

## India Smart Grid Forum

India Smart Grid Forum (ISGF) is a public private partnership initiative of Ministry of Power (MoP), Government of India for accelerated development of smart grid technologies in the Indian power sector.

The main objectives of ISGF are:

- To help the Indian power sector deploy smart grid technologies in an efficient, cost effective, innovative and scalable manner by bringing together all key stakeholders and enabling technologies.
- To create a platform for public and private stakeholder members, research institutions and power utilities to exchange ideas and information on smart grids and develop use case scenarios for India.
- To bring together experts from regulation, policy, and the corporate sector to build support for smart grid policies.
- To conduct research on the capabilities of smart grids in the Indian context through case studies, cost-benefit analysis, study of technical advancements in renewable energy sources and other ancillary activities.
- To make recommendations to the Government, Regulators, Utilities and Consumers through reports, white papers, technical seminars, etc.

Mandate of ISGF is to advise government on policies and programs for promotion of Smart Grids in India, work with national and international agencies in standards development and to help utilities, regulators and the Industry in technology selection, training and capacity building.

ISGF has over 200 members covering ministries, government institutions, regulators, utilities, technology companies, non-profit organisations, educational and research institutions and students from renowned institutes. ISGF has 10 working groups focussed on different aspects of smart grids such as: WG1: Advanced Transmission; WG2: Advanced Distribution; WG3: Communications for Smart Grids; WG4: Metering; WG5: Consumption and Load Control; WG6: Policy and Regulations; WG7: Architecture and Design; WG8: Pilots and Business Models; WG9: Renewables and Microgrids; and WG – 10: Cyber Security.

### ISGF ACTIVITIES

Some of the major activities executed (and under progress) by India Smart Grid Forum are:

#### A) Work with Ministry of Power:

- ISGF worked with Ministry of Power (MoP) in formulation of **Smart Grid Vision and Roadmap for India** which was issued by MoP in August 2013
- ISGF assisted MoP in preparation of the Framework for **National Smart Grid Mission (NSGM)**. Now preparing **Model DPR and Model RFP for projects under NSGM**. Also preparing a short film on Smart Grid to be screened at the launch event of NSGM
- ISGF worked with various stakeholders and MoP in finalization of **Model Smart Grid Regulations** that have been approved by the Forum of Regulators in June 2015
- ISGF prepared draft **Terms of Reference for Smart Microgrid** in Chandni Chowk, Daryaganj and Paharganj areas in Delhi in coordination with MoP, Delhi Transco, Government of Delhi and BESES Yamuna
- ISGF launched and maintains the **India Smart Grid Knowledge Portal** ([www.indiasmartgrid.org](http://www.indiasmartgrid.org)) since January 2013. This is one of the most popular smart grid portals in the world today

## B) Work with other Ministries and Government Institutions:

- ISGF worked as Knowledge Partner with NITI Aayog for the **India Energy Security Scenario 2047** tool version-1; and now working on the second version
- ISGF is engaged with MNRE on **Energy Storage** and **Renewable Energy Integration** on the Grid
- ISGF is engaged with Ministry of Heavy Industries on designing appropriate policies and systems for **Electric Vehicle Charging Infrastructure** for India
- ISGF is engaged with Ministry of Urban Development for preparation of a **Standard Framework for Infrastructure domains of a Smart City**
- ISGF work closely with Department of Telecommunications – **rollout of IPv6 for Power Sector**, a **National Telecom M2M Roadmap** and development of **M2M Communications Roadmap for Power Sector**
- ISGF work closely with **National Critical Information Infrastructure Protection Centre (NCIIPC)** – finalized framework for Cyber Security Preparedness Survey of Utilities, surveyed a sample set of 7 utilities and submitted a high level Top-10 Recommendations; now preparing cyber security manuals for electric utilities
- Working with Ministry of Shipping and Transport for developing a **Smart Microgrid at a large Sea Port**
- Interacting with Ministry of Railways for implementing a **Microgrid demonstration project in a Railway Station**

## C) Work at States Level

- ISGF work with various states for promotion of smart grids at faster pace. Worked with state energy departments/regulatory commissions/utilities and established following entities:
  - MAHA-Smart Grid Coordination Committee by State Regulatory Commission which drafted a Smart Grid Policy for Maharashtra (under approval)
  - Smart Grid Steering Committee in Odisha under the Energy Department
  - Smart Grid Steering Committee in BESCO, Bengaluru
  - Smart Grid Consultation Committee in Assam by Assam Electricity Regulatory Commission
  - Smart Grid Advisory Committee in Haryana by Haryana Electricity Regulatory Commission

## D) Training and Capacity Building Programs

ISGF undertakes several Training and Capacity Building programs:

- **Cyber Security Workshops (3 days)** – 4 batches conducted in last one year; next batch in September 2015. This program **being ported to an e-learning platform**
- **Smart Grid Bootcamp (1 Day)** – conducted for students in Delhi, Pune and Bangalore; and for utilities and industry in association with PDPU and ADB in Chennai, Delhi, Bangalore, Guwahati, Chandigarh, Kolkata, Jaipur and Mumbai
- **Smart Grid Foundation Course (3 Days)** – conducted 2 programs (Delhi and Bangalore) in association with TERI; next in Vadodara in October in association with ERDC and in Mumbai in November in association with TERI
- **Regulatory Workshops (1 Day)** – conducted 4 regional workshops (Lucknow, Bhubaneswar, Guwahati, Gandhinagar and 2 national workshops in Delhi)
- **Smart Grid Program for Regulators (5 days)** – first program to start in December
- **Smart Grid Certificate Course (3 months full time program)** – first batch from September 2015

## E) Research Papers and Publications

- ISGF publishes a monthly newsletter “**Smart Grid Bulletin**” since January 2014. Present circulation: 2500 in print and >50,000 in PDF (and increasing every month)
- ISGF published following White Papers/Technical Reports:
  - Feasibility study for converting AIS substations to GIS substations by commercializing the land that would be saved
  - Frequency Band Allocation for PLC Communications

- Interdependency Matrix and Maturity Model for Smart Cities
- Leveraging R-APDRP Assets to build Smarter Cities at marginal cost
- Leveraging R-APDRP GIS maps to implement rooftop solar web GIS tool developed by TERI
- M2M Communications for the Power Sector
- Post Go-Live strategy for R-APDRP
- Policy Framework for Electric Rickshaws in Delhi
- Presented a joint knowledge paper on Smart Grids in India along with Bloomberg New Energy Finance at ISGW 2015
- Role of smart grids in Distribution
- Smart Meter specifications of leading meter manufacturers in India
- Smart Metering Scenario in India
- Smart Microgrids for Islands
- Smart Microgrids for large campuses and institutions
- Smart Microgrids for Slums
- Leveraging Social Media for by Electric Utilities for Effective Customer Engagement
- Technical Report on M2M Enablement for the Power Sector
- Technical Report on M2M Gateway and Architecture

#### F) Standards Development Work

- ISGF worked with various stakeholders in finalization of **Smart Meters Standards** as a part of the committee under Bureau of Indian Standards (BIS) which is now under printing
- Worked with BIS and MNRE in creation of BIS ETD 46 Committee for Large Scale RE-Integration to the Grid
- ISGF work closely with international standards development agencies such as IEC, IEEE, Smart Grid Interoperability Panel (SGIP), OpenADR Forum, Wi-SUN Alliance, Open Smart Grid Protocol Alliance (OSGP) etc
- Jointly hosted the **Plenary Session of IEC PC 118 at Bangalore in March 2014 in association** with BIS
- ISGF closely work with Telecom Standards Development Society, India (TSDSI) for formulation of standards in the **M2M/IoT** domain

#### G) Conferences and Workshops

- ISGF conducted First Edition of **India Smart Grid Week 2015** in Bengaluru in March 2-6, 2015 with support from MoP, MNRE, MoUD, DoT, DST, NCIIPC and several international organizations such as IEC, CIGRE, IEEE, ISGAN, GSGF, NEDO, USTDA, US Chamber of Commerce, European Commission, UKTI, EBTC etc. The event was a huge success and the Second Edition is scheduled for 15-19 March 2016 at Manekshaw Centre in New Delhi
- Conducted 2 US-India Smart Grid Workshops in collaboration with USTDA – one in San Francisco in Dec 2014 and second in Bangalore in March 2015
- Conducted EU-India Smart Grid Workshop in Nice, France in June 2015; next workshops in this series planned in November 2015 in Vienna and March 2016 in Delhi
- Conducted Smart Cities and Smart Grids – Technology and Investment Summit in London in July 2015 in partnership with Security Watch India, a not for profit organization in India
- Upcoming programs are:
  - Co-organising the Regulators and Policy Makers Retreat in Goa in September 2015 along with IPPAI
  - One Day Workshop on Renewable Integration in September 2015 in Delhi
  - Organizing Indian Delegation to Korea Smart Grid Week in Seoul in October 2015 in coordination with Indian Embassy in South Korea

#### H) Advisory Services

- ISGF is conducting Customer Education Program for Smart Grid Pilot in Panipat served by Uttar Haryana Bijli Vitran Nigam (UHBVN)
- ISGF been contacted by few state governments and Utilities for development of Smart Grid Roadmaps for them