



# URJA SOLUTIONS

## Smart Grid- *An overview...*

**“A Smart Grid delivers electricity from suppliers to customers using digital technology to save energy, reduce cost and increase reliability.”**

Today, the electricity supply industry is wrestling with an unprecedented array of challenges, ranging from a supply-demand gap to rising costs and global warming. These and other forces are driving the need to reinvent the business. That, in turn, is driving the need for a smart grid.

**Following main factors are driving Utility deployments of the smart grid:**

1. **Continuous increase in electricity demand**
2. **Global warming**
3. **Rising unit costs of electricity**
4. **Reliability**
5. **Efficiency**
6. **Environmental benefits**
7. **Cost savings**
8. **Grid improvement**
9. **Improved customer satisfaction**
10. **Advanced technology**
11. **Providing cost-effective and clean energy for plug-in electric vehicles (PEVs)**
12. **Managing Supply shortfalls**
13. **Loss reduction**
14. **Managing the “human element” in system operations**
15. **Peak load management**
16. **Adaptability to renewable energy**



### **Key characteristics of the smart grid**

- 🕒 *Self-healing:* The grid rapidly detects, analyzes, responds, and restores
- 🕒 *Empowers and incorporates the consumer:* Ability to incorporate consumer equipment and behavior in grid design and operation
- 🕒 *Tolerant of attack:* The grid mitigates and is resilient to physical/cyber-attacks
- 🕒 *Provides power quality needed by 21<sup>st</sup>-century users:* The grid provides quality power consistent with consumer and industry needs
- 🕒 *Accommodates a wide variety of supply and demand:* The grid accommodates a variety of resources, including demand response, combined heat and power, wind, photovoltaic, and end-use efficiency
- 🕒 *Fully enables and is supported by competitive electricity markets.*



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## Potential Benefits of the Smart Grid

### Economic benefits

- *Cost savings from peak load reduction*
- *Reductions in capacity costs*
- *Deferred capital spending for generation, transmission, and distribution investments*
- *Reduced operations and maintenance costs*
- *Reduced industrial consumer costs*

### Service benefits

- *Improved reliability*
- *Increased efficiency of power delivery*
- *Consumption management*
- *Enhanced business and residential consumer service*
- *Improved system security*

### Environmental benefits

- 🕒 *Enabling the integration of clean, renewable generation sources*
- 🕒 *Reducing electrical losses*
- 🕒 *Increasing the penetration of distributed energy resources*
- 🕒 *Increasing energy conservation through feedback to consumers*

## Key Applications

Automatic meter reading

Remote disconnect and reconnect

Outage monitoring and evaluation

Demand-side management and load management

Integration of renewable energy

Mini-SCADA (supervisory control and data acquisition systems)

**Four Key Reasons *for choosing us* to deliver “Smart Grid Solutions”:**

- 1. *Proven solution for “Smart Grid” with global technology tie-up***
- 2. *Deeper knowledge & Experience in Smart Grid (US, UK, India)***
- 3. *Strong “Global Project Management Expertise”***
- 4. *Financial Backing to deliver turnkey operations***



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