

# UI-ASSIST Workshop at IIT DELHI 13-14<sup>TH</sup> Feb 2019

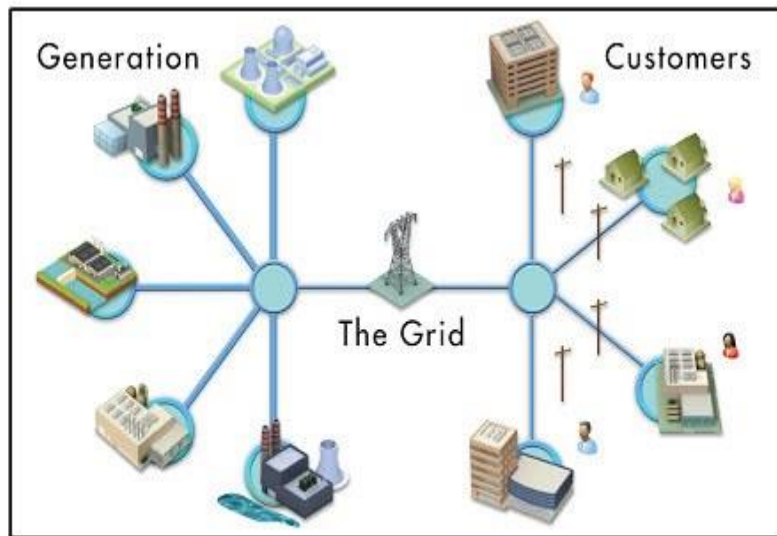
- ▶ 64 participants from industry, utility, government organizations and academia.
- ▶ To bring the major stakeholders in the power sector on a single platform
- ▶ Discuss the status quo of various technologies, market behavior and policy status with regards to microgrids and smart grids.



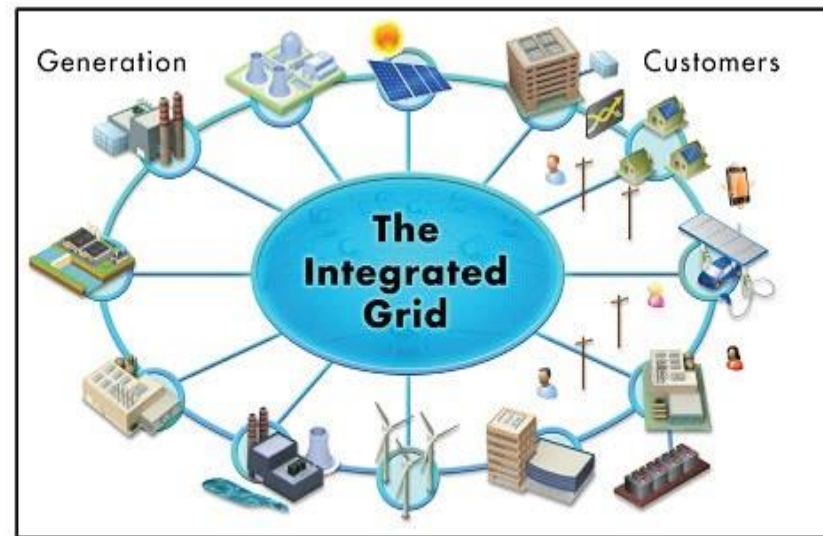
# 12 sessions held

## 1) Introduction to Smart Grid and UI-ASSIST Project

- ▶ Smart Grid, its distinct features as against Conventional Grid, and its status in India.
- ▶ Technical challenges involved in Renewable Generation integration
- ▶ UI-ASSIST project aiming at a smart and secure distribution network development.



Conventional grid



Integrated grid

## 2) Smart Grid Architecture and Measurement

- ▶ Need for real time monitoring
- ▶ Advanced Metering Infrastructure(AMI) and Wide Area Measurement Systems(WAMS) are revolutionizing the way one would monitor and control the power system.

## 3) ICT in Smart Grid

- ▶ Importance of Big Data Analysis
- ▶ Significance of physical layer of security for cyber-physical system.

## 4) Renewable Integration and Integrating Converters

- ▶ Microgrid System and its various components including DC-DC and DC-AC converter topologies

## 5) Microgrids (AC and DC)

- ▶ Models and merits of a Hybrid (AC-DC) Microgrid and its impact on present energy system
- ▶ Challenges in protection due to penetration of DGs(distributed generator) in distribution system

## 6) Energy Storage

- ▶ Integration of Battery Energy Storage Systems (BESS) at distribution level.
- ▶ Energy Storage Technologies and their Application Areas.

## 7) Smart Grid Status in US and Worldwide

- ▶ Dr Noel Schulz from WSU spoke on the Next Generation Distribution Systems.
- ▶ UI-ASSIST activities from the US Team



## **8) R&D Pilot and Field Pilot Demo**

- ▶ Demo of the Smart City Pilot at IIT Kanpur
- ▶ An overview of the National Smart Grid Mission, SCADA, AMI, and home automation systems installed at IIT Kanpur.

## **9) Distribution Management System**

- ▶ Fault Location, Isolation and Service Restoration (FLISR) were discussed.
- ▶ Crucial aspect of Forecasting in Distribution Network and their methodologies along with Distribution Automation and their protocols explained.

## **10) Smart Grid Knowledge Centre and BRPL Smart Grid Pilot**

- ▶ Smart Grid Knowledge Centre developed in Gurugram with the help of GOI and MoP.

## **11) Cyber Security in Smart Grid**

- ▶ Various layers of a cyber physical attack were discussed.
- ▶ Potential effects of a cyberattack on the critical infrastructure of the power grid.

## **12) Regulatory Issues in Smart Grid**

- ▶ Policy and regulatory needs for the adoption and successful implementation of smart grids in India.



THANK YOU

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