

Smart Grid

How Does It Work? Why Do We Need It?

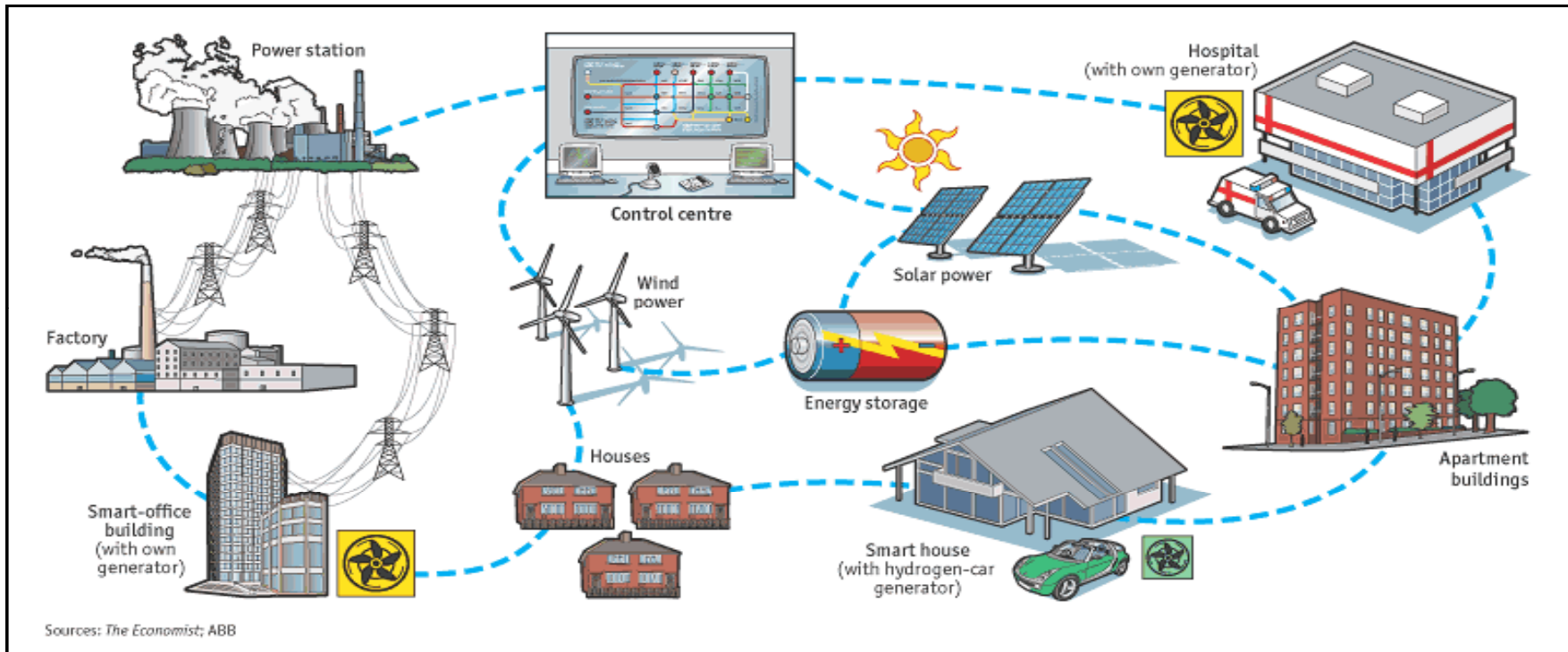


A Congressional Briefing Sponsored by:



Transitioning the Energy Economy

Vision for Grid of the Future – Grid 2020



Interconnected

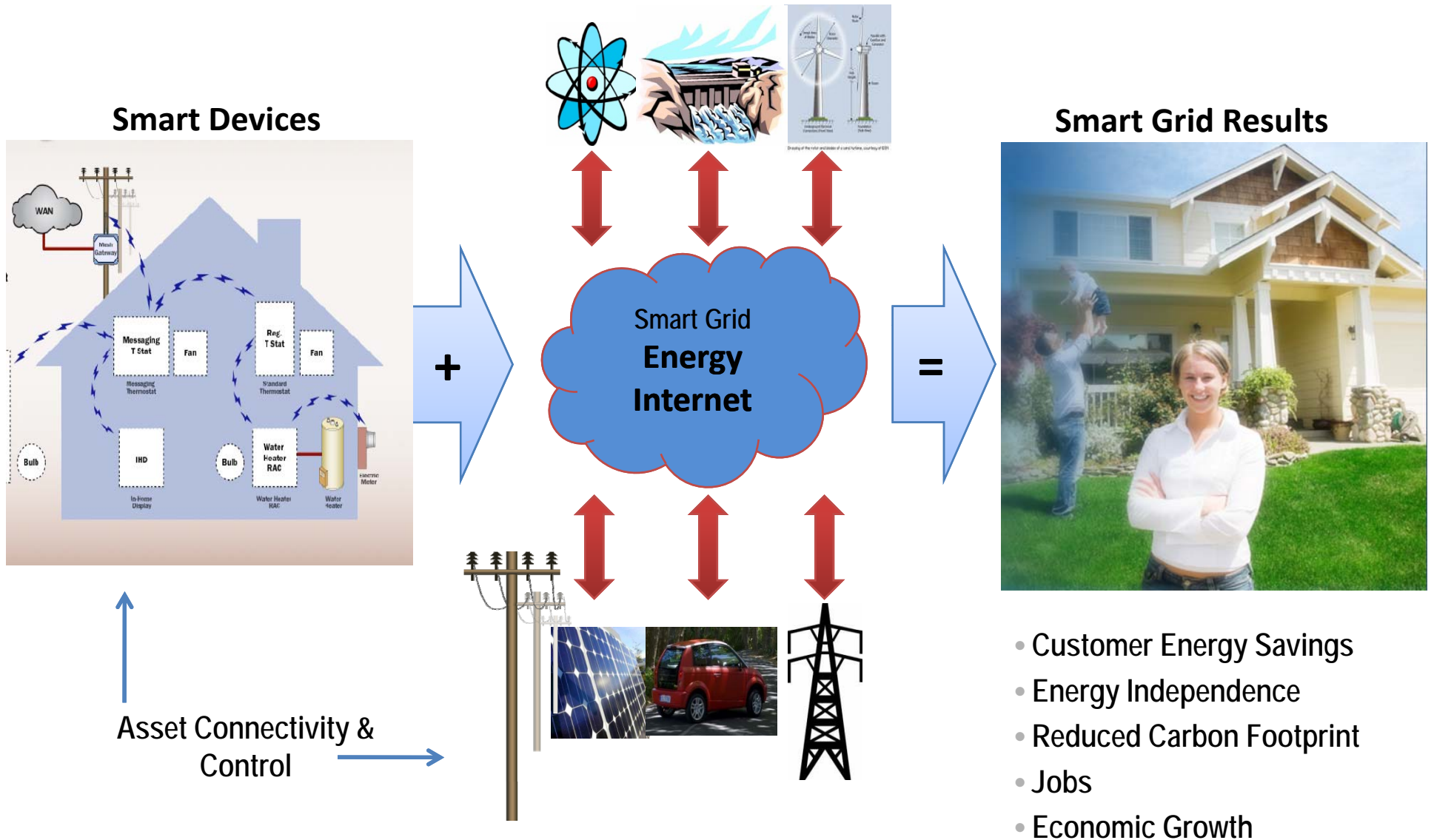
Decentralized

Intelligent

Pervasive

Empowering

Smart Grid at a Glance



Smart Grid Results



- Customer Energy Savings
- Energy Independence
- Reduced Carbon Footprint
- Jobs
- Economic Growth

Smart Grid Evolution

Smart Grid v0.0 Networked Meters

Smart Grid v1.0 Asset Connectivity & Control

Smart Grid v2.0 Grid-to-Consumer Virtualization

Smart Grid v3.0 Dynamic & Autonomic Solutions



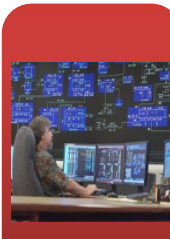
Proprietary
Meter Data
Management



Proprietary
Narrow Band
Networks

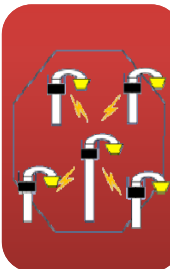


Proprietary
Advanced
Meters



Enterprise Operation

- Enterprise Data Mgt
- Device Programming
- Demand Response



IP Sensor Networks

- Internet Protocols (IP)
- Public/Private WANs
- Low Cost Wireless
- Wide scale Coverage



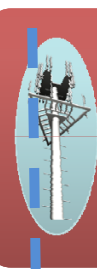
Utility Managed

- Critical Peak Pricing
- Read Advanced Meters
- Control Thermostats
- Load Controls



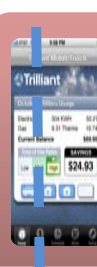
Smart Energy Services

- Grid-Wide Enterprise Services
- ERP Operations Unified
- Consumer Services
- Live Grid Analytics



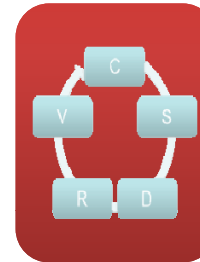
Multi-Service Networks

- Broadband
- Mobility
- Grid
- Community
- Home



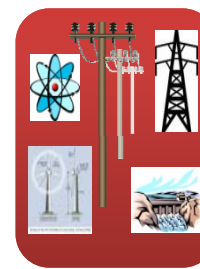
Consumer-Oriented Grid

- Consumer Energy Efficiency
- Smart Appliances
- Account & Eco Info Services
- 1-way PHEV (charging)



Sustainability

- Supply Balancing
- Time-Allocation
- Eco Credits



Max Capacity

- Matrix Grids
- Quality of Service
- Load Balancing
- Energy Storage



EcoCommunity

- 2-way Elect. Vehicles
- Retail services
- Affinity groups

Isolated Meter Networks

Utility Operations

2009

Efficiency Subscriber Services

Smart Grid Objectives

