

Smart Facilities, Smart Grid



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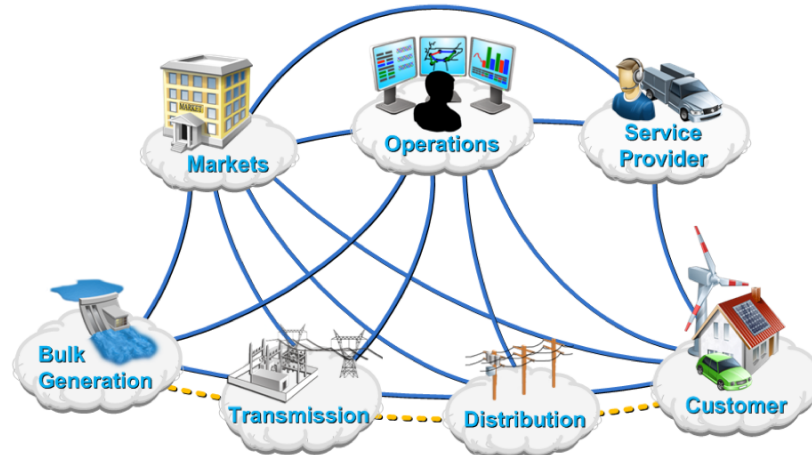
Who Am I?

- Enterprise architect; elected member of OASIS Technical Advisory Board
- Skilled at building standards from ideas to adoption
- Business, marketing, and technical background
- Working with key Smart Grid interoperability teams
- Participate in B2G and I2G NIST Groups
- Support four NIST Priority Action Plans
- *My personal analysis, opinions and suggestions*



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The Smart Grid Conceptual Model



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Smart Facilities, Smart Grid

- A smart grid must engage the end nodes
 - “Customers”
 - “Loads”
 - “Facilities”
- Collaborative Energy is most effective
 - Energy efficiency, adaptation
 - Facility automation at the interface
 - Shallow, not deep, integration—more value

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Information Exchanges

- Price
- Schedule
- Usage
- Load

Price and Product Definition

- Price is more than a number
- When, where, units, quantity, and more
- NIST Priority Action Plan 3 is guiding
 - <http://collaborate.nist.gov/twiki-sggrid/bin/view/SmartGrid/PAP03PriceProduct>
- Standard in progress in OASIS
 - OASIS Energy Market Information Exchange TC
 - <http://www.oasis-open.org/committees/emix>

Schedule

- When things happen
 - Energy prices on five minute intervals
 - Building and people schedules
- NIST Priority Action Plan 4
 - <http://collaborate.nist.gov/twiki-sggrid/bin/view/SmartGrid/PAP04Schedules>
- Based on IETF iCalendar standards
 - <http://www.calconnect.org>; <http://www.ietf.org>
- Standard in progress in OASIS
 - <http://www.oasis-open.org/committees/>

Usage and Load

- EIS Alliance inside the facility
 - <http://eisalliance.org/>
 - “Gather requirements and use cases for intra-premise scenarios that require inter-domain data exchange”
- Usage history, present, and projection
 - Benefit: devices report usage, look at meter usage and determine what’s left
- Load history, present, and projection PAP10
 - <http://collaborate.nist.gov/twiki-sggrid/bin/view/SmartGrid/PAP10EnergyUsagetoEMS>

Building to Grid

- NIST Domain Expert Working Group
- B2G Summit Wednesday
 - <http://www.b2g-summit.com>
- Meets weekly Thursday 2pm Eastern
- Driven collaboration technology and issues
- <http://collaborate.nist.gov/twiki-sggrid/bin/view/SmartGrid/B2G>



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Opportunities

- Develop lower cost, higher value energy management systems
- Integrate better with client/tenant/business
- Less customization in these areas as standards complete



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More Information

- NIST Smart Grid Collaborative Site
 - <http://collaborate.nist.gov/twiki-sggrid/bin/view/SmartGrid/WebHome>
 - <http://nist.gov/smartgrid/>
- Cox Software Architects
 - <http://coxsoftwarearchitects.com/energy>
 - Monthly newsletter
 - See What's New for most recent updates



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OASIS Links

- Interoperation and information vocabulary
- Organization for Advancement of Structured Information Systems
 - <http://www.oasis-open.org>
 - Leading XML and web services standards group (WS-Security, OpenDocument, more)
- [OASIS Energy Interoperation TC](#)
 - OpenADR as starting point



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