



SMART Grid Innovation in the Sub-region and learnings for Bangladesh

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ACHIEVEMENTS OF THE GOVERNMENT

Generation
capacity:
21,282MW

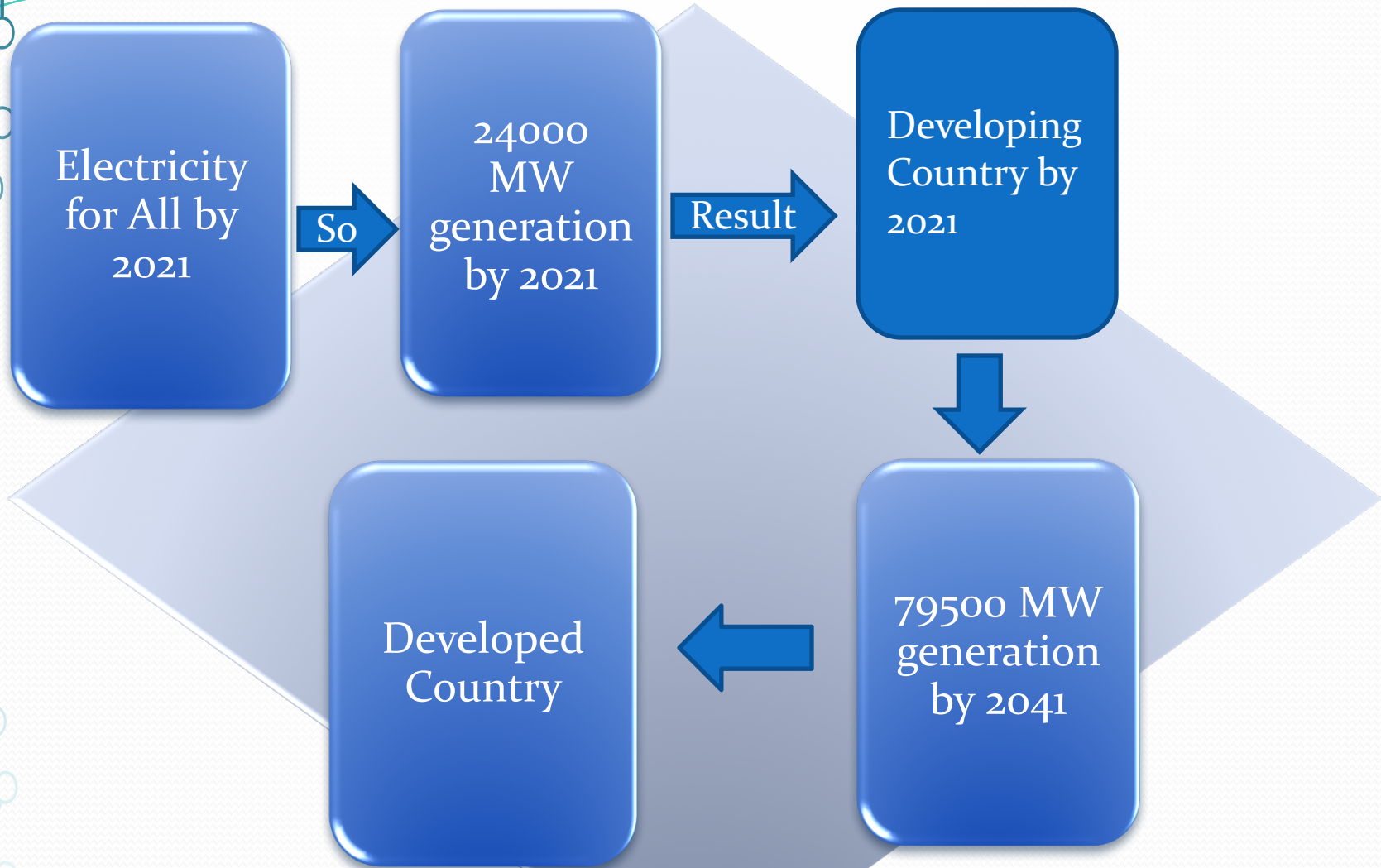
Around 5% System
Loss Reduced in
last 9 years

93% Population
under Electricity
coverage

Per Capita
Electricity
Generation is
464kWh - More
than Doubled in
last 9 Years



Government Master Plan

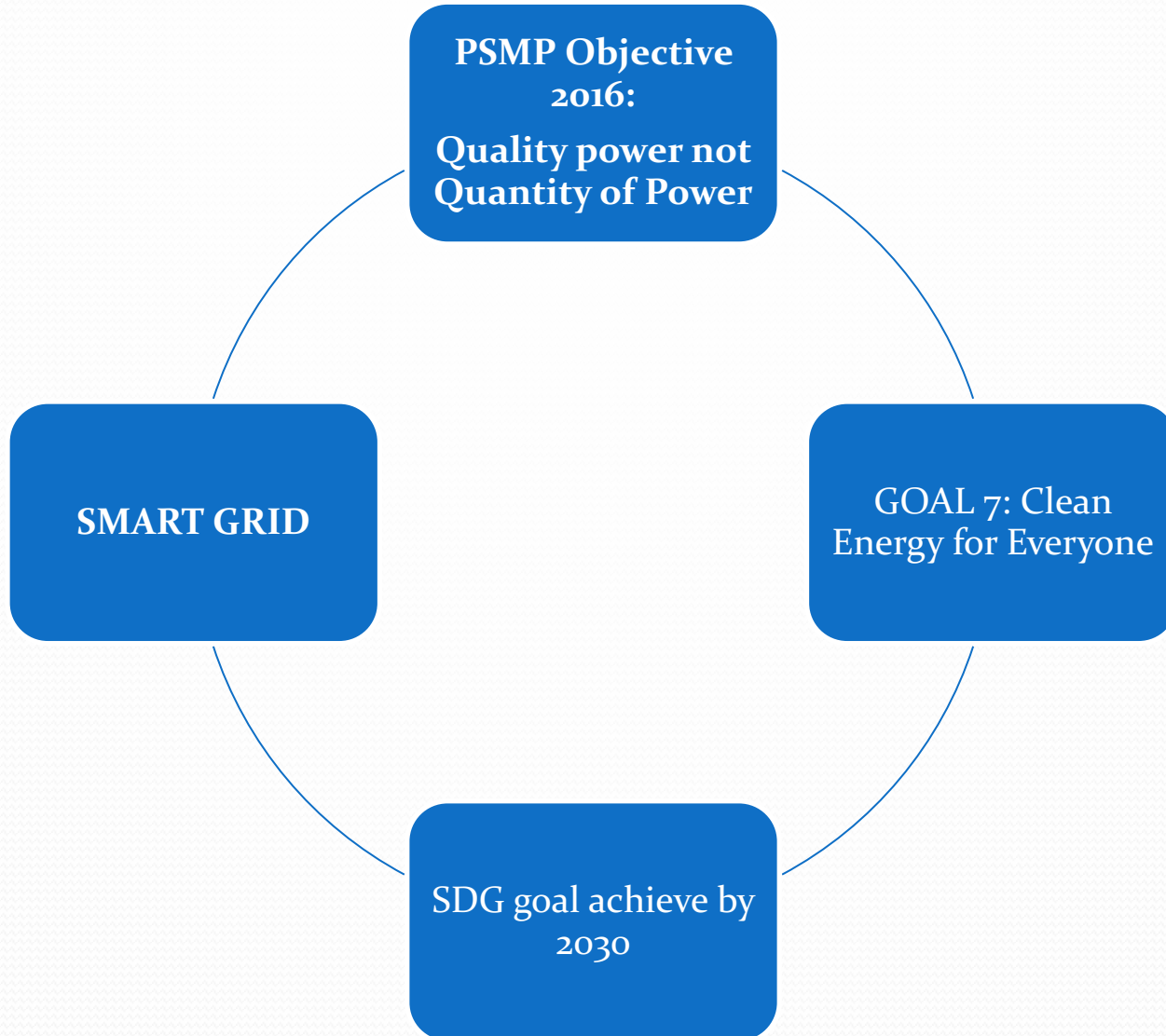


SDG Goal Achieve by 2030

Goal-7. “Clean energy for everyone”: Secure access to affordable, reliable, sustainable and modern energy for everyone



PSMP Following SDG



Challenges Towards The SDG Achievement

Operation & dispatch

- Inefficient transmission SCADA
- distribution SCADA
- Almost non-functional EMS

Power quality management

- automated frequency and voltage control
- power quality management in practice

Supply management

- distributed supply
- contribution from consumer end RE sources

Consumption management

- Advanced Metering Infrastructure (AMI)
- smart energy consumption management
- Absence of smart home appliances

Market Policy

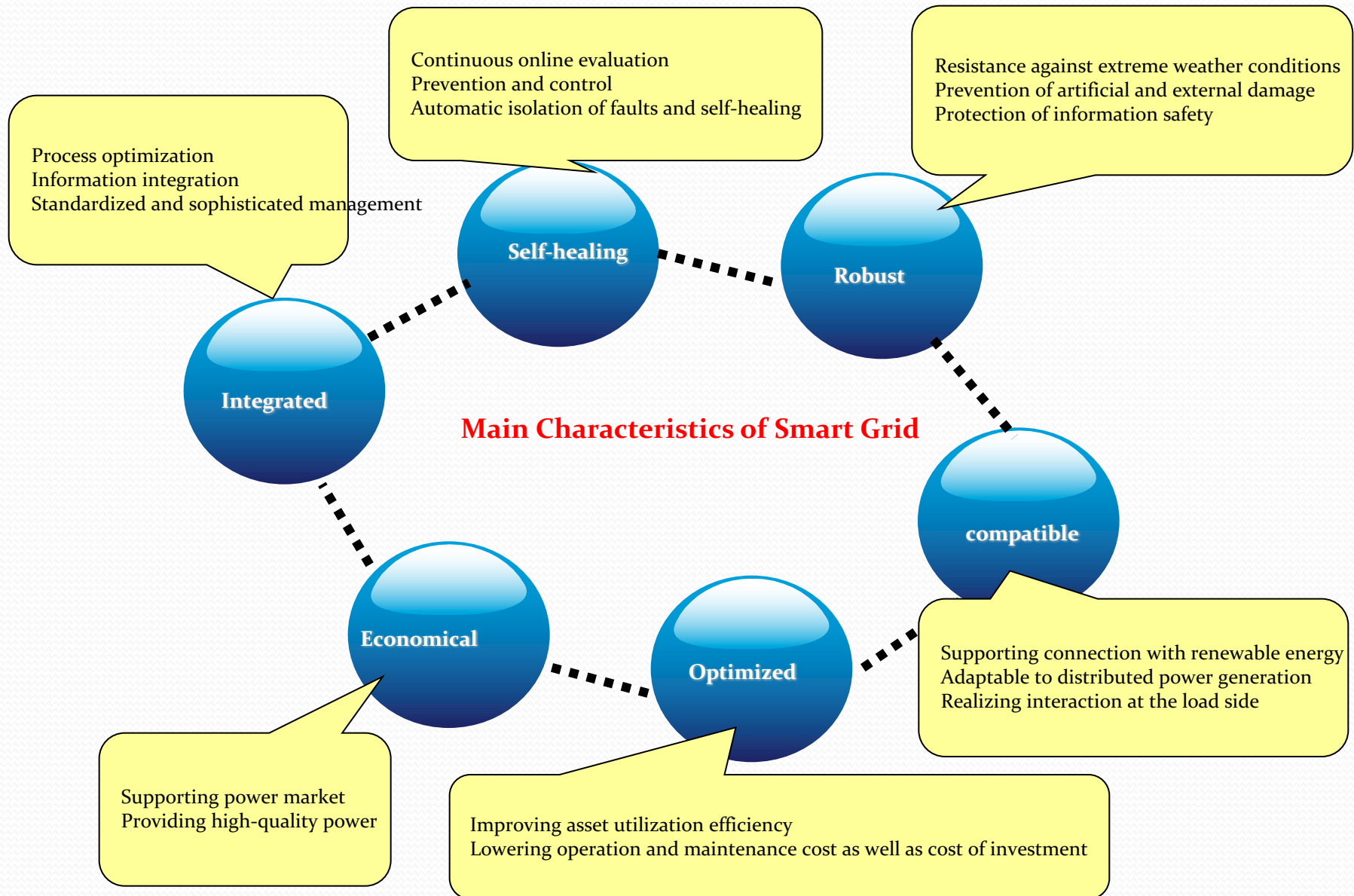
- smart tariff mechanism
- Less transparent energy accounting
- Absence of free market policy

What Is the Solution of Clean Energy

SINGLE
SOLUTION TO
ALL: SMART
GRID



Features of Smart Grid



Structural Model of Smart Power Grid

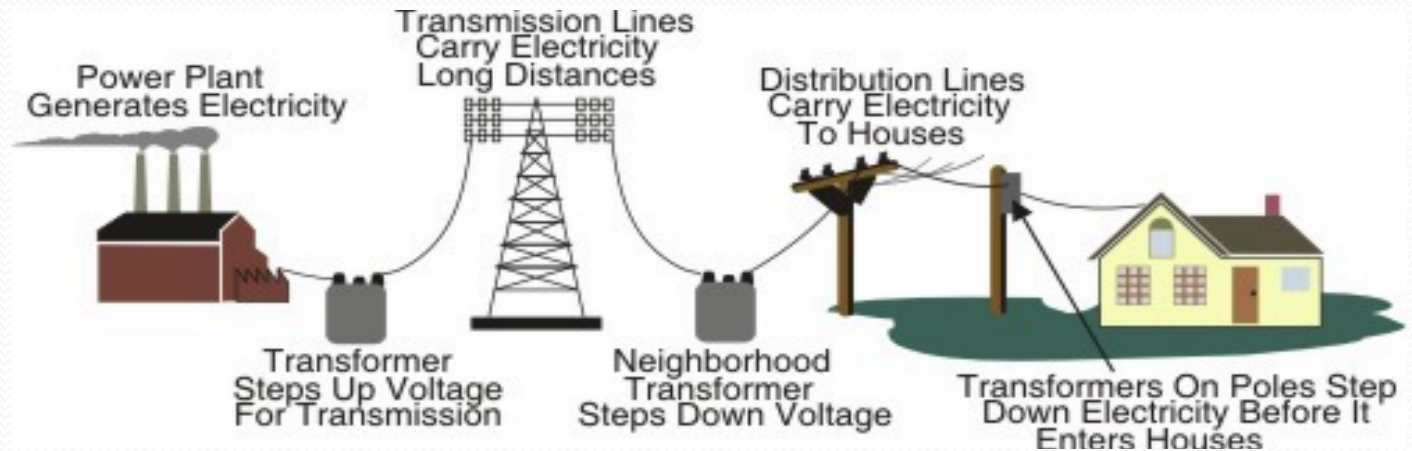
Model of Smart Power Grid



Structural Model of Smart Power Grid

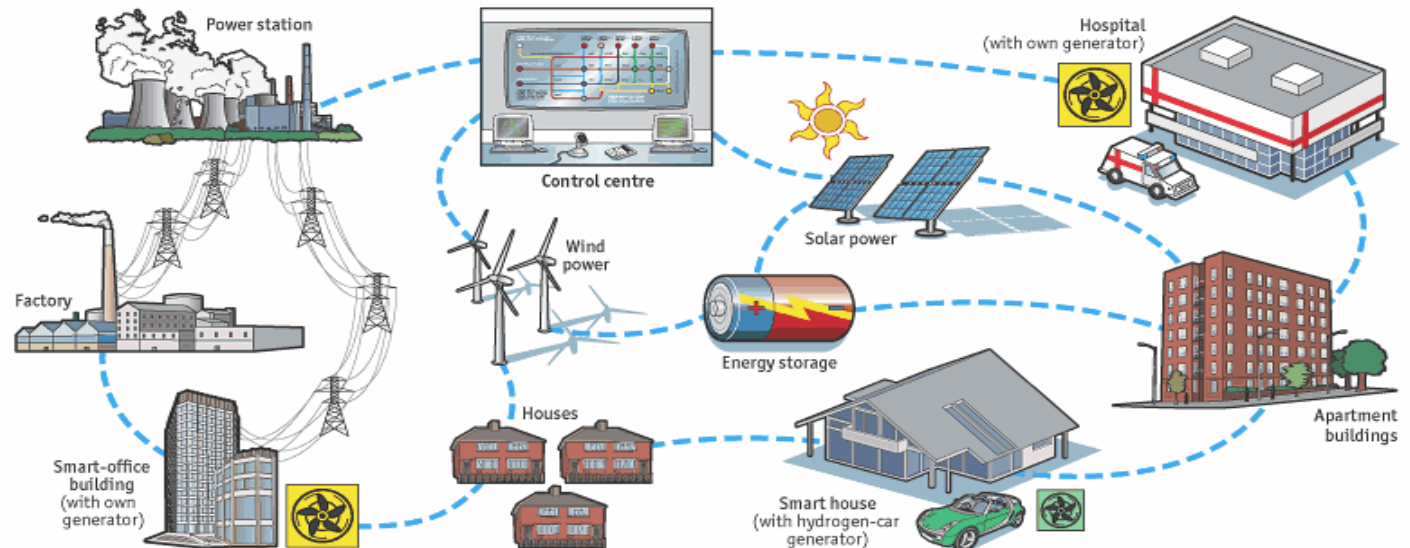
Traditional power grid:

- One-way load flow
- Simple interaction



Smart power grid

- Two-way load flow
- Distributed power supply
- Distributed energy storage
- Active interaction



Sources: The Economist; ABB

COMPONENTS OF SMART GRID

GENERATION

4th Generation SCADA

Distributed Generation

Energy Storage

VAR Compensator

System Stabilizer

Advanced Generation Control

TRANSMISSION

4th Generation SCADA

Cyber Security

ICT

Smart Urban Power Grid

Asset Life Management

Synchrophasor Technology

Automatic Restoration

DISTRIBUTION

4th Generation SCADA/Smart Metering

Advanced Distribution Management

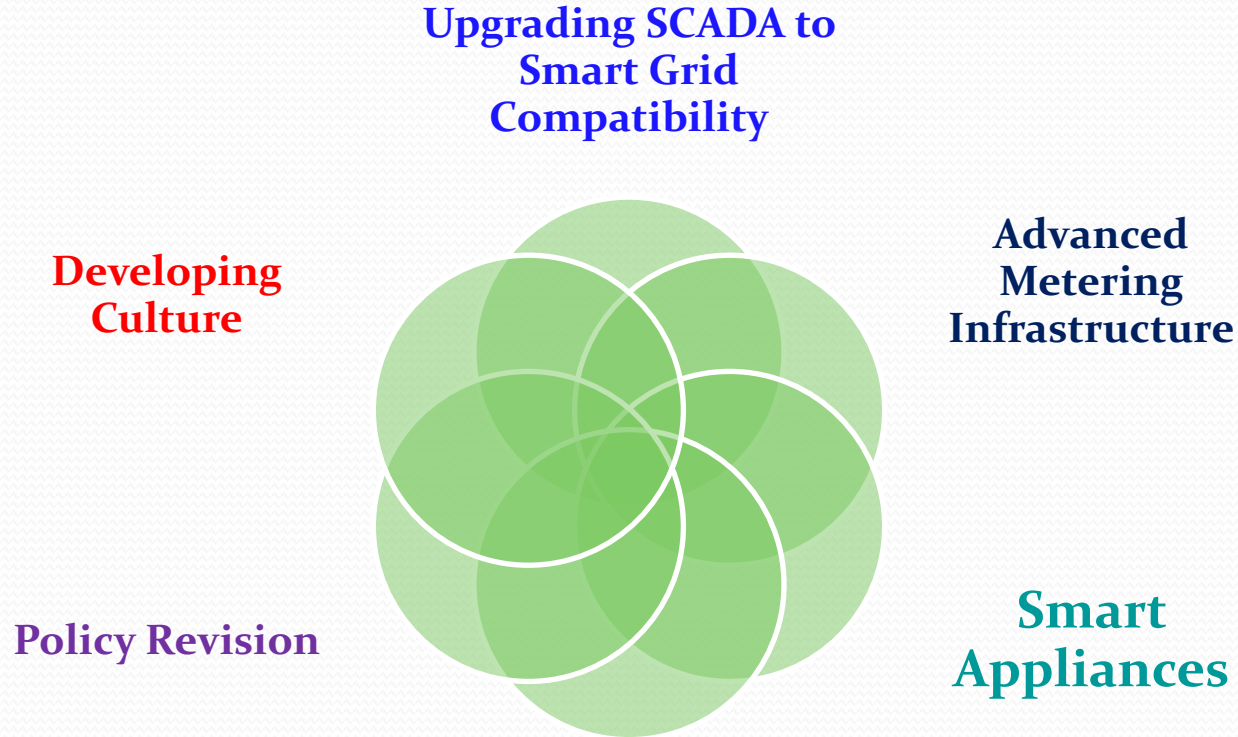
Advanced Metering Infrastructure

Self-healing System

GIS Mapping

Internet of Energy

ROADMAP TOWARDS SMART GRID



ROADMAP TOWARDS SMART GRID

Upgrading SCADA to Smart Grid
Compatibility

Policy
Revision

ISO (Independent System Operator)



ROADMAP TOWARDS SMART GRID

Advanced Metering Infrastructure

Smart Meters/Prepaid Meters

Energy Accounting

Bi-directional power flow

Consumption management

Energy Internet

Smart Appliances

Intelligent home appliances(Net Meter)

Smart vehicle

Home energy monitors



ROADMAP TOWARDS SMART GRID

Advanced Generation Management

Automatic Frequency Control

Decentralization of Sources

Diversification of Fuel

Energy Storage System

Consumer Involvement

Policy Revision

ISO(Independent System Operator)

Net Metering

Feed in Tariff

Grid Code

Smart Metering

Developing Culture

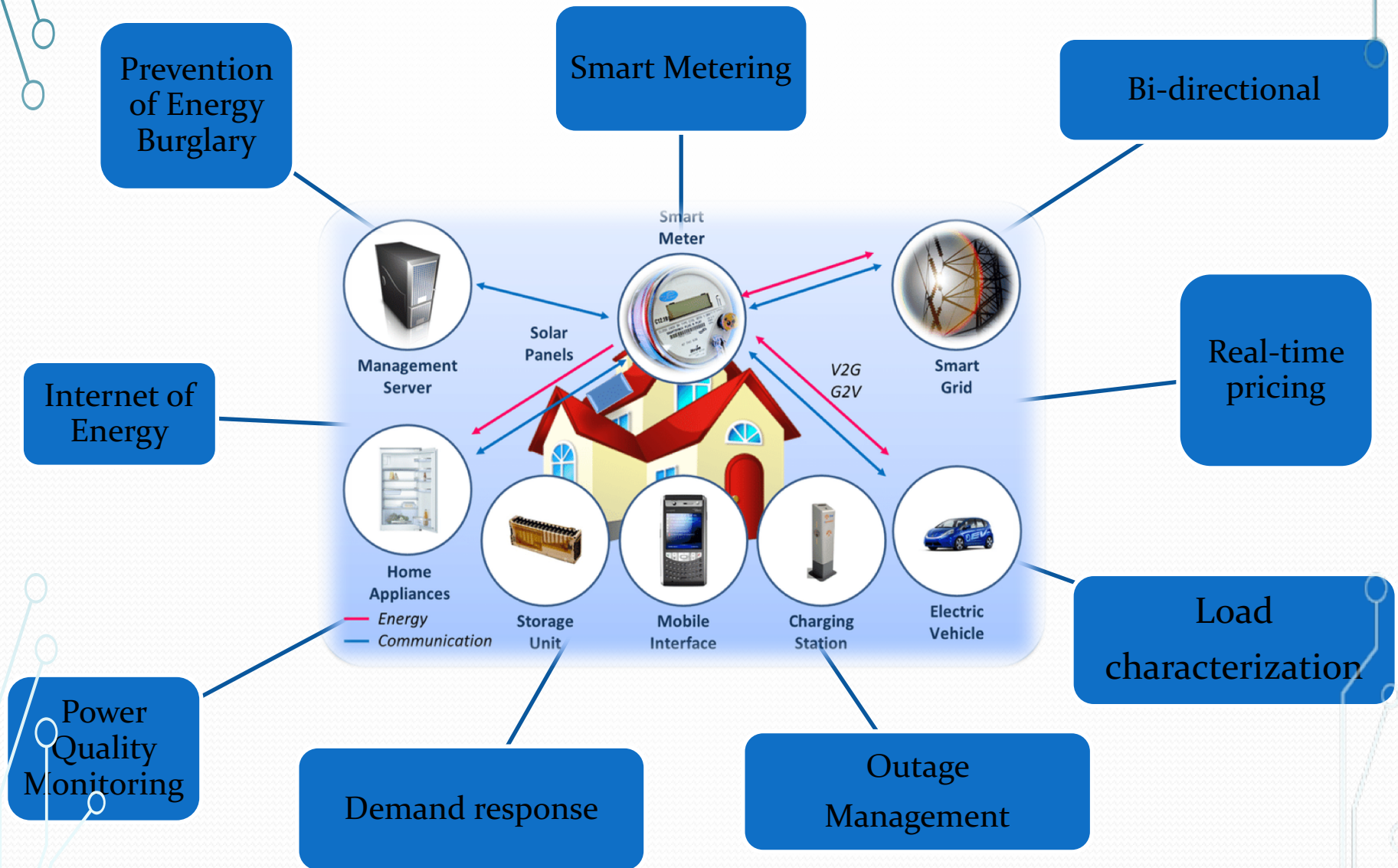
Awareness Grow to users regarding Smart Metering/Net Metering



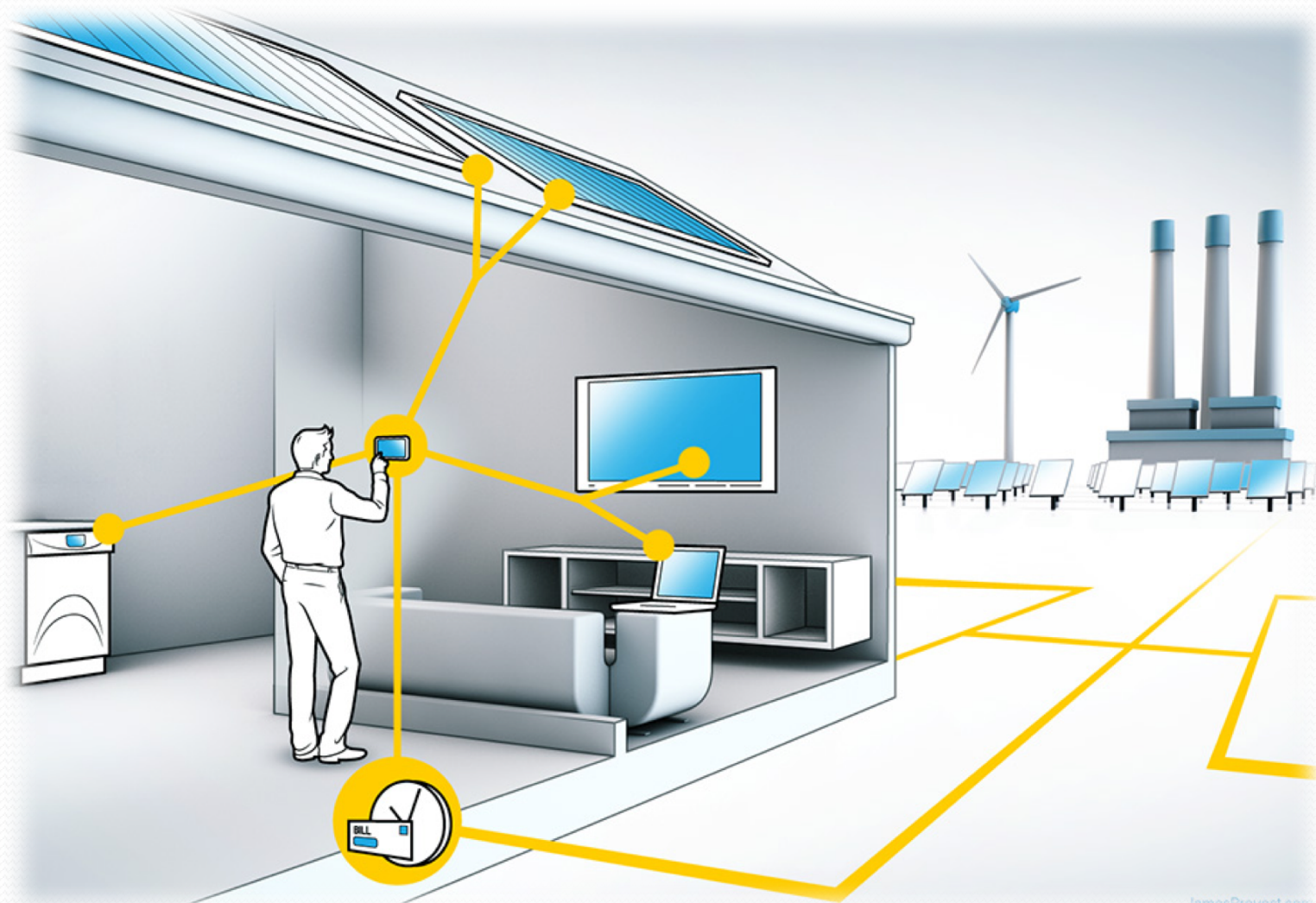
Publicity through ad., leaflet, Banner, Poster

Incentive to buy smart Household Appliances

ADVANCED METERING INFRASTRUCTURE



INTERNET OF ENERGY



KNOWLEDGE SHARING



Present Scenario of DESCO's SMART Grid

- ❑ To construct SCADA(Supervisory control and Data Acquisition) system for managing modernization of Electricity distribution.
- ❑ GIS mapping will bring in to operations activities.
- ❑ SMART' metering installation work is going on.
- ❑ 20 Nos Distribution Substation out of 35 is under Substation Automation System.
- ❑ Call Center is established

