

Why is a Smart Meter a Green Meter....and Why is a Smart Grid a Green Grid?

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Demand Response & Advanced Metering
Coalition
(DRAM)

DRAM Members

- Aclara
- Cellnet + Hunt
- Comverge
- Direct Energy
- Eka Systems
- Elster Electricity
- eMeter
- EnergySolve
- EnerNOC
- IBM
- Ice Energy
- Itron
- Landis + Gyr
- Orion Energy Systems
- Sensus Metering
- Silver Spring Networks
- Site Controls Energy Services
- SmartSynch
- Tendril
- Trilliant Networks
- Ziphany

Demand – An Evolutionary Perspective

- Conservation
 - Running out of oil
- Efficiency – Phase 1
 - Get the same benefit with less energy
- Demand Side Management
 - Utility-oriented
- Efficiency – Phase 2
 - Beyond the end use
- Efficiency Phase 3
 - The Smart Age based on Demand Response
 - Dynamic Efficiency
 - Based on communications, information and prices
 - Systems approach: Smart Grid, Smart Homes, Smart Appliances

The rest of our lives are getting smarter why not electricity?

- Using info to make informed purchases
- Choices in purchasing
- Home networks – even if they don't have one
- Sensors and controls
- Open communications (see: Internet)
- Connected to information networks (see: cable, ATM, mobile phone)
- Information feedback (see: Prius effect)
- Optimize energy usage between different options (see: Hybrid Autos)

New Players in Electricity Policy

- Smart Meters
 - Interval Measurement
 - Two-Way Communication
 - Informational Feedback to Customers
- Demand Response
 - Price Signals
 - Smart Thermostats, etc
 - Reducing Peak Usage
 - Dispatching Energy Reductions
- Smart Grid
 - Lots of Demand Response
 - Optimization of all of the Resources
 - Outage Management and Restoration
 - Self-Healing Capabilities
 - Increased Security and Reliability
 - Dynamic Storage (including plug-in hybrid vehicles)

DR and Energy Efficiency Siblings in the “Demand-Side” Family

- Energy efficiency saves more kwh
- DR's highest value is KW
- DR results on average in a net conservation effect
- DR is dynamic, controllable and dispatchable
a.k.a. “dynamic efficiency”
- DR is more measurable and verifiable
- DR technologies provide information that fosters overall energy efficiency

Demand Response and Renewable Energy Marriage Partners?

- Wind resources in many parts of U.S. are off-peak resources
- Wind resources, whether on-peak or off-peak, are intermittent
- Mar 2, 2008, 6:41 PM – Texas
 - ERCOT experiences sudden drop in wind resource
 - Emergency DR Programs keep the lights on

DR and the Environment – a New Era?

- DR technologies, and info they provide, stimulate overall efficiency
 - A new platform for creation of sustainable, institutionalized efficiency
- Net conservation effect
- Load flattening defers/avoids need for plants/ lines
- Less trucks and less miles for utility operations
- Support for intermittent renewables and clean DG
- Dynamic management of NOx and Sox
- "Greenfill" by way of PHEVs and other storage
- M & V and monetization of energy reductions under carbon constraining polices
- A smart meter is a green meter
- A smart grid is a green grid

Federal Policy Options

- Tax Policy
 - Accelerated Depreciation
 - Investment Tax Credit
 - Reduction Tax Credit
 - Customer Incentives
- Funding and Guidance to Federal Agencies
- Funding for Education and Outreach
- Support to States
- RD&D

Thank You

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