ISUW 2021 CONFERENCE AGENDA

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CONFERENCE AGENDA SUMMARY

02 MARCH 2021 (TUESDAY): CONFERENCE DAY 1

INAUGURATION OF ISUW 2021 CONFERENCE AND EXHIBITION

LUNCH BREAK + TOUR OF ISUW 2021 EXHIBITION

New York (03:00 ~ 03:30) | Paris (09:00 ~ 09:30) | India (13:30 ~ 14:00) | Tokyo (17:00 ~ 17:30)

CONFERENCE THEMATIC SESSIONS	
14:00 ~ 16:00	Session - 1: Innovation in Utilities During the Pandemic
16:00 ~ 18:00	Session - 2: Regulatory Support in Different Countries for Revival of Utilities
19:00 ~ 21:00	Special Plenary - 1: Customer Rights Protection Order by Ministry of Power – Action by Utilities and Regulators
WORKSHOP	
	10th EU-INDIA Smart Gird Workshop PART-A in Partnership with European Union
SEMINARS	
14:00~18:00	Presentation of Select Technical Papers: Part - 1
ROUNDTABLES	
15:00~18:00	Roundtable - 1: Interconnection of Regional Grids in Asia

Live Performance 18:00~19:00 IST

03 MARCH 2021 (WEDNESDAY): CONFERENCE DAY 2

REJUVENATION SESSIONS	
09:00~10:00	Virtual Yoga
CONFERENCE THEMATIC SESSIONS	
11:30 ~ 13:30	Session - 3: Smart Meter Rollout in India
14:00 ~ 16:00	Session - 4: Energy Storage Systems – Technologies, Business Models and Regulations
16:00 ~ 18:00	Session - 5: Disaster (and Pandemic) Resilient Utilities and Cities (In partnership with NIUA)
WORKSHOPS	
11:00~13:00	5G for Smart Utilities and Smart Cities (In partnership with TSDSI)
14:00~17:00	10th EU - INDIA Smart Grid Workshop – Part B (In partnership with EU)
18:00~21:30	7th US - INDIA Smart Grid Workshop (In partnership with US Commercial Services; US DoE; and USIBC)
SEMINARS	
11:30~13:30	Smart Water Distribution
14:00~17:30	IEC – IEEE World Smart Energy Standardization Coordination Workshop
ROUNDTABLES	
11:30~13:30	Roundtable - 2: Electric Cooking
14:00~17:00	Roundtable - 3: Digital Architecture and System Integration for Smart Metering (Powered by Amazon Web Services)

LUNCH BREAK + TOUR OF ISUW 2021 EXHIBITION

New York (03:00 ~ 03:30) | Paris (09:00 ~ 09:30) | India (13:30 ~ 14:00) | Tokyo (17:00 ~ 17:30)

04 MARCH 2021 (THURSDAY): CONFERENCE DAY 3

REJUVENATION SESSIONS	
10:00~11:00	Virtual Yoga
18:00~19:00	Talk by Devdutt Pattnaik
CONFERENCE THEMATIC SESSIONS	
11:30 ~ 13:30	Session - 6: Cyber Security for Digital Utilities
14:00 ~ 16:00	Session - 7: Disruptive Technologies and Innovations for Utilities: Part - A
16:00 ~ 18:00	Session - 8: New Revenue Opportunities for Utilities
19:00 ~ 21:00	Special Plenary - 2: Grid Integrated Vehicles (GIV) and Standards for GIVs
WORKSHOPS	
11:00~13:30	Workshop on District Cooling Systems (In partnership with APUEA)
14:30~17:30	5th SWEDEN - INDIA Smart Grid Workshop (In partnership with Department of Science and Technology (DST) and Swedish Energy Agency (SEA), and Business Sweden)
SEMINARS	
14:00~18:00	Smart City Gas Distribution and Green Hydrogen
ROUNDTABLES	
11:30~13:30	Roundtable - 4: Urban Air Mobility Systems (UAM)
14:00~17:30	Roundtable - 5: Blockchain Applications in Energy Sector

LUNCH BREAK + TOUR OF ISUW 2021 EXHIBITION

New York (03:00 ~ 03:30) | Paris (09:00 ~ 09:30) | India (13:30 ~ 14:00) | Tokyo (17:00 ~ 17:30)

05 MARCH 2021 (FRIDAY): CONFERENCE DAY 4

REJUVENATION SESSIONS	
09:00~10:00	Virtual Yoga
17:00~19:00	Live Band
CONFERENCE THEMATIC SESSIONS	
11:30 ~ 13:30	Session - 9: Disruptive Technologies and Innovations for Utilities: Part-B
WORKSHOPS	
10:00~12:30	Workshop on Live Line Maintenance in Utilities
SEMINARS	
11:30~13:30	Presentation of Select Technical Papers: Part - 2

LUNCH BREAK + TOUR OF ISUW 2021 EXHIBITION

New York (03:00 ~ 03:30) | Paris (09:00 ~ 09:30) | India (13:30 ~ 14:00) | Tokyo (17:00 ~ 17:30)

ISGF INNOVATION AWARDS CEREMONY & VALEDICTORY FUNCTION OF ISUW 2021

New York (03:30 ~ 06:30) | Paris (09:30 ~ 12:30) | India (14:00 ~ 17:00) | Tokyo (17:30 ~ 20:30)

ISUW 2021

DETAILED AGENDA

CONFERENCE DAY 1

02 MARCH 2021 (TUESDAY)

POWERED BY

CONFERENCE DAY 1 – 02 MARCH 2021
INAUGURATION OF ISUW 2021 CONFERENCE AND EXHIBITION

Venue & Time	
Venue	Plenary Hall
Time	New York 01:00 ~ 03:00 Paris 07:00 ~ 09:00 India **11:30 ~ 13:30** Tokyo 15:00 ~ 17:00
Speakers	
Welcome Address	**Reji Kumar Pillai**, President, ISGF
Special Addresses	1. **Richard Schomberg**, IEC Ambassador and Chairman, IEC Smart Energy Systems Committee and Vice President, EDF 2. **Ajay Kaul**, India State and Local Govt. Leader, Amazon Web Services 3. **N Venu**, Managing Director, Hitachi ABB Power Grids India and South Asia 4. **Debasish U Banerjee**, Managing Director, CESC, Kolkata 5. **Amal Sinha**, Chief Executive Officer, BSES Rajadhani Power Ltd 6. **PR Kumar**, Chief Executive Officer, BSES Yamuna Power Ltd 7. **Praveer Sinha**, Chief Executive Officer & Managing Director, Tata Power Company Ltd 8. **Yoshiro Kaku**, Chief Representative, NEDO- India 9. **Rob Stephen**, Former President, CIGRE 10. **Keisuke Sadamori**, Energy Markets and Security Director, International Energy Agency 11. **Gauri Singh**, Deputy Director-General, International Renewable Energy Agency 12. **Ugo Astuto**, European Union Ambassador to India 13. **Nicholas Dunlop**, Secretary General, Climate Parliament 14. **Ashok Lavasa**, Vice President, Asian Development Bank 15. **Barry Gardiner**, Member of Parliament, Brent North, House of Commons, United Kingdom 16. **Upendra Tripathy**, Director General, International Solar Alliance
Inaugural Address	RK Singh, Union Minister of State (Independent-Charge), Ministry of Power and New and Renewable Energy and Minister of State, Ministry of Skill Development and Entrepreneurship
Vote of Thanks	**Reena Suri**, Executive Director, ISGF

RELEASE OF WHITE PAPERS AND REPORTS

1. **ISGF White Paper on New Revenue Opportunities for Utilities**
2. **ISGF White Paper on DG Set Replacement with Lithium – ion Batteries Version 2**
3. **Study Report on Framework for Implementation of Time of Use (ToU) Tariff for Electricity in Gujarat State, India**
4. **Smart Energy Water White Paper on A Billion Possibilities - the CX Revolution in Indian Utility Industry**

ANNOUNCEMENTS

1. **Launch of Innovation Fund for Start –ups in India by Smart Energy Water**

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CONFERENCE DAY 1 – 02 MARCH 2021
THEMATIC SESSION - 1
INNOVATION IN UTILITIES DURING THE PANDEMIC

Venue & Time	
Venue	Plenary Hall
Time	New York 03:30 ~ 05:30 Paris 09:30 ~ 11:30 **India 14:00 ~ 16:00** Tokyo 17:30 ~ 19:30

Session Background

Covid-19 has presented never before opportunities for innovation and transformation with profound implications for utilities that are gainful in the long term. The way we work and live has dramatically changed in the last one year with the majority of the workforce in most sectors working remotely or work from home (WFH). The operations and work environment of electric utilities have also changed in this short span. Most of the processes have become paper-less and operations contact-less! Emerging technologies like Artificial Intelligence, Machine Learning and Advanced Analytics, Blockchain, Augmented Reality, Drones and Robotic Process Automation are also being leveraged by utilities for various applications which are optimizing business models and opening up new business opportunities.

Clean energy and clean transportation are the central themes in the green recovery plans of most nations. Stakeholders across industries are drafting strategies to define and accept the post Covid-19 realities; and utilities are relooking at their operations and processes to create resilience. Digital technologies will play a key role in helping the utility industry transform and innovate in the face of the present crisis and to align with the long-term transformational goals.

Discussion Points:

1. New innovations adopted by utilities to ensure business continuity during the pandemic
2. Change management in power distribution utilities after the pandemic
3. Managing the revenue hit during the pandemic
4. Digitalization roadmaps of utilities post-Covid
5. Managing customer expectations and other challenges during the crisis period

Chair	Sanjay Malhotra, Chairman and Managing Director, REC Limited
Moderator	**Richard Schomberg**, IEC Ambassador and Chairman, IEC Smart Energy Systems Committee and Vice President, EDF
Speakers	1. **Mark F McGranaghan**, Vice President, Electric Power Research Institute and EPRI Fellow 2. **Ganesh Srinivasan**, Chief Executive Officer, Tata Power Delhi Distribution Ltd 3. **Amal Sinha**, Chief Executive Officer, BSES Rajdhani Power Ltd 4. **Nuki Agya Utama**, Executive Director, ASEAN Centre for Energy 5. **Brajesh Kumar**, Sr Vice President - Business, BYPL 6. **Gerhard Gamperl**, Director - Head of Strategy, Corporate Development and Sustainability, Verbund, Austria 7. **Leonid Lev**, Senior Expert and Manager, Israel Electric Company 8. **Murali Krishna Gannamani**, Managing Director and Chief Executive Officer, Fluentgrid Ltd 9. **RP Singh**, VP of Strategic Partnerships and Customer Success (APAC), Smart Energy Water (SEW)

Key Takeaways by Moderator

Session Coordinator: Anand Singh | +91 9925218036 | anand@indiasmartgrid.org

CONFERENCE DAY 1 – 02 MARCH 2021
THEMATIC SESSION - 2
REGULATORY SUPPORT IN DIFFERENT COUNTRIES FOR REVIVAL OF UTILITIES

Venue & Time	
Venue	Plenary Hall
Time	New York 05:30 ~ 07:30 Paris 11:30 ~ 13:30 **India 16:00 ~ 18:00** Tokyo 19:30 ~ 21:30

Session Background

Electric utilities faced significant revenue loss because of the Covid-19 economic crisis. The lockdown measures in response to the crisis have significantly reduced demand for electricity in the commercial and industrial sectors. By contrast, residential demand increased because people were spending more time and undertaking additional activities at home, such as teleworking. The residential electricity tariff is subsidized in many countries. This anomaly has resulted in huge revenue loss to utilities around the world. For example, in South Africa, reduced demand during a three-week lockdown that began on 26 March 2020 resulted in revenue loss of USD 240 million for ESKOM. Similarly, in India, national peak power demand declined by 33% from February to April 2020 due to the factory and office closures which account for over 50% of India's total electricity consumption.

In the past, the power sector went through extreme weather events, emergencies, riots and natural calamities for which various support measures and contingency plans have been implemented which helped the utilities to recover. The current pandemic, however, has stress-tested the most well-defined playbooks. Therefore, to support the utilities in their fast revival new and innovative steps have to be undertaken by governments and regulators. This session will focus on what are the policy and regulatory measures being undertaken in different countries to support the utilities and also discuss the innovative approaches to insulate the utilities from such disasters in future.

Discussion Points:

1. Regulatory measures to balance the interests of consumers on one side while ensuring financial viability of utilities on the other hand
2. Is tariff increase the only solution?
3. Investments for infrastructure upgrades, business continuity and quality of services in the post-Covid period
4. Regulatory support for adoption of new technologies and business models to increase revenue and optimize assets and cost of operations

Chair	**PK Pujari**, Chairman, Central Electricity Regulatory Commission
Moderator	**Jean-Michael Glanchant**, Director, Florence School of Regulation
Speakers	1. **Dominique Jamme**, Director General, French Regulator for Energy 2. **Luciano Martini**, Chairman, International Smart Grid Action Network 3. **RP Singh**, Chairman, UP Electricity Regulatory Commission 4. **Roberto Zangrandi**, Secretary General, E.DSO 5. **RN Sen**, Former Chairman, West Bengal Electricity Regulatory Commission 6. **Abel Didier Tella**, Director General, Association of Power Utilities of Africa 7. **BP Singh**, Former Member, Delhi Electricity Regulatory Commission 8. Ranjith Sepala, Chairman, Sri Lanka Sustainable Energy Authority, Ministry of Power & Renewable Energy 9. **Rahul Tongia**, Fellow, CSEP 10. **Christopher Villarreal**, President, PLUGGED IN Strategies, USA

Key Takeaways by Moderator

Session Coordinator: Suddhasatta Kundu | +91 9674446886 | s.kundu@indiasmartgrid.org

CONFERENCE DAY 1 – 02 MARCH 2021
SPECIAL PLENARY 1
CUSTOMER RIGHTS PROTECTION ORDER BY MINISTRY OF POWER – ACTION BY UTILITIES AND REGULATORS

Venue & Time	
Venue	Plenary Hall
Time	New York 05:30 ~ 07:30 Paris 11:30 ~ 13:30 **India 16:00 ~ 18:00** Tokyo 19:30 ~ 21:30

Session Background

In December 2020, Ministry of Power issued Electricity Rules mandating utilities to ensure certain right for consumers. According to this rule, new electricity connections, refunds, and other services will be provided in a time-bound manner and disregard for consumer rights will lead to penalty for service providers. The highlights of the new Rule are:

Reliability of Supply

- DISCOMs to supply 24x7 quality power to all consumers
- Defined frequency of outages per consumer
- DISCOMs to deploy automatic tools for monitoring and restoring outages

Use of Smart Metering

- No connection without either Smart Pre-Payment of Meters or Pre-Payment of Meters
- Consumers to get data access for checking their consumption on real-time basis

Billing & Payment

- DISCOMs to provide for tariff of each category along with any change in tariff including fuel surcharge or other charges
- Encouragement towards online bill payment with various notification channels

Compensation Mechanism

- On DISCOM's default, consumers will get automatically compensated
- DISCOMs to create an online facility where consumers can register and claim their compensation amount

Discussion Points:

1. Role of Regulators to frame appropriate regulations to implement the Customer Rights Rules by the Ministry of Power
2. Infrastructure upgrades and process transformation required to comply with these provisions
3. Strategic changes in utilities to comply with this new mandate

Chair	Alok Kumar, Secretary, Ministry of Power
Moderator	**Ravi Seethapathy**, Chair of ISGF Working Group on RE and Microgrid; and Chairman, Biosirus, Inc, Canada
Speakers	1. **Neil Chatterjee**, Commissioner, Federal Energy Regulatory Commission, USA 2. **Sutirtha Bhattacharya**, Chairman, West Bengal Electricity Regulatory Commission 3. **Anand Kumar**, Chairman, Gujarat Electricity Regulatory Commission 4. **Sanoj Kumar Jha**, Secretary, Central Electricity Regulatory Commission 5. **Sanjay Banga**, President – T&D, Tata Power 6. **Timothy Dean Self**, Vice President, Altec 7. **Mohan Gupta**, Vice President - Regional Industry -Utilities, SAP 8. **Anjuli Chandra**, Member, Punjab Electricity Regulatory Commission 9. **Katarina Barunica,** Program Manager, Department of Energy, UNIDO 10. **MS Kele**, Managing Director, Tripura State Electricity Corporation Ltd

Key Takeaways by Moderator

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CONFERENCE DAY 1– 02 MARCH 2021 - WORKSHOP
10TH EU - INDIA SMART GRID WORKSHOP – PART A
in Partnership with European Union

Venue & Time	
Venue	Workshop Hall
Time	New York 03:00~ 04:30 Paris 09:00 ~ 10:30 **India 13:30 ~ 15:00** Tokyo 17:00 ~ 18:30

Background Note

Given the need for India and Europe to integrate more Renewable Energy, one of the enabler is competition and functioning markets in the power sector. The increase in prices in electricity market necessitates the need to assess the competition and market power in electricity markets. The market design defines the trading arrangements that get the buyers and sellers of the markets together in a competitive market. These trading arrangements define the detailed rules of access to the transmission facility with the right of access to the facilities being enshrined in the law governing the electricity sector of a country. The most developed form of market structure is the one that allows for customer choice and retail competition. Once competition is ensured in the retail business, distribution companies or retail suppliers can compete with each other to attract the ultimate users of service. This would motivate cost cutting through increase in efficiency and innovation which would in turn lead to expansion of output as well as reduction in price; improvement in the quality of service; as well as wider options in choosing suppliers. All these benefits would result in an increase in consumer welfare.

Discussion Points

1. Competition and market functioning in the power sector
2. Trading arrangements that get the buyers and sellers of the markets together in a competitive market
3. Wider options in choosing suppliers resulting in an increase in consumer welfare

13:30 ~ 13:45	**Inaugural Session** **Welcome Address: Reji Kumar Pillai,** President - India Smart Grid Forum **Inaugural Address:** • **HE Ugo Astuto**, European Union Ambassador to India • **PK Pujari**, Chairman, Central Electricity Regulatory Commission (CERC)
13:45 ~ 13:55	**Presentation on EU-India Webinar Series "Enablers for India's Energy Transition"** **Swetha Bhagwat**, Head of FSR Global, Florence School of Regulation
13:55 ~ 14:55	**Panel Discussion on Competition and Market Design for the Power Sector in India: Enablers for India's Energy Transition** **Chair**: **PK Pujari**, Chairman, Central Electricity Regulatory Commission (CERC), India **Moderator**: **Pradyumna Bhagwat**, FSR Global Advisor 1. **RP Singh**, Chairman, Uttar Pradesh Electricity Regulatory Commission 2. **Jean-Michel Glachant**, Director, Florence School of Regulation 3. **Patrick Clerens**, Secretary General, European Association for Storage of Energy 4. **Rajesh K Mediratta**, Director-Strategy and Regulatory Affairs, Indian Energy Exchange (IEX) 5. **Markus Benjamin Janitzek,** Advisor, Danish Energy Agency 6. **Matthis Brinkhaus,** Energy Brainpool 7. **OD Naidu**, Global R&D, APTSPLU, ABB **Q&A**
14:55 ~ 15:00	**Key Takeaways and Next Steps** **Matthieu Craye, DG ENER, European Commission**

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CONFERENCE DAY 1 – 02 MARCH 2021 - SEMINAR PRESENTATION OF SELECT TECHNICAL PAPERS: PART – 1					
Venue & Time					
Venue		Seminar Hall			
Time		**India - 16:00 ~ 18:00**			
Paper Serial Number	**Theme**	**Paper Title**	**Author Name**	**Organization**	**Presentation Time**
Chair: N Murugesan, Former Director General - CPRI and Advisor - ISGF					
3	**Foundational Blocks for Smart Grids**	Real Time Monitoring of OT Devices through INMS	Aamir Hussain Khan	Tata Power Delhi Distribution Limited	14:00~14:15
11		Smart Solutions based on Smart Metering Data to Improve Distribution Network Operations and Customer Management in France	Antoine TROBOIS	ENEDIS	14:15~14:30
26		Market Clearing Price (MCP) in Microgrid Power generation Scenario	Dr. Arup Sinha	Virtuoso Consulting	14:30~14:45
34		Cyber Threat Protection Mechanism for Smart Microgrids	Himanshu Nayyar	Tata Power Delhi Distribution Limited	14:45~15:00
43		Cyber Physical Security of the Critical Infrastructure	M L Sachdeva, Former Chief Engineer – CEA; NS Sodha, Former Executive Director, PowerGrid	Individuals	15:00~15:15
62		iElectrix Project System integration tests	Pierre-Jacques Le Quellec	ENEDIS	15:15~15:30
Chair: Kishore Narang Founder, Narnix Technolabs Pvt. Ltd.					
4	**Smart Grids for Smart Cities**	Combined Billing and Customer Care Systems for all Utilities in a Smart City	Amit Jindal	PwC India Pvt. Ltd.	15:30~15:45
36		Communicable and Remotely Opertable 11KV Air Break Switch with Earth Blade and FPI Facility A Smart “Switch Operation	Jignesh Borisgar	GPRD CELL, GUVNL, IIT GANDHINAGAR	15:45~16:00
74		Enabling Smart Energy Communities	SR Sanjay Kumar	GBCI India Pvt. Ltd.	16:00~16:15

		through PEER Strategies			
76		Distributed Ledger Technology based Common GIS Map for all Domains in a Smart City	Sanjay Dhonde	Orange Current Technologies Pvt.Ltd.	16:15~16:30
Chair: Sajid Mubashir, Scientist-G, DST					
21	**Electric Mobility**	Vehicle to Grid Integration and Strategies for Managed EV charging	Chandana Sasidharan	Alliance for an Energy Efficient Economy	16:30~16:45
25		Development of Smart Data Analytics Module enabling access to Electric Vehicle Usage in Smart City	Surekha Deshmukh	PVG COET	16:45~17:00
28		Hosting Capacity Analysis and Managed Charging Solutions for Electric Vehicle Grid Integration	Shivani Sharma	Hitachi ABB Power Grids	17:00~17:15
33		Feasibility analysis to integrate EVs and RTPV at distribution voltage level	Hari Krishna K V	Center for Study of Science Technology and Policy	17:15~17:30
94		Optimizing Electric Vehicle Charging with Charging Data Analytics	Tayyibah Khanam	Aligarh Muslim University	17:30~17:45
14	**Towards 100% RE**	Energy Storage	BB Mehta	Odisha Power Transmission Corporation Ltd	17:45~18:00
Key Takeaways by Session Chairs					

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CONFERENCE DAY 1 – 02 MARCH 2021 - ROUNDTABLE
ROUNDTABLE - 1: INTERCONNECTION OF REGIONAL GRIDS IN ASIA

Venue & Time

Venue	Roundtable Hall
Time	New York 04:30 ~ 07:30 Paris 10:30 ~ 13:30 **India 15:00 ~ 18:00** Tokyo 18:30 ~ 21:30

Session Background

The interconnection of regional grids has gained attention in the era of increasing share of variable renewable energy (VRE) resources on the grids. Integration of intermittent VRE, especially solar and wind, is efficiently handled in a larger balancing area that offers better forecasting of VRE generation and opportunities for intra-day and hour-ahead mitigation measures for managing the variability of VRE resources. Larger power systems could also offer large quantities of demand flexibility and dispatchable generation resources at lower cost. Interconnected grids could offer the opportunity to replace their own costly generation by a relatively cheaper imported power.

Discussion Points:

1. Recap of the Identified Interconnections between GCC Grid – SAARC Grid – ASEAN Grid
2. European Experience of Interconnection of Regional Grids
3. Action Plan for Feasibility Study of Identified Interconnections and Market Design for Interconnected Power Markets in Asia
4. Interconnection of Regional Grids in the context of OSOWOG

15:00 ~ 15:30	**Inaugural Session** **Welcome Address: Reji Kumar Pillai**, President, India Smart Grid Forum **Special Address:** 1. Mrityunjay Kumar Narayan, Joint Secretary, Ministry of Power (MoP) 2. Rakesh Sarwal, Additional Secretary, NITI Aayog 3. **Upendra Tripathy**, Director General, International Solar Alliance (ISA)
15:30 ~ 16:00	**Session 1: Recap of the Identified Interconnections between GCC Grid – SAARC Grid – ASEAN Grid** • ASEAN Grid – SAARC Grid Interconnections and SAARC Grid – GCC Grid Interconnections • Gulf – India Interconnection Modelling Studies by Climate Parliament **Speakers:** 1. **Ghanshyam Prasad**, Joint Secretary, Ministry of Power (MoP) 2. **SL Narasimhan,** Director General, Centre for Contemporary Chinese Studies (CCCS) and Member, National Security Advisory Board, Government of India 3. **Pankaj Batra**, Former Chairman – CEA and Project Director, IRADe 4. **Abhishek Shivakumar,** Senior Researcher, Climate Parliament
16:00 ~ 16:30	**Session 2: European Experience of Interconnection of Regional Grids** • Contribution of Grid Interconnections in Integrating Large Share of RE in Europe • EU Experience with Regulating Interconnections – Cross Border Cost Allocation, Socializing the Cost of Interconnections • Electricity Market Coupling in the EU • EU's 15% by 2030 Interconnection Target • Policy Framework of the EU to support the Development and Financing of Inter-connections • Regulatory Framework for the Cost Recovery and Use of Interconnections **Speakers:** 1. **Thomas Bregeon,** Team Lead, European Commission, DG Energy 2. **Matthieu Craye,** DG ENER Directorate, European Commission 3. **Arnold Weiss,** Head of Vienna Office – EPEX SPOT

	4. **Elaine O'Connell,** Policy Expert – Electricity Markets, European Commission, DG Energy
16:30 ~ 17:30	**Session 3: Action Plan for Feasibility Study of Identified Interconnections and Market Design for Interconnected Power Markets** 1. Detailed Feasibility Studies 2. Interconnection of Regional Grids in the Context of OSOWOG **Moderator: Pankaj Batra**, Former Chairman – CEA and Project Director, IRADe **Speakers:** 3. **Beni Suryadi,** Manager – Policy Research and Analytics, ASEAN Centre for Energy (ACE) 4. **Matthew David Wittenstein,** Chief - Energy Connectivity Section, Energy Division 5. **Mohammad Hussain,** Director General – Power Cell & Power Division, Bangladesh Power Development Board 6. **Ujjwal Deep Dahal,** Director General, Druk Holdings & Investments, Bhutan 7. **KVS Baba,** Chairman and Managing Director (CMD), POSOCO 8. **SK Soonee,** Advisor, POSOCO 9. **Jyoti Parekh,** Executive Director – IRADe 10. **Rajiv Mishra**, Director, PTC India 11. **Akilur Rahman,** Chief Technology Officer, Hitachi ABB Power Grids 12. **Eddie Widiono,** Ex - President, PT PLN and Founder of PJCI 13. **Zainal Arifin,** Director- Smart Grids, PT PLN, Indonesia 14. **Yoshiro Kaku,** Director – METI, Japan, and Country Head – NEDO India 15. **Marut Pitayachawal,** Chief - Regional Trading Team, Governor Office, EGAT 16. **Dinh Huu Thuan,** Technical Expert – Technical Department, Vietnam Electricity (EVN), Vietnam **Other Participants and Speakers:** 17. K Sreekant, Chairman & MD, POWERGRID 18. Sandesh Kumar Sharma, Member – Planning, Central Electricity Authority (CEA) 19. Harry Dhaul, Director General, IPPAI 20. Rajesh K Mediratta, Director – Business Development, IEX 21. Simon Stolp, Practice Manager – Energy, South Asia, World Bank 22. Kul Man Ghising, MD, Nepal Electricity Authority, Nepal 23. Fahad Hussain Al-Sudairi, Vice Chairman & CEO – Saudi Electricity Company, KSA 24. Wong Kim Yin, Group CEO, Singapore Power 25. Rohan Seneviratne, DGM - Ceylon Electricity Board, Sri Lanka 26. Matar Hamed Al-Neyadi, Member of The Board of GCC Interconnection Authority, Undersecretary – Ministry of Energy – United Arab Emirates 27. Hot Martua Bakara, HAPUA Secretary in-Charge, Head of ASEAN Power Utilities Authorities (HAPUA) 28. **SR Narasimhan,** Director – System Operation, POSOCO 29. **Rutchakrit Brahmayana,** Head - Transmission System Business Development Section, EGAT 30. **Wissarut Yuttachai,** Business Development Engineer, Energy Storage System Business Section, EGAT 31. Sombath Southisombath, Head of Distribution, Electricite Du Laos (EDL), Laos

Key Takeaways by Moderator

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ISUW 2021

DETAILED AGENDA

CONFERENCE DAY 2

03 MARCH 2021 (WEDNESDAY)

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CONFERENCE DAY 2 – 03 MARCH 2021
THEMATIC SESSION - 3
SMART METER ROLLOUT

Venue & Time	
Venue	Plenary Hall
Time	New York 01:00 ~ 03:00 Paris 07:00 ~ 09:00 **India 11:30 ~ 13:30** Tokyo 15:00 ~ 17:00

Session Background

Government of India is mandating all electricity distribution companies (DISCOMs) in the country to go for smart prepaid meters on fast track. Although this program was under planning since 2019, it has assumed high priority in the post-Covid era. DISCOMs are also now serious on smart meter rollouts. The proposed Smart Meter National Program (SMNP) aims to replace 250 million conventional meters in India with smart pre-paid meters in the next 3 years with total cost of around USD 21 billion. In order to accelerate the implementation process, Ministry of Power has issued a Standard Bidding Document (SBD) which was prepared in consultation with various stakeholders. The business model suggested in the SBD is based on ISGF White Paper of 2017 which advocated for Metering as a Service in which a metering service provider will implement the smart metering system and maintain it for ten years on a monthly fee per meter.

Discussion Points:

1. Technical and regulatory challenges in smart metering rollout
2. Benefits and challenges of the OPEX business model and evaluation of standard bidding document
3. Payment security mechanism in the OPEX model
4. DISCOM's preparedness in mass rollout of smart metering

Chair	**Anil Rawal**, Managing Director and Chief Executive Officer, IntelliSmart Infrastructure
Moderator	**Anant Venkateswaran,** Director of ISGF Master Classes
Speakers	1. **MB Rajesh Gowda**, Managing Director, BESCOM 2. **Sylvain Jouhanneau**, Project Director – India Smart Metering, EDF 3. **Deepti Dutt,** Head Strategic Initiatives – Public Sector, Amazon Web Services 4. **Subhadip Raychaudhuri**, HOD - Commercial, TATA Power Delhi Distribution Limited 5. **MS Kele**, Managing Director, Tripura State Electricity Corporation Ltd 6. **Chandha Neupane**, Project Manager, Nepal Electricity Authority 7. **CN Ragupathi**, Head - India Business, Infosys 8. **Nabil Sahri**, VP, Sagemcom Energy and Telecom and G3-PLC 9. **Phil Beecher**, President and CEO, Wi-SUN Alliance 10. **Vasundhar Boddapati,** Head - India Operations, Exceleron Software, USA

Key Takeaways by Moderator

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CONFERENCE DAY 2 – 03 MARCH 2021
THEMATIC SESSION - 4
ENERGY STORAGE SYSTEMS - BUSINESS MODELS AND REGULATIONS

Venue & Time	
Venue	Plenary Hall
Time	New York: 03:30 ~ 05:30 Paris: 09:30 ~ 11:30 **India: 14:00 ~ 16:00** Tokyo: 17:30 ~ 19:30

Session Background

Batteries have already proven to be commercially viable energy storage technology. Battery Energy Storage Systems (BESS) are modular systems that can be deployed in standard shipping containers. Until recently, high costs and low round trip efficiencies prevented the mass deployment of BESS. Increased use of lithium-ion batteries in consumer electronics and electric vehicles, however, has led to an increase in global production capacity, leading to a substantial decrease in costs that is expected to continue over the next decade. For both small-scale, behind-the-meter installations and large-scale, grid-level deployments, the low cost and high performance of lithium-ion batteries have been instrumental in a surge of BESS deployments in recent years. Depending on how ownership and operating liability is split between service clients or prosumers and the utility or network provider, different business models are possible. Similarly, while private owners may own large-scale batteries used for frequency control, the maintenance of these devices is likely to be the responsibility of the transmission system operator as part of the pool of assets that supply the spinning reserve.

Discussion Points:

1. Battery Technology – Present Status and Future Roadmap
2. Challenges of BESS Deployment and Experiences
3. Energy Storage Market – India and Global
4. Battery Price Landscape
5. Battery Manufacturing Program in India
6. Regulatory Clarity for ESS
7. Battery Managements Systems (BMS)
8. Value Streams and Business Case for Energy Storage: Impact of Power Market Design and Regulation
9. European Experience of ESS Projects
10. Energy Storage Projects: International Best Practices and Lessons for India

Chair	**PC Maithani**, Advisor, Ministry of New and Renewable Energy, GoI
Moderator	**Rahul Walawalkar,** Chairman, IESA
Theme Presentation	**Ramaswamy Murugan**, Puducherry University
Speakers	1. **Amy Rose**, Member – Grid Systems Group, NREL 2. **Suraj Rengarajan**, Chief Technology Officer, Applied Materials 3. **Nilesh Kane**, Additional General Manager, Tata Power Delhi Distribution Ltd 4. **Rashi Gupta**, Founder and Chief Executive Officer, Vision Mechatronics 5. **Shantanu Jaiswal**, Bloomberg New Energy Finance 6. Matthieu Craye, Senior Officer, Directorate General – Energy, EU 7. **Mani Khurana**, Senior Energy Specialist, World Bank 8. **Kondalarao Bavisetti,** Hitachi ABB Power Grids 9. **Naveen Nagpal,** GM Renewables, BSES Rajadhani Power Limited 10. **Patrick Clerens**, Secretary General, European Association for Storage of Energy

Key Takeaways by Moderator

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CONFERENCE DAY 2 – 03 MARCH 2021
THEMATIC SESSION - 5
DISASTER (AND PANDEMIC) RESILIENT UTILITIES AND CITIES
in Partnership with National Institute of Urban Affairs, GoI

Venue & Time	
Venue	Plenary Hall
Time	New York: 05:30 ~ 07:30 Paris: 11:30 ~ 13:30 **India: 16:00 ~ 18:00** Tokyo: 19:30 ~ 21:30

Session Background

Electric utilities frequently face disasters ranging from the vagaries of the weather to earthquakes and other natural calamities as well as manmade damages such as war, riots etc to their infrastructure and operations. As per the 2019 Asia-Pacific Disaster Report (APDR) highlights that 28 percent of energy, 30 percent of transport, and 34 percent of ICT infrastructure are exposed to multiple hazards. However, the ongoing Covid-19 pandemic has inflicted the most severe blow to electric utilities in their history of over a century. While they had to ensure uninterrupted supply of quality power so that the society is able to maintain essential services, the revenue of the power utilities has severely diminished to the extent of challenging their very existence in many geographies. In this era of increasing and potentially overlapping risks, countries and cities have no choice but to invest more in strategic resilient development rather than solely on reactive recovery efforts. The Global Coalition for Disaster-Resilient Infrastructure led by India is a good example of developed and developing countries in the region building synergies to reach the goal of disaster-resilient infrastructure. In this session Indian and global experts will share their experiences and views to support building disaster and pandemic resilient utilities and cities.

Discussion Points:

1. Integrated approach to city resilience and how urban leaders can better prepare for natural and human catastrophes
2. Utilities and cities resiliency framework
3. Why Covid-19 must be the catalyst for utilities and cities to build long-term resilience against future shocks

Chair	**Ashok Lavasa**, Vice President, Asian Development Bank
Moderator	**Sanjeev S Ahluwalia**, Advisor, Observer Research Foundation
Speakers	1. **Hitesh Vaidya**, Director, National Institute of Urban Affairs (NIUA), Ministry of Housing and Urban Affairs 2. **Karuna Gopal**, Founder President, Foundation for Futuristic Cities 3. **Rajendra Cholan**, Chief Executive Officer, Bangalore Smart City 4. **Martin Hauske**, Energy Segment Sales leader, APAC, Nokia 5. **Akilur Rahman**, Hitachi ABB Power Grids 6. Pratibha Pal, Executive Director, Indore Smart City Development Ltd and Commissioner, Indore Municipal Corporation 7. **Andress Carvallo**, Chief Executive Officer and Founder, CMG, USA 8. **Ashwani Aggarwal**, Vice President, BSES Yamuna Power Ltd 9. **Mili Majumdar,** Managing Director, GBCI 10. **Ravikanth Giddalur**, Fluentgrid Limited

Key Takeaways by Moderator

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CONFERENCE DAY 2 – 03 MARCH 2021 - WORKSHOP
5G FOR SMART UTILITIES AND SMART CITIES
in Partnership with Telecommunications Standards Development Society, India

Venue & Time	
Venue	Workshop Hall
Time	New York 00:30- 02:30 Paris 06:30- 08:30 **India 11:00 - 13:00** Tokyo 14:30- 16:30

Session Background

Communication infrastructure, coupled with IoT technologies, is an essential component for making utilities and cities "smart". ITU's IMT2020 standards (aka 5G) focus on 3 pillars of new capability - Ultra Reliable Low Latency Communication (URLLC), enhanced Mobile Broadband (eMBB) and Massive Machine Type Communications (mMTC). The new 5G capabilities are crucial for realizing the full benefits for smart utilities and smart cities. The ITU Radio communication Sector (ITU-R) has recently published Recommendation ITU-R M.2150 (Detailed specifications of the radio interfaces of IMT-2020). One of the 3 technologies to be approved is 5Gi, developed by Telecommunications Standards Development Society, India (TSDSI), India's Telecom SDO. Further, the Government of India has recently adopted TSDSI's transposed oneM2M standards as national standards for IoT/M2M technologies. These milestones are significant for implementation of standards-based solutions for various use cases and industry segments. This session will look at the enablement for smart utilities and smart cities from the arriving 5G technologies and the new standards. Experts will discuss the 5G features and share experiences from early trials/ deployments.

Discussion Points

1. 5G Applied to Smart Utilities and Smart Cities
2. oneM2M for Smart Utilities and Smart Cities
3. Communication Infrastructure and IoT Technologies for Smart Cities

11:00 ~ 11:15	**Inaugural Session** **Welcome Address: ISGF** **Inaugural Address: Pamela Kumar**, Director General, TSDSI
11:15 ~ 11:30	**SESSION 1: 5G Applied to Smart Utilities and Smart Cities** **Speaker: Satish Jamadagni**, Vice Chairman-TSDSI and Vice President-Reliance JIO
11:30 ~ 11:45	**SESSION 2: oneM2M for Smart Utilities and Smart Cities** **Speaker: Sachin Chaudhari,** Asst. Professor, IIIT Hyderabad
11:45 ~ 12:45	**SESSION 3: Panel Discussion** **Moderator**: **Sharad Arora**, Co-Chair TSDSI Outreach Committee and Governing Council Member and Founder and Managing Director, Sensorise Digital Services **Participants:** **1. RK Pathak**, Convener, 5G HLF and DDG-IC, DoT **2. Kiran Kuchi**, Professor, IIT Hyderabad **3. Subhas Mondal,** Governing Council Member, TSDSI and Wipro Fellow & Chief Architect-5G, Wipro **4. Amarjeet Kumar,** CEO – Shrama Technologies **5. Hem Thukral,** Smart Grid Expert, Ernst & Young
12:45 ~ 13:00	**SESSION 4: Key Takeaways and Closing Remarks** **Sharad Arora**, Co-Chair TSDSI Outreach Committee and Governing Council Member (Founder and Managing Director, Sensorise Digital Services Pvt Ltd)

Session Coordinator: Parul | +91 9810878505 | parul@indiasmartgrid.org

CONFERENCE DAY 2 – 03 MARCH 2021 - WORKSHOP
10TH EU - INDIA SMART GRID WORKSHOP – PART B
in Partnership with European Union

Venue & Time	
Venue	Workshop Hall
Time	New York 03:30 ~ 06:30 Paris 09:30 ~ 12:30 **India 14:00 ~ 17:00** Tokyo 17:30 ~ 20:30

Session Background

With the increasing demand for electricity, capacity additions and energy transition to cleaner power systems, the integration of renewable energy and fast adoption of Electric Vehicles has assumed high priority. Directorate of Energy (DG ENER), European Commission, Indian Delegation of the European Union and ISGF has been conducting EU-India Smart Grid Workshops since 2015. The dialogues in these workshops have led to formation of an EU-India High Level Platform on Smart Grids for more frequent interactions. This High-Level Platform is a step towards transforming India's conventional grids towards transparent, intelligent, smart, and bi-directional energy flow to improve grid stability and reliability. The EU-India High Level Platform on Smart Grids will help in identifying leading smart grid projects to be considered as use cases from Europe and India to facilitate knowledge sharing between experts drawn from industry, academia, utilities and policymakers. The platform will aim on various smart grid technologies such as energy storage, blockchain and customer engagement, energy vectors optimization and energy smart grids.

Discussion Points

1. Energy Storage Systems (ESS) for Smart Grids
2. Blockchain Technologies and Customer Engagement
3. Energy Vectors Optimization
4. Energy Smart Grids

14:00 ~ 14:10	**Welcome Address:** 1. **Edwin Koekkoek,** Counsellor, Energy and Climate Action, Delegation of European Union to India 2. **Reji Kumar Pillai,** President, India Smart Grid Forum (ISGF)
14:10 ~ 15:10	**Presentation on EU-India High Level Platform on Smart grids** **Swetha Bhagwat**, Head of FSR Global, Florence School of Regulation **Discussion on the EU-India High Level Platform:** **1. Donal Cannon,** Head, Regional Representation in South Asia, European Investment Bank **2. Remy Garaude Verdier**, Head of European Affairs, Enedis **3. Tomas Gomez**, Universidad Pontificia Comillas, Spain **4. Anoop Singh**, Indian Institute of Technology, Kanpur **5. Vikram Gandotra**, Head of Marketing & Strategy, Energy Automation and Smart Grids, Siemens **6. Shivani Sharma,** Power Consulting, Hitachi ABB Power Grids **Q&A**
15:10 ~ 16:50	**15:10- 15:20 Welcome Remarks** **Moderator**: **Thomas N. Mikkelsen,** CEO & Founder, Geco Global 15:20 – 16:10 **Session 1: EU-India Energy Cooperation Projects** (8 minutes per project): **Energy Storage**

	- **iElectrix - by Rémy Garaude-Verdier,** Energy Storage in the Interflex Project, Enedis & TPDDL **Blockchain technologies and customer engagement** - **Croce Vincenzo**, eDreams - **Bonnie Murphy**, Beneffice **Energy vectors optimization** - Farhan Farrukh, Eland - **Katerina Valalaki,** Merlon **Energy Smart Grids** - **Alessandra Cuneo**, RINA, (MUSEgrids) **16:10 – 16:25 SESSION 2: New Projects - starting 2021** - **Jayakrishnan Radhakrishna Pillai**, SUSTENANCE - **Nikos Hatziargyriou**, Re-Empower **16:25 – 16:50 SESSION 3: Country projects** - France - Country 2 - Country 3
16:50 ~ 17:00	**Key Takeaways and Next Steps** **Matthieu Craye, DG Energy, European Commission**

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CONFERENCE DAY 2 – 03 MARCH 2021 – WORKSHOP
7th US - INDIA SMART GRID WORKSHOP
in Partnership with US Commercial Services; US DoE; and USIBC

Venue & Time	
Venue	Workshop Hall
Time	New York 08:00 ~ 11:00 Paris 14:00 ~ 17:00 **India 18:30 ~ 21:30** Tokyo 22:00 ~ 01:00
18:30 ~ 18:50	**Inaugural Session** **Welcome Address: ISGF** **Special Address:** 1. **Aileen Nandi**, Minister Counsellor for Commercial Affairs, Embassy of USA 2. Alexander Slater**,** Deputy Managing Director, US-India Business Council (USIBC), India 3. **Arun Mishra,** Director, National Smart Grid Mission (NSGM) **Inaugural Address:** Rakesh Sarwal**,** Additional Secretary, NITI Aayog

SESSION 1: DIGITALISATION OF UTILITY INFRASTRUCTURE

Session Background

Digitalization of assets and processes in the energy and infrastructure sector is advancing efficiency, reliability, predictability, productivity, safety and security across the value chain in the electricity, water, oil and gas, and other sectors. It is enabling planning and implementation of energy transitions and more sustainable resource use and re-cycling.

In addition, the global pandemic and environmental changes have increased the focus on resilience – can we create infrastructure resilient enough to deliver consistent performance in pandemics, environmental vagaries, and associated disruptions? What are the challenges, opportunities, and best practices? What policy and regulatory interventions are needed to increase adoption? Ultimately, how will digitalization of energy and infrastructure benefit the economy and most importantly, the end-user or consumer?

Key Discussion Points:

1. Digitalisation of Utility Infrastructure
2. Policy and Regulatory Interventions for the Change Management

18:50 ~ 19:20	**Chair:** Ghanshyam Prasad, Joint Secretary, Ministry of Power (MoP) **Moderator: Anant Venkateswaran,** Director of ISGF Master Classes **Speakers:** 1. **Vinay Jammu**, Vice President, Physical-Digital Technologies, GE Digital 2. Ashish Aneja**,** Digital Leader, Suez Water Technologies 3. **Hasit Kaji,** Chief- Digital and Information Officer, Tata Power Company Ltd. 4. Rajan Aiyzer**,** Managing Director, Trimble India 5. **Rishi Goyal,** General Manager, BSES Rajdhani
19:20 ~ 19:30	**Q & A**

Key Takeaways by Moderator

SESSION 2: SMART TECHNOLOGIES FOR A CLEAN ENERGY TRANSITION

Session Background

As India becomes the third-largest energy consumer with continued economic and population growth and increasing urbanization, India is seeking to balance energy demand growth with a clean energy transition. India has made strides toward its goal of 175GW of renewable power generation by 2022 and amplified its commitments to 450GW by 2030. It has also achieved a 24% reduction in emissions intensity over 2005 levels, well on track toward its goal of a 33-35% reduction by 2030. However, to address this climbing energy demand over the coming decades, India must make considered decisions over the next couple of years about expanding its power generation capacity and its fuel and technology choices.

To continue on a clean energy pathway, a number of smart technologies and fuel alternatives can help drive India's energy transition. In addition to continuing to integrate renewable energy coupled with energy storage, smart grid technologies and demand side management will be critical to a reliable energy system. And understanding the impacts and potential benefits of electric vehicles and grid-integrated smart buildings could help balance the load for a more resilient and reliable grid. Superefficient appliances, such as air conditioners, and advanced space cooling technologies could result in significant energy savings. Transport electrification, particularly for heavy-duty vehicles, would have a significant impact on reducing emissions in the transport sector. Likewise, electrification, carbon-capture and storage; and green hydrogen technologies could significantly reduce emissions in heavy industry.

The United States and India have already embarked upon a clean energy partnership under a longstanding energy dialogue. As both of our countries pursue more ambitious clean energy goals, there are a number of potential areas for expanded U.S.-India cooperation. The ISUW 2021 energy panel session will introduce just a few areas of ongoing or potential cooperation on smart technologies for a clean energy transition.

Key Discussion Points:

1. Distributed Energy Resources for a Modern Grid
2. Grid-Integrated Energy Efficient Built Environment
3. Electrification in Transport
4. Smart Grid and Energy Storage

19:30 ~ 19:40	**Opening Remarks: Andrew Light,** Acting Assistant Secretary for International Affairs, DoE, USA
19:40 ~ 19:55	**Planning for Distributed Energy Resources and Demand Response** • **David Palchak**, National Renewable Energy Laboratory
19:55 ~ 20:10	**Grid-Integrated Energy Efficient Built Environments: Decarbonize, Democratize, and Digitalize India** • **Reshma Singh**, Lawrence Berkeley National Laboratory
20:10 ~ 20:25	**Leapfrogging Towards a Clean and Smart Transportation Future** • **Nikit Abhyankar**, Lawrence Berkeley National Laboratory
20:25 ~ 20:40	**PACE-R US-India Collaboration for Smart Distribution System with Storage (UI-ASSIST)** 1. **Noel Schulz**, Washington State University 2. **Anurag Srivastava**, Washington State University 3. **Suresh Srivastava**, IIT Kanpur
20:40 ~ 21:00	**Q & A**
21:00 ~ 21:30	**Panel Discussion:** **Moderator: Elena Thomas-Kerr,** Senior Advisor, International Affairs, DoE, USA **Panellist:** 1. **Girish Ghatikar,** Lead, Information and Communication Technologies (ICT) Program, Electric Power Research Institute (EPRI) 2. **OP Agarwal**, CEO, WRI 3. **Andrew Light**, Acting Assistant Secretary for International Affairs, DoE, USA

Key Takeaways by Moderator

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Anand Singh | +91 9925218036 | anand@indiasmartgrid.org

CONFERENCE DAY 2 – 03 MARCH 2021 - SEMINAR
SMART WATER DISTRIBUTION

Venue & Time	
Venue	Seminar Hall
Time	New York 01:00 ~ 03:00 Paris 07:00 ~ 09:00 **India 11:30 ~ 13:30** Tokyo 15:00 ~ 17:00

Session Background

Availability of water for drinking and other needs is a key indicator for social and economic growth. India's water resources are struggling because of anthropocentric as well as climate-induced reasons leading to declining per capita water availability, lack of storage capacity, and spatial and temporal variations. As per the United Nations classification, India has been categorized as a 'water-stressed' country. The issue of water contamination is also rapidly increasing due to large-scale, unplanned urbanization and untreated effluents emitted by industries. The widening demand-supply gap is further compounded by other challenges like depletion of groundwater caused by over-extraction, poor recharge, low storage capacity, erratic rainfall due to climate change, presence of contaminants, poor operation and maintenance (O&M) of water supply systems, etc. It is imperative to conserve water and also improve water use efficiency across sectors.

Urban centers in India lack robust data monitoring systems for water and water utilities being a legacy of water-plenty era, failed to integrate data measurement in its systems and continue to navigate the unsteady path for transformation. Water utilities are failing majorly in asset management, controlling non-revenue water (NRW), maintaining water quality, managing water demand, etc. Quality real-time data through adoption of digital technologies can significantly improve water management in the country.

Government of India has taken serious measures to address these issues and already allotted Rs 5 trillion for improvement of water supply and sanitation in Indian cities. The recently announced Jal Jeevan Mission (JJM) aims at providing Functional Household Tap Connection (FHTC) to every rural household by 2024. It is a great opportunity for leveraging modern technologies, particularly the digital technologies to build new water distribution networks with real-time monitoring of water flows and water accounting to minimize NRW as well as improve the quality of water. With the advent of the digital era, governance systems for water utilities too have continuously adopted advanced technologies to transition towards new systems with data-centric approach. It will create a platform to maintain and monitor water distribution and protect water resources through digital technologies which will play a crucial role for water allocation and industrial and municipal waste management.

The automation and IT systems and the last mile connectivity solutions for building a smart electricity grid can be leveraged for automating the water and gas distribution systems at marginal cost. Similarly, the billing and collection systems of the electric utility can be leveraged to provide a single bill for all 3 services – electricity, water and gas. This will not only enhance convenience of the customer who has to pay only one bill but will also reduce the cost of business operations for the gas and water utilities. From this perspective, ISGF feels there is a compelling business case to bring water distribution companies to the smart grid forum and explore the collaborative business opportunities.

11:30 ~ 12:00	**Inaugural Session** **Welcome Address: India Smart Grid Forum** **Inaugural Address: G Asok Kumar,** Additional Secretary & Mission Director, National Water Mission
12:00 ~ 12:30	**Session-1: National Water Scheme/ Mission** • Jal Jeevan Mission Sustainable water supply to rural areas **Chair: Vaibhav Chaturvedi,** Research Fellow, Council on Energy, Environment and Water (CEEW) **Speakers:** 1. **SK Goyal,** Sr Principal Scientist & Head, National Environmental Engineering Research Institute 2. **Sourabh Daspatnaik,** CEO, Swach Environment Pvt Ltd
12:00 ~ 12:30	**Session-2: Enabling Sustainability and driving Customer Experience through Digital Technologies** • Enhancing the availability and quality of water through digital technologies

	• Remote pollution monitoring for industrial and municipal waste **Chair & Moderator: Neville Bhasin**, Business Developer, Forbes Marshall **Speakers:** 1. **PC Ladkat,** Executive Engineer, Pimpri-Chinchwad Municipal Corporation 2. **George Hunt, Chief Strategy Officer (CSO), Smart Energy Water** 3. **Dherminder Mohan, Head - Water Business, Forbes Marshall Pvt Ltd**
12:30 ~ 13:00	**Session-3: Smart Water Operation** • Water Distribution Maintenance and Monitoring through Advanced Technologies • Protection and management of Water Resources through digital technologies • Industrial Water allocation and Waste Water management **Chair: A Murlidharan**, Deputy Adviser, Department of Drinking Water and Sanitation, Ministry of Jal Shakti **Speakers:** 1. **Jagdish Kumar Arora**, OSD and Nodal Officer (Water), Delhi Jal Board **2. Sanjoy Roy,** Chief Executive Officer, Orange City Water, Nagpur **3. Uday Kelkar,** Director and Advisor, NJS, Japan/US

Key Takeaways by Moderator

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CONFERENCE DAY 2 – 03 MARCH 2021 - SEMINAR
IEC – IEEE WORLD SMART ENERGY STANDARDIZATION COORDINATION WORKSHOP

Venue & Time

Venue	Seminar Hall
Time	New York 03:30 ~ 06:30 Paris 09:30 ~ 12:30 **India 14:00 ~ 17:00** Tokyo 17:30 ~ 20:30

Session Background

Grid integration of renewable energy has picked up in last couple of years. Standards related to renewable energy grid integration will play very important role towards grid infrastructure augmentation and its stability. Solar micro grids are also becoming popular which demands standardization of domestic solar inverters with grid synchronization and remote isolation features for consumer to distribution level. This will facilitate proliferation of rooftop solar in a big way. Large-scale renewable integration in the grid has got a big push by recent launch of a 30 GW solar and wind energy park in Gujarat.

Discussion Points:

1. IEEE 1547
2. IEEE 2030.5
3. IEC 61850
4. IEC 62746.10.1

Welcome Address **Special Address**	India Smart Grid Forum Jayanta Roychowdhury**,** DDG, BIS
Session -1 RENEWABLE ENERGY INTEGRATION	
Chair **Panellists**	**Kishore Narang,** Founder, Narnix **1.** J**ason Allnutt,** IEEE SA **2.** **Frances Cleveland** IEC / Xanthus Consulting
Session -2 SMART ENERGY INTERFACE MANAGEMENT	
Chair **Panellists**	**Richard Schomberg,** IEC/EDF **1.** **Robby Simpson,** GE Grid Solutions 2. **Laurent Guise,** IEC

Concluding Remarks and Next Steps by

Richard Schomberg, IEC/EDF
Kishor Narang, Narnix

Session Coordinator: Anand Singh | +91 9925218036 | anand@indiasmartgrid.org

CONFERENCE DAY 2 – 03 MARCH 2021 - ROUNDTABLE
ROUNDTABLE - 2: ELECTRIC COOKING

Venue & Time	
Venue	Roundtable Hall
Time	New York 01:00 ~ 03:00 Paris 07:00 ~ 09:00 **India 11:30 ~ 13:30** Tokyo 15:00 ~ 17:00

Session Background

About 4 million people die prematurely from diseases caused by household air pollution, primarily from cooking with firewood, charcoal and biomass. As of 2019, 63% rural and 18% urban households in India use firewood, dung cakes or biomass for cooking. According to a study by World Resources Institute (WRI), while the average PM2.5 in rural India is in the rage of 22 to 112 µg/m³, the indoor PM2.5 concentration ranges from 106 to 512 µg/m³. This explains why 600,000 people died of household air pollution in 2019 in India.

Having electrified almost all households in the country and with surplus electricity generation capacity, India should actively promote electric cooking. Increasingly higher share of electricity is being produced from renewable resources and during many time slots in a day, cheap electricity is available on the grid. In the year 2018-19, 1500 million LPG cylinders were distributed in the country which is not sustainable from the perspective of cost and energy efficiency. New city gas distribution networks cost Rs 25,000 per connection. In order to meet the NDC targets it is imperative that emissions from the kitchen must be reduced drastically. Electric cooking is the fastest and least cost route to achieve these multiple targets which will also reduce LPG imports saving billions of dollars leading towards Atmanirbhar Bharat.

Ministry of Power, Government of India recently launched a new program "GO ELECTRIC" which has two components – Electric Vehicles and Electric Cooking. This Roundtable will examine and recommend the way forward to promote electric cooking in the country.

Discussion Points

1. Electricity supply status and grid capability to support cooking appliances in households
2. Estimation of capex to strengthen the medium voltage and low voltage grids to provide 24x7 supply as well as 3kW to 5kW connections to all households so that they could use electric cooking appliances and air-conditioners
3. Assessment of availability of electric cooking appliances in different regions, its cost and performance, roadmap for augmenting the manufacturing capacity of such appliances in the country
4. Skill development programs and estimation of employment generation potential in the electric cooking domain as against the job losses in LPG distribution
5. Environmental benefits from electric cooking by reducing GHG emissions and avoiding deforestation
6. Development of different strategies for promotion of electric cooking and campaigns for consumer awareness and adoption of electric cooking appliances and practices
7. Leveraging renewable energy for electric cooking and integration of cooking appliances with the grid – smart cooking with green electricity bought from the cheapest resource on the grid

11:30 ~ 12:00	**Welcome Address: ISGF** **Theme Presentation:** • **Simon Batchelor,** Modern Energy Cooking Services
12:00 ~ 13:15	**Roundtable Discussion** **Moderator: Mohua Mukherjee,** Ex-World Bank and Advisor – ISGF **Discussants:** 1. UN Behera, Chairman, Odisha Electricity Regulatory Commission 2. SPS Parihar, Chairman, Madhya Pradesh Electricity Regulatory Commission 3. **Rajnath Ram,** Advisor –Energy, NITI Aayog 4. Prabhakara Rao, Member, Tamil Nadu Electricity Regulatory Commission 5. Prabhati Samal, Director, Bureau of Energy Efficiency 6. Annepu Suresh, Director – Distribution, Ministry of Power 7. Shenbagam Manthiram, CEO, Tata Power Central Odisha Distribution Ltd. 8. PP Mukherjee, Director-Distribution, WBSEDCL 9. **KG George,** Senior Vice President, Prestige
13:15 ~ 13:30	**Key Takeaways and Next Steps**

Session Coordinator: Akshay Kumar | +91 9354907399 | Akshay.kumar@indiasmartgrid.org

CONFERENCE DAY 2 – 03 MARCH 2021 - ROUNDTABLE
ROUNDTABLE-3: DIGITAL ARCHITECTURE AND SYSTEM INTEGRATION FOR SMART METERING
(POWERDED BY AWS)

Venue & Time	
Venue	Roundtable Hall
Time	New York 03:30 ~ 06:30 Paris 09:30 ~ 12:30 **India 14:00 ~ 17:00** Tokyo 17:30 ~ 20:30

Session Background

Smart metering or Advanced Metering Infrastructure (AMI) involve three distinct technologies – metering, communication and IT. AMI system will deploy several new technologies to improve operations and deliver better customer experience. In this journey, it is important to adopt an appropriate digital architecture which is forward looking and flexible in design while integrating the existing and new enterprise systems in the DISCOMs. Smart metering is one of the key components of a digital utility, and can transform and optimize a wide range of commercial processes and grid operations of a utility. This can be achieved through a structured system integration approach which includes alignment with different business units within the utility and their functional expectations, efficient planning from network till enterprise layer, cross leveraging data between smart metering and other utility systems and devices.
This Roundtable will discuss key considerations in technology selection and design of appropriate digital architecture with respect to existing legacy applications in the utility and the new systems envisaged.

14:00 ~ 14:20	**Theme Presentation:** 1. **Sainath Bandhakavi**, Senior Solutions Architect – Utilities, Amazon Web Services 2. **Deepak Konnur**, ISGF
14:20 ~ 16:30	**Moderator: Deepti Dutt,** Head Strategic Initiatives – Public Sector, Amazon Web Services **Speakers:** 1. **Arun Mishra**, Director, NSGM 2. **Santhosh Nair**, Nokia 3. **Sanjeev Rana**, AGM - IT Infra & Data Communication, TPDDL 4. **Vikas Kashyap**, ISGF 5. **AP Singh**, CISO, UPPCL 6. Ajoy Rajani, CEO, CyanConnode India 7. **Anil D'souza**, General Manager (ICT&MIS), BESCOM 8. **Muralishankar Gopalakrishnan**, VP-Solutions & Product Engg. Fluent Grid 9. SL Karwadiya, Executive Director, MP Pachim Kshetra Vidyut Vitran Co Ltd 10. **Vikas Gaba**, Partner, KPMG 11. **Jasnir Singh Kuhar**, Executive Engineer (Projects), UHBVN 12. **JVS Ramakrishna**, Business Leader, L&T SWC

Key Takeaways by Moderator

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India SMART UTILITY Week 2021

ISUW 2021

DETAILED AGENDA

CONFERENCE DAY 3

04 MARCH 2021 (THURSDAY)

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CONFERENCE DAY 3 – 04 MARCH 2021
THEMATIC SESSION - 6
CYBER SECURITY FOR DIGITAL UTILITIES

Venue & Time	
Venue	Plenary Hall
Time	New York 01:00 ~ 03:00 Paris 07:00 ~ 09:00 **India 11:30 ~ 13:30** Tokyo 15:00 ~ 17:00

Session Background

Importance of reliable and uninterrupted power supply is underscored during the Covid-19 lockdown when almost everyone was working from home and using online collaboration platforms. Nothing works without electricity and no meaningful task could be accomplished without reliable communication networks which again require electricity to function! A cyber-attack on the power grid could result in complete disruption of all activities in the society and it can cause electrical blackouts and pose threat to national security. It is a growing concern and a key success factor for reliable power generation and distribution as security has become a crucial factor for wide deployment of IT and automation and technologies in the power sector. A cyberattack can have far reaching implications including financial losses, theft of intellectual property, and loss of customer confidence and trust. There is a dearth of trained cyber security professionals and there exists a critical knowledge gap about the need and availability of cyber security resources, assets and solutions.

Discussion Points:

5. Landscape of cyber-attacks and increasing threats to power systems globally
6. Security Operation Centre (SOC) for utilities – trends and architecture
7. Designing, developing and maintaining security systems in Utilities
8. Data theft and data manipulation in utilities
9. Is Cloud the answer to cyber threats?

Chair	**Ajeet Bajpai,** Director General, National Critical Information Infrastructure Protection Centre
Moderator	**Faruk Kazi,** Chair, ISGF WG on Digital Architecture and Cyber Security and Professor, VJTI, Mumbai
Speakers	**1. Muktesh Chander**, Special Commissioner-Operations, Delhi Police **2. Andrew Ginter**, Vice President- Industrial Security, Waterfall Security Solutions **3. Sunandan Banerjee**, Principal Consultant-Government & PSU, SonicWall **4. Aamir Hussain**, IT, Tata Power Delhi Distribution Ltd **5.** Laura Jelinek, Foreign Associate, Epstein Rosenblum Maoz (ERM) Law Office **6. Elad Shaviv**, Chief Executive Officer, Israeli Smart Energy Association **7. Shaleen Khetarpaul**, BSES Rajadhani Power Limited **8. Tathagata Datta**, Consultant, National Critical Information Infrastructure Protection Centre **9. Vijayan SR**, Hub Digitalization Lead – Grid Automation, Hitachi ABB Power Grids **10. Mandar Patil**, Manager - Solutions Architect, Amazon Web Services **11. Lalit Kumar**, General Manager-IT Security, BYPL **12. Kishore Narang,** Founder, Narnix

Key Takeaways by Moderator

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CONFERENCE DAY 3 – 04 MARCH 2021
THEMATIC SESSION - 7
DISRUPTIVE TECHNOLOGIES AND INNOVATIONS FOR UTILITIES
PART - A

Venue & Time	
Venue	Plenary Hall
Time	New York 03:30 ~ 05:30 Paris 09:30 ~ 11:30 **India 14:00 ~ 16:00** Tokyo 17:30 ~ 19:30

Session Background

Since inception, ISGF has been advocating for digitalization in utilities. In the aftermath of Covid-19, the digital platforms have become the coveted assets for utilities in their business continuity and resiliency; and in a short span of time, they all adopted paper-less processes and contact-less and remote operations. This has advanced the digitalization in utilities by several years and this movement towards digitalization is now irreversible. Emerging and disruptive technologies like Artificial Intelligence, Machine Learning, Data Science and Advanced Analytics, Blockchain, Virtual Reality and Augmented Reality, Robotics and Advanced Automation enabling remote operations and remote working will radically revolutionize the utility (electricity, water and gas) operations and smart city management in the coming days. Drones and robots could play crucial roles in various infrastructure and services in city management including utility operations. These new technologies and tools could make the operations more efficient, faster, reliable, safe and economical.

Discussion Points:

1. AI, ML and Robotics Applications for Utilities
2. IoT, Cloud and Data Management
3. Tools for Efficient Remote Operations
4. Disruptive Technologies for Smart Community
5. Policies and Regulations for Adoption of Emerging Technologies

Chair	**Ganesh Srinivasan,** Chief Executive Officer**,** Tata Power Delhi Distribution Ltd
Moderator & Theme Presenter	**Amit Kumar Pandey,** President, Hanson Robotics
Speakers	1. **S Samanta,** Head – IT, Tata Power Delhi Distribution Ltd 2. **Ashutosh Natraj,** Founder and Chief Executive Officer, Vidrona, UK 3. **Abhishek Ranjan**, Assistant Vice President – System Operations (ST & ABT), BSES Rajadhani Power Limited 4. **David Coppalla,** Business Developer and Project Manager, European Space Agency 5. **Mukesh Dadhich**, Asst. Vice President - Sustainability & Cleantech, BYPL 6. **Stefan Engelhardt**, Vice President - Industry Business Unit – Utilities, SAP 7. **AP Singh**, CISO, UPPCL 8. **Martin Hauske**, Energy Segment Sales leader, APAC, Nokia 9. **Sainath Bandhakavi,** Senior Solutions Architect – Utilities, Amazon Web Services 10. **Jayanth Balaji**, Application Engineer, MathWorks 11. **Thomas Waggershauser**, HMS Industrial Networks/ UL Group, Germany

Key Takeaways by Moderator

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CONFERENCE DAY 3 – 04 MARCH 2021
THEMATIC SESSION - 8
NEW REVENUE OPPORTUNITIES FOR UTILITIES

Venue & Time	
Venue	Plenary Hall
Time	New York 05:30 ~ 07:30 Paris 11:30 ~ 13:30 **India 16:00 ~ 18:00** Tokyo 19:30 ~ 21:30

Session Background

In the evolving energy transition with distributed renewable energy resources (DER) and electric vehicles (EV) coupled with constantly falling prices of solar panels and lithium-ion batteries (LiB), we often talk about the "*future of the utility and the utility of the future*". In the coming years many customers could live without grid connection – they can power their homes and offices from rooftop solar integrated with the batteries of their EVs. As the cost of grid defection for customers is becoming economically viable, the writing is on the walls for utilities that their revenue from the sale of electrons is on the decline; and they should look at other revenue streams. In this scenario, it is important for utilities to consider new revenue opportunities for growth and sustainability. This session will discuss various opportunities for revenue generations for utilities from digitalization of the power sector and from unlocking existing infrastructure and services.

Discussion points:

1. New revenue opportunities enabled by digitalization of the power sector
2. New services and revenue opportunities from unlocking existing infrastructure and services
3. Smart homes and grid interactive buildings and appliances

Chair	**RP Singh**, Chairman, UP Electricity Regulatory Commission
Moderator & Theme Presenter	**Reji Kumar Pillai,** President, ISGF
Speakers	1. **UN Behera**, Chairman, Orissa Electricity Regulatory Commission 2. **Sutirtha Bhattacharya**, Chairman, West Bengal Electricity Regulatory Commission 3. **Mukesh Khullar**, Member, Maharashtra Electricity Regulatory Commission 4. **Kapil Mohan**, Add. Chief Secretary, Energy – Karnataka 5. **Mahesh Singh**, Managing Director, UGVCL, Gujarat 6. **Marc Boillot**, Ambassador, Global Smart Energy Federation 7. **AK Jana**, Managing Director, Indraprastha Gas Limited 8. **Ganesh Das**, Head-Innovations, Tata Power Delhi Distribution Ltd 9. **Rammohan Rayaprole**, National Manager - EMS, CMS Computers Ltd 10. **Abhishek Ranjan**, Assistant Vice President – System Operations (ST & ABT), BSES Rajdhani Power Limited

Key Takeaways by Moderator

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CONFERENCE DAY 3 – 04 MARCH 2021
SPECIAL PLENARY - 2
GRID INTEGRATED VEHICLES (GIV) AND STANDARDS FOR GIVs

Venue & Time	
Venue	Plenary Hall
Time	New York 08:30 ~ 10:30 Paris 14:30 ~ 16:30 **India 19:00 ~ 21:00** Tokyo 22:30 ~ 00:30

Session Background

Vehicle to grid (V2G) system would allow the battery of the electric vehicle to inject power to the grid to support the grid when required. V2G can be of two type i.e., on vehicle AC V2G and off vehicle DC V2G and requires chargers configured with grid integration software, smart charging controller and two-way communication option for exploiting its full potential. In addition, vehicle to building (V2B) or vehicle to home (V2H) functionalities can also provide flexibility to the grid by providing power to the building or home from the stationary electric vehicle batteries at the time of peak demand. This will open up new potential for distribution utilities in managing the load by aggregating large number of EVs as virtual power plants (VPPs). Although many of the activities like peak shaving, load levelling etc. can be achieved through smart charging (V1G), V2G will help EVs to act as generation source and claim additional financial benefits by providing ancillary services to the grid and participating in the power market transactions.

Discussion Points:

1. V2G technology evolution and present status
2. Challenges in rollout of V2G functionality in all EVs
3. Incentives for the EV owners to participate in V2G
4. V2G as Ancillary Services for grid support - advantages and challenges
5. Global use cases and business models

Chair	**KR Jyotilal**, Principal Secretary -Transport, Kerala
Theme Presentation	**Rodney McGee**, Chief Engineer, University of Delaware and Committee Chair, Society for Automotive Engineers
Speakers	**1. Rajit Gadh**, Director- Smart Energy Research Centre, UCLA, USA **2. Shashi Verma**, Chief Technology Officer, Transport for London, UK **3. Marc Petit**, Professor, Centrale Supelec, France **4. Lonneke Driessen- Mutters**, Executive Director, OCPP Alliance **5. Ashok Sarkar**, Senior Energy Specialist, World Bank **6. Sajid Mubashir**, Scientist G, Department of Science and Technology **7. Sandeep Bangia**, Head, Electric Vehicle and Home Automation Division, The Tata Power Company Limited **8. Girish Ghatikar,** Senior Program Manager, EPRI

Key Takeaways by Moderator

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CONFERENCE DAY 3 – 04 MARCH 2021 - WORKSHOP
WORKSHOP ON DISTRICT COOLING SYSTEM

Venue & Time	
Venue	Workshop Hall
Time	New York 00:30 ~ 03:00 Paris 06:30 ~ 09:00 **India 11:00 ~ 13:30** Tokyo 14:30 ~ 17:00

Session Background

The summer temperature has been on the rise constantly all across India during the past 3 decades. The maximum temperature in Delhi has increased in the last 3 decades by 6 degree Celsius to exceed 48 degrees in 2019. At this rate by 2030, the summer temperature could be well over 50 degrees making it almost impossible for people to live, work or commute without cooling. Traditionally, space cooling in buildings is provided with room (window) air conditioner (AC) or centralized AC plants. With increasing economic prosperity, urbanization and rising temperatures, sale of room ACs are set to increase rapidly. Installed stock of room ACs in India increased from two million units in 2006 to 30 million units in 2017 and is expected to be between 55 - 124 million by 2030. Per another estimate, about 700 million new ACs by 2030 and 1.6 billion units by 2050 are expected to be added globally. This level of proliferation of ACs will worsen the crisis by increasing the ambient temperature and widen the divide between those who can afford to stay cool and those left out in the unbearable deadly heat.

Room ACs emit heat to the atmosphere creating heat islands in many parts in a city and increase the overall ambient temperature in the locality. Similarly, millions of air-conditioned cars in large cities like Delhi emitting heat make it very uncomfortable for pedestrians and commuters on 2-wheelers and 3- wheelers. This situation is set to aggravate as the number of rooms ACs and air-conditioned cars are increasing by the day. High temperatures are already affecting people's ability to work, making people sick, and outright killing thousands of elderly and children in low-income communities who cannot afford cooling. While cooling is a luxury at moderate to high temperatures, it is an essential need at temperatures above 40 degree Celsius.

The India Cooling Action Plan (ICAP) issued in March 2019 aims to reduce cooling demand by 25-30% and reduce cooling energy requirements by 25-40% by 2037-38 from 2017-18 levels. ICAP targets efficiency improvement and material substitution and related actions that will yield incremental improvements. The problem being so critical and imminent, it requires a radically different approach – incremental improvement in the efficiency of room AC units and better construction materials will not help to mitigate this challenge. District energy systems are being successfully implemented in many parts of the world and have evolved as a matured technology. In the Indian context, the district cooling system (DCS) presents an opportunity to address the space cooling challenge effectively.

Considering this, an actionable implementation plan needs to be developed focusing on both greenfield and brownfield projects along with commercially viable business models for providing cooling as a service. Government should also come up with policy and regulation both at central and state levels focusing on financing options, incentives and tariff policy for providing a push for adoption of DCS and attract investment in the sector.

Through this workshop, we would like to learn from international experience and figure out the issues and challenges for DCS projects in Indian context at both technical and commercial side. This workshop will also evaluate the key activities that need to be undertaken in terms policy and regulations, commercially viable business models, innovative financing options and new technologies to implement DCS in developing countries.

11:00 ~ 11:30	**Inaugural Session** **Welcome Address: ISGF** **Special Address:** Abhay Bakre, Director General, Bureau of Energy Efficiency **Inaugural Address:** RP Gupta, Secretary, Ministry of Environment, Forest and Climate Change
11:30 ~ 12:15	**Session 1: Policy and Regulations and Implementation Plan**
Moderator	**Martin Schefler**, Co-Founder, Auroville Consulting
Speakers	1. Arijit Sengupta, Director, Bureau of Energy Efficiency

	2. **SP Garnaik**, Executive Director, EESL 3. **Laxmi Rao**, Senior Director, IDEA 4. **Dimitry Bochkalov,** Senior Director- Global Business Development, Danfoss 5. **Sudheer Perla**, Country Head, Tabreed 6. **Mikael Jakobsson**, Executive Director, APUEA 7. **Rahul Agnihotri,** Coordinator, District Energy Initiatives South Asia, UNEP
12:15 ~ 13:00 **Chair** **Moderator** **Speakers**	**Session 2: Technology and Business Models** **Rajeev Sharma**, Vice President, GIFT City **Peter Lundberg**, Head of Operations, APUEA 1. **Teruhisa Oi**, Principal Energy Specialist, ADB 2. **Ganesh Das**, Head Innovation & R&D, Tata Power DDL 3. **Dhiraj Wadhwa**, Director, Carrier India 4. **Prameet Gupta**, Tabreed 5. **Laxmi Rao**, Senior Director, IDEA 6. Paul Voss, Managing Director, Euroheat and Power 7. **Shubhasish Dey**, Director, Climate Policy, Shakti Foundation
13:00 ~ 13:30	**Discussion on Way Forward**

Key Takeaways by Moderator

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CONFERENCE DAY 3 – 04 MARCH 2021 - WORKSHOP
JOINT WORKSHOP OF DEPARTMENT OF SCIENCE & TECHNOLOGY, GOI AND SWEDISH ENERGY AGENCY

Venue & Time

Venue	Workshop Hall
Time	New York 04:00 ~ 07:00 Paris 10:00- 13:00 **India 14:30 - 17:30** Tokyo 18:00- 21:00

Session Background

A digitalized, flexible and interactive power system will make it possible to use energy more efficiently. It will also enable integration of increased share of renewable energy, including small scale production. Smart grids empower consumers and give all stakeholders in the electricity market the opportunity to contribute to a sustainable energy system. Department of Science & Technology, Government of India and Swedish Energy Agency organised an Information session regarding Indo-Swedish Joint Research & Innovation call on Smart Grids. The call includes applied R&D projects focused on co-development of new technologies, services or processes to address challenges within the context of electrical smart grid. The programme aimed on Indian and Swedish companies who jointly aim to develop new innovative technologies, processes and advanced or technology-based services which will in subsequent steps generate sustainable solutions for society coupled with market potential. A Joint Workshop of Department of Science & Technology, Government of India and Swedish Energy Agency is being organized as part of India Smart Utility Week 2021 under India-Sweden Collaborative Industrial Research & Development Programme. The objective of this workshop is to bring together the Swedish and Indian project coordinators actively looking to collaborate and submit proposal under the joint India- Sweden research call. The workshop will also provide an opportunity for coordinators to briefly present their project ideas and requirements.

Discussion Points

1. Innovative and market-driven projects, leading to the proposed development of a new technology, or process or new/improved services, leading to future possible commercialization.
2. Joint India-Sweden project teams' capacity to manage the proposed project in their respective countries, and jointly with the counterpart project team
3. How we can carry out the development and transformation of the power system from a holistic perspective so that it not only enables, but also facilitates, changes in the transport sector, building sector, industry and other sectors prioritized by both countries

14:30 ~ 14:35	**Inaugural Session** **Welcome Address: ISGF**
14:35 ~ 14:45	**Opening Remarks:** 1. **Gautam S. Bhattacharyya,** Deputy Head of Mission, Embassy of Sweden 2. **Rajiv Tayal**, Head of Technology Missions, Department of Science & Technology, Govt. of India
14:45 ~ 14:55	**Inaugural Address:** 1. **Ashutosh Sharma**, Secretary, Department of Science & Technology, Govt. of India 2. **Robert Andrén**, Director General, Swedish Energy Agency
14:55 ~ 15:25	**Joint call for India Sweden Collaborative Industrial Research and Development Programme-** Details about Framework for facilitating and Implementing Bilateral Science, Technology, and Innovation Cooperation for funding R&D Projects, focused on co-development of new technologies, services or processes 1. **Sanjai Kumar,** Department of Science & Technology, Govt. of India 2. **Fredrik Lundström,** Programme Manager Swedish Energy Agency
15:25 ~ 15:40	**Questions & Answers** **Moderator: Pawan Tahlani**, Business Sweden

15:40 ~ 17:25	**Short Pitches about Ideas-**Swedish and Indian project coordinators actively looking for project funding or collaboration, can briefly present their high-level project ideas and requirements during a flash presentation session. The objective is to understand each other's demand and expertise and match together for project formulation **Maximum 5 min. per presentation (up to 20 participants)** **Moderators:** **1. Ludvig Lindström**, Country Manager India, Swedish Energy Agency **2. Sanjai Kumar,** Department of Science & Technology, Govt. of India **Presentations (Sweden)** 1. D Laboratory Sweden – Henrik Winberg, COO 2. Ferroamp.Elektronik AB – Mats Karlstorm, VO Sales & Marketing 3. CheckWatt AB -Thomman Nellimoottil, Project Manager **Presentations (India)** 1. Arunai Engineering College - V Saravanan, Professor 2. Amara Raja Batteries Limited - Pasala Vasudevarao, Deputy Manager 3. Auroville Consulting - Umesh Ramamoorthi, Researcher 4. Everon Energy Systems - Ajay Sabharwal, Director 5. Central Electronics Limited - Jasminder Singh, Chief manager 6. IIT Bombay Industry Consortium on Smart Mobility / Smart Cities & Smart Grids - Aabhas Babbar 7. VIT Vellore - MV Chilukuri, Associate Professor

17:25 ~ 17:30	**Key Takeaways and Next Steps** **DST and SEA**

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CONFERENCE DAY 3 – 04 MARCH 2021 - SEMINAR
SMART CITY GAS DISTRIBUTION AND GREEN HYDROGEN

Venue & Time	
Venue	Seminar Hall
Time	New York 3:30 ~ 7:30 Paris 9:30 ~ 1:30 **India 14:00 ~ 18:00** Tokyo 5:30 ~9:30

Session Background

Government of India (GoI) is planning to increase the share of gas in the energy mix of the country. Under the Ujala program cooking gas connections have been given to more than 100 million households in the past 5 years. Besides this, GoI has issued licenses for City Gas Distribution in 228 districts in the country. This will increase the share of gas in the economy to 15% by 2030 from the present levels of 7 %. We are about to witness a huge expansion in City Gas Distribution (CGD) sector. The automation and IT systems and the last mile connectivity solutions for building smart electricity grids can be leveraged for automating the water and gas distribution systems at marginal cost. Similarly, the billing and collection systems of the electric utility can be leveraged to provide a single bill for all 3 services – electricity, water and gas. This will not only enhance convenience of the customer who has to pay only one bill, but will also reduce the cost of business operations for the gas and water utilities. From this perspective, ISGF feels there is a compelling business case to bring city gas distribution companies to the smart grid forum and explore the collaborative business opportunities. There are many common issues that all water, gas and electric utilities are facing with municipal authorities and regulatory bodies which again can be effectively addressed jointly. On the technology and business process side as well, there are many things electricity, gas and water utilities can learn from each other.

ISGF initiated many activities in the gas domain and also constituted a City Gas Distribution Working Group to start knowledge creation and to bring stakeholders on one platform which received acceptance amongst the industry; and now we are launching an **India CGD Forum** which will be chaired by **Shri Tarun Kapoor, Secretary, Ministry of Petroleum and Natural Gas (MoPNG).** The India CGD Forum will start the promotion of initiatives of Government of India towards the gas-based economy.

Smart City Gas Distribution session at ISUW 2021 will provide an effective platform for virtual interactions on new themes related to post-Covid transformation in CGD business, efficient operation and maintenance management; and intervention of hydrogen and CNG driven vehicles.

14:00 ~ 15:00	**Inaugural Session** ***Welcome Address***: India Smart Grid Forum ***Special Address:*** 1. **G Chakraborty,** Executive Director, Gail India Ltd. 2. **MV Ravi Someswarudu**, Chief Executive Officer, Gail Gas Limited 3. **Suresh Mangalani,** Chief Executive Officer, Adani Gas Limited 4. **AK Jana,** Managing Director, Indraprastha Gas Limited 5. Satpal Garg, Member, Petroleum and Natural Gas Regulatory Board ***Inaugural Address***: **Tarun Kapoor**, Secretary, Ministry of Petroleum and Natural Gas ***Vote of Thanks***: **Vivek Joshi**, Executive Director, Natural Gas Society
15:00~16:30	**Session-1: Post Covid Transformation in CGD Business** • Digitalization for transforming utilities during the pandemic: contact less billing, defaulter's management and revenue maximization • Automation for remote operations • Operational agility and resilience ***Chair*: Rajiv Sikka**, Chief Executive Officer, Indian Oil-Adani Gas Pvt. Ltd**.** ***Speakers:*** **1. Manjeet Singh,** Sr Vice President, IGL **2. Murali Srinivasan,** Sr Vice President, Mahanagar Gas Limited **3. Rajesh K Mediratta,** Director – Gas Exchange, IEX **4. Sumit Gupta**, Chief Executive Officer, AssetPlus Consulting
16:30 ~17:30	**Session-2: Efficient Operation, Maintenance and Digitalization** • Sharing of Digital Assets amongst Utilities (Electricity, Water, Gas) • Common IT Infrastructure

	• Smart Techniques for Safety • Management of Tanker Safety: Intermediate Commercial Vehicle (ICV), Gas Cascade Carrying Vehicle, LNG Vehicles in Gas Distribution ***Chair*: G Chakraborty,** Executive Director, (CGD), GAIL India Limited ***Speakers:*** 1. **Tulika Pradhan,** Cloud Advisor, Public Sector, Amazon Web Services, India 2. **Raman Srivastava,** Chief General Manager, IGL 3. **Sushil Kumar,** Deputy General Manager, GAIL 4. **Abhijit Mukherjee,** Head, IT, Maharashtra Natural Gas Limited

Key Takeaways by Moderator

Session – 3: GREEN HYDROGEN ROADMAP FOR INDIA

Session background

Fast paced activities on Green Hydrogen are going on all the around the world. Countries after countries are issuing Hydrogen Roadmaps and Strategies. Globally, green hydrogen is considered as the sustainable solution to decarbonize the "*hard-to-abate-or electrify"* sectors such as long-haul truck traffic, shipping, aviation and production of steel and cement which contribute about 15% of global CO_2 emissions. The hydrogen produced traditionally with CO_2 emission from natural gas is referred as ***Grey Hydrogen*** while that is produced from coal and petroleum coke is called ***Brown Hydrogen***. In the recent past technologies have evolved to produce hydrogen with reduced or no CO_2 emissions. Grey and brown hydrogen produced with carbon capture and storage is known as **B*lue Hydrogen*** while that is produced through pyrolytic processes is referred as ***Turquoise Hydrogen;*** and the hydrogen produced from electrolysers run on electricity from renewable resources (solar and wind) is called ***Green Hydrogen***. The latest entrant in this vibrant domain is ***White Hydrogen*** produced from plastics and biomass.

According to a report by Hydrogen Council, green hydrogen could supply up to 25% of the world's energy needs by 2050. The emergence of a hydrogen economy could change geopolitical dynamics as many countries are already investing in this new energy systems as potential importer or exporter. The cost reduction of green hydrogen will lead to the hydrogen economy replacing the hydrocarbon economy in the long run. As the global demand for green hydrogen increases, new exporters will emerge from different geographies replacing the present oil exporting countries. This will lead to major geopolitical realignments which is a great opportunity for India to leverage to be a net exporter of green hydrogen as well as drastically reduce our oil and gas imports.

In order to manufacture green hydrogen at scale, India has many strategic advantages, including:

- Large land mass for renewable energy production at low cost
- Integrated, country-wide natural gas pipeline networks and storage systems
- Stable electric grid that could support seamless operation of giga-watt (GW) scale electrolysers
- Skilled manpower in abundance

These advantages, if planned well and acted upon with strategy and focus could attract foreign direct investment for fast development of the green hydrogen ecosystem in the country and India could emerge as a leading exporter of green hydrogen. We could start with blue hydrogen as well in the near term. To leverage these advantages and seize the opportunity, India needs to build technology cooperation and partnership with leading countries around the world.

This session will discuss the plan for a Hydrogen Mission and a Hydrogen Roadmap for India.

17:30 ~ 18:30	***Chair*: PC Maithani, Advisor, Ministry of New and Renewable Energy** ***Speakers:*** • **K.R. Jyotilal,** Principal Secretary, Transport, Kerala • **Gauri Singh**, Deputy Director-General, International Renewable Energy Agency • **Anand Vasudevan**, Founder & CEO, Spotimyze Energy, USA • **Sanjeev Gupta,** Chairman, Power Committee (RE&AE), PHD Chamber of Commerce

Key Takeaways by Moderator

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CONFERENCE DAY 3 – 04 MARCH 2021 - ROUNDTABLE
ROUNDTABLE - 4: URBAN AIR MOBILITY SYSTEMS (UAM)

Venue & Time	
Venue	Roundtable Hall
Time	New York 01:00 ~ 03:00 Paris 07:00 ~ 09:00 India **11:30 ~ 13:30** Tokyo 15:00 ~ 17:00

Session Background

Urban Air Mobility (UAM) as a concept was defined by **NASA** as **"safe and efficient air traffic operations in a metropolitan area for manned aircraft and unmanned aircraft systems".** These aircraft would carry cargo or 1-5 passengers on short-range trips (less than 100 km). With rising urbanisation, growing traffic Jam and an e-commerce boom, modern, safe and affordable modes of transportation are required. UAM offers an opportunity for seamless, secure, and rapid transportation to alleviate current and potential challenges faced in urban areas. UAM 's potential has led to various industry efforts; there are now over 100 type of UAM vehicles globally in different stages of development. The key enablers for development of UAM systems are airspace integration, expansion of infrastructure, customer's acceptance, seamless integration into linked mobility systems, and a broad range of other ecosystem components, that are still evolving.

Today, over 4 billion people, or more than half the world's population, live in cities. They are at the epicenter of economic activity, with more than 80% of global GDP generated in cities. As the size of urban populations grows, traffic congestion and air pollution remain as major threats that take a toll on economic growth. It is imperative for governments to seek alternative solutions by making strategic moves to promote UAM system development as an alternative to existing ground transportation. e

Discussion Points

1. ***Learnings from Global Practices and Regulations***
   a. Case Studies on Global Practices of UAM
   b. Standards and Regulations for Manned and Unmanned Drones
2. ***Technical Feasibility of UAM for human transport in metropolitan Areas***
   a. Autonomy
   b. Advancement of Battery Technologies for UAM
   c. Weather
3. ***Commercial viability of UAM Systems to Ferry Passengers***
4. ***New Infrastructure Requirement***
   a. Landing Site
   b. Electric grid access
   c. Navigation Systems
5. ***Environmental Impacts of UAMs***
6. ***Safety Measures***

11:30 ~ 12:00	**Inaugural Session** **Welcome Address: Reji Kumar Pillai**, President, India Smart Grid Forum, & Chairman, Global Smart Energy Federation **Special Address: John Cavolowsky,** Director, Transformation Aeronautics Concepts Program (TACP), NASA Aeronautics Research Mission Directorate (ARMD), USA **Inaugural Address:** Pradeep Singh Kharola**,** Secretary, Ministry of Civil Aviation, Government of India

12:00 ~ 13.15	**India Roadmap for UAM Systems and Foreign Use Cases** **Chair: John Cavolowsky,** Director, Transformation Aeronautics Concepts Program (TACP), NASA Aeronautics Research Mission Directorate (ARMD), USA **Speakers:** 1. **Christian Eschmann,** Acting Head of Lab, German Aerospace Center 2. **C Shikha,** Managing Director, BMTC 3. **Andrew Hately,** U-space ConOps Development, EUROCONTROL 4. Bhawna Singh, Deputy Director General, Ministry of Civil Aviation, GoI 5. **Kanika Tekriwal,** Chief Executive Officer and Co-Founder, JetSetGo (JSG) 6. Anil Chandaliya, CEO, Passenger Drone Research Pvt Ltd 7. **Mehmet Emre YAZICI,** Independent Consultant 8. **Kanishka Agiwal,** Amazon 9. Bhavish Aggarwal, Co-Founder & CEO, OLA Cabs 10. Vallabha Pasupuleti, COO, Senseimage Technologies 11. **Rohan Verma,** Chief Executive Officer and Executive Director, MapmyIndia 12. **Satish Jamadagni**, Vice Chairman TSDI, Vice President, Reliance Jio 13. Kanika Kalra, Urban Transport Expert & Acting Director - KMC, Institute of Urban Transport 14. **Kowthamraj VS,** NITI Aayog, GoI
13:15 ~ 13.30	**Key Takeaways and Next Steps**

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CONFERENCE DAY 3 – 04 MARCH 2021 - ROUNDTABLE
ROUNDTABLE - 5: REGULATORY AND POLICY ENVIRONMENT FOR BLOCKCHAIN INNOVATION AND ADOPTION IN UTILITIES

Venue & Time	
Venue	Roundtable Hall
Time	New York 03:30 ~ 07:00 Paris 09:30 ~ 13:30 **India 14:00 ~ 17:30** Tokyo 17:30 ~ 21:00

Session Background

Increasing number of governments and organizations around the world are planning to pass regulatory legislation and have demonstrated pilot projects centered around blockchain technology. India can leverage blockchain technology to provide cybersecurity, process optimization, and integrate hyperconnected services while bolstering trust and accountability. The distributed ledger technology can be leveraged to support an array of government and public sector processes, including land registration; identity management; supply chain traceability; health care; corporate registration; taxation; voting (elections and proxy); and legal entities management. The structure of digital ledger technology (DLT) poses inherent challenges to traditional approaches to regulation and governance. While enterprise or private blockchains have become more dominant in recent years and which still allow for more traditional governance and regulatory mechanisms, the challenges will become greater as we see growing adoption of public, permission-less DLT.

Blockchain has attracted the attention of the power industry with its potential to unleash an energy revolution in which both electric utilities and consumers will produce and sell electricity. In order to provide flexibility, a regulatory sandbox mechanism needs to be developed for levelling the playing field for all the stakeholders' developing new applications thereby extending guarantee within the regulatory framework.

With this roundtable, we wish to address these challenges; different models of governance and regulation in an increasingly decentralized world.

Discussion Points:

1. Maturity and Usability of Blockchain based Applications for Utilities
2. Potential Regulatory Interventions for Upscaling Adoption of Blockchain in Utilities
3. Use Cases of Implementation of Blockchain Projects in Energy Sector in a Regulatory Sandbox Mechanism

Special Address	1. **Santosh K Misra,** CEO, Tamil Nadu, e-Governance Agency 2. Rajendra Kumar, Additional Secretary, MeitY 3. **RP Singh,** Chairman, UPERC
Chair	**Rajendra Kumar,** Additional Secretary, MeitY*
Moderator	**Reena Suri,** Executive Director - ISGF and Global Ambassador - Energy Web Foundation
Speakers	1. **Ana Trbovich,** Grid Singularity & Energy Web Foundation 2. **Lalit Wasan,** Head of Department - Power System Control, Tata Power Delhi Distribution Ltd 3. **Mohua Mukherjee,** Ex – World Bank and Advisor - ISGF 4. **Vinod Tiwari,** Head of Business Development & Sales, Power Ledger, Australia 5. **Amanda Ahl,** Digital Industry Analyst, Bloomberg NEF 6. **Jitendra Nalwaya,** Head - System Operation & Sustainability, BYPL 7. **AP Singh,** Superintending Engineer (IT), UPPCL 8. Varun Dube**,** General Manager and Global Head-Blockchain, Wipro 9. **Vaska Dimitrova,** Verbund, Austria 10. **Oriol Pujoldevall,** Energy Web Foundation

Key Takeaways by Moderator

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India SMART UTILITY Week 2021

ISUW 2021

DETAILED AGENDA

CONFERENCE DAY 4

05 MARCH 2021 (FRIDAY)

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CONFERENCE DAY 4 – 05 MARCH 2021
THEMETIC SESSION - 9
DISRUPTIVE TECHNOLOGIES AND INNOVATIONS FOR UTILITIES
PART-B

Venue & Time	
Venue	Plenary Hall
Time	New York 01:00 ~ 03:00 Paris 07:00 ~ 09:00 **India 11:30 ~ 13:30** Tokyo 15:00 ~ 17:00

Session Background

The electric utilities are on the threshold of a rapid transformation with the advent of distributed renewable generation, electric vehicle and energy storage systems etc. – a much needed move towards a new era of decentralized systems. The growing concern for environment, government policies supporting environmentally sustainable solutions and rapidly falling technology costs have also pushed these new generation and demand sources to get connected to the low voltage grid. This has led to operational challenges for grid operators as they have to deal with both variable generation and demand sources requiring the grid to be more flexible and robust.

Therefore, with decentralization and increase in complexity of utility operation, utilities need to adapt innovative technologies and transform their businesses to handle the unprecedented disruption across the sector. Emerging technologies will play a crucial role, and utilities must harness their capabilities to seize the opportunities presented by the new energy world.

Discussion Points:

1. Wireless transmission of electricity
2. Innovative technologies facilitating decentralization allowing more customer involvement
3. Robotic process automation potential and challenges in utilities
4. Utility strategy and business models with technology disruption and innovation
5. Advanced analytics and business intelligence from digitalization and big data
6. Virtual reality, augmented reality and mixed reality use cases in utilities

Chair	Anshu Bhardwaj, Chief Executive Officer, Shakti Sustainable Foundation
Moderator	**Probir Neogi**, Chief Advisor, Corporate Affairs, RP-Sanjiv Goenka Group
Speakers	**1. Greg Kushnir,** Chief Executive Officer, EMROD, New Zealand **2. Adarsh Nagarajan**, Lead - Distributed Generation, NREL, USA **3. Ganesh Srinivasan**, Chief Executive Officer, Tata Power Delhi Distribution Ltd **4. Shishir Shekhar**, Senior Global Market Manager, Utilities & Energy, MathWorks **5. Yogesh Gadkari**, Executive Director, MSEDCL **6. Jitendra Nalwaya**, Vice President - System Operations, BYPL **7. Amitava Ghosh**, Vice President – Engineering, Bidgley **8. Akilur Rahman**, Chief Technology Officer, Hitachi ABB Power Grids **9. Sumit Gupta**, Chief Executive Officer, AssetPlus Consulting **10. Divya Rajagopal**, Automation GIU Leader, IBM **11. Ankush Sharma**, Chief Executive Officer, Yeppar

Key Takeaways by Moderator

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CONFERENCE DAY 4 – 05 MARCH 2021 - WORKSHOP
WORKSHOP ON LIVE LINE MAINTENANCE IN UTILITIES

Venue & Time	
Venue	Workshop Hall
Time	New York - 23:30 ~ 02:00 (4th march & 5th March) Paris - 05:30 ~ 08:00 **India - 10:00 ~ 12:30** Tokyo - 13:30 ~ 16:00

Session Background

Government of India has recently issued new Electricity Rules (Customer Rights) which mandates 24x7 supply of quality power to all citizens. One of the key initiatives to achieve this objective is to avoid unnecessary shutdowns of the power lines for minor repair works by electric utilities and adopt the practice of LIVE LINE (or Hot Line Maintenance.

While the Extra High Voltage (EHV) transmission network operators (TRANSCO) in India has been undertaking Live Line Maintenance for decades, the Distribution Companies (DISCOM) are yet to adopt Live Line Maintenance practices. Equipment, tools, work methods and safety standards for Live Line Maintenance are matured and being used successfully in several developed and developing countries. It is high time that Indian DISCOMs should graduate to the live line maintenance regime.

This workshop will introduce the Live Line Maintenance Practices; Equipment, Tools and Tackles; and Safety Standards and Guidelines for Live Line Maintenance in DISCOMs and TRANSCOs.

Discussion Points:

1. Hot Line Maintenance practices by TRANSCOS in India
2. Hot Line Maintenance practices by DISCOMs in other countries
3. Innovative in Live Line Maintenance Equipment and Tools
4. Safety Measures and Standards for Hot Line Maintenance
5. Training and Capacity Building in DISCOMs for Hot Line Maintenance

Chair	**MK Goel,** Chairman, JERC
Moderator	**Ravi Seethapathy,** ISGF
Theme Presentations:	1. **Venu Babu**, Director, Hot Line Training Centre (HLTC), NPTI, Bangalore 2. **Timothy Dean Self**, Vice President, ALTEC, USA
Speakers	1. Shambhu Dayal Meena, Chairman, KERC 2. Naresh Sardana, Member, HERC 3. Manohar Bevinamarad, MD, CESC, Mysore 4. Executive Director – Operations, Power Grid Corporation of India 5. Hajee Abdul Sattar Sait, Director-Technical, KPTCL 6. Hare Ram Pandey, Director, Bihar Power Transmission Corporation Ltd 7. SK Singh, Director – Technical, MVVNL 8. G Ashok Kumar, Director- Technical, BESCOM 9. N Reddy, Chief Engineer, Goa Electricity Department

Key Takeaways by Moderator

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CONFERENCE DAY 4 – 05 MARCH 2021 - SEMINAR PRESENTATION OF SELECT TECHNICAL PAPERS: PART – 2					
Venue & Time					
Venue		Seminar Hall			
Time		**India - 11:30 ~ 13:30**			
S. No	**Theme**	**Title**	**Name**	**Organization**	**Time**
Chair: N Murugesan, Former DG, CPRI					
1	**Emerging Trends**	Demystifying Digitally Empowered Prosumer Transformation Opportunities for Utilities in Energy Value Ecosystem	Anindya Pradhan	Tata Consultancy Services	11:30~11:45
2		Experience of Battery Energy Storage System by TATA Power DDL	Nilesh kane	Tata Power Delhi Distribution Limited	11:45~12:00
3		Paperless & Contactless Operations in Distribution Services	Dr. Arup Sinha	Virtuoso Consulting	14:30~14:45
4		Cyber Threat Protection Mechanism for Smart Microgrids	Parmanand P Tendulkar	Tata Power Company	12:00~12:15
5		Extremely Severe Cyclonic Storm Fani: Impact on Power System Operation in Indian Sub-Continent	Shiban Kanti Bala	Odisha Power Transmission Corporation Limited	12:15~12:30
6		Flexibility from Hydro Energy with case study on 9PM9Minute event	Surendra Kumar Mishra	NHPC Ltd	12:30~12:45
7		Artificial Intelligence (AI) Powered Customer Care	Tanmay Dalal	Accenture Technology Ltd	12:45~13:00
8		Smart LT Network Equipment: Introduction of Smart, Compact & Aesthetic LT Feeder Pillars	Vikas Kaul	Tata Power Company	13:00~13:15
Chair: N Murugesan, Former DG, CPRI					
1	**Disruptive Innovations for Utilities**	Implementation of Robotics & Drones in Power Distribution	Kaushal Pandya	Tata Power Company	13:15~13:30
2		Asset Performance Management using Machine learning	Vinit Mishra	Ernst & Young LLP	13:30~13:30
Key Takeaways by Moderator					

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