Austin Energy
Smart Grid Program

Andres Carvallo, CIO

Austin Energy

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About Austin Energy

- 9th largest public power utility in the USA
- Over $1.2 billion in annual revenues
- Servicing almost 400,000 premises representing around 43,000 businesses and ~1 million consumers
- Leader in conservation and renewable energy
- Leader in the use and management of distributed generation
- Leader in using the best IT solutions to deliver a fully-integrated and self-healing utility

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IT at Austin Energy

- 100 projects per year
- 400,000 meters, 150 enterprise apps, 600 servers, 1700 PCs/laptops, 70,000 thermostats
- Monitoring around 200,000 devices in real-time today. Soon to be 500,000 devices by June 2009
- 440 sq miles of fiber network and 3 wireless data networks
- Over 150,000 calls per month
- 20 terabytes of annual data growing to 100 terabytes by June 09
- 500k billing transactions per month
- $1 billion in hedging transactions per year
- $3.5 billion in assets

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What is the Smart Grid?

- The Smart Grid is the seamless integration of an electric grid, a communications network, and the necessary software and hardware to monitor, control and manage the generation, transmission, distribution, storage and consumption of energy by any customer type.

- The Smart Grid of the future is distributed, interactive, self-healing and reaches every device.

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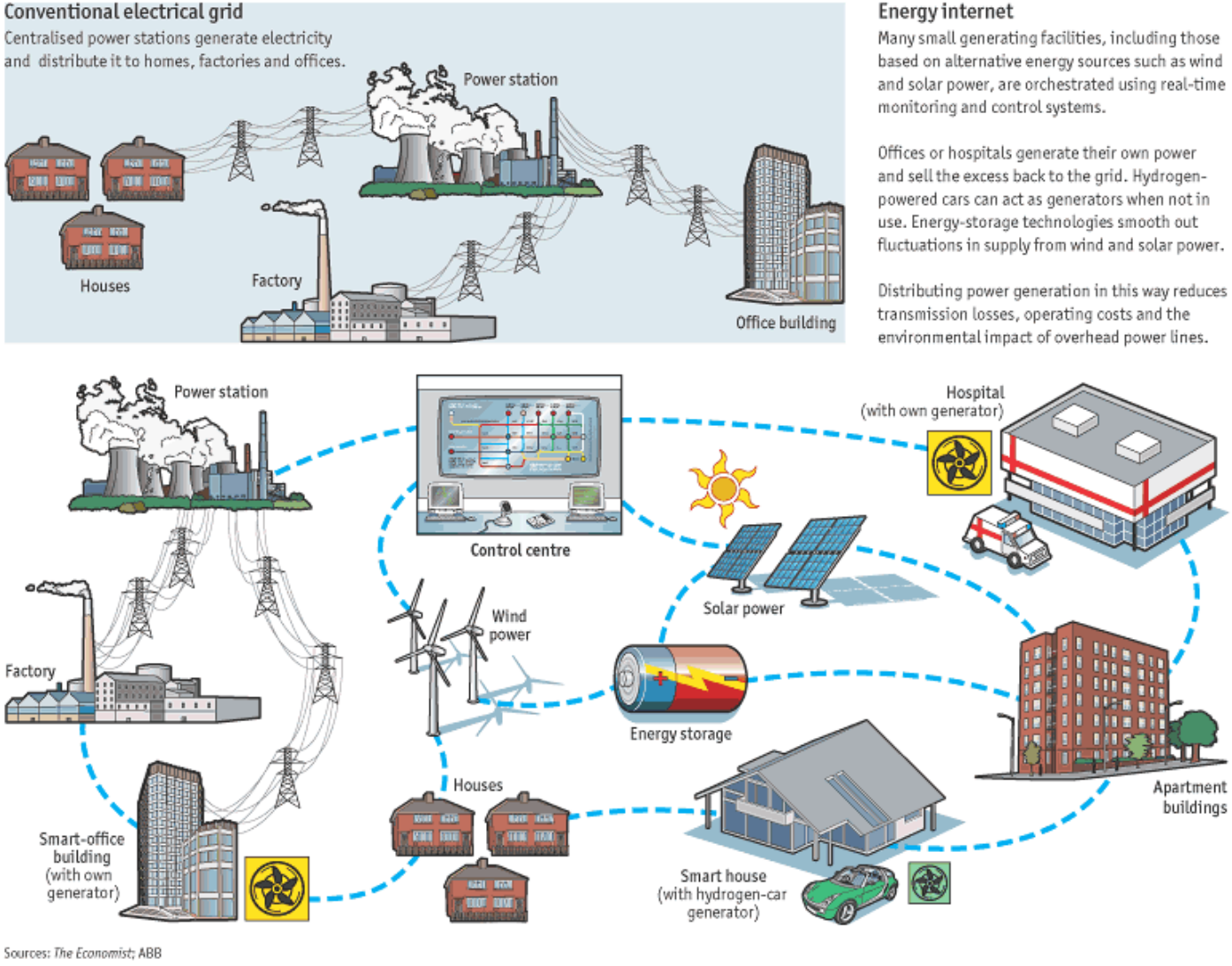
Why Do We Need the Smart Grid?

The shape of grids to come?



Sources: *The Economist*; ABB

Current

- Partial Control
- Not Integrated
- Not Optimized
- Not Interactive
- No Self-Healing
- Utility Focus

Future

- More Secure
- Total Control
- Integrated
- Optimized
- Interactive
- Self-Healing
- Customer Focus

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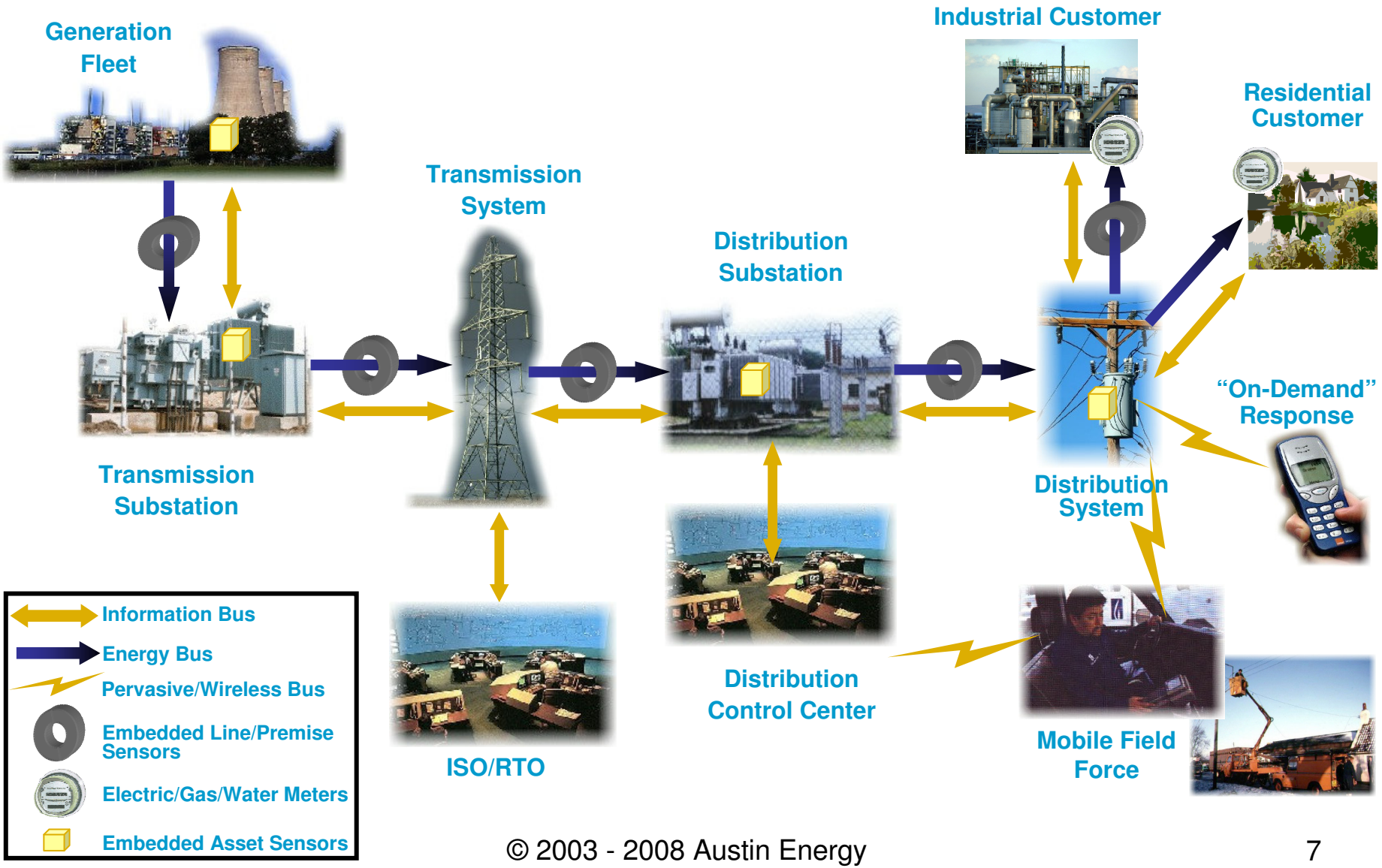
Austin Energy Smart Grid



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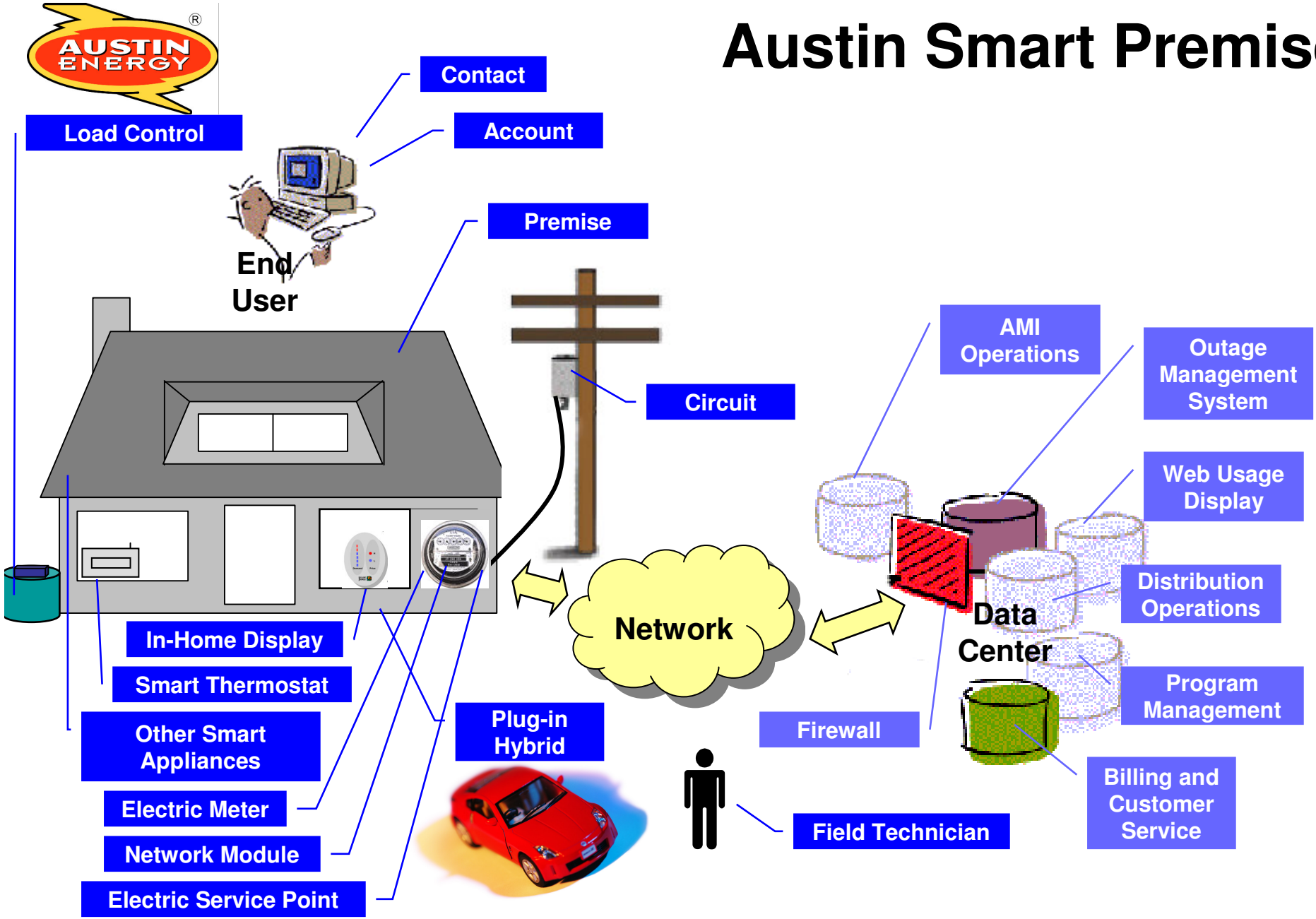
Austin Smart Premise



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Austin Energy Smart Grid Progress

	Activity	Status
1.	Build Enterprise Architecture	Started in 2004. On going.
2.	Upgrade AMR (1 way) Network to AMI (2 way)	October 2007. Done.
3.	Install smart meters. 130k AMR already done. 270k AMI Meters.	First 130k done in 2003. Started 270k in April 2008. Expected to finish in June 2009.
4.	Deploy Meter Data Management (MDM) System	Acquired in Sep 2008. Deployment starts in Oct 2008.
5.	Deploy Distribution Management System (DMS).	Acquired in Sep 2008. Deployment starts in Jan 2009.
6.	Upgrade SCADA/EMS	Nov 2009.
7.	Upgrade Billing System	Purchasing in progress. Project begins Jan 2009.
8.	Integrate DSM/DR devices	70k thermostats now. Evaluating technologies.
9.	Integrate PHEVs	Small Pilot on going. Modeling impact of 10k, 100k, and 500k units

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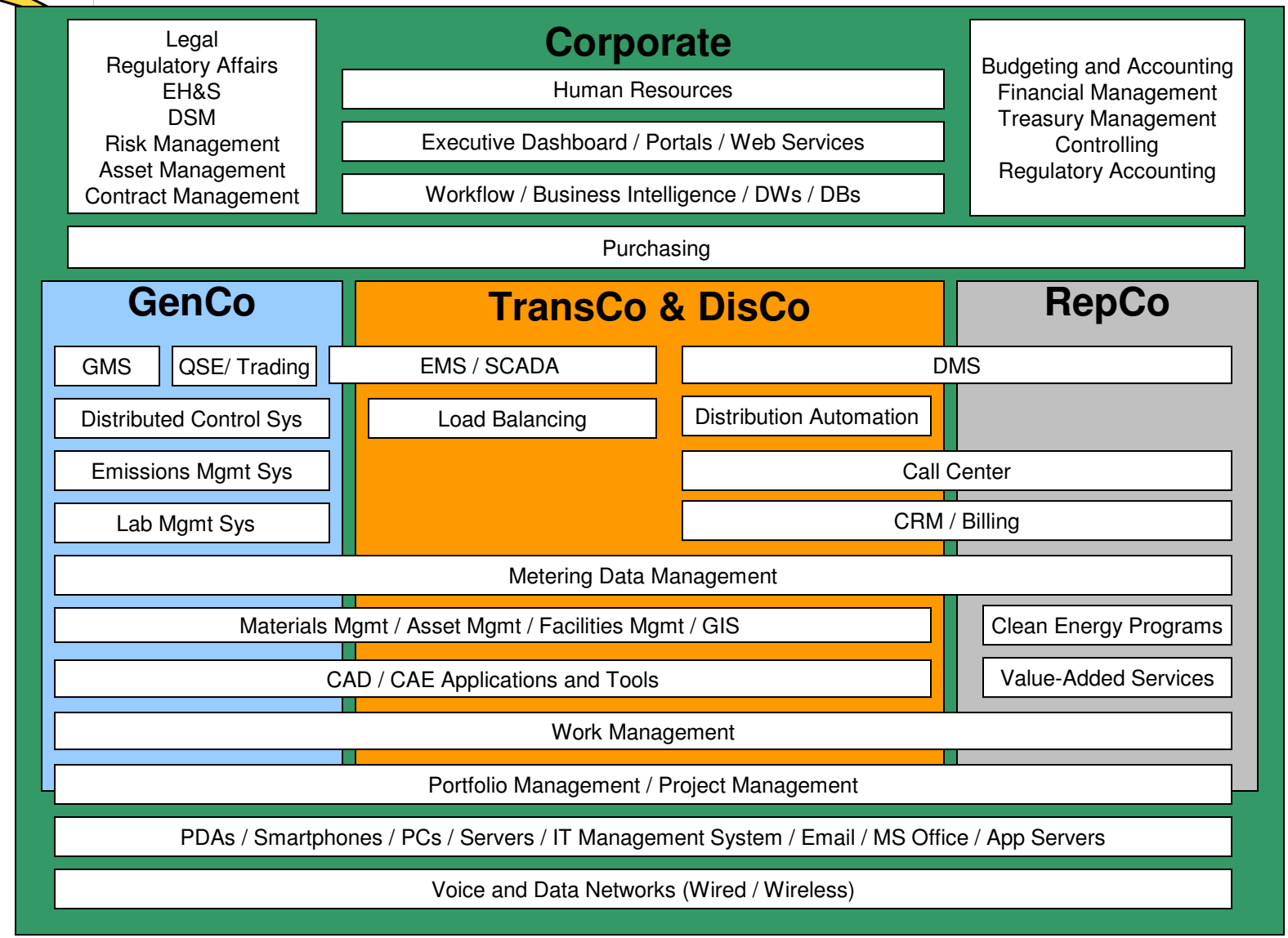
Austin Energy Enterprise Architecture



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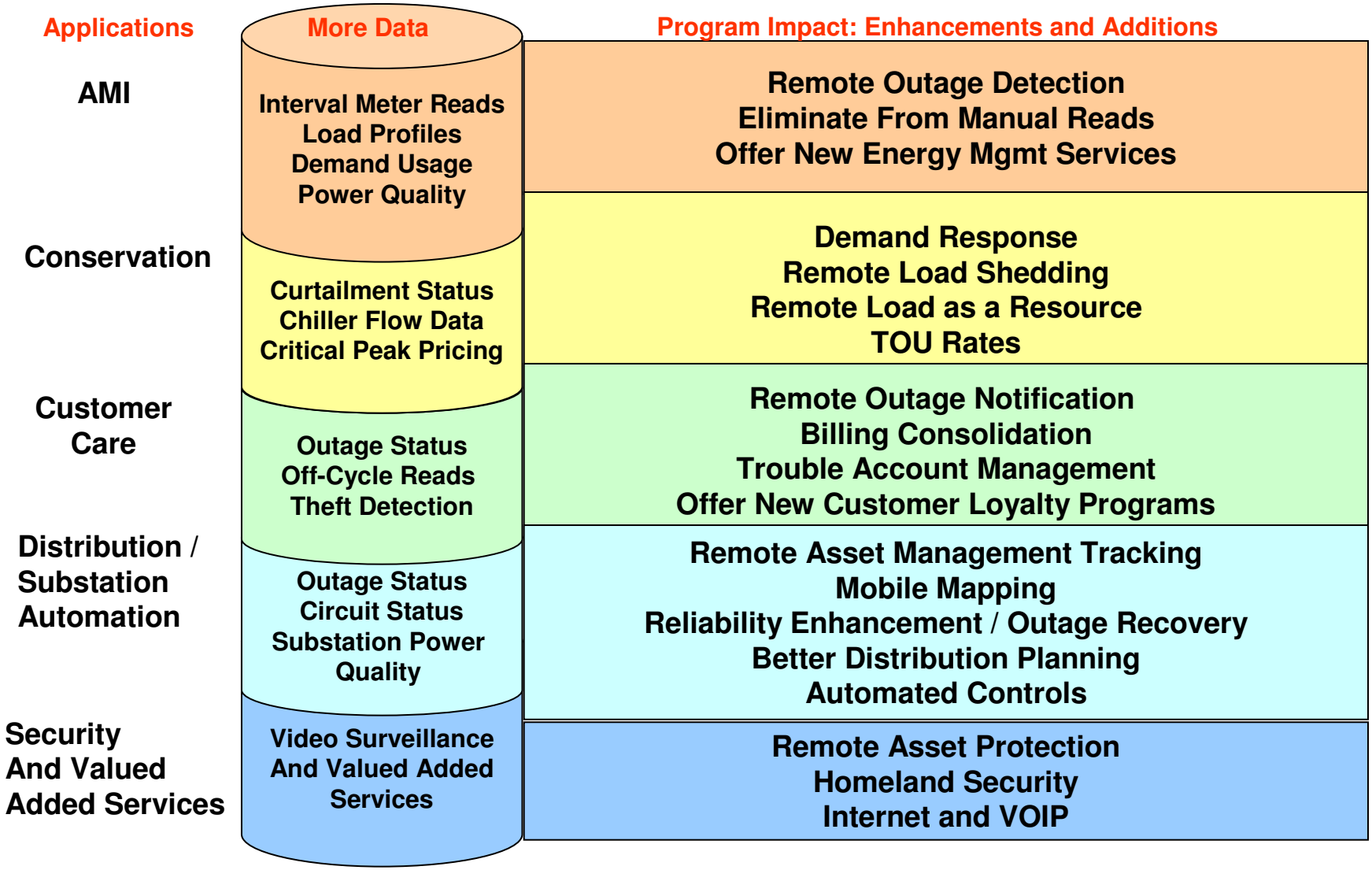
New Integrated Applications



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New Benefits for Customers

- Faster notification and restoration times from outages
- Receive usage information to better understand and manage their bills, and ability to participate in energy efficiency and demand response programs
- Reduced inconvenience by no longer needing to unlock gates and tie up dogs for meter reads
- Improvements in timeliness and accuracy of billing, fewer estimated bills
- Remote service turn-on and shut-off
- Customer can call Utility Customer Service for real-time meter read or via data on in-home display/portal
- Customer can manage DSM appliances via portal
- Ability to participate in other tariff options

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New Benefits for Austin Energy

- Reduced operating costs (less truck rolls)
- Improved outage management – ability to quickly determine if power is off or on
- Reduced number of delayed and estimated bills
- Reduced energy theft
- Lower procurement costs
- Improves Load Profiler
- Improves Distribution Load Management and Planning
- Greater Historical Load and Usage Data
- Better Asset Management and Maintenance
- Time-Of-Use Pricing, pre-paid, and flat bill programs
- Reduces need for additional generation and transmission capacity
- Supports any market price-responsive tariff requirements

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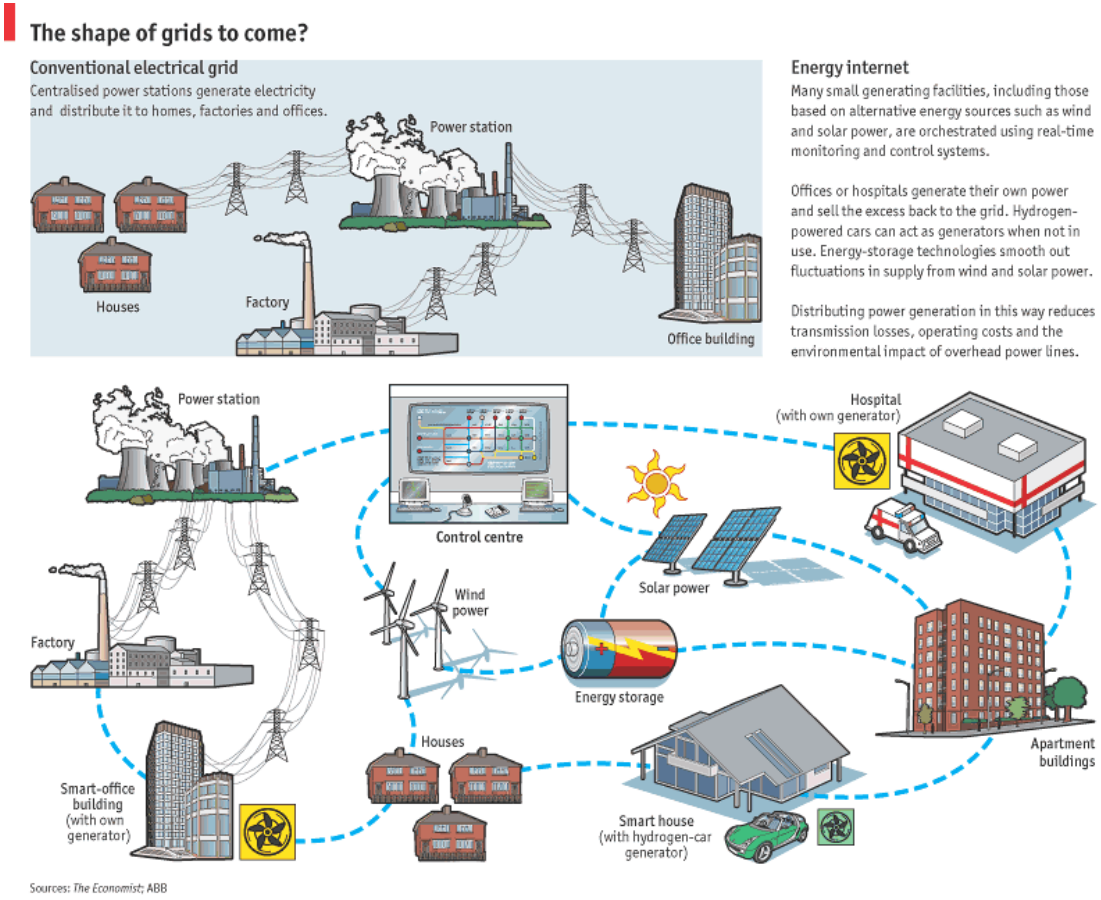
Summary: Austin Energy Smart Grid



1. Lead transformation with Enterprise Architecture
2. Follow with AMI program to reach every meter and key assets while deploying service area network
3. Deploy new Meter Data Management System and Distribution Management System.
4. Feed Outage Management System, GIS, and Asset Management System.
5. Feed SCADA/EMS and Planning Tools as needed.
6. Feed CIS to enable new DSM/DR programs and billing rates (TOU, Net, Prepay, etc)

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Any Questions???

Andres.carvallo@austinenergy.com

www.ciomaster.com

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