

METERING AMERICA

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THE metering and customer management MEGA-EVENT
for SMART electricity, water and gas utilities!

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Maximizing demand response through AMI

“Demand response is clearly the ‘killer application’ for the smart grid”

FERC Commissioner Jon Wellinghoff, 2008

Maximizing demand response through AMI

Introduction & Overview

- Industry and regulatory landscape
- Challenges and opportunities for DR
- AMI as an enabler for C&DM
- New paradigms for maximizing DR

About Rodan

- Leading provider of metering and C&DM solutions to producers, distributors and consumers of power
- Design and implement demand-side management programs for utilities and government agencies
- DE Aggregator for the residential, industrial, commercial and institutional sectors

Industry Overview

- 8% of US energy consumers are in some form of demand response program*
- DR potential in U.S. is close to 41,000 megawatts, or 5.8 percent, of U.S. peak demand*
- Largest DR contributions are from the US Mid-Atlantic, Midwestern and Southeastern*

* 2008 FERC Staff Report “Assessment of Demand Response and Advanced Metering”

Industry Overview

- AMI - 6% penetration*
- 5% of customers on some form of time-based rates or incentive-based programs*
- Renewables, DG and DR are making the smart grid a necessity
- AMI is a fundamental component of the smart grid

Underlying message for AMI and DR

- Potential growth is tremendous
- More and faster needed

Regulatory Overview

Series of Government and Regulatory mandates

- Green Energy Act (Ontario)
- Obama's stimulus package
- State regulations
- FERC proposed policy statement and action plan:
 - focused on the development of key standards for interoperability of smart grid devices and systems
 - interim rate policy for smart grid investments before the standards are developed.

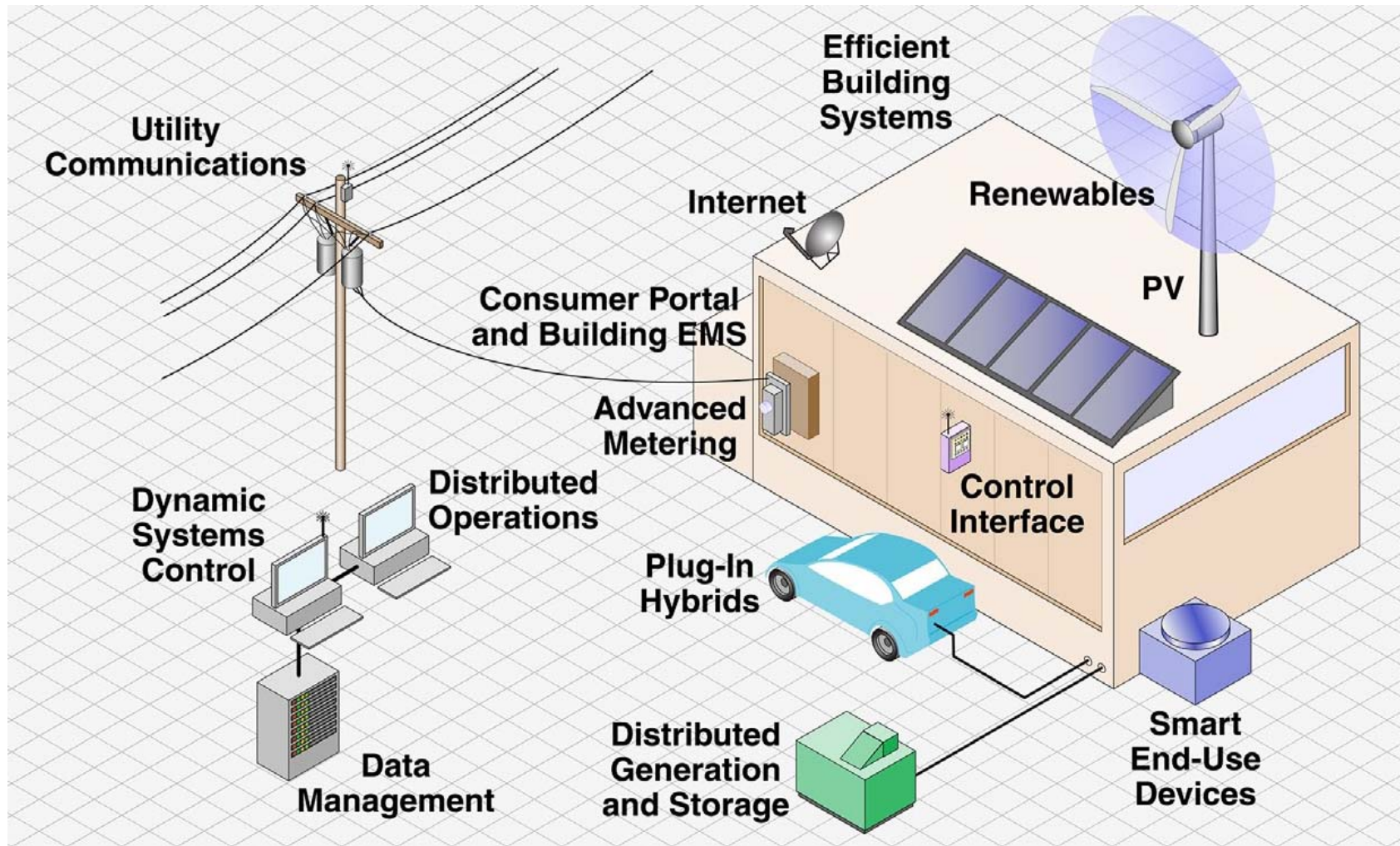
The Smart Grid



March 22 – 25, 2009 Miami, FL, USA

spintelligent

Understanding the Smart Home or Business



AMI as an Enabler for C&DM

- AMI is a means to an end
- C&DM can only be maximized if its a significant part of AMI plan/business case
- Despite the platitudes given to C&DM – regulators and utilities continue to rely on operating efficiencies as the predominant factor in the business case for AMI.

Barriers to Demand Response

- Regulation that “shield” consumers from price fluctuations
- Lack of meters/equipment at customer locations
- Customers’ “limited awareness” about programs and their benefits
- Poor link between participation and tangible benefits

Barriers to Demand Response

- AMI systems designed without a comprehensive DR strategy
 - Inability for customer or aggregator to access real-time data (e.g. pulse output external to meter cabinet)
 - Hourly or 15 min interval meters where DR programs require 5 min data
 - Poor metering records

Barriers to Demand Response

- Communication
- Deployment gap
 - Focus on residential
 - Cost benefit greater in underserviced ICI segment
- Lack of timely and accessible information to end user
- AMI and DR design/implementation are in separate silos

Role of Electricity Distributors

- Enablers of C&DM
- Unconventional partnerships
 - Bring your technology and implementation partners “inside the tent”
- New paradigms
 - Off-load technology and implementation risk
 - Service providers and technology vendors as extension of utility
 - Assets with a short (<5 year) technology life

Role of Electricity Distributors

- Create the infrastructure and the incentives
- Enable/incent others to connect technology and offerings to enhance C&DM
- Utilities need to be interoperable with programs and technologies
- Facilitate innovation
- New asset management and services models

Maximize demand response via AMI

How do we get there?

- Utilities must build the roads, post the signs and provide the incentives
 - AMI, 2-way communication, open protocols
 - Access to data – in home displays and information hubs
- Others will connect to the hub, provide services, access the displays and leverage AMI to maximize DR

Maximize demand response via AMI

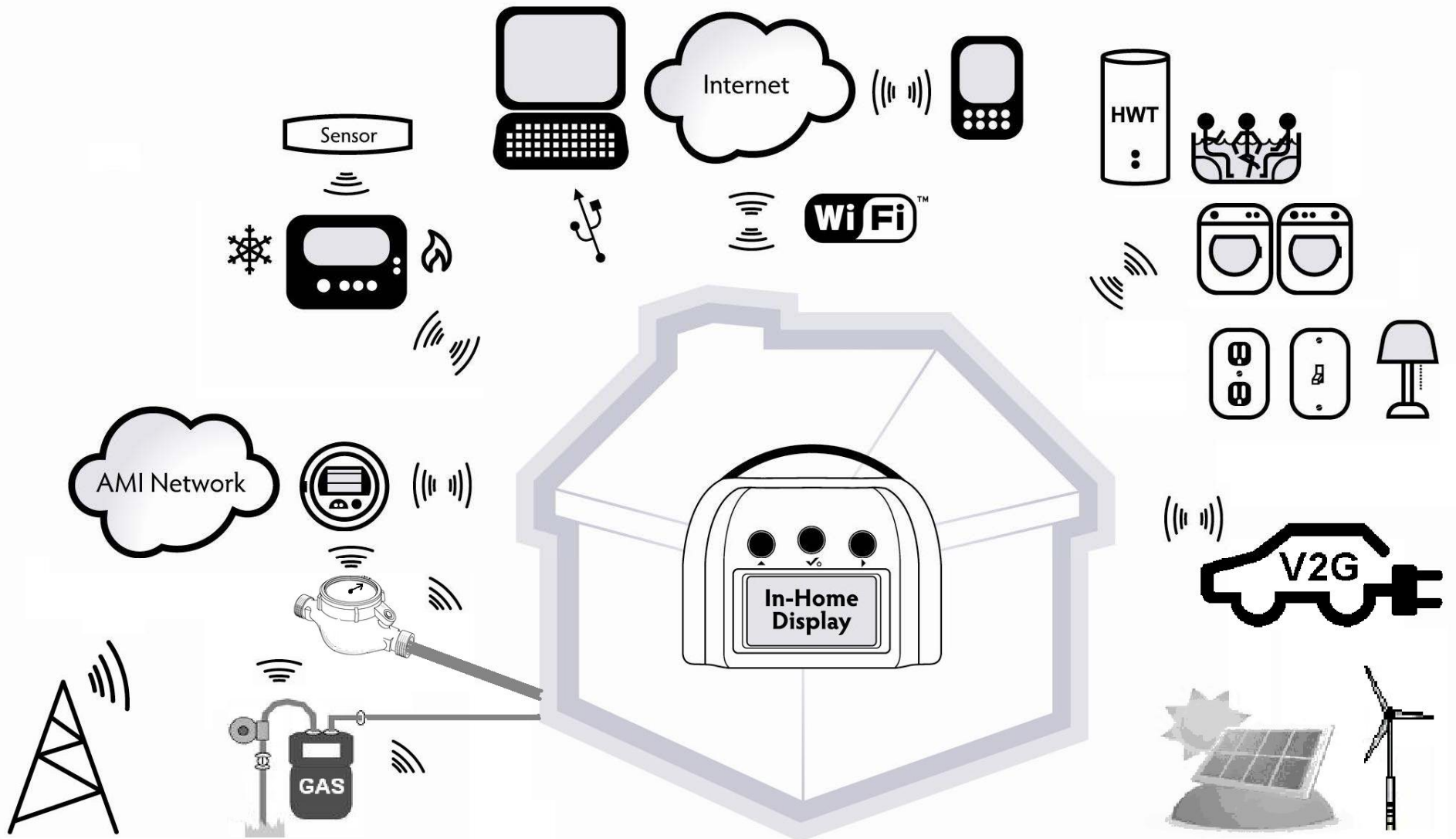
How do we get there?

- Market based rather than program based incentives
- Leverage innovation and reduce risk
- Utilities can lease from service providers rather than own parts of the smart grid infrastructure
- Service providers can find other revenue streams such as other utilities or aggregators that will leverage the infrastructure to deliver innovative offerings

In Home Displays

- Hub for the Home
- Talks to Smart Meter
- Enables two communication to smart devices & appliance
- Enhances AMI's Smart Grid capabilities
- Multiple entities can find value and help off-set the cost of such devices

In Home Displays



Conclusion

- Smart grid has become a necessity
- AMI is the cornerstone of the smart grid
- DR is the killer app of the smart grid
- AMI needs to be designed to maximize DR
- Utilities must focus on enabling C&DM
- Quickly deploying infrastructure is key
- Innovation through untraditional partnerships and new paradigms for utilities

Thank you/Q&A

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Maximizing demand response through AMI

Utilities and regulators often build their business case and design their AMI without considering its potential for enhancing demand response (DR) capabilities in their system. Rodan has been working with utilities, regulators, and government agencies in designing and implementing both AMI and DR programs. We will share experiences and best practices in designing and integrating AMI systems and DR programs. Conference participants will learn how to enhance their AMI business case by leveraging DR opportunities in addition to the traditional justifications of reduced meter reading costs, operational data and theft of power mitigation.