



India
SMART GRID
Week 2015

02 - 06 March, 2015
Bangaluru International Exhibition Centre
Bangaluru, India

www.isgw.in

Smart grids enables smart cities

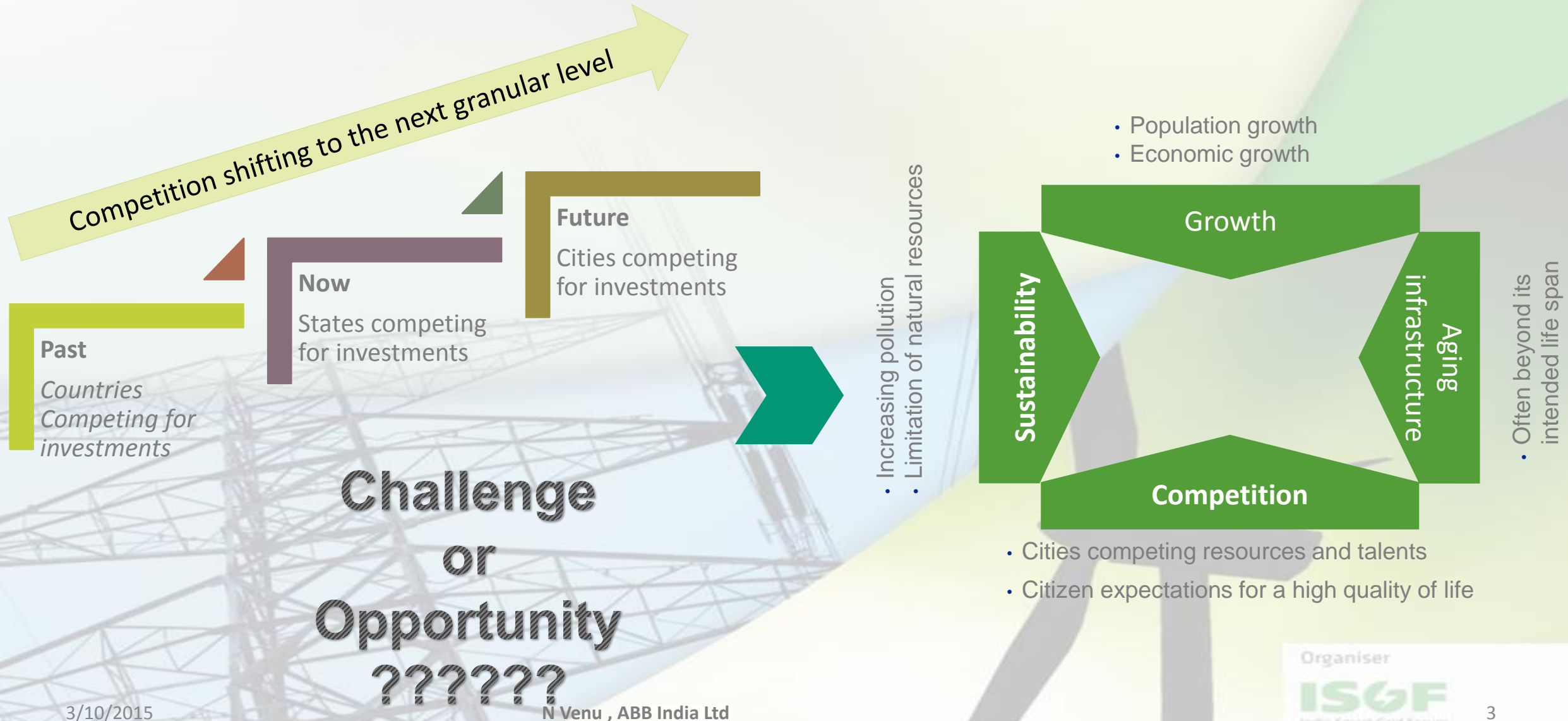
4th March 2015 | Plenary Session -3

Cities in India by 2030 – Change of the land scape



Key Challenges and Opportunities

As faced by cities to a greater or lesser extent



From Traditional to Smart City

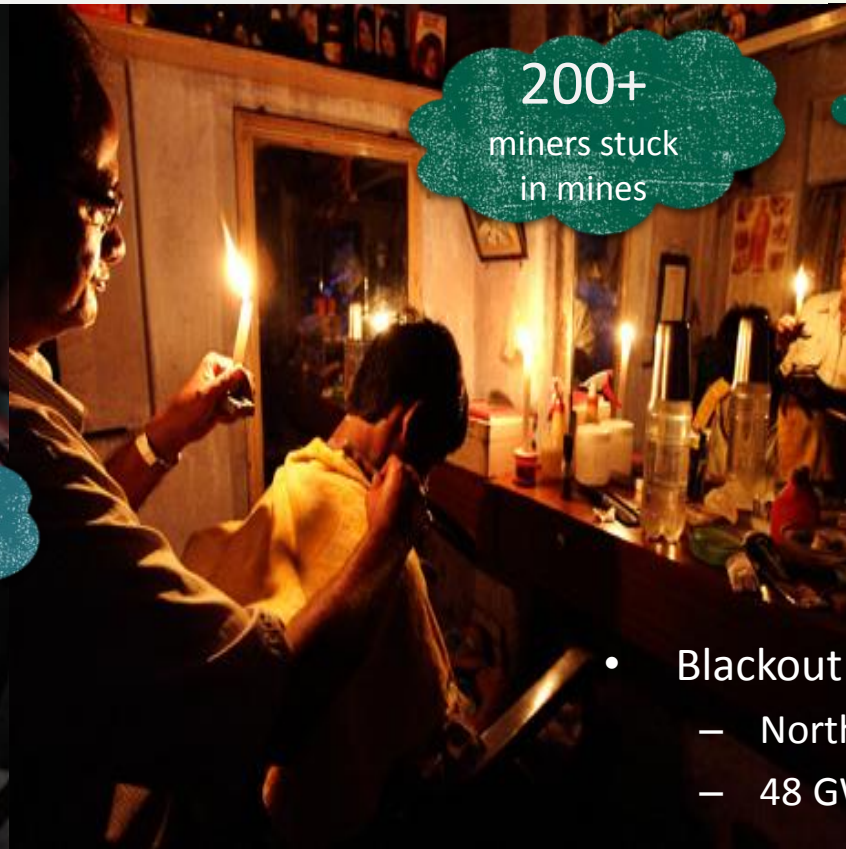
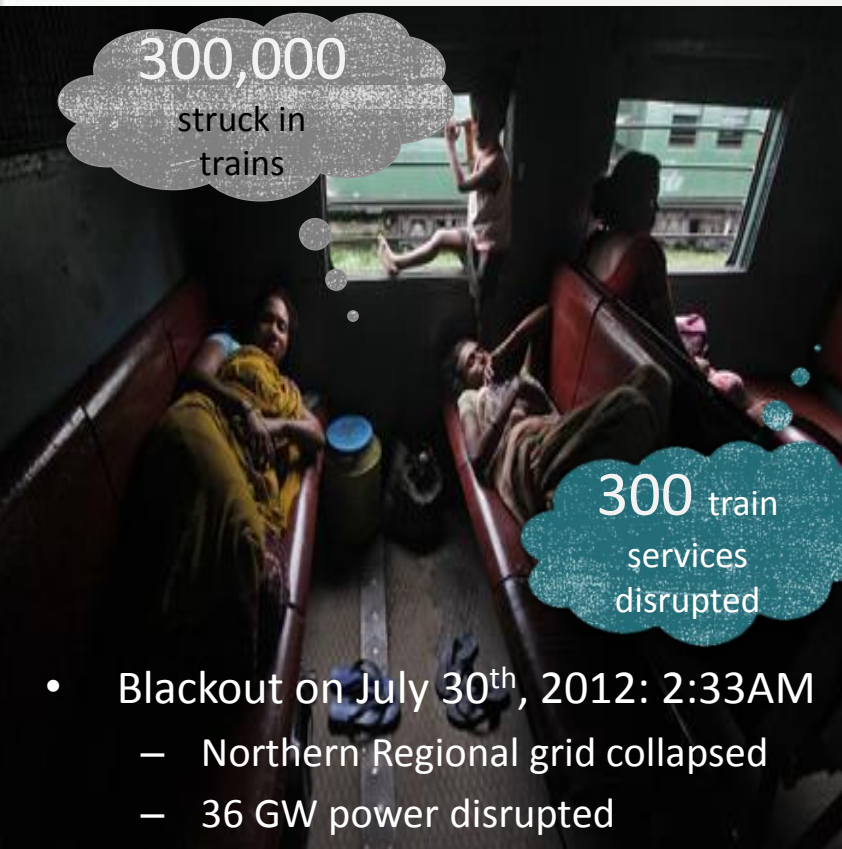
Traditional City	Smart City
Local authority less empowered, struggle to execute projects	City are managed like company, With more authority
Less resources and funds, conventional revenue plans	More resources and funds, innovation in revenue planning
Less focus on sustainability	Higher focus on Sustainability
Limited transparency of information's and governance model	Higher transparency of information and governance model
High power theft , AT&C losses and outages	24x7 Power , lower AT&C losses. Theft monitoring and control
Shortage of water, higher NRW (non revenue water) and timed water supply	24x7 water and lower NRW , Higher degree of water recycling
Slow moving traffic, Excessive dependence on fossil fuel , difficult to find parking space	Better traffic flow , use of alternative source of fuel to reduce fossil fuel consumption, Parking space info readily available
Limited connectivity and mobility	City wide connectivity and higher consumption of data
Energy efficiency and Sustainability - Nice to have	Energy efficiency and Sustainability – Integral part of plan
information in silos and limited data flow across departments	Unified planning and proper coordination among departments
Difficult to access citizen services	Simplified and efficient process flow for better access

A holistic approach needed to make city smart



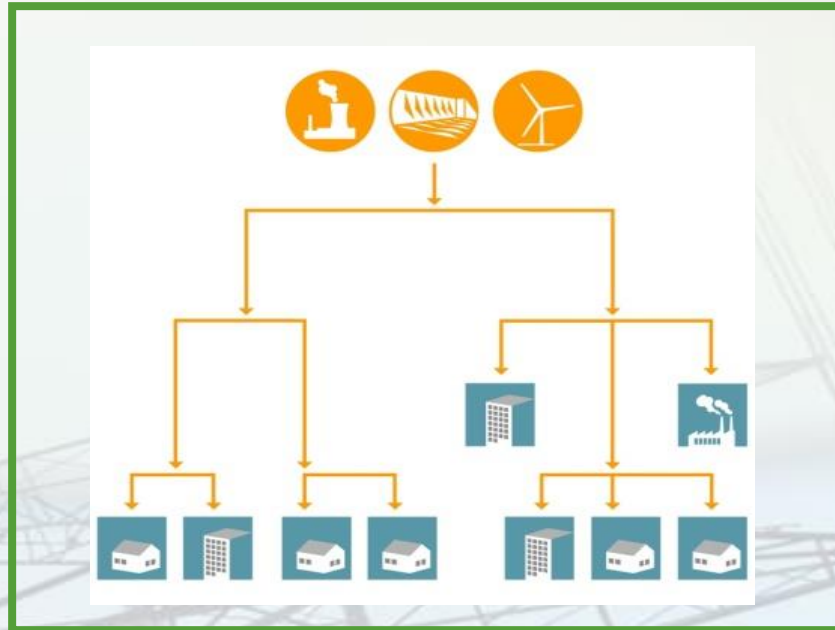
Everything relies on reliable Power

A smart city begins with a Smart Grid



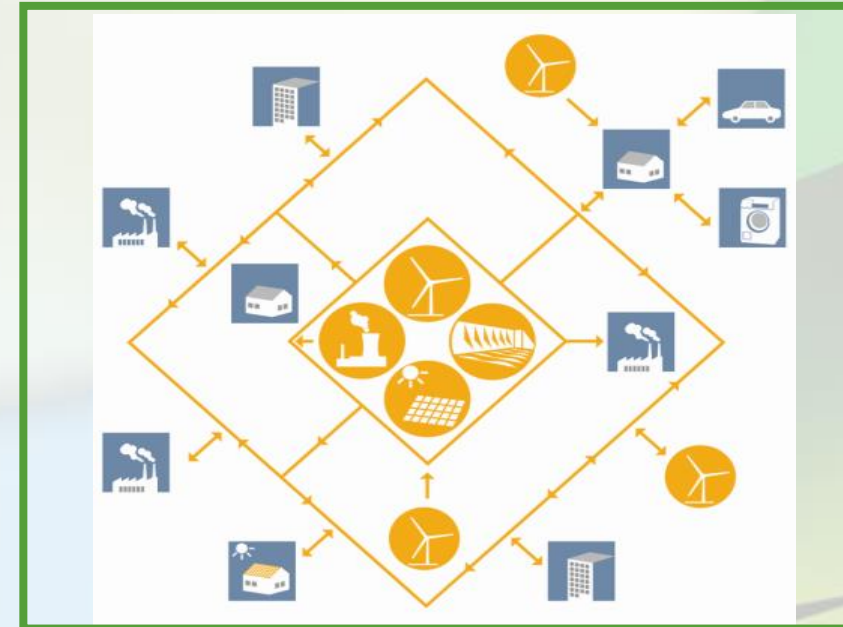
Smart grids enable smart cities

Traditional Grid



- Centralized power generation
- One-directional power flow
- Generation follows load
- Top-down operations planning
- Operation based on historical experience

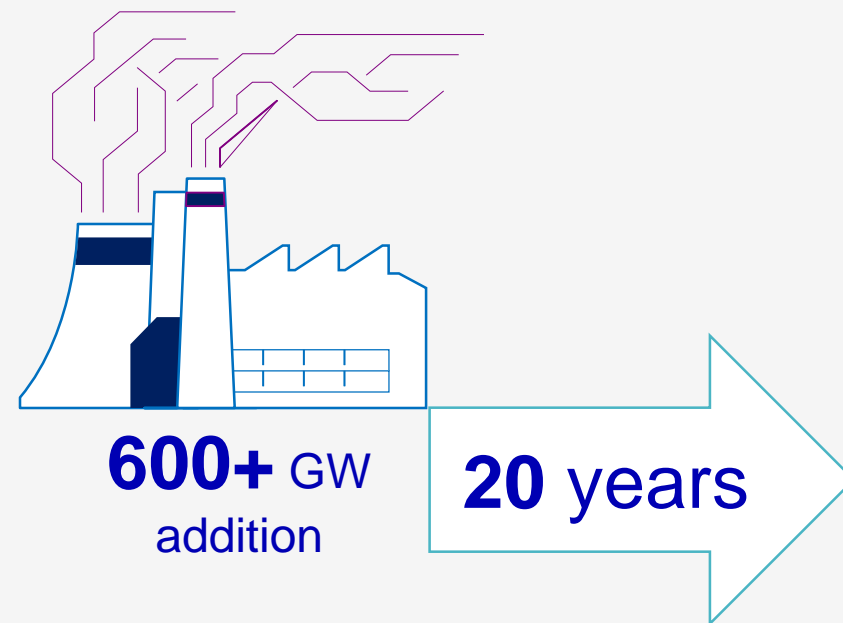
Smart Grid



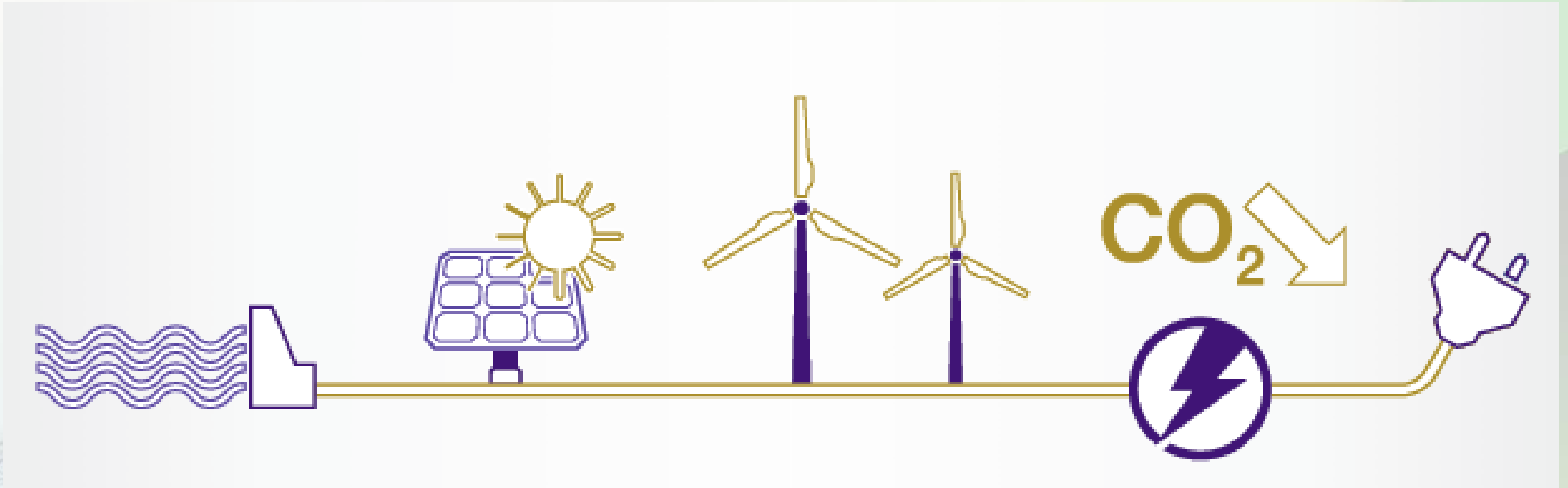
- Centralized and distributed power generation
- Volatile renewable power generation
- Multi-directional power flow
- Flexibility in demand – load follows generation
- Operation based on real-time data

Smart Grid helps meet Growing power need

Demand for electricity is soaring.
Over the **next 20 years**, we will need
to increase capacity by almost **2.5
gigawatt per month** simple to
meet India's demand.



Smart Grid – For Sustainability



Today more than **60%** of the India's electricity comes from coal, which accounts for **68%** of the **CO₂ emissions** from electricity generation.

Smart grids enable the integration of **renewable energy sources** into the grid to reduce our dependence on fossil fuels.

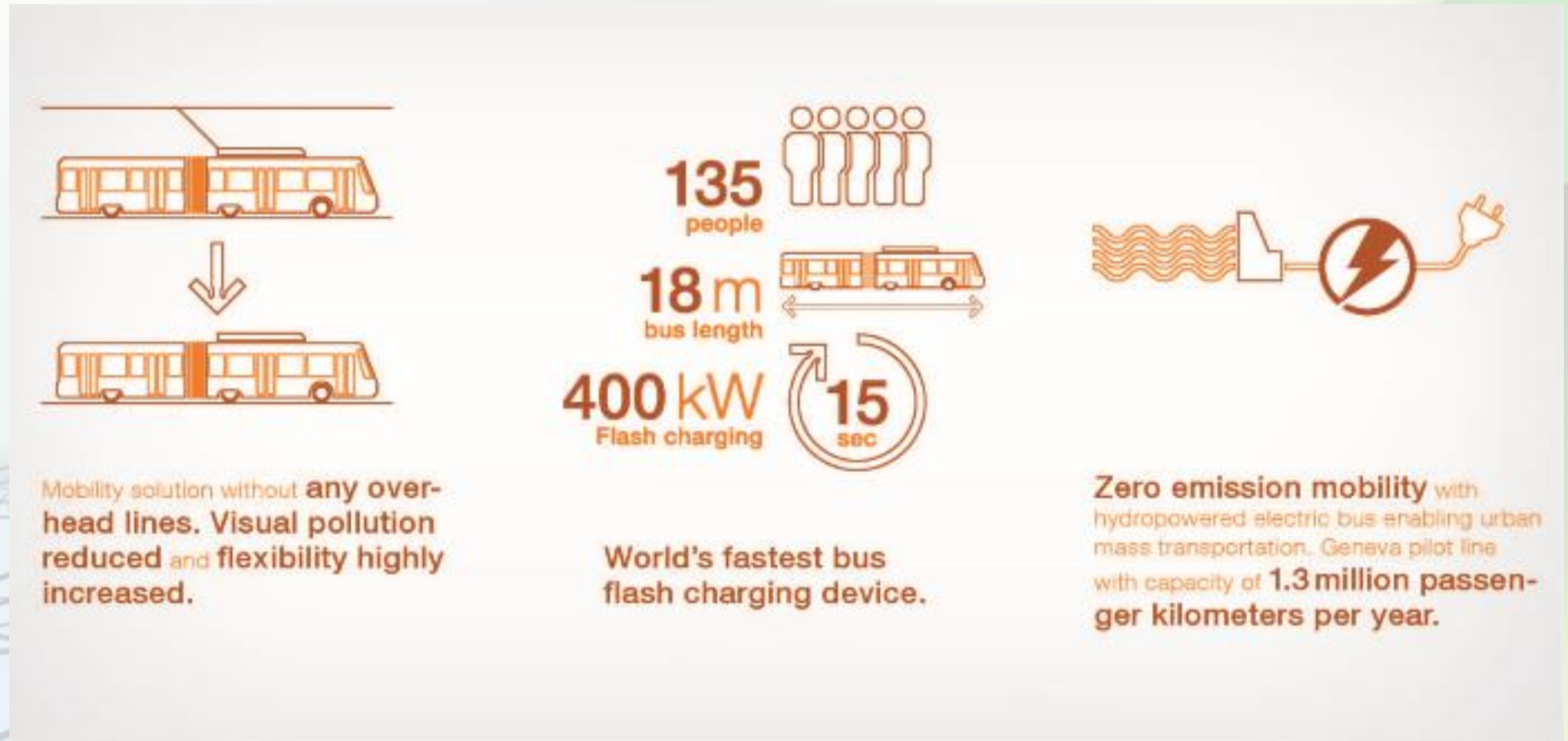
The end user plays an important role in the transformation of the electricity grid



New technologies provide **greater transparency** in terms of consumption and costs for consumers – at all times.

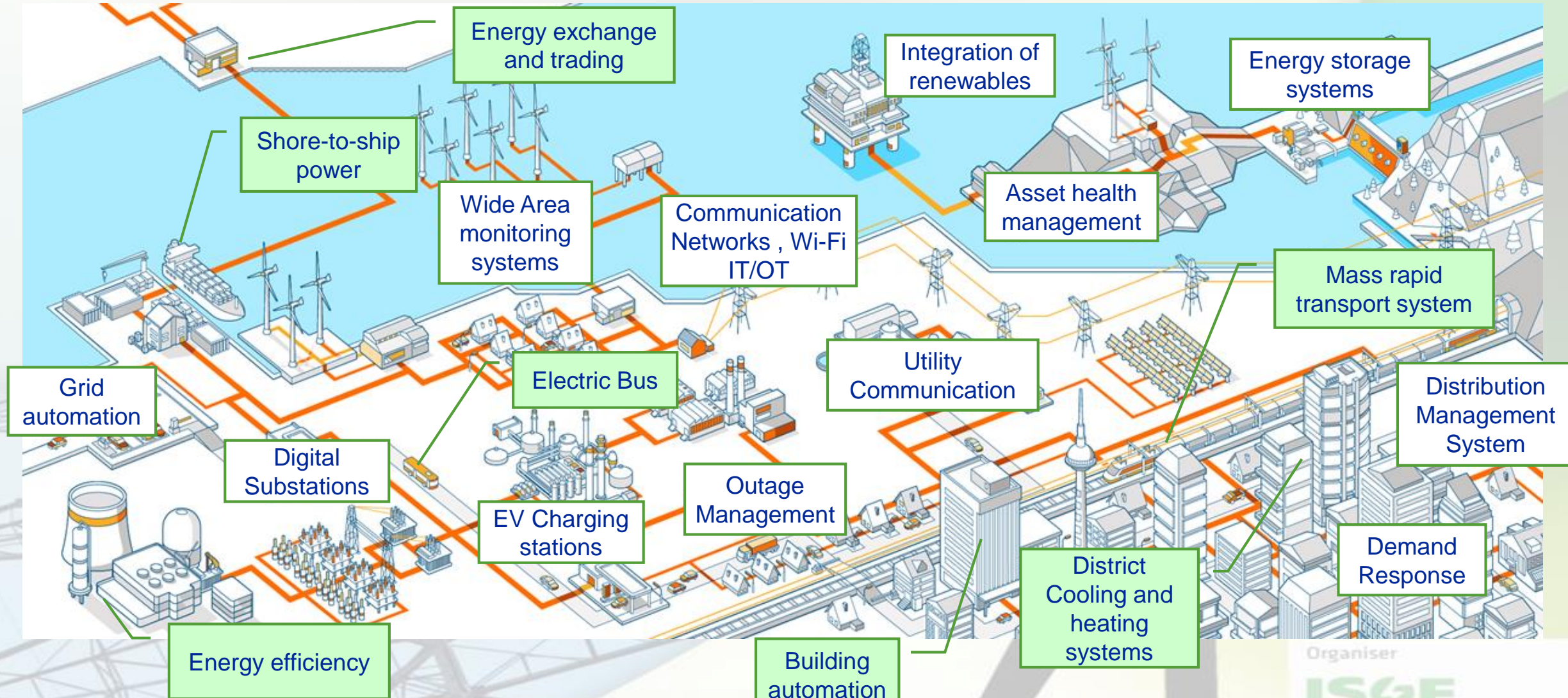
The end user decides how much power to consume and where the power comes from.

Smart grid enabling a new generation of electric bus



The evolving grid with intelligence

Making the City smarter



How we bring Smart city to reality



Integrated network management system for 800+ S/s –KPTCL(India)



High-performance wireless broadband network for city (Venice)



A cool greener life with District cooling network (Marina Bay- Singapore)



Reduce emission, Vibration and Noise in ferry operations (Netherland)



District heating helps to cut CO2 emission ,improve air quality (China)



Making electric buses possible without overhead wires (Geneva)

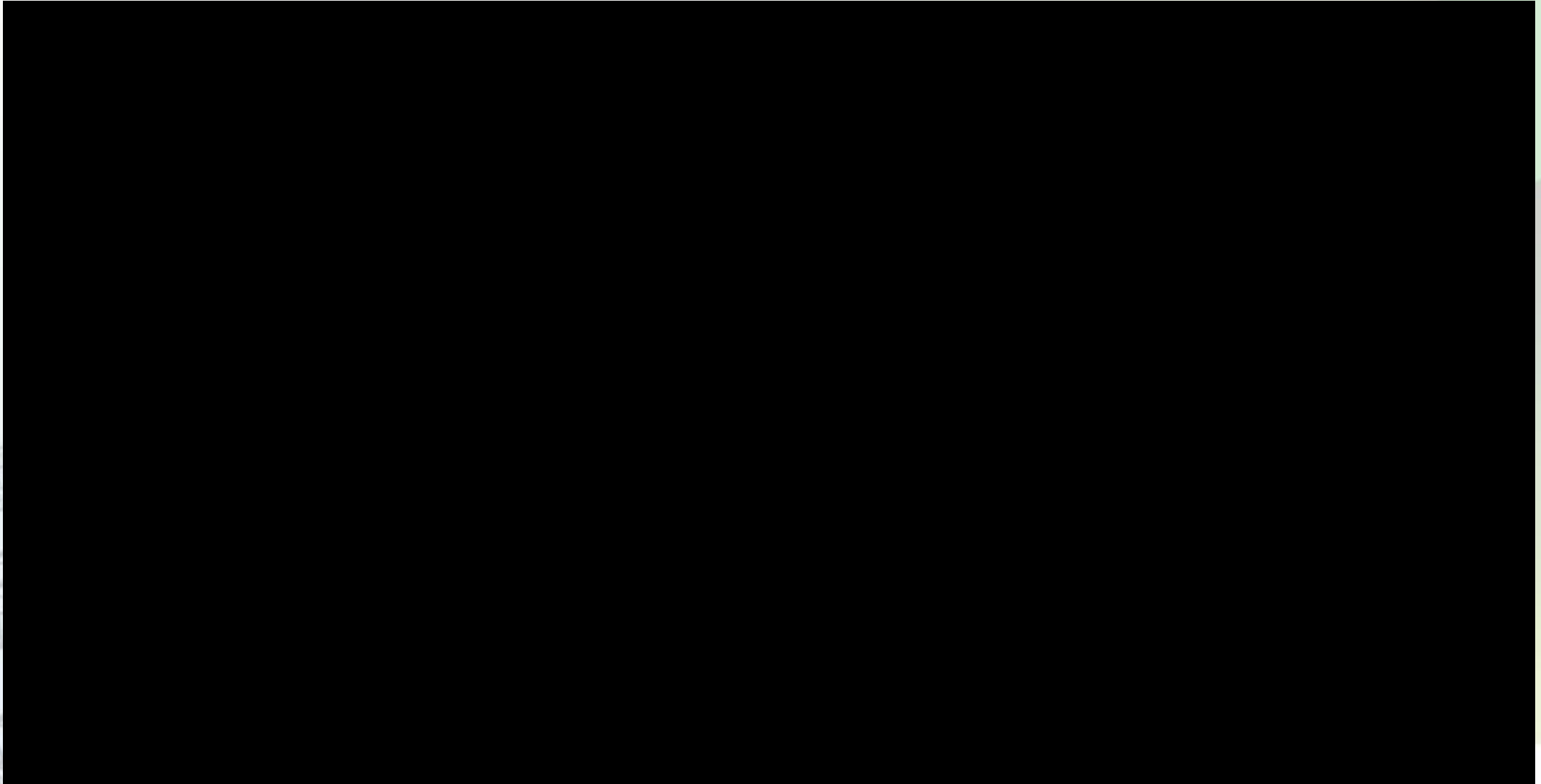


Smart home and power management solution at Burj Khalifa tower (Dubai)



Water Automation solution at India's largest desalination plant (100MLD) at Nemmeli (Chennai)

Smart Grids - Integration from electricity supply to demand





India
SMART GRID
Week 2015

02 - 06 March, 2015
Bangaluru International Exhibition Centre
Bangaluru, India

www.isgw.in

Thankyou

ABB India Ltd