

EAC Update:

Smart Grid Vendor Ecosystem, Economic Impacts, Green Button and Open Energy Data

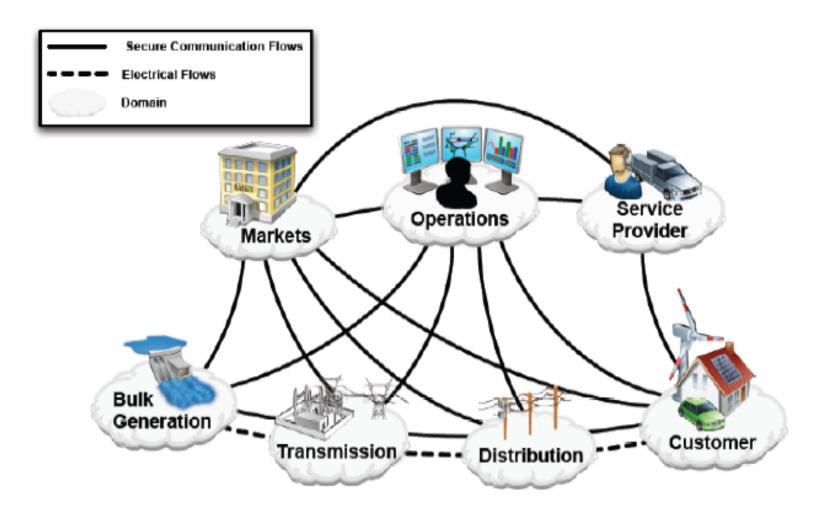
Christopher Irwin – OE Smart Grid Investment Program



October 2012



NIST Conceptual Reference Model







GridWise Architecture Council Interoperability Framework

Political and Economic Objectives as Embodied in 8: Economic/Regulatory Policy **Policy and Regulation Strategic and Tactical Organizational Objectives Shared** 7: Business Objectives (Pragmatics) between Businesses Ε Alignment between **Operational Business 6: Business Procedures Processes and Procedures Relevant Business Knowledge** that Applies Semantics with **5: Business Context Process Workflow** E Informational **Understanding of Concepts** (Semantics) **Contained in the Message** 4: Semantic Understanding **Data Structures** Understanding of Data Structur In Messages Exchanged 3: Syntactic Interoperability between Systems **Exchange Messages between Technical** Systems across a 2: Network Interoperability **Variety of Networks** (Syntax) Mechanism to Establish **Physical and Logical** 1: Basic Connectivity **Connectivity of Systems**



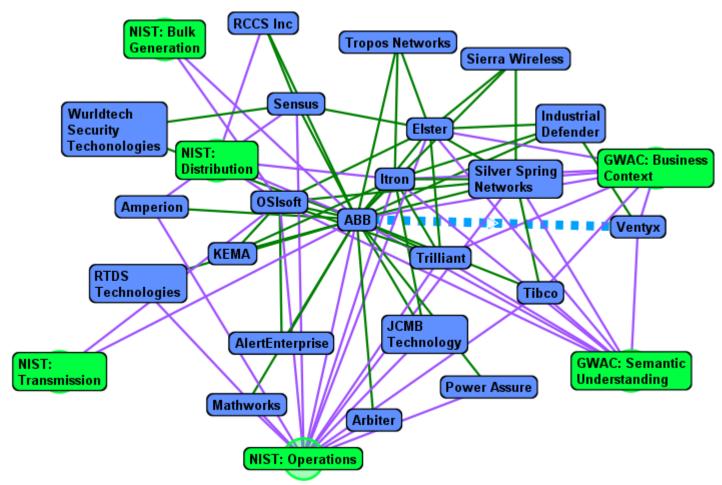
Preliminary Summary Vendor Analysis - Totals

Category	Totals
Total Number of Vendors Considered	582
Number of Final Companies Evaluated	398
Companies not meeting criteria	154

Ownership Status	Number of Vendors
Private	285
Public	119

Relationships		
Туре	Number	
Acquired	16	
Acquisition	8	
Partner	1,296	
Seller-Buyer	234	
Not categorized	42	
Total	1,596	









Economic Analysis Objectives

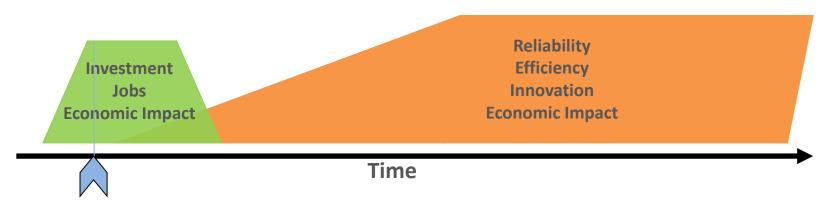
- Objective: Analyze the economy-wide impacts of ARRA funding to date from the Smart Grid project deployments in the United States
- Objective: Understand the flow of funds through the Smart Grid vendor ecosystem, industrial sectors that benefit from ARRA Smart Grid funds, and other economic impacts of the Smart Grid investments





The Economic Value of Smart Grid Investments under ARRA

DOE – Office of Electricity Dual Mission: Stimulus & Smart Grid



- Investments under the Recovery Act were intended to serve two missions first, one of economic stimulus and job creation, and second, the program or Agency mission.
- Both missions, in the case of ARRA Smart Grid investments, generate economic benefits, but on different time scales and durations.
- The present analysis does not attempt to asses the economic, operational nor societal benefits of a Smart Grid itself where it is installed, which is the subject of longer-term Office of Electricity data collection and analysis, led by Joe Paladino.



US Government Actors and Efforts: Green Button and Open Data

















Energy Data
Privacy
Multistakeholder
Process



Smart Grid Investment Grant and Smart Grid Demonstration Program spending is one step towards developing and deploying a nationwide Smart Grid.

\$9.5 billion with cost share by the end of both programs

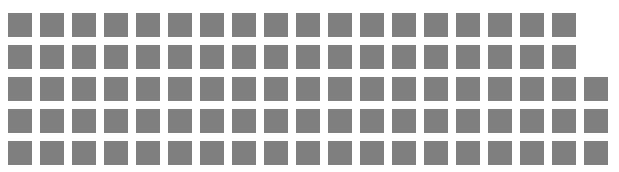
Spending

EPRI Estimate

\$338 - \$476 billion needed through 2030

Electric Power Research Institute. Estimating the costs and benefits of the smart grid: A preliminary estimate of the investment requirements and the resultant benefits of a fully functioning smart grid. EPRI, Palo Alto, CA; 2011.

Brattle Group Estimate



\$880 billion needed through 2030

Chupka, M.W. Earle, R., Fox-Penner, P., Hledik, R. Transforming America's power industry: The investment challenge 2010 – 2030. Edison Electric Institute, Washington D.C.,: 2008.







Thank You

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