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Green Button: International Initiatives

Presented by:

Chris King
Global Chief Regualtory Officer, Smart Grid Services
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Europe Consumer Energy Data Trends

Market

- All member states required to implement retail competition
- All have done so, but distributor and retailer closely linked in most countries; real competition in the UK, Nordics, and Italy

European Union Directive 2009/72/EC

- Countries must deploy smart meters to 80% of customers by 2020 if cost-effective

European Union Energy Efficiency Directive 2012/27EU

- Utilities must bill using actual usage data (vs. estimated)
- Utilities must provide 24 months of detailed data via Internet or local meter interface (Home Area Network interface)
- Data must be free
- Security and privacy must be ensured
- Data must be provided to a customer or authorized third party "in an easily understandable format they can use to compare deals"

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UK

National commitment to Open Data

- Push to make all consumer data available to consumers – energy, health, credit card, banking, even grocery store purchases
- Called "Midata"

Comprehensive Smart Meter Programme

- Deploy 100% smart electric and gas meters by 2019
- Begin rollout 2014

Consumer engagement

- Real-time data via a Home Area Network interface
- Retailers receive only monthly billing data unless customer allows additional data from smart meters
- Retailers have committed to providing data online
- Right to authorize third parties to receive customer's data

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- NIST has had multiple discussions with UK market participants
- Government now evaluating

Germany

Data Access Issues Driven by Federal Office for Information Security

- December 2012 Release Candidate for "Protection Profile for Smart Meter System"

  - Raises costs substantially (doubles cost of smart meters)

- Introduces new market player: Smart Meter Gateway Administrator

  - Possibilities: Distributors, Meter Operators, Telcos (Germany's electric market is unbundled)

Smart Meters

- No final commitment; cost-benefit analysis underway

Consumer engagement

- Real-time data via a Home Area Network interface

- Load control via Smart Meter Gateway

- Retailers get minimum data needed for billing

- All other data: customer determines what data and to whom

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- Effort just beginning

- VDE (Association for Electrical, Electronic, and Information Technologies) evaluating a proposal to adopt Green Button as a standard for Germany

- Implementation target of 2014 in the proposal

Ontario

Smart Meters

- Hourly interval meters deployed for all customers from 2007 to 2012

- Residential and small commercial customers have mandatory time-of-use prices

- All smart meter data processed through a central data hub, the MDM/R, under the auspices of the Ontario Independent Electric System Operator

Consumer engagement

- Smart meters don't have Home Area Network interface

- Smart meter data collected daily; large utilities make it available online the next day

- Data privacy overseen by Ontario Privacy Commissioner

  - "Privacy by Design" methodology

Green Button

- In Fall 2012, Energy Minister committed to rolling out throughout Ontario

- Ontario Power Authority hiring a design consultant to develop an implementation proposal, with the project scheduled for completion by June

- MDM/R presents a unique opportunity for a single implementation to support all 72 utilities

  - Greatest value is a single, consistent, true standard

  - Scale economies are also important

Smart Grid Vision – How does Green Button fit?

- International regulatory policy
  - More reliable grid through <u>automated sensing and response</u> to fluctuations and outages
  - Financial savings via <u>improved load factor and system efficiency</u>
  - Faster and wider adoption of <u>renewable energy and electric vehicles</u>
  - <u>Empowered demand side</u> for efficient markets
- Consumer empowerment triad
  - Begins with a vision of why this matters
  - Detailed, timely usage <u>data</u> for understanding
  - <u>Pricing options</u> for financial savings off-peak or timing usage when renewables are available
  - <u>Automation</u> for set and forget response
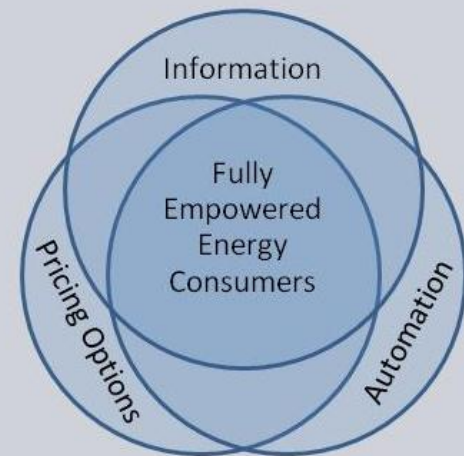
Smart Grid Consumer Empowerment Triad

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Contact

Thank you for your attention!

Questions?

Contact

- chris_king@siemens.com
- (510) 435-5189