



India SMART UTILITY Week 2020

International Conference and Exhibition
on Smart Energy and Smart Mobility
for Smart Cities

March 03 - 07, 2020

The Lalit Hotel, Barakhamba Road,
New Delhi, India

Supporting Ministries



Ministry of Power
Government of India



Ministry of New & Renewable Energy
Government of India



Department of Commerce
Ministry of Commerce and Industry
Government of India



Ministry of Housing and Urban Affairs
Government of India



Ministry of Environment
Forest and Climate Change
Government of India



Ministry of Jal Shakti
Government of India



सीटीआई
National Institution for
Transforming India



Ministry of Science
& Technology
Government of India

SMART CITIES MISSION
Ministry of Housing and Urban Affairs, Government of India

CONFERENCE AGENDA



Organiser

Host Utilities

Co-Host Utilities



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India
SMART UTILITY
Week 2020

03 - 07 March 2020

The Lalit Hotel, Barakhamba Road,
New Delhi, India

ISUW 2020
International
Conference and
Exhibition on Smart
Energy and Smart
Mobility
for Smart Cities

www.isuw.in

— Organiser —
ISGF
India Smart Grid Forum

3 rd March 2020 Tuesday	4 th March 2020 Wednesday	5 th March 2020 Thursday	6 th March 2020 Friday	7 th March 2020 Saturday
Master Classes Parallel Events Cultural Tours (Optional)	Conference & Exhibition Welcome Reception	Conference & Exhibition	Conference & Exhibition ISGF Innovation Awards 2020 & Gala Dinner	Technical Tours Cultural Tours (Optional)

ISUW 2020: AGENDA AT A GLANCE

CONFERENCE THEMES

S/N	Theme	Date	Time
THEME-A: TOWARDS A NET ZERO ENERGY POWER SECTOR - MAINSTREAMING RENEWABLES			
i.	Roadmap for 450 GW Renewable Energy by 2030	04 March 2020	12:00 ~ 13:30
ii.	Forecasting, Scheduling and Dispatching of Renewable Energy	04 March 2020	14:30 ~ 16:30
iii.	Power System Flexibility	05 March 2020	11:30 ~ 13:00
iv.	Unleashing a Rooftop Solar Revolution	06 March 2020	11:30 ~ 13:00
THEME-B: TOWARDS A CARBON NEUTRAL TRANSPORT SECTOR			
i.	Electric Mobility – Policies and Programs in India vis-a-vis International Scenarios	04 March 2020	12:00 ~ 13:30
ii.	Electrification of Public Transportation – Experiences and Challenges	04 March 2020	14:30 ~ 16:30
iii.	EVs and Charging Stations – Technology Trends and Standards	05 March 2020	11:30 ~ 13:30
iv.	Business Models for EV Fleets and Charging Stations	06 March 2020	14:00 ~ 16:00
THEME-C: TECHNOLOGIES ENABLING ENERGY TRANSITION			
i.	Energy Storage Technologies for Grid Support and EVs	04 March 2020	12:00 ~ 13:30
ii.	Digitalization – 250 Million Smart Meters in India by 2024	05 March 2020	14:00 ~ 16:30
THEME-D: ADVANCED AND DISRUPTIVE TECHNOLOGY TRENDS			
i.	Voice of the Customer in the Digital Era	04 March 2020	14:30 ~ 16:30
ii.	Blockchain Applications in the Energy Sector	06 March 2020	11:30 ~ 13:30
iii.	Artificial Intelligence and Robotics	06 March 2020	14:30 ~ 16:30
SPECIAL PLENARIES			
i.	Regulations Enabling Energy Transition	04 March 2020	17:00 ~ 19:00
ii.	Power Systems Security in the Era of Cyber Wars	05 March 2020	09:30 ~ 11:00
iii.	Women in Energy and Energy Transition	05 March 2020	17:00 ~ 19:00
iv.	Future Skills for the Jobs in 2030s	06 March 2020	09:30 ~ 11:00

ISUW 2020: AGENDA AT A GLANCE
MASTER CLASSES, BI-LATERAL WORKSHOPS AND PARALLEL SESSIONS

S/N	Theme	Date	Time
MASTER CLASSES			
i.	TRACK-1: Technologies Enabling Energy Transition: DIGITALIZATION (i) Smart Metering, (ii) Artificial Intelligence, (ii) Advanced Applications, (iv) Case Studies	03 March 2020	09:30 ~ 17:30
ii.	TRACK-2: Technologies Enabling Energy Transition: E-MOBILITY (i) EV Policies and Programs, (ii) EV Charging Infrastructure, (iii) Technologies and Communications	03 March 2020	14:00 ~ 17:30
iii.	TRACK-3: Advanced Cyber Security (i) Attack Patterns, (ii) Defenses and Their Limitations, (iii) Designs for High-Threat Environments	03 March 2020	09:30 ~ 13:30
iv.	TRACK-4: Technologies Enabling Energy Transition: ENERGY STORAGE SYSTEMS (ESS) (i) Battery Technologies, (ii) ESS Applications for Grid Modernization	03 March 2020	09:30 ~ 17:30
BI-LATERAL WORKSHOPS			
i.	6th US - INDIA Smart Grid Workshop – in collaboration with US Department of Commerce and USAID	04 March 2020	14:00 ~ 17:00
ii.	3rd FRANCE - INDIA Smart Grid Workshop - in collaboration with THINK SMARTGRIDS, FRANCE	04 March 2020	14:00 ~ 17:00
iii.	9th EU - INDIA Smart Grid Workshop – in collaboration with Delegation of the European Union to India and the Directorate General Energy, European Commission	05 March 2020	11:30 ~ 16:30
iv.	INDO - SWISS Smart Grid Roundtable - in collaboration with Swissnex	05 March 2020	11:30 ~ 13:30
v.	4th SWEDEN - INDIA Smart Grid Workshop - in collaboration with Business Sweden and Swedish Energy Agency	05 March 2020	11:30 ~ 13:30
PARALLEL SESSIONS			
i.	IEC – IEEE World Smart Energy Standardization Coordination Workshop	03 March 2020	10:00 ~ 17:00
ii.	Global Perspectives on Energy Transition and Smart Grids – in collaboration with Global Smart Grid Federation	04 March 2020	14:00 ~ 17:00
iii.	Smart City Gas Distribution	05 March 2020	11:30 ~ 16:30
iv.	Smart Water Distribution - in collaboration with CBIP	06 March 2020	11:30 ~ 16:30
v.	Presentation of Selected Technical Papers	06 March 2020	11:30 ~ 16:30
i.	Roundtable on Interconnection of Regional Grids in Asia: SAARC Grid - GCC Grid - ASEAN Grid -in collaboration with USAID India and SARI/EI	06 March 2020	14:00 ~ 16:30
ii.	Workshop on Optimizing Electricity Grids by District Energy System Integration – in collaboration with APUEA	06 March 2020	11:30 ~ 16:30

ISUW 2020: DETAILED AGENDA

03 MARCH 2020 (TUESDAY): MASTER CLASSES

ISUW 2020: MASTER CLASS SERIES	Time	Topics
	Registration – Pre Function Area of Regency	
	09:30 ~ 17:30	TRACK-1: Technologies Enabling Energy Transition: DIGITALIZATION (i) Smart Metering, (ii) Artificial Intelligence, (iii) Advanced Applications (iv) Case Studies Regency 1 & 2
	14:00 ~ 17:30	TRACK-2: Technologies Enabling Energy Transition: E-MOBILITY (i) EV Policies and Programs, (ii) EV Charging Infrastructure, (iii) Technologies and Communications Regency 3
	09:30 ~ 13:30	TRACK-3: Advanced Cyber Security (i) Attack Patterns, (ii) Defenses and Their Limitations, (iii) Designs for High-Threat Environments Regency 3
	09:30 ~ 17:30	TRACK-4: Technologies Enabling Energy Transition: ENERGY STORAGE SYSTEMS (ESS) (i) Battery Technologies, (ii) ESS Applications for Grid Modernization Regency 5
		DETAILED AGENDA at APPENDIX - L
	13:00 ~ 14:00	Networking Lunch - Pre-Function Area of Regency

03 MARCH 2020 (TUESDAY): PARALLEL SESSIONS

PARALLEL SESSIONS	10:00 ~ 17:00	IEC – IEEE World Smart Energy Standardization Coordination Workshop
		DETAILED AGENDA at APPENDIX - M Regency 4

ISUW 2020: DETAILED AGENDA

04 MARCH 2020 (WEDNESDAY): CONFERENCE DAY 1		
04 MARCH 2020: ISUW CONFERENCE DAY 1 - INAUGURAL & THEMATIC SESSION	Registration: Pre-function Area of Crystal Ball Room	
	Time	Session Details & Speakers
	09:30 ~ 11:00	INAUGURATION OF ISUW 2020 CONFERENCE LAMP LIGHTING CEREMONY <i>Welcome Address: Reji Kumar Pillai, President, ISGF</i> <i>Special Addresses:</i> <ol style="list-style-type: none"> Richard Schomberg, IEC Ambassador & Chairman IEC Smart Energy Systems Committee N Venu, Managing Director, ABB Power Grids in India and Region Head – South Asia, Power Grids, ABB Debasish U Banerjee, MD, CESC Kolkata Rajeev Sharma, CMD, PFC Ltd Dharmendra, Chairman, New Delhi Municipal Council Neil Chatterjee, Chairman, Federal Energy Regulatory Commission, USA Ugo Astuto, EU Ambassador to India Barry Gardiner, Member of Parliament for Brent North, House of Commons, London and Shadow Secretary of State for International Trade and Climate Change <i>Inaugural Address: SN Sahai, Secretary, Ministry of Power, Govt of India</i> Vote of Thanks: Praveer Sinha , CEO & Managing Director, Tata Power Company Ltd Crystal Ball Room 1 & 2
	11:00 ~ 11:20	ANNOUNCEMENTS AND SIGNING OF MOUs/AGREEMENTS <ol style="list-style-type: none"> Launch of Sweden - India Call on Smart Grids Gautam Bhattacharyya, Deputy Head of Mission and Acting Ambassador of Sweden Ashutosh Sharma, Secretary, Department of Science & Technology, Govt. of India Launch of European Union and India Joint Call on Integrated Local Energy Systems Ugo Astuto, EU Ambassador to India Ashutosh Sharma, Secretary, Department of Science & Technology, Govt. of India Launch of SEW Innovation Fund Crystal Ball Room 1 & 2
	11:20 ~ 11:30	INAUGURATION OF ISUW 2020 EXHIBITION Exhibition Pavilion
	11:30 ~ 12:00	Tea/Coffee Break – Exhibition Pavilion

12:00~13:30

THEME-A: Towards A Net Zero Energy Power Sector – MAINSTREAMING RENEWABLES

(i) ROADMAP FOR 450 GW RE BY 2030

Crystal Ball Room 1

Chair: RP Gupta, Special Secretary, NITI Aayog

Moderator: Ravi Seethapathy, Chair of ISGF Working Group and Chairman, Biosirus Inc., Canada

Speakers:

1. **Jean-Christophe Füeg**, Ambassador, Swiss Federal Office of Energy
2. **Christine Falken-Grosser**, Head of Division - Bilateral Energy Cooperation, Federal Ministry for Economic Affairs and Energy, Germany
3. **Antoine Jourdain**, Senior VP, COO and Head of International Affairs, ENEDIS, France
4. **AK Verma**, Former Joint Secretary, MoP
5. **Amal Sinha**, CEO, BRPL
6. **RK Chauhan**, Director-Projects, POWERGRID*
7. **Shalabh Srivastava**, Country Director, RTI India

THEME-B: Towards A Carbon Neutral Transport Sector

(i) EV POLICIES AND PROGRAMS IN INDIA

VIS-A-VIS

INTERNATIONAL SCENARIOS

Crystal Ball Room 2

Chair: Anil Srivastava, Special Advisor, NITI Aayog and Mission Director for Transformative Mobility and Energy Storage

Moderator: Shantanu Jaiswal, Head India Office, BNEF

Speakers:

1. **Depinder Singh Dhesi**, Chairman, HERC
2. **Kunal Kumar**, Joint Secretary, MoHUA and Smart Cities Mission Director
3. **Pravin Agrawal**, Joint Secretary, DHI
4. **Vedantha Kumar**, Head - Transport and Industry International Climate Strategy, UK Govt.
5. **Rakhi Basu**, Senior Transport Specialist, World Bank
6. **Daniel Bradley**, Team Lead, DFID India
7. **Bhajan Lal Rolan**, Joint Transport Commissioner, Government of Rajasthan

THEME-C: Technologies Enabling Energy Transition

(i) ENERGY STORAGE TECHNOLOGIES FOR GRID SUPPORT AND EVs

Regency 5

Chair: PC Maithani, MNRE

Moderator: Rahul Walawalkar, IESA

Speakers:

1. **Arumugam Manthiram**, UT Austin *(On Video)*
2. **RP Singh**, Chairman, UPERC
3. **Rakesh Trakru**, Toshiba India
4. **Subir Sen**, ED, Powergrid
5. **Nilesh Kane**, Add. GM, Tata Power – DDL
6. **Mukesh Dadhich**, AVP – Sustainability, BYPL
7. **Satish Singh**, Grid Interconnection Pilot Coordinator, USAID India Greening the Grid Program

04 MARCH 2020: ISUW CONFERENCE DAY 1 - INAUGURAL & THEMATIC SESSION	13:30 ~ 14:30	Networking Lunch– Regal (1st Floor)		
	14:30 ~ 16:30	<p>THEME-A: Towards A Net Zero Energy Power Sector – MAINSTREAMING RENEWABLES (ii) FORECASTING, SCHEDULING AND DISPATCHING OF RE Crystal Ball Room 1 Chair: SK Rahate, Additional Secretary, MoP Moderator: Remy Garadue-Verdier, ENEDIS, France Speakers:</p> <ol style="list-style-type: none"> Sutirtha Bhattacharya, Chairman, WBERC KVS Baba, CMD, POSOCO V Kesavadas, Chief Engineer & Head, KSEB BB Mehta, Chief Engineer, Gujarat SLDC Lalit Wasan, HoD- Power System Control, Tata Power – DDL Vijayan SR, Hub Digitalization Lead – Grid Automation, ABB Power Grids in India Anil Thomas, Head of Section, Energy Advisory, DNV GL –Energy Sanand Sule, Co -founder and CTO, Climate Connect Technologies 	<p>THEME-B: Towards A Carbon Neutral Transport Sector (ii) ELECTRIFICATION OF PUBLIC TRANSPORTATION: EXPERIENCES AND CHALLENGES Crystal Ball Room 2 Chair: Prasanna Patwardhan, President, BOCI Moderator: Girish Ghatikar, ISGF and EPRI Speakers:</p> <ol style="list-style-type: none"> Rajanvir Singh Kapur, MD, WBTC Rajendra Cholan, MD, North West Karnataka Road Transport Corporation Ltd Lonneke Driessen-Mutters, Executive Director, Open Charge Alliance Bhajan Lal Rolan, Joint Transport Commissioner, Government of Rajasthan Toru Sano, Director, NEDO Somesh Kumar, Partner-Power & Utilities, E&Y Anish Mandal, Pilot Manager, USAID India Greening the Grid Program Vinita Singh, Chief Engineer, Smart City Gurugram DHBVN 	<p>THEME-D: Advanced And Disruptive Technology Trends (i) VOICE OF THE CUSTOMER IN THE DIGITAL ERA Regency 5 Chair: PR Kumar, CEO, BYPL Moderator: Anant Venkateswaran, ISGF Speakers:</p> <ol style="list-style-type: none"> KK Mishra, Director, MoP Stefan Engelhardt, Vice President-Utilities, SAP Hasit Kaji, Chief-Digital and Information Officer, Tata Power Company Ltd Nick Birrell, Vice President - Industry Strategy, Oracle Utilities Vish Ganti, VP and MD, Autogrid India RP Singh, VP, Smart Energy Water Shweta Kulkarni, Senior Research Associate, Prayas (Energy Group), Pune

	16:30 ~ 17:00	Networking Tea Break – Exhibition Pavilion
	17:00 ~ 19:00	SPECIAL PLENARY 1: REGULATIONS ENABLING ENERGY TRANSITION Crystal Ball Room 1& 2 Special Address: Raj Kumar Singh, Minister of State (IC), Ministries of Power, New and Renewable Energy; and Minister of State for Skill Development, Government of India Plenary Addresses: <ol style="list-style-type: none"> 1. PK Pujari, Chairman, Central Electricity Regulatory Commission (CERC), India 2. Neil Chatterjee, Chairman, Federal Energy Regulatory Commission (FERC), USA 3. Barry Gardiner, Member of Parliament for Brent North, House of Commons, London and Shadow Secretary of State for International Trade and Climate Change 4. Eija-Riitta Korhola, Former MP, European Parliament
	19:30 Onwards	WELCOME RECEPTION AND DINNER WITH CULTURAL PROGRAM <i>(Open to VIPs, Speakers, Delegates, Exhibitors and ISGF Guests)</i> Crystal Ball Room 1 & 2

ISUW 2020 - DAY 1 – PARALLEL SESSIONS	04 MARCH 2020 (WEDNESDAY): PARALLEL SESSIONS	
	Time	Session Details
	14:00 ~ 17:00	6th US - INDIA Smart Grid Workshop – in collaboration with US Department of Commerce and USAID DETAILED AGENDA at APPENDIX - A Regency 1 & 2
	14:00 ~ 17:00	3rd FRANCE - INDIA Smart Grid Workshop - in collaboration with THINK SMARTGRIDS, FRANCE DETAILED AGENDA at APPENDIX - B Regency 4
	14:00 ~ 17:00	Global Perspectives on Energy Transition and Smart Grids – in collaboration with Global Smart Grid Federation DETAILED AGENDA at APPENDIX - C Regency 3

ISUW 2020: DETAILED AGENDA

05 MARCH 2020 (THURSDAY): CONFERENCE DAY 2	
Time	Session Details & Speakers
09:30 ~ 11:00	SPECIAL PLENARY 2: POWER SYSTEMS SECURITY IN THE ERA OF CYBER WARS Chair: Ajeet Bajpai , DG, NCIIPC Moderator: Laurent Ferrari , Sr VP - Strategy, EDF International, France Speakers: <ol style="list-style-type: none"> Andrew Ginter, Vice President, Waterfall Security Solutions, Canada Narendra Taneja, Chairman, Independent Energy Policy Institute Muktesh Chander, Special Commissioner, Delhi Police Faruk Kazi, Professor, VJTI, and ISGF Working Group Chair Crystal Ball Room 1 & 2
11:00 ~ 11:30	Tea/Coffee Break – Exhibition Pavilion
11:30 ~ 13:30	<div> <div> THEME-A: Towards A Net Zero Energy Power Sector – MAINSTREAMING RENEWABLES (iii) POWER SYSTEM FLEXIBILITY Crystal Ball Room 1 Chair: PMhaske, Chairman, CEA Moderator: Ravi Seethapathy, Chair of ISGF Working Group and Chairman, Biosirus Inc., Canada Speakers: <ol style="list-style-type: none"> Ghanshyam Prasad, Chief Engineer, Ministry of Power PK Agarwal, Director- POSOCO N Venu, Managing Director, ABB Power Grids in India and Region Head – South Asia, Power Grids, ABB Winfried Damm, Head of Indo-German Energy Programme, India Randi Kristiansen, Economics & Financial Analyst, Gas, Coal and Power Division, IEA Raymond Kaiser, Director of Energy Management Systems, Amzur, USA Shishir Shekhar, Worldwide Industry Manager, Utilities & Energy, MathWorks, USA </div> <div> THEME-B: Towards A Carbon Neutral Transport Sector (iii) EVs AND EV CHARGING STATIONS – TECHNOLOGY TRENDS AND STANDARDS Crystal Ball Room 2 Chair: Abhay Bakre, DG, Bureau of Energy Efficiency Moderator: Sajid Mubashir, Scientist-G, Department of Science & Technology, Govt. of India and Chair of BIS ETD-51 Committee Speakers: <ol style="list-style-type: none"> Nishant Arya, ED, JBM Chetan Maini, Founder and Chairman, Sun Mobility Sandeep Bangia, Head - EV and Home Automation, Tata Power Company Ltd Madhan Mohan, R&D Team Manager, Grid & Power Quality Solutions, ABB PM Singh, Exicom Prabhjot Kaur, Centre for Battery Engineering and Electric Vehicles (C-BEEV), IIT-Madras </div> </div>
13:00 ~ 14:00	Networking Lunch – Regal (1st Floor)
14:00 ~ 16:30	THEME-C: Technologies Enabling Energy Transition –DIGITALIZATION (ii) 250 MILLION SMART METERS IN INDIA BY 2024 Crystal Ball Room 1 & 2 Chair: Mrityunjay Kumar Narayan , Joint Secretary, Ministry of Power PART 1: ROLLOUT CHALLENGES

Moderator: Ajoy Rajani, ISGF

Speakers:

1. **Shatrujeet Singh Kapoor**, CMD, UHBVN & DHBVN
2. **Daniel E Nordell**, AMI Leader, XCEL Energy
3. **Kulman Ghising**, MD, Nepal Electricity Authority*
4. **Palka Sahni**, ED, PFC
5. **Phil Beecher**, Wi-SUN Alliance*
6. **MB Rajesh Gowda**, MD, BESCOM
7. **Vinit Mishra**, Director-Power and Utilities, E&Y
8. **Nabil Sahri**, VP, Sajemcom Energy and Telecom
9. **D Basak**, Chief - Commercial, Tata Power - DDL

PART 2: ADVANCED APPLICATIONS AND ANALYTICS

Chair: Vishal Kapoor, Director, MoP

Moderator: Anant Venkateswaran, ISGF

Speakers:

1. **Sylvain Jouhanneau**, Project Director – India Smart Metering, EDF
2. **Nick Birrell**, Vice President - Industry Strategy, Oracle Utilities
3. **Rajeev Arun Ekka**, MD, Jharkhand BVNL*
4. **Ketan N Shah**, Utility Head, Accenture India
5. **Martin Hauske**, Asia Pacific Energy Segment Leader, Nokia
6. **Indrajit Das**, Assistant Vice President, Fluentgrid
7. **Vivek Goel**, Chief Engineer, CEA

16:30 ~ 17:00

Tea/Coffee Break – Exhibition Pavilion

17:00 ~ 19:00

SPECIAL PLENARY 3: WOMEN IN ENERGY AND ENERGY TRANSITION

Crystal Ball Room 1 & 2

PART 1: ROLE OF WOMEN IN TRANSITION OF ENERGY UTILITIES- EXPERIENCE SHARING

Chair: Eija-Riitta Korhola, Former MP, European Parliament

Moderator: Palka Sahni, ED, PFC

Speakers:

1. **Reihana Mohideen**, Melbourne Energy Institute, University of Melbourne, Australia
2. **Anjali Chandra**, Member, PERC
3. **Antoine Jourdain**, CTO and Board Member, ENEDIS, France
4. **Randi Kristiansen**, Economist and Financial Analyst, IEA
5. **Kavita Saraswat**, Senior Power Engineer, World Bank-South Asia Energy
6. **Sumaya Mohamed**, Director, Power for All, Uganda

PART 2: POLICIES AND PRACTICES BY ENERGY UTILITIES IN EMPOWERMENT OF WOMEN WORKFORCE

Chair: Marie-Line Bassette, MD, EDF International Networks, France

Moderator: Reena Suri, Executive Director, ISGF

Speakers:

1. **Nagalaxmi Selvarajani**, CMD, APEPDCL
2. **Jean-Christophe Füeg**, Ambassador, Swiss Federal Office of Energy
3. **Shivani Kumar**, GM - Customer Care, BSES Rajdhani Power Limited
4. **Kiran Gupta**, Head – Customer Services, Tata Power – DDL
5. **Ludvig Lindstrom**, Country Manager India, Swedish Energy Agency
6. **Chandha Neupane**, Project Manager, Nepal Electricity Authority

05 MARCH 2020: DAY 2 - PARALLEL SESSIONS	05 MARCH 2020 (THURSDAY): PARALLEL SESSIONS	
	Time	Session Details
	11:30 ~ 16:30	9th EU - INDIA Smart Grid Workshop – in collaboration with Delegation of the European Union to India and the Directorate General Energy, European Commission DETAILED AGENDA at APPENDIX - D Regency 1 & 2
	11:30 ~ 13:30	INDO - SWISS Smart Grid Roundtable - in collaboration with Swissnex DETAILED AGENDA at APPENDIX -E Regency 4
	11:30 ~ 13:30	SWEDEN - INDIA Smart Grid Workshop - in collaboration with Business Sweden and Swedish Energy Agency DETAILED AGENDA at APPENDIX -F Regency 5
	11:30 ~ 16:30	Smart City Gas Distribution DETAILED AGENDA at APPENDIX - G Regency 3

ISUW 2020: DETAILED AGENDA

06 MARCH 2020 (FRIDAY): CONFERENCE DAY 3		
Time	Session Details & Speakers	
09:30 ~ 11:00	SPECIAL INAUGURAL PLENARY IV: FUTURE SKILLS FOR THE JOBS IN 2030 Crystal Ball Room 1 & 2 Chair: Saurabh Srivastava, Founder and Chairman, Indian Angel Network Moderator: Reihana Mohideen, Melbourne Energy Institute, University of Melbourne, Australia Speakers: <ol style="list-style-type: none"> 1. MM Nayak, Commissioner- Education, Andhra Pradesh 2. Amal Sinha, CEO, BRPL 3. Rakesh Kumar Upadhyay, Former CMD, BSNL 4. Chandan Chowdhury, Dean, ISB 5. Amit Kumar Pandey, President, Hanson Robotics 6. Christian Schaffner, Executive Director of the Energy Science Centre (ESC), ETH Zurich 	
11:00 ~ 11:30	Tea/Coffee Break – Exhibition Pavilion	
11:30 ~ 13:00	THEME-A: Towards A Net Zero Energy Power Sector – MAINSTREAMING RENEWABLES (iv) UNLEASHING A SOLAR ROOFTOP REVOLUTION Crystal Ball Room 1 Chair: Sanjay Malhotra, Additional Secretary, MoP Moderator: Girish Ghatikar, ISGF and EPRI Speakers: <ol style="list-style-type: none"> 1. TC Gupta, Additional Chief Secretary Transport, Power and New and Renewable Energy, Government of Haryana 2. BP Singh, Former Member, DERC 3. G Raghumareddy, CMD, TSSPDCL 4. Mahesh Singh, MD, UGVCL 5. Chinmaya Acharya, CEO(Acting), Shakti Sustainable Energy Foundation 6. Abhishek Ranjan, Head- Renewables and DSM, BRPL 7. Rakesh Kumar, International Solar Alliance 8. Ravinder Singh, Tata Power Company Ltd 9. Jagdish Achara, CEO, GridSteer 10. Sumaya Mohamed, Director, Power for All, Uganda 	THEME-D: Advanced And Disruptive Technology Trends (ii) BLOCKCHAIN APPLICATIONS IN THE ENERGY SECTOR (in Collaboration with Energy Web Foundation and Energy Blockchain Consortium) Crystal Ball Room 2 Chair: KK Mishra, Director, MoP Moderator: Reena Suri, Executive Director, ISGF Speakers: <ol style="list-style-type: none"> 1. Nitin Gavhane, Energy Web Foundation, Germany 2. PK Agarwal, Director, POSOCO 3. Vinod Tiwari, Head of Business Development and Sales, Power Ledger, Australia 4. Rene Schumann, Professor, HES-SO Valais-Wallis, Switzerland 5. Hazril Izan Bahari, Director - Digital Services, SEDA, Malaysia 6. Gianluca Corbellini, CEO and Co-founder, Hive Power, Switzerland 7. Jitendra Nalwaya, Head - System Operation & Sustainability, BYPL 8. Anshumali Bhushan, CEO, Genesis

06 MARCH 2020: ISUW CONFERENCE DAY 3 - THEMATIC SESSIONS

06 MARCH 2020: ISUW CONFERENCE DAY 3 - THEMATIC SESSIONS	13:00 ~ 14:00	Networking Lunch – Regal (1st Floor)	
	14:30 ~ 16:30	<p>THEME-D: Advanced And Disruptive Technology Trends</p> <p>(iii) ARTIFICIAL INTELLIGENCE AND ROBOTICS</p> <p>Crystal Ball Room 1</p> <p>Chair: Amit Kumar Pandey, President, Hanson Robotics</p> <p>Moderator: Remy Garadue-Verdier, ENEDIS, France</p> <p>Speakers:</p> <ol style="list-style-type: none"> Sumit Gupta, Founder and CEO, Asset Plus Consulting Amitava Ghosh, VP Engineering, Bidgely Kishore Narang, Narnix Design Studio Ashutosh Natraj, Founder and CEO, Vidrona Ltd S Samanta, Head-IT, Tata Power – DDL Anshuman Sharma, Regional Product Specialist-Transformer Intelligence and Parts, ABB Power Grids in India Nikhil Kurele, Co-Founder& CEO, Nocca Robotics Sanand Sule, Co -Founder & CTO, Climate Connect Technologies 	<p>THEME-B: Towards A Carbon Neutral Transport Sector– (iv) BUSINESS MODELS FOR EV FLEETS and CHARGING STATIONS</p> <p>Crystal Ball Room 2</p> <p>Chair: Ravindra Singh Dhillon, Director (Projects), PFC</p> <p>Moderator:Rahul Tongia, Fellow, Brookings India & Founding Advisor, ISGF</p> <p>Speakers:</p> <ol style="list-style-type: none"> OP Agarwal,CEO, WRI– India N Mohan, DGM-Technical, EESL Abhijeet Sinha, National Director, EoDB CK Sreenath, DGM-Smart Grid & EV, BESCOM Pradeep Agarwal, DGM - Renewable & E-Mobility Initiatives, BRPL Kumud Wadhwa, Senior General Manager,NSGM Sandeep Bangia, Head - EV and Home Automation, Tata Power Company Ltd Indradip Mitra, Senior Energy Advisor, GIZ Nihar Raj, AVP – ABB Power Grids in India
	16:30 ~ 17.00	Tea/Coffee Break – Exhibition Pavilion	
	17:00 ~ 18:00	<p>VALEDICTORY SESSION</p> <p>Valedictory Address by Chief Guest: PR Kumar, CEO, BYPL</p> <ol style="list-style-type: none"> Distribution of Mementos to Partners and Exhibitors Lucky Draw for Visitors to the Exhibition Vote of Thanks and Announcement of ISUW 2021 <p>Crystal Ball Room 2</p>	
	19:30 Onwards	<p>ISGF INNOVATION AWARDS AND GALA DINNER</p> <p>Live Performances</p> <p>Crystal Ball Room 1 & 2</p>	

06 MARCH 2020: DAY 3 - PARALLEL SESSIONS	06 MARCH 2020 (FRIDAY): PARALLEL SESSIONS	
	Time	Session Details
	11:30 ~ 16:30	Smart Water Distribution – in collaboration with CBIP DETAILED AGENDA at APPENDIX - H Regency 1& 2
	11:00 ~ 16:30	Presentation of Selected Technical Papers (Top 25 Papers) DETAILED AGENDA at APPENDIX -I Regency 4
	11:30 ~ 16:30	Workshop on Optimizing Electricity Grids by District Energy System Integration – in collaboration with APUEA DETAILED AGENDA at APPENDIX - J Regency 5
	14:00 ~ 16:30	Roundtable on Interconnection of Regional Grids in Asia: SAARC Grid - GCC Grid - ASEAN Grid in collaboration with USAID India and SARI/EI DETAILED AGENDA at APPENDIX - K Chair: SK Rahate , Additional Secretary, MoP Regency 3

APPENDIX- A

6th US - INDIA SMART GRID WORKSHOP IN COLLABORATION WITH US DEPARTMENT OF COMMERCE AND USAID

Jointly Organized By



**Regency 1 & 2, The Lalit Hotel, New Delhi
04 MARCH 2020, 14:00 TO 17:00**

AGENDA	
14:00 ~ 14:15	INAUGURAL SESSION
	Welcome Address: ISGF Inaugural Address: Dinah McDougall, Commercial Officer, Embassy of USA in India
14:15 ~ 15:30	SESSION 1: ELECTRIC UTILITY OF THE FUTURE: IS THERE AN IDEAL UTILITY BUSINESS MODEL?
	<p>Background</p> <p>The electric utility industry is in the midst of a global transformation which includes a strong focus on deploying new technologies to increase system digitalization as well as adjust to the decentralization of the electricity assets. Distribution utilities are challenged to embrace new business models to respond to these system changes, while increasing system reliability, resiliency, and sustainability. The panel will discuss lessons learned in the United States and India on deployment and use of smart grid infrastructure, distributed energy resources (DERs) and software systems to respond to a shifting global landscape. Panellists will discuss business models, utility use-cases, and examine value of the new systems to the utility and customer. Panellists will provide their perspective on what is an ideal market structure to best position electric utilities to support the grid of the future.</p> <p>Moderator: Rahul Tongia, Fellow -Brookings India &Founding Advisor, ISGF</p> <p>Speakers:</p> <ol style="list-style-type: none"> Neil Chatterjee, Chairman, Federal Energy Regulatory Commission SS Chauhan, Chairperson, Delhi Electricity Regulatory Commission Sutirtha Bhattacharya, Chairperson, WBERC Larisa Dobriansky, Chief Business & Policy Innovation Officer for General Microgrids Inc. and former Deputy Assistant Secretary for National Energy Policy, U.S. Department of Energy IS Jha, Member, CERC Vishal Kapoor, Director, MoP G Raghuma Reddy, Chairman & Managing Director, Telangana State Southern Power Distribution Company Limited (TSSPDCL) Ganesh Srinivasan, CEO, Tata Power Delhi Distribution Limited Gaurav Bhatiani, Director - Energy, RTI International India Vish Ganti, Country Head, Autogrid

15:30 ~ 16:45	SESSION 2: TRANSITION TO ELECTRIC MOBILITY	
	<p>Background</p> <p>Government of India has launched an Electric Mobility Mission and a scheme called Faster Adoption and Manufacturing of Electric Vehicles (FAMwE). Under FAME-I scheme 11 cities were given grants in 2018 for 395 electric buses which are operating currently. Under FAME-II launched in 2019, grants were allotted for 5595 electric buses in 64 cities to be deployed in next 2-3 years. The present EV stock is primarily dominated by electric 3 Wheelers (E-Ricks) with lead-acid batteries while less than 10,000 electric cars are sold so far in the country. In the last 2 years, several new models of EVs have been introduced in India. Ten Indian States have issued state specific EV Policies and 14 States have introduced separate electricity tariff for charging of EVs. Under FAME-II there is a provision for grant for EV charging stations. Overall fast paced activities are undergoing in the E-Mobility domain in India. This panel will discuss about the policies and programs India is pursuing to leapfrog to E-Mobility and the challenges faced by utilities in creation of adequate EV charging stations to support the E-Mobility plans. In this panel, Indian Utilities and U.S. Companies will share their experiences and views in supporting electric vehicles.</p> <p>Moderator: G Ganesh Das, COO – Clean Energy International Incubation Centre and Head - Collaborations and Smart Grid Lab, Tata Power-DDL</p> <p>Speakers:</p> <ol style="list-style-type: none"> UN Behera, Chairperson, OERC Mukesh Khuller, Member, MERC Shantanu Basu, MD, WBSEDCL* Saurabh Kumar, Managing Director, EESL* Amal Sinha, CEO, BSES Rajdhani Power Limited Partha Dey, India Operations Leader, EOS Energy Storage* Sabyasachi Pattanaik, Director-Regulatory Affair & Market Development, Oracle Utilities Aravind Bharadwaj, CTO, Mahindra and Mahindra * 	
16:45 ~ 17:00	NETWORKING	
	<p>Session Coordinator: Balasubramanyam Karnam, ISGF</p>	<p>Contacts: bala.k@indiasmartgrid.org +91 81212 76498</p>

APPENDIX- B

3rd FRANCE – INDIA SMART GRID WORKSHOP IN COLLABORATION WITH THINK SMARTGRIDS, FRANCE

Jointly Organized By



Regency 4, The Lalit Hotel, New Delhi
04 MARCH 2020, 14:00 TO 17:00

AGENDA	
14:00 ~ 14:30	INAUGURATION OF FRENCH – INDIA SMART GRID WORKSHOP
	<p>Welcome Address:</p> <ol style="list-style-type: none"> 1. ISGF 2. Valerie-Anne Lencznar, Managing Director of Think Smartgrids, France <p>Special Addresses:</p> <ol style="list-style-type: none"> 1. AK Verma, Former Joint Secretary, Ministry of Power 2. Antoine Jourdain, Senior VP, COO and Head of International Affairs, Enedis <p>Inaugural Address: Daniel Maître, Head of the Regional Economic Department, South Asia, French Embassy, New Delhi</p>
14:30 ~ 15:45	SESSION 1
	<p>Chair: AK Verma, Former Joint Secretary, Ministry of Power</p> <p>Topic: Microgrids and Islanded Networks</p> <p>Presenters:</p> <ol style="list-style-type: none"> 1. Christophe Feuillard, EDF International Networks, Vice President for Asia 2. Stéphane Jamet, Head of Microgrids, ENEDIS, France 3. Sanjay Banga, President, Tata Power Company Ltd 4. Ashok Das, Founder and CEO, Sun Moksha <p>Topic: New Technologies for Distribution Utilities</p> <p>Presenters:</p> <ol style="list-style-type: none"> 1. Manish Kumar, Director Digital Sales, GE Power 2. Deepak Pandey, Operations Leader, GE Software Solutions - South Asia <p>Topic: Financing Smart Energy: Perspectives and New Trends in India</p> <p>Presenters:</p> <ol style="list-style-type: none"> 1. Philippe Serres, Regional Director South Asia, AFD 2. Kedar Sawant - Project Manager, Energy, Environment and Digital Transition, AFD
15:45 ~ 16:15	SESSION 2
	<p>Chair: Harinath Rao, CMD, APSPDCL, Andhra Pradesh</p> <p>Topic: Practical experience of implementing successful Smart Grid project relevant to the Indian Market</p> <p>Presenters:</p> <ol style="list-style-type: none"> 1. Paul Da Cruz, Global Head of Business Development - Energy and Utilities, ATOS 2. Muralidharan Ramachandran, Director, ATOS India <p>Topic: T&D Asset Performance Management Systems (APM)</p> <p>Presenters:</p> <ol style="list-style-type: none"> 1. Anil Kadam, Solution Architect, Schneider Electric India

16:15 ~ 16:50	SESSION 3: PANEL ON “THE CHALLENGES OF DATA FOR TOMORROW’S UTILITIES”	
	Moderators: 1. Anant Venkateswaran , ISGF 2. Aurélien Sostaponti , Head of Industries & Cleantech Department in India, Business France Panellist: 1. Anil Kadam , Solution Architect, Schneider Electric India 2. Paul Da Cruz , Atos 3. T Prabhakar Rao , Member, Tamil Nadu Electricity Regulatory Commission 4. Sandeep Kapoor , CTO, UHBVN and DHBVN 5. Sudhir Gupta , Chief Engineer, PDD, Jammu 6. Rakesh Pandey , AGM, NTPC 7. Madan Pal , Advisor (RE), NDMC 8. Shashank Andey , GM, Noida Power Company Ltd 9. KS Sisodiya , Chief Engineer (IT), Ajmer VVNL	
16:50 ~ 17:00	Closing Remarks and Next Steps	
	Dana Purcarescu , Deputy Chief of Mission, French Embassy	
	Session Coordinator: Bindeshwary Rai , ISGF	Contact: b.raï@indiasmartgrid.org +91 98683 35485

APPENDIX- C

ROUNDTABLE ON GLOBAL PERSPECTIVES ON ENERGY TRANSITION AND SMART GRIDS IN COLLABORATION WITH GLOBAL SMART GRID FEDERATION

Jointly Organized By



REGENCY 3, THE LALIT HOTEL, NEW DELHI
04 MARCH 2020, 14:00 TO 17:00

AGENDA

Background

Energy transition is a pathway towards transformation of global societies from fossil fuel-based system to zero-carbon by the middle of this century. Decarbonization of the energy sector requires top priorities as many other verticals such transportation, water production/treatment and HVAC are increasingly being electrified. This decarbonization of other verticals (electrification), puts a heavy burden on the energy sector to ensure overall success.

Theoretically, Renewable Energy (RE) and Energy Efficiency (EE) measures can potentially achieve 70-90% of the required carbon reductions, but a practical pathway needs to be developed for mass adoption. The architecture and flexibility of future energy systems (Smart grid) must intelligently integrate the actions of all stakeholders and users - generators, T&D, consumers and prosumers— in all their energy needs (electricity, heat, cool, transport, etc.) in order to efficiently deliver sustainable, economic and secure electricity supply.

Key Topics

1. Do you think Renewables (both T&D connected) is difficult to implement in your countries (lack of design, standards, and implementation)? How can it be helped?
2. What is the status of Smart Meter rollout in your countries (Electricity/Water/Gas)? Are you implementing TOU rates for all customers? What are the major impediments? What help is needed?
3. Do you think Energy Efficiency is difficult to implement in your countries (lack of design, standards, and implementation)? How can it be helped?
4. What steps are being taken to increase distributed energy resources and rooftop solar in LV levels, in your communities? What is the target penetration? What Grid Code changes have been made to facilitate this?
5. Is Local Integrated Resource Planning (LIRP) being initiated to address last mile needs (generation, heat, cool, load management)? IF not, what are your efforts in this area?

Chair: Eddie Widiono, Chairman, Indonesia Smart Grid Initiative (PJCI) and former President, PT.PLN, Indonesia

Moderator: Ravi Seethapathy, Ambassador Americas
Global Smart Grid Federation, Chairman and Biosirus Inc., Canada

14:00 ~ 14:15 | Opening Remarks by Chair and Moderator

14:15 ~ 15:15	Panel-1	
	Panellists: <ol style="list-style-type: none"> Arvind Jadhav, Former Chief Secretary, Karnataka RN Sen, Former Chairman, WBERC Rohan Seneviratne, Deputy General Manager, CEB, Sri Lanka Patrick Clerens, Secretary General, EASE* Gopal Saxena, Former CEO, BRPL and BYPL Raymond Kaiser, Director of Energy Management Systems, Amzur, USA 	
15:15 ~ 15:30	NETWORKING TEA BREAK	
15:30 ~ 16:30	Panel- 2	
	Panellists: <ol style="list-style-type: none"> Pankaj Batra, Former Chairman, CEA BP Singh, Former Member, DERC Ujjwal Deep Dahal, Director, Druk Holdings & Investment RR Mehta, Former CEO, Reliance Energy Martin Hauske, Asia Pacific Energy Segment Sales Leader, Nokia Gianluca Corbellini, CEO and Co-Founder, Hive Power IA Khan, Former Chairman, Telangana ERC Rahul Tongia, Fellow, Brookings India & Founding Advisor, ISGF Hitendra Dev Shakya, Managing Director, NEA Engineering Company Mohammad Hossain, Director General, Bangladesh Power Development Board Michael Williamson, Section Chief- Energy Division, UN ESCAP <i>(On Video)</i> Mohammad Abdullah Al-Drazi, Protocol Officer, GCCIA* RK Chauhan, Director – Projects, Power Grid Corporation of India* Rajesh K Mediratta, Director (Business Development), IEX Rajiv Mishra, Director, PTC India Harry Dhaul, DG, IPPAI Sunil Wadhwa, Advisor, IPPAI Ghanshyam Prasad, Chief Engineer, MoP SR Narasimhan, Director – System Operation, POSOCO 	
16:30-16:55	Open House	
16:55-17:00	Closing Remarks by Chair and Moderator	
	Session Coordinators: Aashima Chaney , ISGF Parul , ISGF	Contact: aashima@indiasmartgrid.org parul@indiasmartgrid.org

APPENDIX- D

9th EU - INDIA SMART GRID WORKSHOP IN COLLABORATION WITH DELEGATION OF THE EUROPEAN UNION TO INDIA AND THE DIRECTORATE GENERAL ENERGY, EUROPEAN COMMISSION

Jointly Organized By



Regency 1 & 2, The Lalit Hotel, New Delhi
05 MARCH 2020, 11:30 TO 16:30

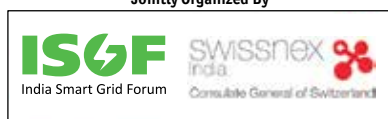
AGENDA	
11:30~11:45	INAUGURAL SESSION
	1. Welcome Address: ISGF 2. Opening Remarks: Matthieu CRAYE - Office of DG Energy, European Commission
	<p>Background</p> <p>Given the need for India and Europe to integrate more Renewable Energy Sources (RES) and therefore the need to provide more flexibility to the power system, it is important to develop, demonstrate and deploy Energy Storage Systems (ESS) for flexibility at grid scale.</p> <p>ESS at grid level could offer balancing services (FCR, FRR) and contributes to power quality (e.g. voltage control and angular stability).</p> <p>This workshop will start by setting the scene from a TSO perspective and the challenges the TSOs face with increasing share of RES in the energy system, from the European as well as from the Indian perspectives. Then Market Design will be addressed by on the one hand showing the state of thinking of the Indian Regulator to be followed by sharing regulatory experiences from Europe (existing regulatory framework and possibilities to evolve for a better ESS uptake). Finally, project developers as well as equipment suppliers will share examples of successful grid scale energy storage projects.</p> <p>Key Topics</p> <ol style="list-style-type: none"> 1. Ongoing EU-INDIA Cooperation in Smart Grid Projects 2. Energy Storage System Technologies and Choices 3. ESS Pilot Projects in Europe and India 4. Innovation and Business Model Trends in Grid-scale energy Storage 5. Regulatory Challenges for Integrating Storage
11:45~13:30	SESSION 1: GRID SCALE ENERGY STORAGE: SYSTEM NEEDS, MARKET DESIGN AND REGULATORY ISSUES
	<p>Moderator: Christophe Arnoult, Smart Grid Expert, European Commission</p> <p>Speakers:</p> <ol style="list-style-type: none"> 1. Praveer Sinha, CEO & MD, Tata Power Company Ltd 2. Subir Sen, Executive Director, POWERGRID 3. Patrick Clerens, Secretary General Energy Technologies Europe, European Association for the Storage of Energy (EASE) 4. Pradyumna Bhagwat, Research Head, Florence School of Regulations 5. Amit Kumar, Partner (Clean Energy), PwC India 6. Luis Miguel Costa, Head of Digital Solutions, L&T 7. BB Mehta, Chief Engineer, Gujarat SLDC 8. Naveen Nagpal, General Manager (Renewables, BESS & E-mobility), BSES Rajdhani Power Ltd. <p>Followed by Panel Discussion</p>

13:30~14:30	NETWORKING LUNCH	
14:30~16:00	SESSION 2: GRID SCALE ENERGY STORAGE SYSTEM PROJECTS IN EUROPEAN UNION AND INDIA	
	<p>Moderator: Christophe Arnoult, Smart Grid Expert, European Commission</p> <p>Speakers:</p> <ol style="list-style-type: none"> 1. Sumant Sinha, Chairman, ReNew Power* 2. Rémy Garaude-Verdier, Energy Storage in the Interflex Project, ENEDIS, France 3. Jatindra Nath Swain, Chairman & Managing Director, SECI* 4. Álvaro Nofuentes Prieto, Energy Storage in the Crossbow Project, ETRA 5. Jitendra Nalwaya, Head - System Operation & Sustainability, BYPL 6. Sebastian Marx, Director Public Affairs, Texel Energy Storage 7. Rupam Raja, Director, Fluence, India 	
16:00~16:15	PANEL DISCUSSION	
16:15~16:30	SESSION 3: CLOSING REMARKS	
	<ol style="list-style-type: none"> 1. ISGF 2. Edwin Koekkoek, Energy and Climate Counsellor, EU Delegation to India 	
16:30~17:00	TOUR OF EU PAVILION	
	<p>Session Coordinator:</p> <p>Balasubramanyam Karnam, ISGF</p>	<p>Contacts:</p> <p>bala.k@indiasmartgrid.org +91 81212 76498</p>

APPENDIX- E

INDO - SWISS SMART GRID ROUNDTABLE IN COLLABORATION WITH SWISSNEX

Jointly Organized By



**Regency 4, The Lalit Hotel, New Delhi
05 MARCH 2020, 11:30 TO 13:00**

AGENDA

11:30~12:00	INAUGURATION OF INDO - SWISS SMART GRID ROUNDTABLE
	<p>Welcome Address: ISGF</p> <p>Keynote Address:</p> <ol style="list-style-type: none"> AK Mishra, Director, NSGM and Vice-Chair, ISGAN Palka Sahni, Executive Director, IPDS, PFC Limited <p>Inaugural Address:</p> <p>Christian Schaffner, Executive Director, Energy Science Center (ESC), ETH Zurich</p>
12:00~12:45	PANEL 1: DIGITALIZATION OF GRID
	<p>Key Topics</p> <ol style="list-style-type: none"> Swiss Technologies Indian Case Studies Research and Innovations in the Domain Partnerships and Technology Transfer <p>Chair: AK Mishra, Director, NSGM and Vice-Chair, ISGAN</p> <p>Speakers:</p> <p>Swiss Side</p> <ol style="list-style-type: none"> Christian Schaffner, Executive Director of the Energy Science Center (ESC), ETH Zurich Patrick Favre-Perrod, Professor, Electrical Power Systems, HES-SO University of Applied Sciences Western Switzerland Philippe Bieri, COO, Gilytics René Schumann, Professor, HES-SO Valais-Wallis <p>Indian Side</p> <ol style="list-style-type: none"> Gaurav A Sharma, AVP, BSES Yamuna Power Limited Nishant Arya, ED, JBM Vijayan SR, Hub Digitalization Lead - Grid Automation, ABB Power Grids in India Faruk Kazi, Professor, VJTI, Mumbai, and Chair of ISGF Working Group Girish Ghatikar, Sr. Program Manager, Electric Power Research Institute, and Chair of ISGF Working Group Pankaj Batra, Project Director, SARI/EI/IRADE & Ex-Chairperson, Central Electricity Authority Rishi Goyal, GM-Meter Management, BRPL

12:45 ~ 13:20	PANEL 2: DISRUPTIVE TECHNOLOGIES – AI, ML, BLOCKCHAIN AND ROBOTICS	
	<p>Key Topics</p> <ol style="list-style-type: none"> 1. Swiss Technologies 2. Indian Case Studies 3. Research and Innovations in the domain 4. Partnerships and Technology Transfer <p>Chair: G Ganesh Das, COO – Clean Energy International Incubation Centre and Head - Collaborations and Smart Grid Lab, Tata Power-DDL</p> <p>Speakers:</p> <p>Swiss Side</p> <ol style="list-style-type: none"> 1. Veronica Garcia, CEO & Founder, Bitlumen 2. Jagdish Acharya, CEO, GridSteer 3. Gianluca Corbellini, CEO and Co-founder, Hive Power 4. Daniel Rüffer, Business Development Manager, Sensirion AG <p>Indian Side</p> <ol style="list-style-type: none"> 1. JBV Reddy, Scientist - E, Department of Science and Technology 2. PK Agarwal, Director, Market Operations and CISO, POSOCO 3. OD Naidu, Principal Scientist, Corporate Research Center, ABB 4. Faruk Kazi, Professor, VJTI, Mumbai, and Chair of ISGF Working Group 5. Sumit Gupta, Founder and CEO, Atpug Plus Consulting 	
13:20 ~ 13:30	CLOSING REMARKS AND NEXT STEPS	
	Sebastien Hug , Consul General and CEO, Swissnex India	
	<p>Session Coordinator: Bindeshwary Rai, ISGF</p>	<p>Contacts: b.rai@indiassmartgrid.org +91 98683 35485</p>

APPENDIX- F

4th SWEDEN - INDIA SMART GRID WORKSHOP IN COLLABORATION WITH BUSINESS SWEDEN AND SWEDISH ENERGY AGENCY

Jointly Organized By



Regency 4, The Lalit Hotel, New Delhi
05 MARCH 2020, 11:30 TO 13:30

AGENDA	
11:30~12:00	INAUGURAL SESSION
	<p>Welcome Address: ISGF</p> <p>Opening Remarks:</p> <ol style="list-style-type: none"> Sanjay Bajpai, Head of Technology Missions Division (Energy, Water & all Other), Department of Science & Technology Ludvig Lindstrom, Country Manager India, Swedish Energy Agency <p>Theme Address: Smart Grid and E-mobility – Engagement Observations and Strategy by: Anant Venkateswaran, ISGF</p> <p>Special Address: Innovation and Collaboration between Sweden and Indian by: Anders Tofte, APAC Business Development Director and Deputy Trade Commissioner, Business Sweden</p>
12:00~12:30	SESSION 1: INTRODUCTION OF PARTICIPANTS – SWEDISH AND INDIAN COMPANIES
12:30~13:20	SESSION 2: ROUNDTABLE DISCUSSION – MAIN THEMES
	<p>Promoting Renewable Energy Integration and Managing Variability through Advanced Smart Grid Technologies</p> <ol style="list-style-type: none"> Sandip Sinha, Vice President Microgrid and Head Renewables, ABB Abhishek Ranjan, AVP – Renewables & DSM, Power Planning & Scheduling, BRPL Atul Bali, Sr Manager, NPMU, NSGM <p>Enhancing Grid Security and Reliability through Effective Monitoring and Power Quality Management</p> <ol style="list-style-type: none"> Prabhjot Kaur, Centre for Battery Engineering and Electric Vehicles (C-BEEV), IIT-Madras Ashok Das, Founder and CEO, Sun Moksha Andreas Winter, Co-CEO, Swedish Neutral Amrish Kubavat, Business Development Manager, Metrum <p>Developing localized Smart Grid Solutions from End User Perspective through Joint Indo-Swedish Approach</p> <ol style="list-style-type: none"> Awadhesh Jha, Vice President – Charge & Drive and Sustainability, Fortum Charge & Drive India Pvt. Ltd. CK Sreenath, Deputy General Manager – Smart Grid & Electric Vehicle, BESCOM Anil Arora, Country Head, Cleanmotion
13:20~13:30	CONCLUSION AND CLOSING REMARKS
	<p>Session Coordinator: Shuvam Sarkar Roy, ISGF</p> <p>Contacts: shuvam@indiasmartgrid.org +91 98749 69066</p>

APPENDIX- G

SMART CITY GAS DISTRIBUTION

 India Smart Grid Forum Organizer	 Supporting Organization	 Member	 INDRAPRASTHA GAS LIMITED Host
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Regency 3, The Lalit Hotel, New Delhi
05 MARCH 2020, 12:00 TO 17:30

AGENDA	
12:00 ~ 12:30	INAUGURAL SESSION
	<p>Welcome Address by Reji Kumar Pillai, President, ISGF</p> <p>Keynote Address by Ashutosh Karnatak, Director Projects, GAIL</p> <p>Gas Business Policies Perspective by Ravi Agarwal, Executive Director, (Marketing-JV), GAIL</p> <p>Industrial Perspective by Manjeet Singh, Senior Vice- President, IGL</p> <p>Vote of Thanks: ISGF</p>
12:30 ~ 13:30	SESSION 1: NEW TECHNOLOGIES, INNOVATIONS AND TRENDS IN CITY GAS DISTRIBUTION
	<p>Background</p> <p>The 100 smart cities program in India has brought focus on upgrading the water infrastructure and city gas distribution along with efforts for making the grid smarter besides several other infrastructure upgrades to smarter systems and e-governance. However, lack of effective policy and regulations both at the central and state level along with inadequate safety guidelines, standards, business models act as barriers for its growth. 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 and gas utilities to the smart grid forum and explore the collaborative business. There are many common issues that all water gas and electrical 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.</p> <p>Key Topics</p> <ol style="list-style-type: none"> 1. SCADA and GIS 2. Digitalization: Smart Metering, Meter Data Management, Analytics and Dash Boards, IT and OT Convergence 3. Cyber Security 4. Fast Filling Dispensers, Modular and Mobile CNG Stations <p>Chair: Raman Srivastava, Chief General Manager, IGL</p>

	Speakers: <ol style="list-style-type: none"> 1. Sushil Kumar, Deputy General Manager, GAIL 2. Vinay Dixit, National Manager, Itron 3. Dharmendra Tomar, Dy. General Manager, Tata Communications 4. Balu Ramaswamy, Director, Oracle Utilities 5. Nikhil Chaturvedi, Vice-President, Industrial Engineering, SAP, Tokyo
13:30~14:30	NETWORKING LUNCH
14:30~15:30	SESSION 2: CUSTOMER PERSPECTIVES: CURRENT REQUIREMENTS AND KEY ISSUES
	Key Topics <ol style="list-style-type: none"> 1. What are the current requirements of the key consuming segments? 2. How are the requirements being met? What are the gas sourcing strategies? 3. What are the key issues and challenges? 4. New initiatives for customer delight Chair: Rajiv Sikka , CEO, Indian Oil Adani* Speakers: <ol style="list-style-type: none"> 1. Jiledar, Consultant, PNGRB and former Managing Director, Green Gas Limited 2. PK Pandey, Vice President, IGL 3. Sandep Trehan, Founder and President, Think Gas 4. Anshumali Bhushan, Co-Founder & Director, Genesis 5. Tarun Katiyar, General Manager, TPDDL
15:30~16:00	TEA/COFFEE BREAK
15:30~17:00	SESSION 3: REGULATORY PERSPECTIVES AND EMERGING TRENDS AND NEW OPPORTUNITIES IN NATURAL GAS VEHICLES
	Chair: Vipin Chittoda , Convener, Natural Gas Society Part 1: REGULATORY PERSPECTIVES Key Topics <ol style="list-style-type: none"> 1. What are the recent regulatory developments? 2. What will be the impact of these developments on the gas industry? 3. What are the key unaddressed regulatory issues and concerns? Speakers: <ol style="list-style-type: none"> 1. SK Pathak, Managing Director, Rajasthan State Gas Ltd 2. SC Sharma, Former Advisor Energy, NITI Aayog 3. Amit Mathur, Additional General Manager, IGL Part 2: EMERGING TRENDS AND NEW OPPORTUNITIES IN NATURAL GAS VEHICLES Key Topics <ol style="list-style-type: none"> 1. What are the emerging trends and developments in the natural Gas Vehicle Market? 2. What are the technologies/ Equipment options being deployed? What has been the experience so far? 3. What are the key challenges and issues? Speakers: <ol style="list-style-type: none"> 1. Ranjan Dwivedi, Managing Director, Central UP Gas Ltd. 2. Piyush Tripathi, Senior Vice President, Adani Gas 3. Ashish Chutani, Dept Head- Government and Policy Affairs, Maruti Suzuki India Ltd* 4. Amitabh Ranjan, DGM, GAIL* 5. KK Gandhi, Advisor, TVS* 6. PK Banerjee, ED, SIAM* 7. Raghav Mathur, Lead Energy Specialist, ICF
	Session Coordinator: Aashima Chaney, ISGF Contacts: aashima@indiasmartgrid.org +91 98717 52530

APPENDIX- H

SMART WATER DISTRIBUTION IN COLLABORATION WITH CBIP



Regency 1, The Lalit Hotel, New Delhi
06 MARCH 2020, 11:30 TO 16:30

AGENDA	
11:30 ~ 12:15	INAUGURAL SESSION Welcome Address: ISGF Special Address: R K Jain , Chairman, Central Water Commission* Subodh Yadav , Joint Secretary, Ministry of Jal Shakti Inaugural Address: Raghav Chadha , Vice Chairman, Delhi Jal Board* Vote of Thanks: V K Kanjlia , Secretary, CBIP, and Treasurer, ISGF
12:15 ~ 13:30	SESSION 1: WATER DISTRIBUTION SYSTEM IN THE DIGITAL ERA: CHALLENGES, OPPORTUNITIES AND SOLUTIONS Background <p>Water is a critical resource that lies at the heart of social and economic growth. Water is essential for survival, and its absence can impact the health, food security, and livelihoods of families across the world. India's water resources are under immense pressure due to declining per capita water availability, lack of storage capacity, and spatial and temporal variation. The pressure stated above is due to a plethora of reasons ranging from anthropocentric to climate-induced reasons. In recent years, decreasing per capita average annual water availability in the country has become a cause for concern, especially since India has already been categorized as a 'water-stressed', as per the United Nations classification. Also, the issue of water contamination is also rapidly increasing due to large-scale, unplanned urbanization and untreated effluents emitted by industries.</p> Key Topics <ol style="list-style-type: none"> 1. Non-Revenue Water (NRW) Management 2. Water Governance, Corporate Approach and Private Sector Participation 3. Policy Maker's perspective Chair: DP Mathuria , ED, NMCG Moderator: Ajay Pradhan , President and CEO, C2S2 Speakers: <ol style="list-style-type: none"> 1. Bharat Lal, Additional Secretary, (Water) Department of Drinking Water and Sanitation Ministry of Jal Shakti 2. Ajay Shankar, Distinguished Fellow, TERI 3. S Bharghava, Former Member, DJB* 4. Arun Lakhani, Chairman & Managing Director, Vishvaraj Infrastructure, Mumbai
13:30 ~ 14:30	NETWORKING LUNCH
14:30 ~ 16:00	SESSION 2: WATER RESOURCE UTILIZATION: FUTURE STRATEGY, INNOVATIONS & NEW

APPROACH FOR EMERGING TECHNOLOGIES		
	Key Topics <ol style="list-style-type: none"> 1. Quality Monitoring from Origin to Consumption 2. Data from IoT Devices for Monitoring and Controlling 3. Smart City Data Management- use cases on Machine Learning and Advanced Analytics 4. Innovations in Water Technology <p>Chair: G Asok Kumar, Mission Director, National Water Mission</p> <p>Moderator: Neville Bhasin, Business Developer, Forbes Marshall</p> <p>Speakers:</p> <ol style="list-style-type: none"> 1. Sanjoy Roy, CEO, Orange City Water Pvt Ltd 2. Abbha Sargaonkar, Sr Principal Scientist, NEERI 3. Sourav Daspatnaik, Managing Director, Swach Environment Pvt Ltd., Director, PPP projects including Delhi Jal Board and Haldia Development Authority 4. Jagdish Kr. Arora, Chief Engineer (WW) Delhi Jal Board, Delhi Govt 5. R.P Singh, VP, Strategic Partnership, Smart Energy Water 6. Ali Hosseini, CEO, SenRa 	
16:00~16:30	SESSION 3: CLOSING REMARKS	
	Session Coordinator: Aashima Chaney, ISGF	Contacts: aashima@indiasmartgrid.org +91 98717 52530

APPENDIX- I
PRESENTATION OF SELECTED TECHNICAL PAPERS

Regency 4, The Lalit Hotel, New Delhi
06 MARCH 2020, 11:00 TO 16:30

AGENDA		
10:50 ~ 11:00	INAUGURAL SESSION	
	Welcome Address: ISGF	
11:00 ~ 12:40	THEME 1: FOUNDATION BLOCKS FOR SMART GRIDS	
	Chair: G Ganesh Das , COO – Clean Energy International Incubation Centre and Head - Collaborations and Smart Grid Lab, Tata Power-DDL	
Time	Technical Paper	Author
11:00 ~ 11:10	ENEDIS, France IoT Smart Grid Solutions for more Efficiency	Laurent Karsenti , ENEDIS, France
11:10 ~ 11:20	IElectrix H2020 Project – SHAKTI Demonstration	Pierre-Jacques LE QUELLEC , ENEDIS, France
11:20 ~ 11:30	Smart Grid and Utility Challenges	PT Seenath Beevi , Kerala SEB
11:30 ~ 11:40	India Moving Towards Solar Energy	Purnima M. Gupta , former Chief Economic Advisor
11:40 ~ 11:50	Hybrid Microgrid Set up in Laboratory for Practical Alimentation of Electrical Engineering Students	Rahul Singh , Aligarh Muslim University
11:50 ~ 12:00	Communications Solutions for Smart Grids and Smart Meters	Sanjeev Rana , Tata Power Delhi Distribution Limited
12:00 ~ 12:10	A Framework for Microgrid Power Management in Developing Communities	Ashok K Das , SunMoksha Power Pvt. Ltd.
12:10 ~ 12:20	Indian Power Sector: Current Stance on Topmost Disruptive Trends in Smart Grid Industry and Roadmap for Sustaining Growth Amidst Them	Shweta Agarwal , Landis+Gyr
12:20 ~ 12:30	Exploring Alternative Energy Sources to Supplement and Cover the Downtime of Wind and Solar to Improve the Resilience of Smart Grids	Srinivasa Murthy Lolla , Bio Electrical & Energy Systems
12:30 ~ 12:40	Smart Meter Data Enabled Transition to Energy Efficient Cooling (Video Presentation)	Shalu Agrawal , Council on Energy, Environment and Water
12:40 ~ 13:40	NETWORKING LUNCH – REGAL (1ST FLOOR)	
13:40 ~ 14:30	THEME 2: E-MOBILITY AND ENERGY STORAGE	
	Chair: Girish Ghatikar , ISGF and EPRI	
13:40 ~ 13:50	Minimized Operational Cost and Enhanced Battery Life in Solar, Battery and Building Integrated EV Charging Station	Bharat Gupta , Vision Mechatronics
13:50 ~ 14:00	Pooling Electric Vehicles and Residential Systems for Ancillary Services – Concept and Demonstration	Fabian Niedermeyer , Fraunhofer IEE
14:00 ~ 14:10	AGC in a Deregulated Interconnected Power System with STATCOM and Battery Energy Storage	Rajesh Joseph Abraham , Indian Institute of Space Science and Technology
14:10 ~ 14:20	Revenue Modelling of the Electric Vehicle Charging Infrastructure in India – A case study of Delhi NCR	Shinjini Singh , Tata Power Company Limited

14:20 ~ 14:30	Electric Vehicle Infrastructure Planning for Indian Distribution Sector	Tripta Thakur , Maulana Azad National Institute of Technology, Bhopal
14:30 ~ 16:20	THEME 3: EMERGING TRENDS AND DISRUPTIVE INNOVATIONS	
	Chair: N Murugesan , Former DG, CPRI	
14:30 ~ 14:40	Standards and Interoperability of Equipment and Systems	Amit Jindal , PwC
14:40 ~ 14:50	Cyber Physical Security of Critical Infrastructure	Aamir Hussain Khan , TPDDL
14:50 ~ 15:00	Rise of Algorithmic Trading in Today's Changing Electricity Market	Anindya Pradhan , Tata Consultancy Services
15:00 ~ 15:10	Explainable Artificial Intelligence (XAI): Towards Malicious SCADA Communications	Harditya Sarvaiya , VJTI
15:10 ~ 15:20	Grid Security	Kshama Joshi , Accenture Technology Center India
15:20 ~ 15:30	Tariffs - A Tool to Create Flexibility?	Magnus Linden , SWECO
15:30 ~ 15:40	Blockchain Technology Application to DER Implementation Strategy for India	ML Sachdeva , NS Sodha
15:40 ~ 15:50	Transforming Campuses into Grid Interactive Buildings Using PEER Strategies	Sanjay Kumar , Green Business Certification Inc.
15:50 ~ 16:00	Power Quality Improvement & Performance Enhancement of Permanent Magnet Brush-less DC Motor	Saurabh Manglik , Jacobs Engineering
16:00 ~ 16:10	Improving Revenue Assurance Theft Detection to a New Technology Landmark	Rui Mano , Choice Technologies
16:10 ~ 16:20	Empowering Energy Efficiency Deployments with Blockchain	Christopher Peoples , Energy Blockchain Consortium
	Session Coordinator: Balasubramanyam Karnam , ISGF	Contacts: bala.k@indiasmartgrid.org +91 81212 76498

APPENDIX- J

WORKSHOP ON OPTIMIZING ELECTRICITY GRIDS BY DISTRICT ENERGY SYSTEM INTEGRATION IN COLLABORATION WITH APUEA

Regency 5, The Lalit Hotel, New Delhi
06 MARCH 2020, 11:30 TO 16.30



AGENDA

Background

56 percent of the world's population lives in urban areas by 2020 and 80 percent of the world's energy is consumed here. The urban population in Asia-Pacific will grow by 16 percent between 2020- 2030, and by 2050 more than half of the world's urban population will be in the Asia- Pacific region. Cities in emerging economies, where 95 percent of population growth to 2030 and beyond will occur, will account for the majority (70 percent) of global growth in energy use through 2030. For instance, according to 2018 Global Status Report, the energy needed for cooling buildings will triple by 2050 – a growth equivalent to the current electricity demand in the USA and Germany combined. Governments throughout the region struggle to keep pace with the growing demand for energy infrastructure while striving to meet the requirements for livable and environmentally sustainable cities. It is safe to say that the development of sustainable urban energy, complemented by other enabling systems of provision is crucial to combat climate change. Cities can be climate-solvers and can help countries in Asia-Pacific to achieve their international climate commitments.

Key Topics

1. District Energy Developments Global and Indian Scenario
2. Integrated Energy Applications: Smart Grids – Peak Load Shaving – Energy Storage – Demand Side Response (DSR)
3. Developing, Financing and Managing Energy Utilities

11:50 ~ 12:40 PART 1: DISTRICT ENERGY DEVELOPMENTS-Global and Indian Scenario

Chair: RR Mehta, Former CEO, Reliance Energy

Moderator: Sanjay Dube, IIEC

Speakers:

1. Mikael Jakobsson, Asia Pacific Urban Energy Association (APUEA)
2. SP Garnaik, EESL, TBC
3. Benjamin Hickman, UN District Energy in Cities Initiative (UN DES), Video
4. Disha Sharma, International Energy Agency (IEA)
5. Sudheer Peerla, Tabreed

13:20 ~ 14:10 PART 2: INTEGRATED ENERGY APPLICATIONS: SMART GRIDS – PEAK LOAD SHAVING – ENERGY STORAGE – DEMAND SIDE RESPONSE (DSR)

Chair: Arbind Prasad, Chairman, Jharkhand ERC

Moderator: Peter Lundberg, APUEA

Speakers:

1. Akshay Mangal, Broad
2. Santhosh Muzumbar, Johnson Controls
3. Rahul Tongia, Brookling Institution & India Smart Grid Forum
4. Nitesh Mishra, ABB*
5. Jignesh Rawat, Danfoss*

14:10 ~ 14:40	NETWORKING LUNCH	
14:50 ~ 15:40	PART 3: DEVELOPING, FINANCING AND MANAGE ENERGY UTILITIES	
	<p>Moderator: Mikael Jakobsson, APUEA</p> <p>Contact:</p> <p>Speakers:</p> <ol style="list-style-type: none"> 1. Teruhisa OI, Asian Development Bank 2. Sanjay Dube, International Institute for Energy Conservation 3. Markus Wypier, GIZ 4. Rajeev Sharma, VP Engineering and Construction, GIFT City, Gujarat 	
	<p>Session Coordinator: Anand Singh, ISGF</p>	<p>Contacts: anand@indiasmartgrid.org +91 9925218036</p>

APPENDIX- K

ROUNDTABLE ON INTERCONNECTION OF REGIONAL GRIDS IN ASIA: SAARC GRID –GCC GRID - ASEAN GRID IN COLLABORATION WITH USAID AND SARI/IE



Regency 3, The Lalit Hotel, New Delhi
06 MARCH 2020, 14:00 to 16:30 PM

AGENDA

Background

A roundtable session was conducted on the topic “Interconnection of Regional Grids in Asia: ASEAN SAARC/BIMSTEC-GCC Grids” on 15th March 2019 in New Delhi as part of ISUW 2019. The roundtable was attended by key stakeholders from GCC, SAARC/BIMSTEC and ASEAN regions. The participants expressed interest on the concept and discussed various aspects of the Pan Asian Grid Interconnectivity. The technological, economic, environmental and social benefits were discussed in detail. The feasibility of various options and points of interconnections were looked into. Two potential interconnections were identified: (i) Oman-Gujarat undersea HVDC cable link and; (ii) Manipur-Myanmar-Thailand overhead line. A regional power market can only be functional in an interconnected regime. There is a regional power exchange already operational in the GCC region. There are domestic power exchanges operational in India. Efforts are on to initiate exchange based regional trade in the SAARC and ASEAN regions. Establishment of a South Asian Regional Power Exchange (SARPEX) has been recommended. The establishment of a regional power exchange in the very near future in the ASEAN region is also likely. The power market/exchange can start as a split market with the trades between various interconnected countries and regions conducted separately. As more and more interconnectors are built, these split markets can be coupled in steps. Physical infrastructure and the power market operating on the physical infrastructure needs to be coordinated to build and utilize the same in an optimal manner. All the power trades to be executed on sound commercial basis. This roundtable will discuss the following key topics:

1. Review of Status of Interconnection of grids in ASEAN, SAARC/BIMSTEC and GCC regions
2. Identified Interconnections
3. Feasibility Study for the Identified Interconnections
4. Next Steps

Chair: SK Rahate, Additional Secretary, Ministry of Power

Speakers:

1. **Mohammad Hossain**, DG, BPDB, Bangladesh
2. **Ghanshyam Prasad**, Chief Engineer, Ministry of Power
3. **Ujjwal Deep Dahal**, Director, Druk Holding & Investments (DHI), Bhutan
4. **SR Narasimhan**, Director – System Operation, POSOCO
5. **Hitendra Dev Shakya**, Managing Director, NEA Engineering Company, Nepal

6. **Rohan Seneviratne**, Deputy General Manager, Ceylon Electricity Board, Sri Lanka
7. **Pankaj Batra**, Project Director, IRADe
8. **Eddie Widiono**, Chairman, PJCI, Indonesia
9. **Michael Williamson**, Section Chief- Energy Division, UN ESCAP *(On Video)*
10. **Mohammad Abdullah Al-Drazi**, GCCIA, Saudi Arabia*
11. **Sunil Wadhwa**, Advisor, IPPAI
12. **Harry Dhau**, DG, IPPAI*
13. **RK Chauhan**, Director – Projects, Power Grid Corporation of India*
14. **Rajesh K Mediratta**, Director (Business Development) at IEX
15. **Rajiv Mishra**, Director, PTC India*
16. **BB Mehta**, Chief Engineer (SLDC), GETCO
17. **Ravi Arora**, Head- HVDC Projects India and South East Asia, ABB

Session Coordinator:

Shuvam Sarkar Roy, ISGF

Contacts:

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APPENDIX- L/ Track-1
MASTER CLASSES
TRACK-1: TECHNOLOGIES ENABLING ENERGY TRANSITION: DIGITALIZATION

**Regency 1&2, The Lalit Hotel, New Delhi
03 MARCH 2020, 09:30 TO 17:30**

AGENDA	
Background <p>Energy transition is a pathway towards transformation of the global energy sector from fossil-based to zero-carbon and digitalization is facilitating this transformation story through the use of information and communication technology. This transition also paves the way for more consumer participation as well as optimum usage of decentralized resources because of which more human machine collaboration at user end is coming into play and energy efficiency and conservation becoming a priority. For example, Smart meters are capable of two-way communication between power producers and consumers, and are the basis for “smart grids,” which can detect and instantly react to local changes in generation and demand, increasing efficiency and flexibility. Similarly, artificial intelligence (AI) might also prove crucial as energy “prosumers” will connect their distributed resources to the grid, downloading and uploading energy according to need, with potential payment for their surplus supply. More extensive technology take-up will mean even greater data generation. AI will sweep through this data at a rapid rate, pinpointing patterns of behavior and making accurate predictions on energy demand and much more. This provides an uninterrupted supply of energy solutions, all of which work together to enable the transition to net zero emissions in India.</p>	
09:30 ~ 13:00	SESSION 1
	<ol style="list-style-type: none"> 1. Digital Consumers 2. AMI and Utility Transformation – Different Use Cases 3. Asset Management through Advance Analytics <p>Tutors:</p> <ol style="list-style-type: none"> 1. Anant Venkateswaran, ISGF 2. Ajoy Rajani, ISGF
13:00 ~ 14:00	NETWORKING LUNCH - PRE-FUNCTION AREA OF REGENCY
14:00 ~ 17:30	SESSION 2
	<ol style="list-style-type: none"> 1. Cybersecurity in the Digital Age 2. Cloud – The Enabler for Digitalization 3. An Introduction to AI, Machine Learning, and Big Data and their Impacts on the utility 4. Unlocking the “Fifth Fuel” - Increased Energy Efficiency with Machine Learning and Big Data <p>Tutors:</p> <ol style="list-style-type: none"> 1. Andrew Ginter, VP, Industrial Security at Waterfall Security Solutions, Canada 2. Anant Venkateswaran, ISGF
	<p>Session Coordinator: Suddhasatta Kundu, ISGF</p> <p>Contacts: s.kundu@indiasmartgrid.org +91 96744 46886</p>

APPENDIX- L/ Track-2

MASTER CLASSES

TRACK-2: TECHNOLOGIES ENABLING ENERGY TRANSITION: E-MOBILITY

Regency 3, The Lalit Hotel, New Delhi

03 MARCH 2020, 14:00 TO 17:30

AGENDA

Background

India has launched a number of schemes and initiatives to stimulate and expedite the adoption of Electric Vehicles (EVs) in the country such as the 'National Electric Mobility Mission Plan (NEMMP) 2020', followed by the introduction of the scheme named 'Faster Adoption and Manufacturing of (Hybrid and) Electric Vehicles (FAME India)'. The FAME-II, an extension of the FAME scheme, was launched in 2019.

Eighteen state governments have released final (or draft) versions of electric vehicle policies for their respective states. Twelve states and one union territory have also introduced separate EV tariff. Bureau of Indian standards (BIS) issued IS: 17017-Part-1, 21, 23 and 24, related to EV charging equipment. Several other policy initiatives have been taken by Ministry of Power, Department of Heavy Industries, NITI Aayog and Ministry of Road Transport and Highways.

This course will cover EV policies and programs in India vis-a-vis what are leading countries in the world. Introduction to EV charging infrastructure, standards and communication technologies.

14:00 ~ 15:30

SESSION 1

1. Global EV Deployment
2. EV Technologies
3. International Best Practices

Tutor:

Girish Ghatikar, Senior Program Manager- EPRI, California, USA, and Chair of ISGF Working Group

15:30 ~ 16:00

TEA/COFFEE BREAK

16:00 ~ 17:30

SESSION 2

1. Electric Vehicle Charging Infrastructure
2. Vehicle to Grid Integration
3. Enhancement and Health Management

Tutors:

1. **Lonneke Driessen-Mutters**, Executive Director, Open Charge Alliance
2. **Raji Kumar Pillai**, President, India Smart Grid Forum

Session Coordinator:

Anand Singh, ISGF

Contacts: anand@indiasmartgrid.org

+91 99252 18036

APPENDIX- L/ Track-3

MASTER CLASSES TRACK-3: ADVANCED CYBER SECURITY

Regency 3, The Lalit Hotel, New Delhi
03 MARCH 2020, 09:30 TO 13:30

AGENDA	
Background Security has become a crucial factor for the success and wide deployment of smart grid networks. A cyber-attack on the power grid could result in complete disruption of all activities in the society it can cause electrical blackouts and breaches of national security secrets. It is a growing concern and a key success factor for reliable power distribution. According to an IT Governance Report, there were more than 1.7 billion data breaches and cyber-attacks in January 2019 alone. A cyber-attack can have far-reaching implications including financial losses, theft of intellectual property, and loss of consumer confidence and trust. Cybercrime affects society in a number of different ways, both online and offline.	
09:30 ~ 11:00	SESSION 1 1. Attack Patterns 2. Defenses and Their Limitations Moderator: Anant Venkateswaran, ISGF Tutor: Andrew Ginter, Vice President, Waterfall Security Solutions, Canada
11:00 ~ 11:30	TEA/COFFEE BREAK
11:30 ~ 13:30	SESSION 2 Designs for High-Threat Environments Tutor: Andrew Ginter, Vice President, Waterfall Security Solutions, Canada Session Coordinator: Anand Singh, ISGF
	Contacts: anand@indiasmartgrid.org +91 99252 18036

APPENDIX- L/ Track-4

MASTER CLASSES TRACK-4: TECHNOLOGIES ENABLING ENERGY TRANSITION: ENERGY STORAGE SYSTEMS (ESS)

Regency 3, The Lalit Hotel, New Delhi

03 MARCH 2020, 09:30 TO 17:30

AGENDA

Background

India's renewable energy (RE) target of 175 GW (including 40 GW RTPV Solar) target by 2022 is well on track – having achieved 87 GW by January 2020. ISGF undertook detailed studies and estimated 17 GWh of battery energy storage systems (BESS) requirements for integration of 175 GW of RE to the grid by 2022. Besides this, BESS required for other stationary applications such as data centres, telecom towers, UPS and inverters, DG replacement and etc., is calculated at 121 GWh making an aggregate requirement of 138 GWh for stationary applications. Electric Vehicles (EVs) would require another 40 GWh of BESS during the same period, up to 2022. This session will discuss key topics listed below.

09:30 ~ 13:00

SESSION 1

1. Battery Technologies for Grid Storage and Electric Vehicles
2. Energy Storage Systems Roadmap for India: 2019-2032

Tutors:

1. **Arumugam Manthiram**, Director, Texas Materials Institute, Materials Science and Engineering Graduate Program, The University of Texas, Austin, USA **(On Video)**
2. **Ravi Seethapathy**, Chair of ISGF Working Group and Chairman, Biosirus Inc., Canada

13:00 ~ 14:00

NETWORKING LUNCH - PRE-FUNCTION AREA OF REGENCY

14:00 ~ 17:30

SESSION 2

1. Manufacturing of Energy Storage Systems in India
2. Value Streams and Business Case for Energy Storage: Impact of Power Market Design and Regulation
3. Battery Requirements for Electric Mobility in India
4. Storage Projects: International Best Practices and Lessons for India

Tutors:

1. **Rahul Walawalkar**, President – India Energy Storage Alliance (IESA)

Session Coordinator: Shuvam Sarkar Roy, ISGF

Contacts: shuvam@indiasmartgrid.org | +91 9874969066

IEC – IEEE WORLD SMART ENERGY STANDARDIZATION COORDINATION WORKSHOP IN COLLABORATION WITH IEC AND IEEE

Jointly Organized By



Regency 4, The Lalit Hotel, New Delhi
03 MARCH 2020, 10:00 TO 17:00

AGENDA	
10:00 ~ 10:45	INAUGURAL SESSION
	<p>Welcome Address: Reji Kumar Pillai, President, ISGF</p> <p>Purpose of IEC-IEEE Standardization Co-ordination</p> <ol style="list-style-type: none"> Stephen Dutnall, Technical Officer and SyC SE Secretary, IEC Srikanth Chandrasekaran, Sr. Director, Standards and Technology, IEEE <p>Inaugural Address: Jayanta Roy Chowdhury, Scientist-G & DDG, Standardization-Products & Methods, BIS</p>
10:45 ~ 11:15	NETWORKING TEA BREAK
11:15 ~ 12:15	SESSION 1: ELECTRIC VEHICLES INFRASTRUCTURE: UTILITY CHALLENGES
	<p>Speakers:</p> <ol style="list-style-type: none"> Rajeev Sharma, Scientist F & Head (Electrotechnical Department), Bureau of Indian Standards Abhishek Ranjan, Additional Vice President and Head Renewable, DSM & EE and Energy Analytics, BSES Rajdhani Power Limited Lonneke Driessen-Mutters, Executive Director, Open Charge Alliance P V Mathew, Scientist-E, ETD & Member Secretary ETD-51, Bureau of Indian Standards
12:15 ~ 13:00	SESSION 2: RENEWABLE CHALLENGES
	<p>Speakers:</p> <ol style="list-style-type: none"> PK Agarwal, Director, POSOCO Abhishek Ranjan, Additional Vice President and Head Renewable, DSM & EE and Energy Analytics, BSES Rajdhani Power Limited
13:00 ~ 14:00	NETWORKING LUNCH – REGAL (1st FLOOR)
14:00 ~ 14:45	SESSION 3: LVDC STANDARDIZATION CHALLENGES
	<p>Speakers:</p> <ol style="list-style-type: none"> IEEE LVDC Standardization: Rajesh Kunnath, Founder, Radio Studio IEC LVDC Standardization: Vimal Mahendru, President, Legrand-India
14:45 ~ 16:00	SESSION 4: PANEL DISCUSSION - SMART INFRASTRUCTURE CHALLENGES: STANDARDIZATION PERSPECTIVE
	<p>Chair & Moderator: Kishor Narang, Chairman, LITD-28, BIS committee on Smart Infrastructure</p>

	Panellist: 1. Stephen Dutnall , Technical Officer and SyC SE Secretary, IEC 2. Amarjeet Kumar , Founder & CEO, Shrama Technologies Pvt Ltd 3. Arun Kumar Mishra , Director, NSGM and Vice-Chair, ISGAN 4. Tulika Pandey , Director, NeGD DEITY, Ministry of Electronics and Information Technology 5. G Ganesh Das , COO – Clean Energy International Incubation Centre, Tata Power-DDL 6. Purushottam Kaushik , Head- Strategy, Special Initiatives - L&T Smart World and Communications 7. Deepak Pandey , Operations Leader, GE Software Solutions - South Asia 8. Ashish Tandon , Director-Sales & Marketing, Landis+Gyr India	
16:00 ~ 16.15	NETWORKING TEA BREAK – EXHIBITION PAVILION	
16:15 ~ 16:45	OPEN HOUSE	
16:45 ~ 17:00	CLOSING REMARKS	
	Reji Kumar Pillai , President, ISGF	
	Session Coordinator: Balasubramanyam Karnam , ISGF	Contacts: bala.k@indiasmartgrid.org +91 81212 76498

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