



Smart Grids: the Innovation Challenge

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I2G Summit, AHR 2011
2/1/2011

We can't just perfect yesterday's approaches

- We want Smart Grids to be engines of innovation for Green Tech
- New technology is today gated by the most risk-adverse entities
- Free exchange of market information is the enabler of disruptive technology change

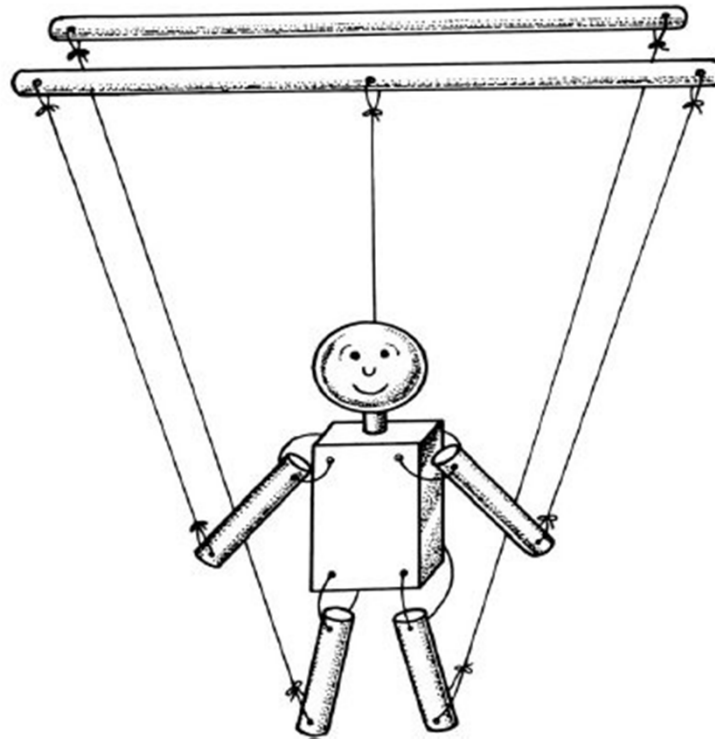


Three fundamental decisions will fracture full requirements markets

- Continued reduction of operating margins
- Inadequate new transmission and distribution to support anticipated growth
- Switch from constant to intermittent generation



The grid cannot provide and Industry
does not want direct load control



Smart grids will unbundle ancillary services that are hidden today

- Unbundling of the key services:
 - Price Risk Arbitrage
 - Availability Risk Arbitrage
 - Distribution network support
 - Energy Supply Management





Interfaces that hide details let dissimilar systems interoperate

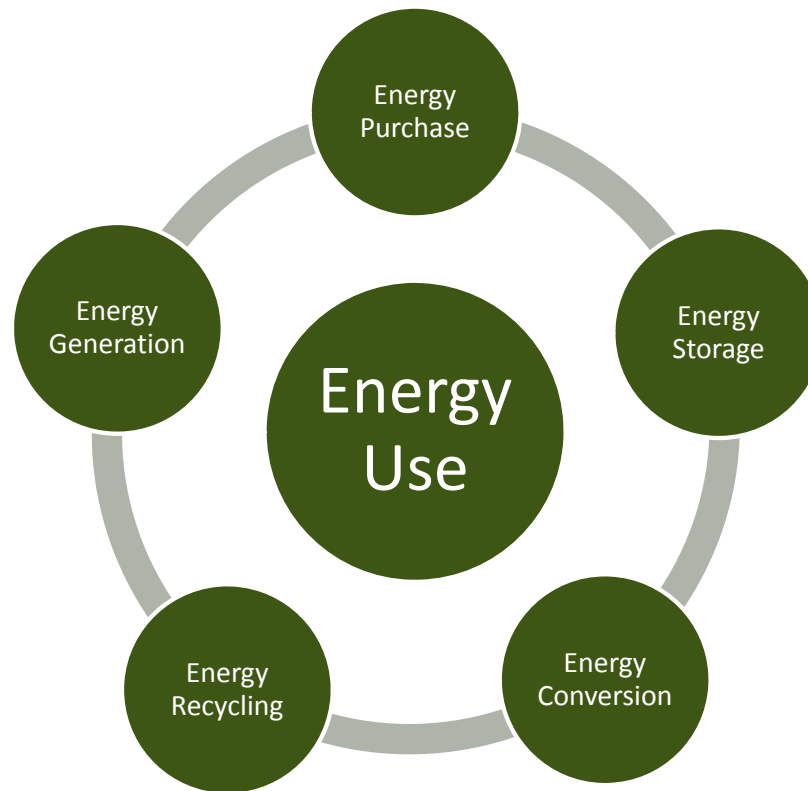


E-commerce interfaces define the minimal communication needed between domains

- WS-Calendar
 - Communication of Schedule & Sequence
 - National Priority Action Plan 04
- Energy Market Information Exchange (EMIX)
 - National Priority Action Plan 03
- Energy Interoperation
 - National Priority Action Plan 09
- Energy Usage Information
 - National Priority Action Plan 10



Zero net energy buildings will require ever more integration



Industrial Sites will act as day traders in new energy markets

- Defend system mission
- Enterprise (or home) defines value & schedule
- Production and building agents choreograph response
- Power Grid offers clearing market

. . . Abundance . . .





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Questions



Toby Considine Perspectives

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- Editor, OASIS Energy Interaction TC
- Editor, OASIS EMIX TC
- Chair, OASIS WS-Calendar
- Member, SGIP Architectural Council
- NAESB Smart Grid Task Force



Specifications

- WS-Calendar
 - <http://www.oasis-open.org/committees/ws-calendar>
- EMIX
 - <http://www.oasis-open.org/committees/emix>
- Energy Interoperation
 - <http://www.oasis-open.org/committees/energyinterop>
- oBIX
 - <http://www.oasis-open.org/committees/obix>

