immersive virtual environments for use cases such as trainings, remote guidance for repairs and maintenance jobs etc. Together, these technologies are setting the stage for transformative changes in the power sector.

There is a need to identify successful use-cases of these technologies in power utilities and create a roadmap for their adoption, contributing to a sustainable, future-ready power sector that supports India's energy transition and growth.

##### Discussion Points

1. **Brief presentation of AI-ML projects implemented in India and won/shortlisted for ISGF Innovation Awards in 2024 and 2025**
2. **Grid Optimization, Demand Forecasting and Asset Management**
  - AI/ML algorithms to improve demand forecasting accuracy and enable more efficient resource management
  - AI's role in enhancing grid operations through real-time data analytics and automated decision-making processes, particularly in the integration of RE and EV
  - Advanced Analytics for improved efficiency in commercial operations
3. **AI's Role in Loss Identification**
  - Consumption pattern analysis and profiling
  - Theft identification
4. **Predictive Maintenance**
  - Leveraging AI/ML and advanced analytics to predict equipment failures and schedule proactive maintenance, thereby reducing downtime and operational costs
5. **Web 3.0, Blockchain and Immersive Technologies**
  - Applications of Web 3.0, Blockchain, AR/VR/XR and Metaverse
6. **Customer Service Enhancements**
  - Highlighting AI applications in customer service, such as chatbots and voice bots for customer interactions and personalized service offerings



<b>7. Challenges and Ethical Considerations</b> <ul style="list-style-type: none"><li>Challenges related to AI adoption, including data security, privacy concerns, and the ethical implications of automated decision-making in utility services</li></ul>	
<b>8. Workforce Transformation</b> <ul style="list-style-type: none"><li>Impact of AI on the utility workforce, including the need for new skills and the potential for job transformation</li></ul>	
<b>Chair</b>	<b>Akash Tripathi</b> , Additional Secretary, Ministry of Power
<b>Moderator</b>	ISGF
<b>Theme Presentations</b>	<ol style="list-style-type: none"><li><b>Projects that Won the ISGF Innovation Awards in 2024</b></li><li><b>Projects Shortlisted for the ISGF Innovation Awards in 2025</b></li></ol>
<b>Speakers</b>	<ol style="list-style-type: none"><li><b>Dan Traverse</b>, Cofounder, Open Climate Fix</li><li><b>Vineet Sikha</b>, MD, CESC Kolkata</li><li><b>Mohammed Rihan</b>, DG, NISE</li><li><b>Jae won Chang</b>, Vice Chairman, Korea Smart Grid Association*</li><li><b>Paul Bingaman</b>, <b>Power &amp; Utilities Market Manager</b>, ANY Robotics*</li><li>UPPCL*</li></ol>
<b>Key Takeaways by Moderator</b>	
Coordinator: <b>Disha Khosla</b>   <a href="mailto:disha@indiasmartgrid.org">disha@indiasmartgrid.org</a>	





EVENT DAY 3: 20 MARCH 2025 (THURSDAY) 1 <sup>ST</sup> JOINT INDONESIA-INDIA SMART ENERGY WORKSHOP	
Venue & Time	
Venue	Regency 5
Time	India 10:30-13:00
<b>Session Background</b> <p>As part of the <b>India Smart Utility Week (ISUW) 2025</b>, the <b>Joint Indonesia-India Smart Energy Bilateral Workshop</b> will bring together key stakeholders from both nations to explore collaboration opportunities in <b>Smart Grids, Renewable Energy, Electric Mobility, and Smart City Solutions</b>. Indonesia and India, both dynamic and fast-growing economies are committed to accelerating their energy transition and grid modernization efforts. This workshop will provide a strategic platform for policymakers, regulators, utilities, technology providers, and industry leaders to exchange insights, showcase innovations, and develop joint initiatives that strengthen bilateral energy ties.</p> <p>This high-impact session will foster knowledge sharing, inspire new ideas, and pave the way for long-term partnerships between Indonesia and India in the smart energy and electric mobility domains.</p> <p>Join us at ISUW 2025 to be part of this exclusive dialogue shaping the future of energy collaboration between <b>Indonesia and India</b>.</p> <b>Discussion Points</b> <ul style="list-style-type: none"><li>• Advancing Smart Grid Infrastructure and Digitalization</li><li>• Renewable Energy Integration and Grid Resilience</li><li>• Electric Mobility and EV Ecosystem Development</li><li>• Policy and Regulatory Frameworks for Future Energy Systems</li></ul>	
Chair	
Moderator	
Theme Presentation	
Speakers	
<b>Key Takeaways by Moderator</b>	
Coordinator: <b>Aashima Chaney</b>   aashima@indiasmartgrid.org <b>Shashi Bala</b>   shashi@indiasmartgrid.org	



**EVENT DAY 2: 20 MARCH 2025 (THURSDAY)  
2ND INDIA - BRAZIL SMART ENERGY WORKSHOP (IN  
COLLABORATION WITH LATAM SMART GRID FORUM AND BRAZIL-  
INDIA CHAMBER OF COMMERCE\*)**

**Venue & Time**

Venue	<b>Regency 5</b>
Time	<b>India 16:00-19:00</b>



FORUM LATINO-AMERICANO DE SMART GRID



**Session Background**

The global energy landscape is undergoing a transformative shift, driven by the urgent need for sustainable development, climate change mitigation, huge growth in electrification and technological innovations. This session aims to foster collaboration and knowledge exchange between Brazil and India stakeholders to address critical challenges and opportunities in energy transition. Key focus areas include the implementation of Smart Grids, reduction of T&D losses, integration of renewable energy sources, development of biofuels, and the adoption of smart mobility and urban mobility solutions. Additionally, the session will explore the role of regulatory frameworks and policies in enabling innovation and scaling up smart energy solutions. By sharing best practices, identifying collaborative opportunities, and discussing cutting-edge technologies, this session seeks to pave the way for a more resilient, efficient, and sustainable energy future

**Discussion Points**

- Smart Metering as a Service – the Indian Model:**
  - Continuation of Smart Meter Dialogue from LATAM 2023
  - Sharing Indian experience of Smart Metering as a Service Against Monthly Fee
- Grids Implementation**
  - Strategies for Developing Robust Smart Grid Infrastructure
- T&D Loss Reduction:**
  - Common Challenges in Transmission and Distribution (T&D) Loss Reduction
  - Collaborative Approaches and Technologies for Minimizing Energy Losses
- Renewable Energy Integration:**
  - Assessing the Current State of Renewable Energy Adoption in Brazil and India
  - Digital Tools for DER Integration
  - Identifying Opportunities for Collaboration in Solar, Wind, and Bioenergy Projects
- Bio Fuels Development:**
  - The Role of Biofuels in Energy Transition and Climate Change Mitigation
  - Exploring Joint Research and Development Initiatives in Biofuel Technologies
- Smart Mobility Solutions:**
  - Electric Mobility Landscape in India and Brazil
  - Collaborative Projects for accelerated rollout of charging infrastructure and electric vehicles (EVs)
  - Evolving Trends and Technologies in Electric Mobility
- Regulatory Frameworks and Policies:**
  - The Importance of Supportive Regulatory Environments to Foster Innovation
  - Policy Gaps and Potential Reforms to Promote Smart Energy Solutions



<b>14:30 ~ 15:00</b>	<b>INAUGURAL SESSION</b>  <b>Welcome Address:</b> <b>Reji Kumar Pillai</b> , President, ISGF and Chairman, Global Smart Energy Federation (GSEF)  <b>Special Address</b> <ol style="list-style-type: none"> <li><b>Cyro Vicente Boccuzzi</b>, Presidente - ECOee &amp; L.A. Smart Grid Forum</li> <li><b>Leticia Gomes</b>, Manager, Institutional Relations, India-Brazil Chamber of Commerce</li> <li><b>Pedro Piacesi de Souza</b>, Head of Energy and Environment Sector, Embassy of Brazil in New Delhi</li> <li><b>Anil Rawal</b>, MD, IntelliSmart Infrastructure</li> <li><b>Sandip Dhamija</b>, CEO, TP Power Plus Ltd</li> </ol> <b>Inaugural Address:</b> <b>Vinay Kumar</b> , Director - LAC, Ministry of External Affairs*
<b>15:00 ~ 16:00</b>	<b>Session -1: T&amp;D Loss Reduction Experiences in India and Brazil and Smart Metering as a Service – the Indian Model</b>  <b>Moderator:</b> <b>Ravi Seethapathy</b> , Advisor, ISGF; Executive Chairman, Biosirus Inc  <b>Speakers:</b> <ol style="list-style-type: none"> <li><b>Subhadip Raychaudhuri</b>, Additional General Manager, TPDDL</li> <li><b>Cyro Vicente Boccuzzi</b>, President - ECOee &amp; L.A. Smart Grid Forum</li> <li><b>Felipe Tenorio Vicente</b>, Deputy-Regulation, Light, Rio de Janeiro</li> <li><b>Brajesh Kumar</b>, Sr Executive Vice President and Business Head, BSES Yamuna Power Limited</li> <li><b>Arvind Singh</b>, CEO, Tata Power Western Odisha Distribution Company Ltd</li> </ol>
<b>16:00 ~ 17:00</b>	<b>Session 2: Biofuels</b>  <b>Moderator:</b> <b>Ravi Seethapathy</b> , Advisor, ISGF; Executive Chairman, Biosirus Inc, Canada  <b>Speakers:</b> <ol style="list-style-type: none"> <li><b>Bárbara Teruel</b>, Associate Professor and Coordinator of the Digital Agriculture and Energy Laboratory, State University of Campinas (UNICAMP)</li> <li><b>Mohnish Ahuja</b>, Founder and CEO, PRESPL</li> <li><b>Neeraj Atray</b>, Principal Scientist – Biofuels, Indian Institute of Petroleum (IIP)</li> <li><b>Amitabh Malaviya</b>, CEO, Araville Green Energy Ventures Pvt Ltd</li> <li><b>Cyro Vicente Boccuzzi</b>, President - ECOee &amp; Latin American Smart Grid Forum</li> <li><b>Vishal Rawat</b>, Director General, Biodiesel Manufacturers Association of India</li> <li><b>Chandra Kumar Jain</b>, Grain Ethanol Manufacturers Association of India (GEMA)</li> </ol>
<b>17:00 ~ 17:15</b>	<b>Closing Remarks by Moderators</b>
<b>Coordinator: Aashima Chaney   +91 9871752530   aashima@indiasmartgrid.org</b>	



## PRESENTATION OF 25 SELECTED TECHNICAL PAPERS

**DAY 3: 20 MARCH 2025 (THURSDAY)**

**09:30 ~ 19:00 | REGENCY 3**

SL.	Theme	Paper Title	Presenter	Organization	Time
<b>Chair: BP Singh, Former Member, Delhi Electricity Regulatory Commission (DERC)</b>					<b>09:30 - 09:35</b>
1	<b>Disruptive Innovations for Utilities</b>	Object-based classification for vegetation encroachment analysis and change detection in greater noida for electrical network planning and utility management	Vikas Gupta	Noida Power Company Limited	Presentation 09:35 - 09:50  Chair's Remark 09:50 - 09:55
2		SVM and DWT based Detection and Classification of Microgrid Faults using Single Point Measurement	Sumangal Bhaumik	Abacus Institute of Engineering and Management	Presentation 09:55 - 10:10  Chair's Remark 10:10 - 10:15
3		Unlocking the Intelligent Utility with Generative AI	Dheeraj Gangadharan	Accenture	Presentation 10:15 - 10:30  Chair's Remark 10:30 - 10:35
4.		A CIM Based Network Model Management	Najda V M	TNEI India Services Limited	Presentation 10:35 - 10:50  Chair's Remark 10:50 - 10:55
5.		Governance Frameworks for GenAI in Sustainable Utility Management: An ESG Perspective	Priyanshu Agrawal	Cognizant	Presentation 10:55 - 11:10  Chair's Remark 11:10 - 11:15
6.		Robotics Process Automation for Master Data Integration	Anil Kumar Ojha	TPWODL	Presentation 11:15 - 11:30  Chair's Remark 11:30 - 11:35
7.		Application of digital twins for the low-voltage electricity grid—Challenges and opportunities of Distribution Grid Analytics in India	Ajeet Kumar Singh	The Energy & Resources Institute	Presentation 11:35 - 11:50  Chair's Remark 11:50 - 11:55
8.		Disruptive	Tusar Kanti	TP Central Odisha	Presentation



		Innovations for Utilities: Digitalization, New Services and Revenue Streams: Evolution of Substation Automation System	Bag	Distribution Ltd.	11:55 - 12:10  Chair's Remark 12:10 - 12:15
9	Regulations for the Evolving Smart Energy Systems	India's Carbon Credit Trading System: An Assessment Framework for Power Sector Transformation and Market Stability	Sujit Surendran	Cognizant Technology Solution Pvt Ltd	Presentation 12:15 - 12:30  Chair's Remark 12:30 - 12:35
10		Framework for Indian Carbon Markets	Purnima M Gupta	Central Electricity Authority	Presentation 12:35 - 12:50  Chair's Remark 12:50 - 12:55
11		Enhancing Regional Energy Cooperation in South Asia: Lessons from Success Stories and the Need for a Unified Regulatory Framework	Maitreyi Karthik	RTI International (USAID Implementation partner)	Presentation 12:55 - 13:10  Chair's Remark 13:10 - 13:15
12		Regulatory Framework for Ancillary Services in Evolving Smart Energy Systems Challenges and Strategic Solutions	Gufran Basit	Siemens Technology and Services	Presentation 13:15 - 13:30  Chair's Remark 13:30 - 13:35
LUNCH: 13:35 – 14:00					
Chair: Faruk Kazi of ISGF Working Group on Digital Architecture and Cyber Security Professor and Dean of Research and Development, DerVJTI, Mumbai					14:00 – 14:05
13	Electric Mobility	Effect of vehicle dynamics on Performance of Electric Vehicle	Minal Rade	D.Y. Patil College of Engineering	Presentation 14:05 - 14:20  Chair's Remark 14:20 - 14:25
14		Opportunity For Battery Swapping in India	Eshwar Pisalkar	Blue Energy Commercial Vehicle Limited	Presentation 14:25 - 14:40  Chair's Remark 14:40 - 14:45
15		Advanced Modulation Techniques for Multilevel Inverters in Vehicle-to-Grid Applications	Nasreen Banumansoori	Silver Oak University, Ahmedabad, Gujarat	Presentation 14:45 - 15:00  Chair's Remark 15:00 - 15:05
16		Strategic Charging Demand Management of Electric Buses: A Case Study on Urban Decarbonization	Mahavir Singh	The Energy and Resources Institute	Presentation 15:05 - 15:20  Chair's Remark 15:20 - 15:25
17		Harnessing Drone	Sanjay Singh	Accenture Ltd.	Presentation



		Technology to Transforming India's Future in Mobility	Rawat		15:25 - 15:40  Chair's Remark 15:40 - 15:45
Chair: Rajesh Bansal, Former CEO of BSES Rajdhani Power Ltd					15:45 - 15:50
18	Foundational Blocks for Smart Grids	Improving Frequency Regulation and Reliability in Renewable Energy Based Distribution Networks through Advanced Inertia Control and Optimized Fault Passage Indicators (FPIs)	Aditya Kumar Pati	PSCC, TPWODL, BURLA	Presentation 15:50 - 16:05  Chair's Remark 16:05 - 16:10
19		Estimation of Most Probable Root cause using Digital tools for Inverter Dominated Power Grid	Sarthak Dash	GE Vernova	Presentation 16:10 - 16:25  Chair's Remark 16:25 - 16:30
20		Integrated Bespoke Outage Management System: Effective solution for Indian Power Utilities to address Customer Power Failure Grievance	Birendra Choudhary	Noida Power Company Limited	Presentation 16:30 - 16:45  Chair's Remark 16:45 - 16:50
Chair: Reji Kumar Pillai, President, ISGF					16:50 - 16:55
21	India@100 in 2047: Vision for the Indian Power System	IEEE 2800 Complied Power Hardware- in-the-Loop (PHIL) Setup for Analyzing PV Plant's Behaviour in Power Systems	Sarasij Das	Indian Institute on Science, Bangalore	Presentation 16:55 - 17:10  Chair's Remark 17:10 - 17:15
22		Generatioin Planning Analysis in India's Evolving Policy Landscape: A Case Study of Uttar Pradesh	Sairam Thandra	Centre for Study of Science, Technology and Policy (CSTEP)	Presentation 17:15 - 17:30  Chair's Remark 17:30 - 17:35
Chair: Anjuli Chandra, Former Member, PERC					17:35 - 17:40
23	Smart Grids for Smart Cities	Integrated Modelling for Sustainable Energy Transition: Renewable Energy Planning, Resource Adequacy, and Green Hydrogen & Ammonia Supply in India	Aditi Narang	Energy Exemplar	Presentation 17:40 - 17:55  Chair's Remark 17:55 - 18:00



24		The Role of Decentralized Energy Communities in Supporting Telecom Infrastructure	Jagruti Thakur	KTH Royal Institute of Technology	Presentation 18:00 - 18:15 Chair's Remark 18:15 - 18:20
25	<b>New and Emerging Technologies and Trends</b>	Exploring Renewable Energy Dynamics in Power Grids Through Synchrophasor Technology	Aman Gautam	Grid India	Presentation 18:20 - 18:35 Chair's Remark 18:35 - 18:40
<b>Key Takeaways by Session Chairs</b>					18:40 – 19:00
<b>Coordinators:</b> Aashima Chaney   aashima@indiasmartgrid.org Rohan Banik   rohan@indiasmartgrid.org					





India  
**SMART UTILITY**  
Week 2025



India  
**SMART UTILITY**  
Week 2025

**18 - 22 March 2025**

**📍 New Delhi**

ORGANIZER

**ISGF**  
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**ISUW 2025**

11th Edition of  
India Smart Utility Week, An International  
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and Smart Mobility

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**18 March 2025**  
Tuesday

Special Workshops  
& Master Classes

**19 March 2025**  
Wednesday

Conference and  
Exhibition

**20 March 2025**  
Thursday

Conference and  
Exhibition

**21 March 2025**  
Friday

Conference and  
Exhibition

**22 March 2025**  
Saturday

Technical Tours and  
Cultural Tours

**9th ISGF INNOVATION AWARDS : 21 MARCH 2025**



**9th ISGF INNOVATION  
AWARDS 2025**

# ISUW 2025 DETAILED AGENDA

## EVENT DAY 4 21 MARCH 2025 (FRIDAY)





## EVENT DAY 4: 21 MARCH 2025 (FRIDAY)

### DIGITALIZATION OF UTILITIES, DIGITALIZATION ROADMAPS; DIGITAL TWINS

#### Venue & Time

Venue	Crystal 2
Time	10:00-11:30

#### Session Background

The utility sector is rapidly evolving with the **integration of digital technologies to improve efficiency, reliability, and customer service**. This transformation involves the use of **smart meters, automation systems, and IoT devices**, which enable real-time monitoring and better management of energy resources.

To ensure a smooth transition, utilities follow **digitalization roadmaps**, which outline the technologies to be adopted, timelines, investment plans, and expected benefits. A key part of this transformation is digital twins—virtual models of physical systems that help monitor, simulate, and predict network performance. These tools are especially useful in managing **renewable energy sources, forecasting demand, and optimizing operations**.

Digitalization in a utility creates humongous digital data which can be interpreted using advanced AI, ML tools to optimize assets and operations.

#### Discussion Points

1. Importance of a Digitalization Roadmap
  - How structured planning guides technology adoption and investments
  - Ensuring alignment with regulations and future needs
2. Enhancing Operational Efficiency and Customer Service
  - Role of smart meters, automation, and IoT in improving efficiency
  - How digital tools enhance reliability and customer experience
3. Role and Benefits of Digital Twins
  - How digital twins help manage complex energy networks
  - Using predictive analytics for maintenance and decision-making
4. Challenges in Digital Transformation
  - Addressing cybersecurity risks, investment challenges, and compliance issues
  - Strategies to overcome these barriers and ensure smooth adoption
5. Future Trends in Utility Digitalization
  - Emerging technologies shaping the future of utilities
  - The evolving role of data analytics and changing customer expectations
6. Application of AI, ML Tools
  - Successful use cases of application of AI, ML tools in power utilities

Chair	<b>Manu Srivastava</b> , Additional Chief Secretary (ACS), Renewable Energy Department, Madhya Pradesh
Moderator	<b>Andres Carvallo</b> , CEO & Founder, CMG Consulting LLC
Theme Presentation	ENEL (Gridspertise)



<b>Speakers</b>	<ol style="list-style-type: none"><li>1. <b>Keisuke Sadamori</b>, Director, International Energy Agency*</li><li>2. <b>Saurabh Kumar</b>, Vice-President- India, Global Energy Alliance for People and Planet (GEAPP)</li><li>3. <b>Mohammed Musharraf Farooqui</b>, CMD, TGSPDCL</li><li>4. <b>Rudiger L Thomas</b>, Executive Director, Digital Strategy, Microsoft*</li><li>5. <b>Mukesh Wadhwa</b>, Director, Sales and partner Ecosystems, GE Digital</li><li>6. <b>Beni Suryadi</b>, HOD-SRE &amp; PFS, ASEAN Centre for Energy*</li><li>7. <b>Nick Singh</b>, Smart Grid CoE Manager, Eskom Research Testing &amp; Development*</li><li>8. <b>Marissa hummon</b>, CTO, utilidata*</li><li>9. <b>SR Narasimhan</b>, CMD, Grid-India</li><li>10. <b>Mohak Mangal</b>, CEO and Co-Founder Pravāh (Stanford University)</li><li>11. <b>Dhruv Suri</b>, PhD Candidate, Stanford University</li><li>12. Tata Power</li><li>13. BRPL</li></ol>
<b>Key Takeaways by Moderator</b>	
Coordinator: <b>Shashi Bala</b>   shashi@indiasmartgrid.org	



**EVENT DAY 4: 21 MARCH 2025 (WEDNESDAY)**  
**EMERGING DIGITAL TECHNOLOGIES FOR UTILITIES**  
**SESSION PARTNERS: DST AND C-DAC**

**Venue & Time**

Venue	<b>Crystal-2</b>
Time	<b>India 11:30-13:00</b>

**Session Background**

Emerging technologies such as AI, ML, Blockchain, Robotics, and the Metaverse are driving transformative changes in the power sector. These advancements enable innovative applications, from predictive analytics and grid optimization to immersive virtual environments for training, remote maintenance, and real-time operational guidance. The integration of physical and digital realities through the Metaverse further enhances efficiency and skill development in utility operations.

Department of Science and Technology (DST) has been at the forefront of fostering Research, Development, and Demonstration (RD&D) in clean energy and smart grids. Through its clean energy research initiatives, DST has catalysed several national and international programs focused on modernizing utility systems. During Mission Innovation Phase I, DST successfully led the Smart Grids Innovation Challenge, aimed at doubling clean energy investments and driving innovation for reliable, accessible, and affordable energy systems. Building on this foundation, Mission Innovation Phase II focuses on the Green Powered Future Mission, where DST is spearheading efforts to integrate Variable Renewable Energy (VRE) into the grid while maintaining cost-efficiency, security, and resilience. This session explores the major RD&D activities leveraging emerging and digital technologies to advance utility operations and prepare for a sustainable, green-powered future.

**Discussion Points**

1. AI, ML, Blockchain, and Metaverse Applications - existing and potential applications of these technologies in the power sector
2. Challenges and Barriers - identifying the technological, regulatory, and societal challenges to adopting these technologies and potential solutions
3. Future shaped by the widespread adoption of AI, ML, Blockchain, and the Metaverse, including potential impacts on daily life, work, and social interactions
4. Tangible outcomes and future directions in Smart Grids and Building Energy Efficiency programs

<b>Chair</b>	<b>Anita Gupta</b> , Scientist -G, Department of Science and Technology, Govt of India
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<b>Moderator</b>	<b>Renji V Chacko</b> , Senior Director & Chief Investigator – NaMPET, C-DAC
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<b>Theme Presentations</b>	C-DAC
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<b>Speakers</b>	<ol style="list-style-type: none"> <li>1. <b>Jemma Green</b>, Cofounder and CEO, Powerledger</li> <li>2. <b>Aby Joseph</b>, Scientist -G and Sr Director, C-DAC, Thiruvananthapuram</li> <li>3. <b>Lee Jung-Ho</b>, President, KEPCO Research Institute</li> <li>4. <b>Atul Bali</b>, Director-NSGM and Vice-Chair, ISGAN</li> <li>5. <b>Meenakshi Vashist</b>, Cofounder and CEO, TekUncorked</li> <li>6. <b>Mark McGrahanan</b>, EPRI Fellow at EPRI Europe*</li> <li>7. <b>Mandala White</b>, CEO, Smart Grid Forums*</li> <li>8. <b>Gerhard Salge</b>, CTO, Hitachi*</li> <li>9. BYPL</li> </ol>
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**Key Takeaways by Moderator**

Coordinator: **Shashi Bala** | [shashi@indiasmartgrid.org](mailto:shashi@indiasmartgrid.org)



## EVENT DAY 4: 21 MARCH 2025 (FRIDAY)

### INNOVATIONS IN REGULATIONS FOR THE NEXT ROUND OF POWER SECTOR REFORMS

#### Venue & Time

Venue	Crystal- 1
Time	India 10:00-12:30

#### Session Background

As the world grapples with escalating climate challenges and the urgency of achieving Net-Zero targets, the power sector is undergoing a transformative shift. The emergence of advanced technologies such as Artificial Intelligence (AI), Machine Learning (ML), Blockchain, and cutting-edge Grid Edge solutions are driving innovation. The growing presence of the "prosumers" alongside the rapid expansion of distributed energy resources (DERs) connected to low and medium voltage grids, is creating new complexities in grid management and stability. Moreover, the rise in transport electrification is placing additional demands on distribution grids, requiring a rethinking of infrastructure to accommodate high-capacity power connections for public charging stations and bus depots. To navigate these challenges, grid operators must embrace not only innovative technologies but also forward-thinking business models, supported by updated policies and regulatory innovations.

#### Discussion Points

1. Distributed Energy Resources (DER) and the Impact of Prosumer Growth on DISCOMs
2. Role of Nuclear Energy, particularly SMRs in the Energy Transition
3. Regulations for the Nuclear Sector
4. Regulatory frameworks and technological solutions for P2P energy trading and promotion of local clean energy markets.
5. Incentives to customers for participation in demand response and vehicle-to-grid (V2G) programs
6. Implementation of carbon pricing and enforcement of energy efficiency standards
7. Policies fostering research and deployment of advanced technologies like AI, ML and Blockchain in Power Sector
8. Transition Financing - mobilizing investment in clean energy, energy storage systems and phasing out fossil fuel investments
9. Just Transition - ensuring the shift is equitable transition, addressing the social and economic impacts on communities and workers
10. Cross-Sector Collaboration between the power sector and other industries (such as transport, manufacturing, and agriculture) to create integrated solutions for achieving Net-Zero emissions goals and fostering a circular economy

Chair	Jishnu Barua, Chairperson, CERC
Moderator	Rahul Tongia, Senior Fellow with CSEP
Theme Presentation	ISGF

Speakers	<ol style="list-style-type: none"> <li>1. P Ravikumar, Chairperson, KERC</li> <li>2. Sanjay Kumar, Chairperson, MERC</li> <li>3. Arvind Kumar, Chairperson, UPERC</li> <li>4. Anil Mukim, Chairperson, GERC</li> <li>5. Kumar Sanjay Krishna, Chairperson, AERC</li> <li>6. Ashish Kumar Goel, Chairman, UPPCL; and General Secretary, All India DISCOMs Association</li> <li>7. Srikant Nagulapalli, Addl. Secretary, MoP</li> </ol>
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	<p>8. <b>Hanif Qureshi</b>, Additional Secretary, MHI</p> <p>9. <b>Prasad Tejram Reshme</b>, Director (Projects), MSEDCL</p> <p>10. <b>A Balan</b>, Member (Planning), CEA</p> <p>11. <b>D Sai Baba</b>, JS, MoP</p> <p>12. <b>M V Rao</b>, Chairperson, WBERC</p>
<b>Key Takeaways by the Moderator:</b>	
Coordinator: <b>Sumit Sharma</b>   <a href="mailto:sumit@indiasmartgrid.org">sumit@indiasmartgrid.org</a>	



## EVENT DAY 4: 21 MARCH 2025 (FRIDAY)

### GRID INTEGRATED BUILDINGS

#### Venue & Time

Venue	Regency 5
Time	India 10:00 - 12:00

#### Session Background

Nearly half the electricity generated are consumed in buildings globally and this share is increasing with steep increase in cooling and heating loads, more and more appliances, gadgets and automation systems. In this context making buildings grid interactive or Grid Integrated Buildings (GIBs) are becoming a key solution for improving energy efficiency, grid flexibility, and renewable energy integration. Per IEA estimates, rooftop solar capacity is expected to grow from 688 GW presently to 3700 GW by 2035 – an increase of 449%. The buildings, equipped with rooftop solar, battery energy storage systems (BESS), and advanced automation technologies could enable real-time communication with the electric grid, optimizing energy consumption, generation, and storage. By utilizing distributed energy resources like rooftop solar, battery storage, electric vehicles (EVs) and smart appliances, GIBs help buildings actively manage their energy usage while providing much needed flexibility to the grid through load shifting, peak shaving, and frequency regulation.

The rise of intermittent renewable energy sources like wind and solar has increased the need for flexible grid systems, and GIBs address this challenge. They offer building owners the opportunity to lower energy costs, generate revenue from energy markets, and improve grid reliability. Electrifying buildings—through systems like heating, cooling, electric vehicle (EV) charging, and smart appliances—also presents significant decarbonization potential. In countries like India, where energy demand from buildings is rising due to rapid urbanization, GIBs can help optimize energy use while reducing carbon emissions.

With technologies like smart meters, automated energy management, and vehicle-to-grid (V2G) capabilities, GIBs can improve grid stability and energy efficiency. To promote their widespread adoption, India needs supportive policies, regulatory frameworks, and greater awareness about the benefits of GIBs in reducing energy demand and contributing to national decarbonization targets.

#### Discussion Points

1. Role of GIBs in Grid Flexibility and Stability - how grid-interactive buildings contribute to load management, demand response, and renewable energy integration
2. Technologies Driving Grid Interactivity - role of advanced technologies such as smart meters, energy management systems, BESS, and IoT-enabled devices in enabling real-time communication and optimization in GIBs.
3. Policy and Regulatory Support for GIB Deployment - need for supportive policies, incentives, and regulations to promote the adoption of grid-interactive buildings
4. Integration of EV Charging Infrastructure with GIBs - potential of grid-interactive buildings to support EV adoption through smart charging, vehicle-to-grid (V2G) systems, and optimized energy usage
5. Economic Benefits and Business Models for GIBs - revenue streams for building owners, such as participation in energy trading and ancillary services, and assessing cost savings from energy efficiency and peak load reduction
6. Challenges in Scaling GIBs and Solutions – how to remove barriers such as high upfront costs, interoperability issues, data privacy concerns, and the need for workforce training



<b>Chair</b>	<b>TBD</b>
<b>Moderator</b>	<b>Mili Majumdar</b> , Managing Director, GBCI India and Senior Vice President, Research and Innovation, USGBC
<b>Theme Presentation</b>	<b>ISGF</b>
<b>Speakers</b>	<ol style="list-style-type: none"><li>1. <b>Pravatanalini Samal</b>, Director – Buildings, BEE</li><li>2. <b>Arvind Singh</b>, CEO, TP Central Odisha Distribution Limited</li><li>3. <b>Kumud Wadhwa</b>, Chief General Manager (ERP &amp; IT), PowerGrid</li><li>4. <b>Soumya Prasad Garnaik</b>, India Country Representative, Asia Lead Energy Efficiency and Project Manager IKI-ALCBT, GGGI</li><li>5. <b>Richard Sedano</b>, President &amp; CEO, RAP</li><li>6. <b>Craig Burton</b>, Senior Research Manager, GBPN</li><li>7. <b>Manoj Kumar</b>, Executive Engineer, Nalanda University</li><li>8. <b>Gautam Nagar</b>, Country Manager, GBPN</li><li>9. <b>Sachin Kumar</b>, Director–Industry, Buildings &amp; Cooling, Shakti Sustainable Energy Foundation</li><li>10. <b>Lorraine HJ Akita</b>, President/CEO, LHA Ventures*</li><li>11. <b>Ashok B Lall</b>, Principal, Ashok B Lall Architects</li></ol>
Coordinator: <b>Disha Khosla</b>   <a href="mailto:disha@indiasmartgrid.org">disha@indiasmartgrid.org</a>	



## EVENT DAY 4: 21 MARCH 2025 (FRIDAY)

### POWER MARKETS AND CARBON MARKETS

#### Venue & Time

Venue	Regency 1 & 2
Time	India 10:30-13:30

#### Session Background

##### **The Indian Carbon Market (ICM): A Pathway to Global Leadership in Climate Finance**

India is making significant strides and an impressive progress in establishing a structured and scalable carbon market to achieve its “Net-Zero by 2070” ambition. India’s Carbon Credit Trading Scheme (CCTS) is a landmark development aimed at integrating carbon pricing into the Indian economy. Administered by the Bureau of Energy Efficiency (BEE) and regulated by the Ministry of Power (MoP) and Ministry of Environment, Forest & Climate Change (MoEFCC), the ICM is designed to transition from an energy-efficiency-based trading system to a more comprehensive carbon credit mechanism, covering multiple sectors.

India’s CCTS aligns with global frameworks under Article 6 of the Paris Agreement, aiming to enhance compliance market readiness while fostering participation in voluntary carbon trading. At the same time CCTS recognizes and aims to facilitate establishment of a voluntary domestic carbon market as well. Such evolving mechanisms mirror best global practices. However, to truly dovetail with global markets, India must focus on harmonizing its MRV (Measurement, Reporting & Verification) system, ensuring additionality, and improving registry transparency.

The key focus areas for leadership & scaling climate finance are summarized below:

1. **Enhancing Market Integrity** – Implementing high-quality, science-based methodologies for carbon credits’ generation.
2. **Strengthening MRV & Digitalization** – Leveraging blockchain, AI, and remote sensing to ensure credit integrity and prevent greenwashing.
3. **Sectoral Expansion** – Including transport, agriculture, and nature-based solutions to maximize impact.
4. **Global Linkages** – Engaging in bilateral Article 6.2 agreements to facilitate cross-border credit trade and unlock international climate finance.

By focusing on rigor, transparency, and scalability, India has the potential to showcase leadership in carbon markets, attract global investors, and set a benchmark for emerging economies.

Integrating Power Markets and Carbon Markets with the collaboration of key bodies such as the Central Electricity Regulatory Commission (CERC), Bureau of Energy Efficiency (BEE), Grid Controller of India, and Power Exchanges aims to create a cohesive framework that enhances both energy efficiency and climate change mitigation efforts. Power markets enable the buying and selling of electricity, fostering competition and optimizing energy distribution, while carbon markets focus on reducing greenhouse gas emissions through the trading of carbon credits. The integration of these markets will align their mechanisms, promoting cleaner energy sources, incentivizing carbon reduction, and driving the transition toward a more sustainable and low-emission energy system.

#### Discussion Points

1. Market Structures: Discuss the current structures of power and carbon markets and how they can be more effectively integrated
2. Regulatory Role: Explore the role of CERC, BEE, and Power Exchanges in regulating and facilitating market integration
3. Incentive mechanisms for carbon trading within power markets
4. Strategies and frameworks for scaling Climate Finance in power markets
5. Technology solutions that support efficient operation and integration of the power and carbon markets
6. Key Challenges: Regulatory hurdles and market participants’ awareness; and potential solutions





<p>7. Potential economic benefits for the energy sector and environmental benefits for the society</p> <p>8. Reskilling and Upskilling power markets stakeholders to enable just transition and embrace new mechanisms including carbon markets</p> <p>9. International Lessons: Insights from other countries with integrated power and carbon markets</p>	
<b>Chair</b>	<b>Akash Tripathi</b> , AS, MoP
<b>Moderator</b>	<b>Yuvaraj Dinesh Babu</b> , Executive Director, Infrablocks Capital, Singapore
<b>Theme Presentation</b>	<b>Saurabh Diddi</b> , Director, BEE*
<b>Key Notes</b>	<b>Scaling Climate Finance: Abhilash Mulakala</b> , General Manager, Debt & Sustainable Finance, IFSC Gift City*
	<b>Public Private Partnership: Sanchayan Chakraborty</b> , Partner & CEO – Aavishkaar Carbon Platform*
<b>PANEL DISCUSSION:</b> Integration of Power and Carbon Markets – Leveraging Technology, Digital Infrastructure and Sustainable Finance	
<b>Speakers</b>	<ol style="list-style-type: none"> <li><b>Saurabh Diddi</b>, Director, BEE*</li> <li><b>P Rambabu</b>, Advisor, GREENKO Group*</li> <li><b>Sanchayan Chakraborty</b>, Partner &amp; CEO – Aavishkaar Carbon Platform*</li> <li><b>Rohit Bajaj</b>, Joint Managing Director, IEX*</li> <li><b>Abhilash Mulakala</b>, General Manager, Debt &amp; Sustainable Finance, IFSC Gift City*</li> <li><b>Ajit Gupta</b>, Sr Adviser, ICF Consulting*</li> <li><b>Sushmita Ajwani</b>, Director, Power &amp; Renewables at ICF</li> <li><b>Apurba Mitra</b>, IETA India Taskforce Cochair and Partner, KPMG*</li> <li><b>Deepak Gupta</b>, Executive Vice President, ReNew Power*</li> <li><b>Aparna Khandelwal</b>, Sr Advisor, India Climate Collaborative*</li> <li><b>Smita Rakesh</b>, Vice President, Social Alpha*</li> <li><b>Tania Banerjee</b>, Associate Director, BCG*</li> <li><b>Binita Shrestha</b>, Renewable Energy Officer, MinErgy Initiatives*</li> <li><b>Rakesh Sarin</b>, Co-founder &amp; Director, Carbon Uturn*</li> <li><b>Rachit Agarwal</b>, Partner, JouleWise*</li> </ol>
<b>Session Coordinator:</b> Bala Karnam   81212 76498   <a href="mailto:bala.k@indiasmartgrid.org">bala.k@indiasmartgrid.org</a>	



## EVENT DAY 4: 21 MARCH 2025 (FRIDAY)

### WORKSHOP ON IMMERSIVE TECHNOLOGIES: AR/VR, DIGITAL TWINS, DRONES, AND ASSISTED REALITY FOR ENHANCED OPERATIONS AND EFFICIENCY

#### Venue and Time

Venue	Regency 1& 2
Time	India 14:00 to 17:00

#### Session Background

This workshop explores the transformative potential of cutting-edge technologies – Augmented/Virtual Reality (AR/VR), Digital Twins, Drones, and Assisted Reality – within the Power sector. Participants will experience/witness practical applications across power generation (traditional and renewable), transmission and distribution, and smart energy domains. The session will showcase how these technologies are revolutionizing operations by enabling remote troubleshooting, digital guided work instructions, predictive maintenance, real-time monitoring, and enhanced inspections. Through real-world case studies and interactive discussions, participants will gain insights into leveraging these tools to improve efficiency, safety, and sustainability in the energy landscape. Learn how to empower your organization with the future of immersive technologies.

#### Workshop Format

- **Interactive Demonstrations:** Include live demos of AR/VR applications, digital twin platforms, and drone operations.
- **Case Studies:** Present real-world examples of how these technologies are being used by Power companies.
- **Hands-on Demos:** Offer participants the opportunity to try out some of the technologies themselves.
- **Panel Discussion:** Invite Utility Leaders & Industry experts to discuss the challenges and opportunities of deploying these technologies in the power sector.

#### Cross-Cutting Topics

- **Data Security and Privacy:** Address the critical aspects of data security and privacy when using AR/VR, digital twins, and drones in the power sector.
- **Integration Challenges and Solutions:** Discuss the challenges of integrating these technologies with existing systems and provide practical solutions.
- **Cost-Benefit Analysis:** Present case studies and examples that demonstrate the ROI of using AR/VR, digital twins, and drones in the power sector.
- **Future Trends and Opportunities:** Explore the latest advancements in these technologies and discuss their potential impact on the future of power systems



## Demonstration Sessions:

### 1. Introduction (15 minutes):

- **Welcome and Introductions:** Brief introduction and the purpose of the workshop.
- **Setting the Stage:** Highlight the challenges and opportunities in the power sector and how these technologies can address them. Briefly touch upon industry trends driving adoption.
- **Overview of Technologies:** Briefly define AR/VR, Digital Twins, Drones, and Assisted Reality, emphasizing their distinct characteristics and capabilities.

### 2. Deep Dive into Applications (30 minutes):

- **Sector-Specific Breakdown:** Divide this section into the three key sectors: Power Generation, Transmission and Distribution, and Smart Energy.
- **Use Cases:** For each sector, present 2-3 successful use cases for each technology (AR/VR, Digital Twins, Drones, Assisted Reality). Focus on the "why" and the "how"—explain the problem, the solution, and the benefits.
- **Visual Aids:** Use plenty of images, videos, and even short demos as feasible. Seeing these technologies in action is crucial for understanding their impact.
- **Real-World Examples:** Showcase case studies of companies successfully implementing these technologies. Quantify the benefits achieved (e.g., cost savings, downtime reduction, safety improvements).

### 3. Hands On Demos (45 minutes):

- **AR/VR Demonstration:** Showcase a live demonstration of an AR/VR application relevant to the power sector (e.g., a virtual power plant tour, an AR-guided maintenance procedure). Explain the features and benefits of the application as we demonstrate it.
- **Digital Twin Demonstration:** Demonstration of a digital twin platform and how it can be used for real-time monitoring, predictive maintenance, or scenario simulation.
- **Drone Demonstration (Pre-recorded or Live if feasible):** Show footage from a drone inspection of power lines or other grid infrastructure. Highlight the data captured and how it's used.
- **Assisted Reality Demonstration:** Demonstrate how assisted reality can be used for remote troubleshooting or guided work instructions.

### 4. Panel Discussion: 30 minutes

### 5. Q & A (20 minutes):

### 6. Concluding Remarks & Key Takeaways (10 minutes):



ANNEXURE		
Sector	Technology	Application
Power Generation (Traditional and Renewable)	AR/VR	Training and Maintenance Simulations, Guided Maintenance Procedures, Boiler/Turbine/Substation Operation Examples
	Digital Twins	Predictive Maintenance, Real-time performance Monitoring, SCADA/IoT Integration, Wind Turbine/Solar Panel Use Cases, Remote Diagnostics, Performance Optimization
	Drones	Inspections of Power Lines, Solar Farms, And Wind Turbines, Thermal Imaging, Safety Improvements, Regulatory Considerations, Post-Inspection Analysis and Reporting, Remote Inspections.
	Assisted Reality	Remote Troubleshooting, Digital Guided Work Instructions, Remote Expert Assistance.
Transmission and Distribution	AR/VR	Grid Visualization and Planning, Underground Cable Route Visualization, Lineman Training.
	Digital Twins	Grid Management, Scenario Simulation, Power Flow Optimization, Smart Grid Integration, Real-Time Grid Monitoring and Anomaly Detection, Predictive Maintenance
	Drones	Transmission Line Inspections, Tower Inspections, Vegetation Management, AI-Powered Defect Detection, Emergency Response and Damage Assessment, Remote Inspections.
	Assisted Reality	Remote Troubleshooting, Digital Guided Work Instructions for Field Technicians, Remote Expert Assistance.
Smart Energy	AR/VR	Customer Engagement, Smart Energy Education, Real-Time Energy Consumption Visualization. Remote Support for Smart Home Devices, Remote Troubleshooting, Digital Guided Work Instructions.
	Digital Twins	Smart Home/Building Energy Optimization, Equipment Failure Prediction, Smart Grid Integration, Personalized Energy Management Recommendations, Remote Monitoring and Control.
	Drones	Smart City Infrastructure Monitoring, Streetlights/EV Charging Station Inspections, Monitoring Energy Efficiency of Buildings, Remote Inspections.



Chair	TBC
Presenters	1. <b>Keyur Bhalavat</b> , Founder & CEO, Plutomen XR Solutions
Discussants	1. DISCOMs 2. TRANSCOs 3.
Key Takeaways by the Moderator:	
Workshop Coordinator: <b>Shashi Bala</b>   <a href="mailto:shashi@indiasmartgrid.org">shashi@indiasmartgrid.org</a>	



## EVENT DAY 4: 21 MARCH 2025 (FRIDAY) EVOLVING TRENDS IN ELECTRIC MOBILITY – V2G DEMO

Venue	Crystal- 2
Time	India 14:30~16:30

### Session Background

The shift to electric mobility has moved beyond range anxiety to reducing charging time. While EV drivers in most urban areas have better access to public charging stations (PCS), charging time vary from 30 minutes to several hours. Lack of facilities around PCS is a major concern and, in most cases, there is not even a convenient place to sit while the EV is being charged. Battery technology is advancing, with 2C-rated batteries—charging in under 30 minutes—gaining traction. In the next 3-5 years, 4C-rated batteries, charging in 15 minutes or less, will enter the market. However, these ultra-fast charging EVs will require MW-scale power at public charging stations (PCS), posing grid challenges, especially in urban areas. Utilities must plan for high-capacity connections at charging hubs and bus depots.

India's electric mobility push, backed by FAME-I and FAME-II, has built the foundation for EV charging networks. However, adopting electric buses and trucks for intercity transport remains a hurdle. The "Vision 2030: PM Public Transport Sewa" initiative aims to develop 600 km of electric highways and replace 800,000 diesel buses, including 50,000 school buses, with EVs. Efforts are also underway to deploy electric trucks for freight transport along industrial corridors.

School buses, which remain idle during peak demand and high solar hours, present a huge opportunity for Vehicle-to-Grid (V2G) integration. These buses can supply stored energy back to the grid and serve as backup power during outages, enhancing community resilience. During peak summer and peak winter schools are closed and the electric school buses will be available 24x7 for grid support services. Typically, schools have large roofs where solar PV systems can be installed, and buses can be charged with green electricity from the rooftop PV.

V2G allows bi-directional energy flow, enabling EVs to draw power from the grid and also feed stored electricity back into the grid when needed. This improves grid stability, optimizes energy flows, and provides financial benefits for EV owners. ISGF has undertaken the very first V2G demonstration in India in 2024 in technology collaboration with University of Delaware, USA. Three private DISCOMs in Delhi - BRPL, BYPL and TPDDL- and ANERY in Kerala re participating in this V2G demonstration. Four Tata Nexon EVs have been retrofitted with 11 kW bidirectional power modules inside these EVs and participating in V2G trails with bidirectional AC chargers connected to the grid. The 4 retrofitted EVs have been commissioned in December 2024 and are undergoing testing presently.

ISGF has also undertaken pioneering trials on demonstrated movement of cargo on electric trucks in industrial corridors n Northern India in 2023; and submitted recommendations for electrification of goods transportation. Agricultural sector is being mechanized on fast track and emerging as a major emitter of CO<sub>2</sub>. ISGF is working on promotion of electric tractors in agricultural sector that can reduce emissions and fuel expenses and improve efficiency. Accelerating this transition requires key enablers such as subsidies, financing options, and a charging infrastructure in the rural areas. With advancements in battery technology and supportive policies, electric tractors have the potential to make Indian agriculture more sustainable and energy efficient.

This session will explore India's progress in Vehicle-to-Grid (V2G) technology, key regulatory enablers, and future opportunities for integrating EVs into the energy ecosystem.



## Discussion Points

1. New Programs and Initiatives in Electric Mobility
2. Super-fast Chargers and MW-scale Charging Systems (MCS)
3. Electric Highways and Wireless Charging Systems
4. Inter-city Operations of Electric Buses and Electric Trucks – how to Remove the Barriers?
5. Imperatives for School Bus Electrification and Business Models
6. Evolving Trends in V2G
  - Global Adoption and Market Growth
  - Technological Advancements and Infrastructure Needs
  - Regulatory and Policy Challenges
  - Potential Benefits of V2G
  - Way Forward for India
7. Electrification of Agriculture Sector
  - Infrastructure and Technology Readiness
  - Policy and Financial Support for Widespread Adoption
8. New Business opportunities such as integration with P2P energy trading platforms, Second life utilization of EV batteries for stationery applications (BESS), EV conversion kits and retrofitting services, etc.

<b>Chair</b>	<b>Hanif Qureshi</b> , Additional Secretary, MHI
<b>Moderator</b>	ISGF
<b>Theme Presentations</b>	<ol style="list-style-type: none"> <li>1. MHI</li> <li>2. <b>Rodnee T McGee</b>, University of Delaware, USA</li> </ol>
<b>Speakers</b>	<ol style="list-style-type: none"> <li>1. <b>SJ Sinha</b>, Advisor, NITI Aayog*</li> <li>2. <b>Anupam Shukla</b>, MD, UPREV</li> <li>3. <b>Quan Nan</b>, Director, Global Energy Interconnection Development (GEIDCO)</li> <li>4. <b>Lee Yoonsoo</b>, EV Innovation Business Strategy Team, Hyundai Motor Group</li> <li>5. <b>Nitin Seth</b>, Chief Executive Officer-New Mobility, Reliance Industries Limited</li> <li>6. <b>Prasanna Patwardhan</b>, Former President, BOCI; and CMD, Prasanna Purple</li> <li>7. <b>Awadhesh Jha</b>, Executive Director- Glida India; and Chairman, Indian Charge Point Operators Association</li> <li>8. <b>Omkar Shaligram</b>, General Manager, Tata Motors Ltd</li> <li>9. <b>Nishant Arya</b>, Vice Chairman, JBM</li> <li>10. <b>N Mohan</b>, Head (EVCI), CESL</li> <li>11. <b>RK Singh</b>, Head of Business Operations - EV Charging, Tata Power</li> <li>12. <b>Jung-Ho, Lee</b>, Corporate Senior Vice President, Chief Safety Officer &amp; Chief Operation Officer, KEPCO Research Institute*</li> <li>13. <b>Brian Grunkemeyer</b>, Founder &amp; CTO, FlexEnergi*</li> <li>14. <b>Veda Prakash Galigerkere</b>, Senior E-Mobility Engineer, BMW of North America*</li> </ol>

Coordinator: **Anand Kumar Singh** | [anand@indiasmartgrid.org](mailto:anand@indiasmartgrid.org)



EVENT DAY 4: 21 MARCH 2025 (FRIDAY) CAPACITY BUILDING IN UTILITIES FOR ENERGY TRANSITION (In Collaboration with SKILL COUNCIL FOR GREEN JOBS)	
Venue & Time	
Venue	Regency 5
Time	India 14:30 - 17:00
<b>Session Background</b>	
<b>Discussion Points</b>	
Chair	
Moderator	
Theme Presentation	
Speakers	1. <b>Kabir Malik</b> , Senior Economist, World Bank Group/ESMAP 2. <b>Afeena Ashfaq</b> , Associate Director Partnerships, SED Fund* 3. <b>KN Satyanarayana</b> , Professor- Civil & Environmental Engineering, IIT-TIRUPATI*
Coordinator: <b>Yashika Maheshwari</b>   <a href="mailto:yashika@indiasmartgrid.org">yashika@indiasmartgrid.org</a>	





**EVENT DAY 4: 21 MARCH 2025 (FRIDAY)**

**17:00 ~ 18:00**

**Valedictory Function of ISUW 2025**

**Chief Guest**

**Shripad Naik**

**Hon'ble Minister of State for Power and MNRE**