The Smart Grid Policy Nexus

NCSL Energy Forum

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Who We Are

BRIDGE Energy Group is a consulting and systems integration company focused on improving utility operational performance.

- **Headquarters:** Boston, MA
- **Established:** 2004
- **Specialization:** Utility Industry
Utility Industry at a Crossroads

- Energy Policy at State Level Has Had a Profound Effect on the Utility Business
- 3rd Party Consumers Solutions Challenging Utility Market Share
- Technology has Transformed Business and Society but Utility System has Lagged
- Regulatory Adaptation has been at the Margin, not Comprehensive
U. S. electricity use and economic growth, 1950-2040

Percent growth, 3-year rolling average

History

Projections

Electricity Use

GDP

Source: EIA, Annual Energy Outlook 2013 Early Release
Industrialization will yield significant cost reductions.

c-Si multicrystalline solar-photovoltaic system

Best-in-class installed system cost (no margins)
$ per watt peak, 2011 dollars

The Times They Are A Changing

Technicians at the Gate: How Google Could Become Your Next Power Company

greentechgrid:
This Is What the Utility Death Spiral Looks Like

In Germany, utility revenues are spiraling down the rabbit hole. Will American power companies follow?

Stephen Lacey
March 4, 2014
Its About the Network
An Enabling Platform

• Visibility and Control at the Edge
• Two Way Power Flow
• Supporting Dynamic Interactions
  – DER (Micro-Grids, DG, EV’s)
  – Customer Empowerment
• Distribution Level Market
• Policy Attainment
  – Reliability, System Efficiency, CO2 ...
High Level Ecosystem

- Regulators
- Bulk System (ISO)
- 3rd Party Service Providers
- Direct Access Customers

Diagram shows the ecosystem with Regulators at the top, connected to Bulk System (ISO), 3rd Party Service Providers, and Direct Access Customers, all connected through a central Platform.
Policy & Technology Alignment

Objectives
• Policy Goals
• System Needs
• Customer Demands

Functional
• More Timely & Accurate Data
• Remote Fault Identification
• Improved Outage Restoration
• Cond Based Maintenance

Technology
• AMI,
• DA,
• Volt/Var
• OMS
• DMS
• GIS
• Work & Asset Management
• Data Analytics

Values
• Operational Savings
• Less Frequent & Shorter Outages
• Energy Efficiency & Peak Load Reduction
• Avoided/Deferred Cap Ex
• Customer Satisfaction
• Environmental

Metrics
• Cost Per Customer
• Feeder Voltage Level
• Asset Life/Maint Cost
• Peak Load
• Carbon Emissions
• Customer Satisfaction

Enterprise Value
• Incentive ROE
• Net Earnings
• EPS
Legislative To Do List

• In Many States Regulators and Utilities are at an Impasse
• Review of Operational Requirements of a Modern Utility
  – Map Policy Goals to Enabling Technology
• Wholesale Review of Ratemaking & Regulatory Process
  – Cost Recovery Aligned to Modern Conditions
  – Incentives for Policy