



India Smart Grid Forum

**ISGF Presentation at the ISGAN Webinar  
on 29<sup>th</sup> 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 4<sup>th</sup> 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 ( $\pm 500$ kV): 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

## Customers:

- Expand access to electricity – “Power for All”
- Improve reliability of supply to all customers – no power cuts, no more DG sets and inverters!
- Improve quality of supply – no more voltage stabilizers!
- User friendly and transparent interface with utilities

## Utilities:

- Reduction of T&D losses in all utilities to 15% or below
- Peak load management – multiple options
- Reduction in power purchase cost
- Better asset management
- Increased grid visibility
- Self healing grid
- Renewable integration

## Government & Regulators:

- Satisfied customers
- Financially sound utilities
- Tariff neutral system upgrade and modernization
- Reduction in emission intensity

**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 stake holders
  - 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 31<sup>st</sup> 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

WG1: Advanced Transmission

• Shekhar Kelapure, GE Energy

WG2: Advanced Distribution

• Ram Pillai, Tata Power

WG3: Communications

• Ajoy Rajani, Reliance Infra

WG4: Metering

• V. Arunachalam, CPRI

WG5: Load Control

• Vikram Gandotra, Siemens

WG6: Regulatory & Policy

• Pankaj Batra, CERC

WG7: Architecture & Design

• Deepak Konnur, IBM

WG8: Pilots and Business Models

• Raghu Cavale, Infosys

WG9: Renewables and Microgrids

• Prakash Nayak, IET

WG10: Cyber Security

• Abraham Samson, L&T