

demand response
energy efficiency

distributed
energy resources



The Smart Grid MAP

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grid modernization

climate
change

environmental
sustainability

smart
systems





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- **20+Years experience in the Smart metering, Demand response and Load Control systems**
- **Career start in 1992 with ABB in the protective relay systems for the Power network.**
- **In Dubai since July, 2000 to develop to develop the MEA metering business for ABB**
- **1990 -EEE graduate from Northeastern University, Mass**
- **2002 Exec MBA – Duke University, NC**
- **Responsible for the development od Smart Metering Solution business in the MENA region.**

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The Smart Grid vision...

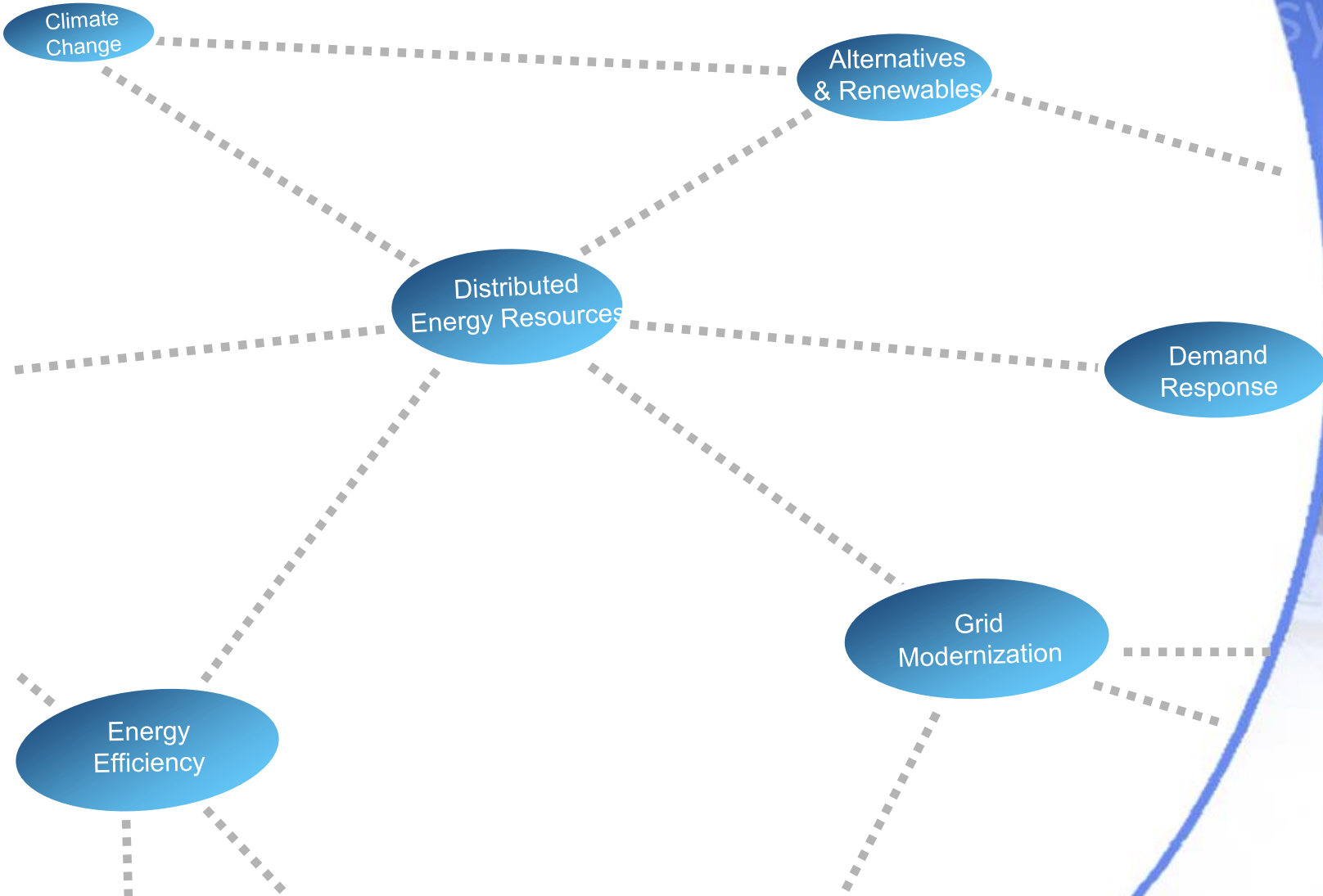
- **Efficient-** Supports increased demand without additional infrastructure
- **Accommodating-** Open to energy from virtually any source including renewables as easily, transparently, and reliably as traditional generation technologies; capable of integrating new technologies such as energy storage as they become available & proven
- **Intelligent-** Capable of sensing system problems and intelligently rerouting power or altering loads to prevent or minimize impact
- **Barrier reducing-** Enabling real time communication between the consumer and utility allowing consumers to tailor their energy consumption based on individual preferences, like price and/or environmental concerns
- **Quality focused-** capable of delivering the power quality necessary- free of sags, spikes, disturbances, and interruptions, to power the increasingly digital economy, and the data centers, computers and electronics necessary to make it run
- **Resilient-** increasingly resistant to attack and natural disasters as it becomes more decentralized and reinforced with smart grid security protocols
- **Green-** slowing the advance of global climate change and offering a real path toward significant environmental improvement

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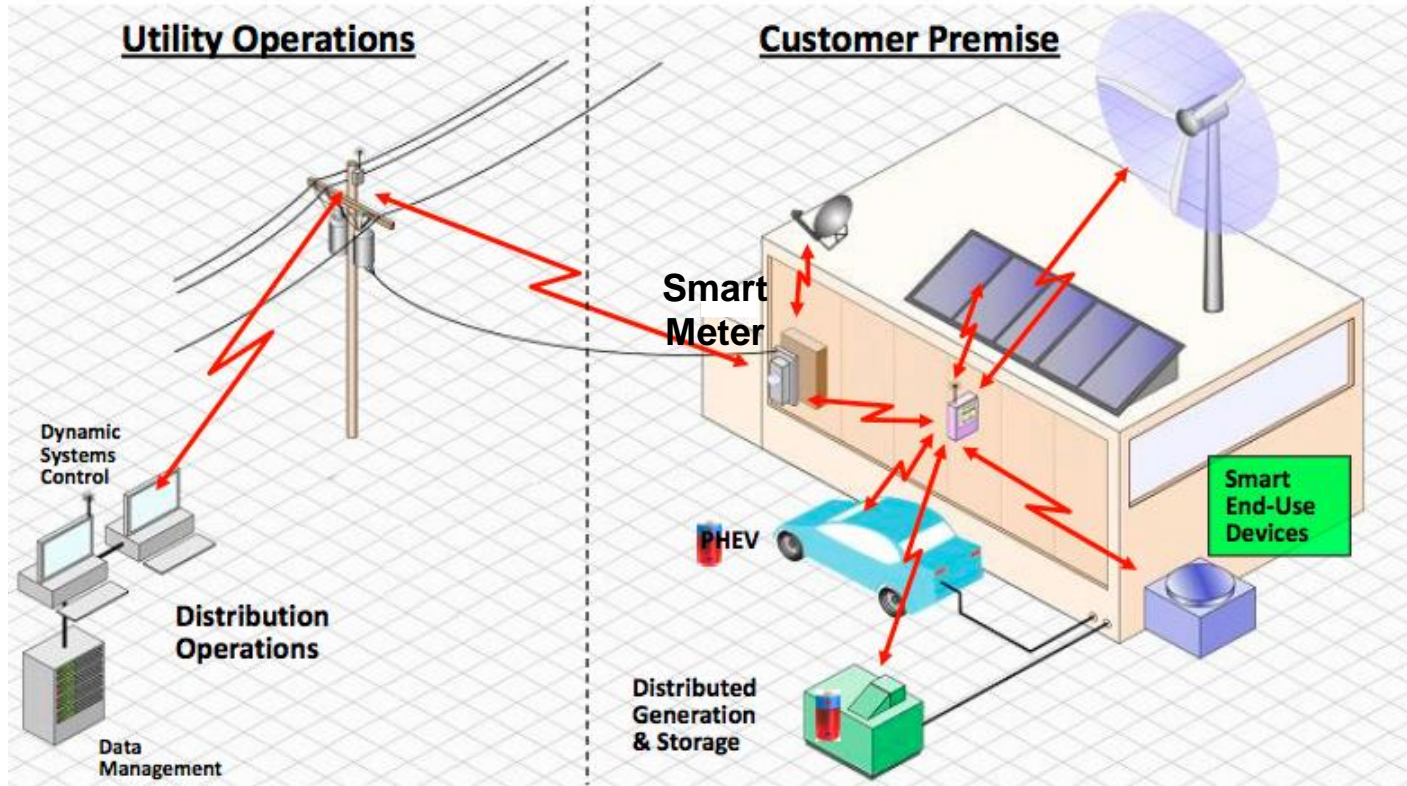
What embodies the Smart Grid?



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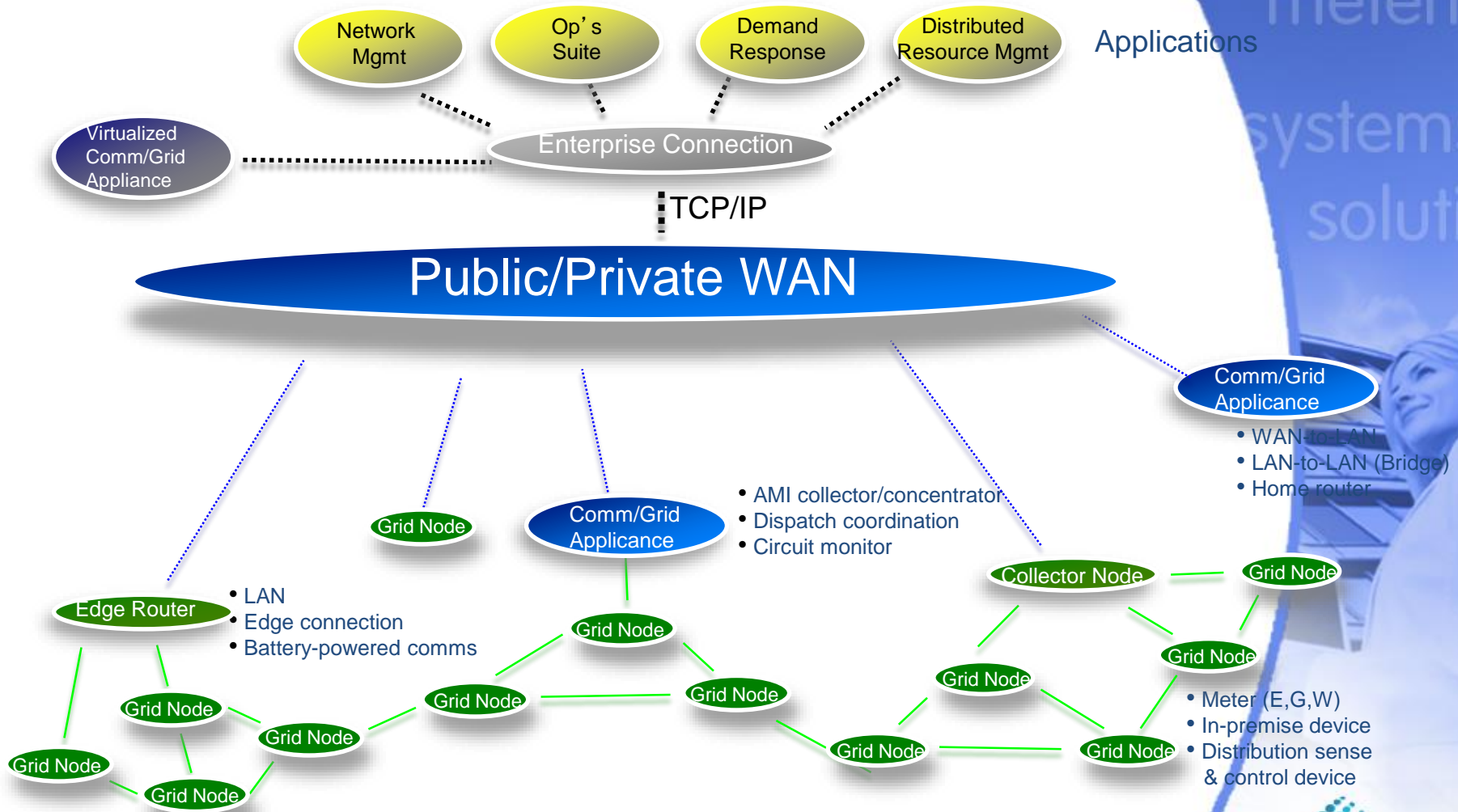
Smart Metering- Enabling the Smart Grid



Source: EPRI

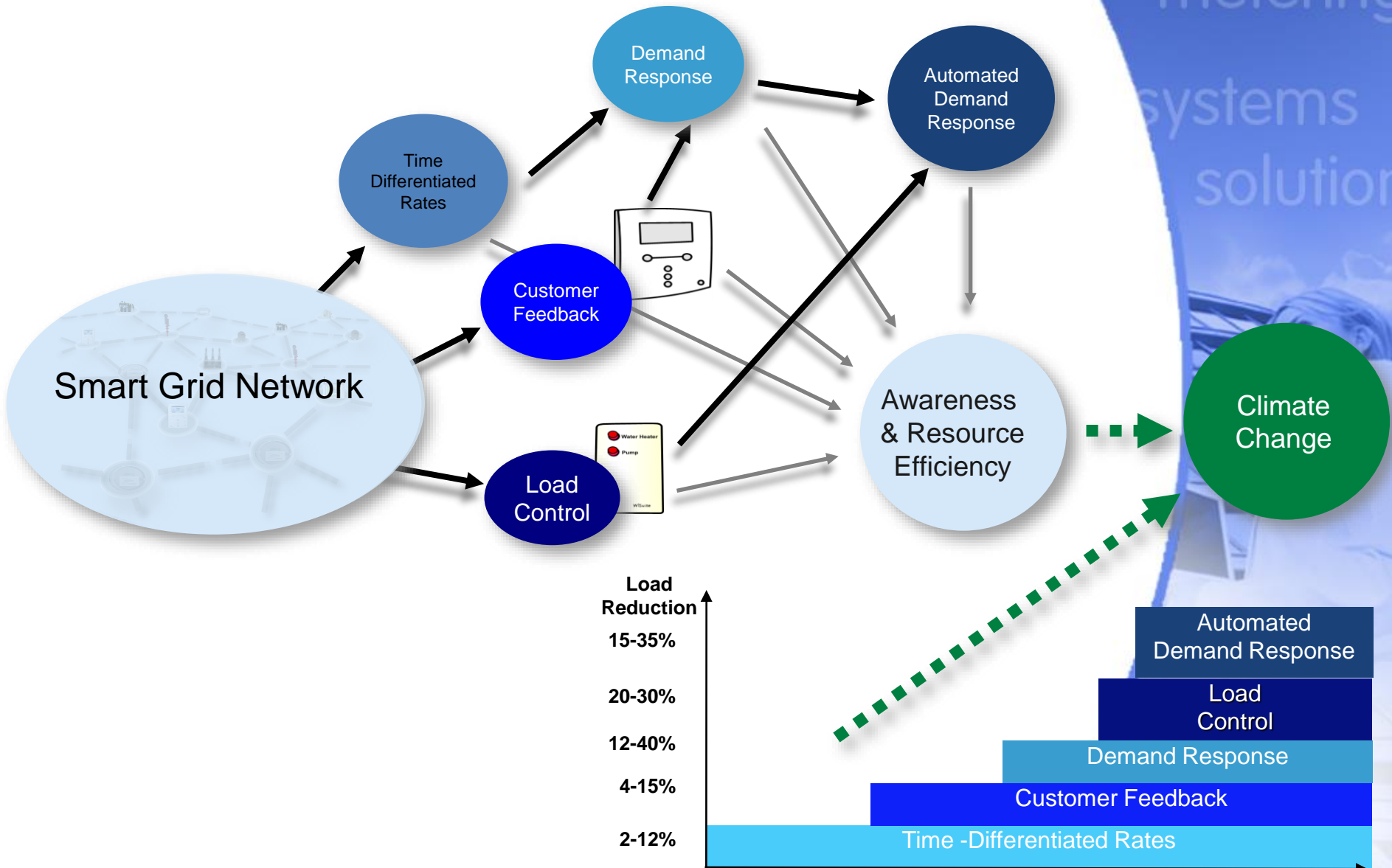
The Smart Grid is an evolution
Smart Metering is today's building block

Elster Vision - Network Smart Devices



Smart Grid and Smart Metering

Energy Efficiency, Demand Response, & Climate Change



Smart Grid Enablers

- **Integrated Communications** – Robust, integrated, two-way communications
- **Sensing and Measurement** – Enhanced synchronized distribution system measurement and monitoring
- **Advanced Components** – Power system devices that apply the latest in materials, energy storage, and electronics to determine the grid's behavior
- **Advanced Control Methods** – Methods to monitor essential grid components and enable rapid diagnosis and timely, appropriate, response to any event
- **Improved Interfaces and Decision Support** – Seamless, real-time applications that enable grid operators to make decisions quickly
- **Applications** – Linking consumers to producers and all elements of the energy/resource value chain

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Elster Mission

Enable energy and environmental sustainability

- Through pervasive, scalable, secure two-way networks of smart devices (sense, measurement, and control nodes)
- Delivering an **open** and **interoperable** system architecture that will adapt to your smart grid needs today and in the future
- Creating more than just a communications pipe. Leveraging in network distributed intelligence to enable smart grid applications
- Support demand response programs through time variable usage measurement and consumer linkage through home area networking capabilities
- Create seamless data access through enterprise information integration & applications
- Deliver these capabilities while in a cost effective smart metering and smart grid system solution deployable today

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Thank-you

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