ISGF Presentation at the ISGAN Webinar on 29th November 2012
Note: This list of logos of ISGF Members is partial and indicative only.
Brief on Indian Power Sector

- Indian power system is the 4th largest in the world – installed capacity: 210GW. Almost doubled in last 10 yrs; and will continue to grow at 8-10%/year for several decades
- Largely dominated by government owned utilities (central and states – 29 states and 7 union territories) – most of them have own generation, transmission and distribution utilities
- Central Electricity Regulatory Commission (CERC) and State Regulatory Commissions (SERCs) in most states – some small states few have gone for Joint SERCs.
- Transmission Grid in India is one of the largest in the world:
  - 765kV/400kV lines: ~1,03,000 ckms; 220kV lines: ~132,000 ckms
  - HVDC Bipole (±500kV): 7,500 ckms – 3 nos; HVDC Back-to-back: 7 nos (3000MW)
  - Now building 1200 kV AC and 800kV HVDC networks
  - Most modern control centers – 5 regional control centers, 1 national control center, 1 back-up national control center
- Distribution sector:
  - Very high T&D losses – about 30% (>50% in several states!)
  - 400 million+ people have no access to power
  - Large parts of the country experiences power cuts for several hours every day – customers keep storage (invertors)/ auto generation facilities
  - Power quality being poor; consumers require voltage stabilizers, UPS etc
Brief on R-APDRP (Restructured – Accelerated Power Development and Reforms Program)

The on-going R-APDRP is one of the largest IT initiatives by utilities anywhere in the world - in one integrated project, Distribution Utilities in India are building IT Infrastructure, IT Applications and Automation Systems

Scope under Part-A are:

- Consumer Indexing using GIS
- Asset Mapping (entire distribution network – HT and LT lines, transformers, poles, meters) using GIS
- Automatic Meter Reading for all Distribution Transformers and Feeders
- IT applications for, meter reading, billing & collection, MIS, redressal of consumer grievances, establishment of IT enabled consumer service centers
- Energy Accounting & Auditing
- SCADA / DMS system (only in the project area having more than 4 lacs population and annual input energy of the order of 350 Million Units (MU). Because study shows that SCADA for smaller towns / areas is economically not feasible)
- Feeder Segregation/ Ring Fencing

Under Part-B of the program utilities are undertaking electrical network strengthening and up-gradation. And under Part-C of the program 14 Smart Grid pilots are being launched.
### Smart Grid for India – Stakeholder Expectations

<table>
<thead>
<tr>
<th>Customers:</th>
<th>Utilities:</th>
<th>Government &amp; Regulators:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Expand access to electricity – “Power for All”</td>
<td>• Reduction of T&amp;D losses in all utilities to 15% or below</td>
<td>• Satisfied customers</td>
</tr>
<tr>
<td>• Improve reliability of supply to all customers – no power cuts, no more DG sets and inverters!</td>
<td>• Peak load management – multiple options</td>
<td>• Financially sound utilities</td>
</tr>
<tr>
<td>• Improve quality of supply – no more voltage stabilizers!</td>
<td>• Reduction in power purchase cost</td>
<td>• Tariff neutral system upgrade and modernization</td>
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<tr>
<td>• User friendly and transparent interface with utilities</td>
<td>• Better asset management</td>
<td>• Reduction in emission intensity</td>
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A Smart Grid Roadmap prepared by ISGF is currently under discussion with various stakeholders.
India Smart Grid Forum & Task Force

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

- ISGF was launched along with **India Smart Grid Task Force (ISGTF)**, an inter-ministerial government task force chaired by Mr. Sam Pitroda, Advisor to the Prime Minister of India.
ISGF – Objectives

- Voluntary public-private consortium of Govt agencies, utilities, technology and service providers, regulators, research & academia and other stakeholders
  - Govt. of India (MoP) is the Patron, and retains Chairmanship
  - Registered as a Society under the Indian Societies Act as a not-for profit organization
  - Enrolled members and conducted elections to choose the management team in Oct 2011
  - As of 31st October 2012 ISGF has 105 members (several requests pending)
- Prime objective is to accelerate development of Smart Grid technologies in the Indian Power Sector
  - ISGF recommendations will be advisory in nature
- ISGF will seek the best practices in the world and help develop a roadmap for development of Smart Grid solutions for Indian needs and conditions
ISGF - Structure

Funding of ISGF will be from membership fees

• Seed funding of the ISGF by Ministry of Power (~USD 100K)

Governance of ISGF will be overseen by a Board of Governors (BoG)

Category of Members:

• Founding Members: MoP, PFC, CEA, CERC, CPRI, BEE – enjoy voting rights

• Regular Members: enjoy voting rights, representation in all Working Groups (WGs)

  • Utilities: Rs 10 Lakhs life time fee OR Rs 3 Lakhs Joining Fee + Annual Fee; 50% discount for utilities from special category states – NE, Sikkim, Uttarakhand, HP, J&K and UTs

  • Industry: Rs 5 lakhs Joining Fee + Annual Fee

• Associate Members: Non-Profit/Educational & Research entities – no fee; no voting rights; by invitation for a period of 2 years; representation in all WGs

• Limited Members: Rs 1.5 lakhs/Year - for smaller entities with revenues under INR 5 crore; no voting rights; representation in all WGs

• Individual Members: Rs 50,000/Year – for eminent persons by invitation; enjoy voting right and representation in all WGs

• International Members: Entities having no presence in India; more as Observers; USD 11000/year. No voting rights
ISGF – Office Bearers

Office Bearers:
1. Chairman: Sanjeev Kumar, Director-Distribution, Ministry of Power
2. President & CEO: Reji Kumar Pillai (Individual)
3. Secretary & Convenor: elected person resigned recently; Board appointed Rupendra Bhatnagar as interim Secretary till next elections
4. Treasurer: V.K. Shah, Executive Director in Power Finance Corporation

Board of Governors:

a) Industry (4 seats)
   1. Deven Patel, Tata Consultancy Services
   2. Rupendra Bhatnagar, SAP India
   3. Vikram Manchanda, Microsoft India
   4. Sunil Singhvi, Secure Meters

B. Utilities (2 seats)
   1. U.S. Mane, Maharashtra State Electricity Distribution Company Ltd
   2. To be elected

C. Research/Academia (1 seat)
   1. Prof. S.A. Khaparde, IIT-B

Term is 2 years (from November 2011)
## ISGF Working Groups - Chairpersons

<table>
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<th>Working Group</th>
<th>Chairpersons</th>
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<tr>
<td>WG1: Advanced Transmission</td>
<td>Shekhar Kelapure, GE Energy</td>
</tr>
<tr>
<td>WG2: Advanced Distribution</td>
<td>Ram Pillai, Tata Power</td>
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<tr>
<td>WG3: Communications</td>
<td>Ajoy Rajani, Reliance Infra</td>
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<tr>
<td>WG4: Metering</td>
<td>V. Arunachalam, CPRI</td>
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<tr>
<td>WG5: Load Control</td>
<td>Vikram Gandotra, Siemens</td>
</tr>
<tr>
<td>WG6: Regulatory &amp; Policy</td>
<td>Pankaj Batra, CERC</td>
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<tr>
<td>WG7: Architecture &amp; Design</td>
<td>Deepak Konnur, IBM</td>
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<tr>
<td>WG8: Pilots and Business Models</td>
<td>Raghu Cavale, Infosys</td>
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<tr>
<td>WG9: Renewables and Microgrids</td>
<td>Prakash Nayak, IET</td>
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<tr>
<td>WG10: Cyber Security</td>
<td>Abraham Samson, L&amp;T</td>
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