

SMART GRID REGULATORY AND LEGISLATIVE TOPICS

RUSSELL LEFEVRE

IEEE-USA ENERGY POLICY COMMITTEE

Informing Congress

- Congressional Energy Briefings
 - Smart Grid w/ASME
 - Discover Magazine w/ NSF, ASME
 - Biofuels
 - Energy Storage
 - Efficiency
 - Transitional Technology

The screenshot shows the Discover magazine website. At the top, the word "DISCOVER" is prominently displayed in a large, bold, black font. Below it, the tagline "Science, Technology, and The Future" is visible. To the right of the logo, there are links for "Log In", "Subscribe", "Give a Gift", "Archives", and "Customer Service". A search bar with the word "SEARCH" is also present. Below the main navigation, there are several category links: "Health & Medicine", "Mind & Brain", "Technology", "Space", "Human Origins", "Living World", "Environment", "Physics & Math", "Video", "Photos", "Podcast", and "RSS". The main content area features a large image of wind turbines at sunset. Overlaid on this image is a text box that says "Click here to launch interactive presentation and video." To the right of this text box is a vertical list of four article teasers, each with a small thumbnail image and a title with a date: "Cellulosic Biofuel (06/18/09)", "Energy Storage (07/16/09)", "Increasing Efficiencies (Coming in September)", and "Transitional Technologies (Coming in October)". At the bottom of the page, there is a "Sponsored By:" section with logos for "DISCOVER", "IEEE★USA", "NSF", and "ASME".

Recent Meetings with DoE Officials

Officials

- Steven Koonin, Under Secretary for Science
- Henry Kelly, Principal Deputy Assistant Secretary for Energy Efficiency and Renewable Energy (EERE)
- David Rodgers, Director for Strategic Planning and Analysis, EERE
- Colin McCormack, EERE Staff

Recent Meetings with DoE Officials

Issues

- The IT-Energy nexus
- Standards
- Behavioral economics
- Power electronics
- Modeling and simulation, especially related to energy efficiency
- Green Buildings
- Workforce, including the need for 120 new employees at DoE headquarters

Recent Congressional Meetings Regarding Energy

Staff

- Alicia Jackson, Office of Jeff Bingaman
- Jonathan Epstein, Office of Jeff Bingaman
- Ann Zulkosky, Senate Commerce Committee
- Chan Lieu, Senate Commerce Committee
- Michelle Dallafior, House Subcommittee on Energy and the Environment

Issues

- Energy workforce
- Smart grid standards, including IEEE P2030

IEEE-USA Smart Grid Congressional Outreach

- Congressional Brief on Smart Grid in the EISA
IEEE-USA/ASME– March 26, 2009
 - Dr. Massoud Amin – University of Minnesota
 - Dr. David Wollman – National Institute of Standards and Technology
- Video on “A Smart Grid For Intelligent Energy Use” - Joint IEEE-USA/PES/NTDC

Recent Energy Legislation

- Energy Policy Act of 2005 (EPACT; Public Law 109-58)
- Energy Independence and Security Act of 2007 (EISA; Public Law 110-140)
- The American Recovery and Reinvestment Act – the 2009 Stimulus Bill (ARRA; Public Law 111-005)

Energy Independence and Security Act (EISA) of 2007

- Highlights:
 - Increased Corporate Average Fuel Economy (CAFÉ) Standards to 35mpg by 2020
 - Increased bio-fuel production
 - Improved efficiency standards for appliance and lighting
 - Included incentives for Plug-In Hybrid Electric Vehicles
 - Included provisions for Smart Grid Implementation

The Mandate

Energy Independence and Security Act (EISA) of 2007

Title XIII, Section 1305

Smart Grid Interoperability Framework

- In cooperation with the IEEE, DoE, NEMA, GWAC, and other stakeholders, NIST has “primary responsibility to coordinate development of a framework that includes protocols and model standards for information management to achieve interoperability of smart grid devices and systems...”

EISA Smart Grid Provisions

- Title XIII
 - Section 1303:
 - DOE to establish a task force to coordinate federal smart grid activities. Mission:
 - » Conduct research and development
 - » Develop standards and protocol
 - » Conduct demonstration projects
 - Section 1304:
 - Smart grid research, development and demonstration
 - » Power Grid Digital Information Technology
 - » \$100 million for Smart Grid Regional Demonstration Initiative
 - Section 1305:
 - Interoperability Framework
 - » Directs NIST to coordinate with IEEE, Gridwise Architecture Council, FERC, NERC and NEMA to develop an Interoperability Framework

2009 Energy Legislation

- **American Clean Energy and Security Act of 2009 H.R.2454) (House Bill)**
- **American Clean Energy Leadership Act of 2009 – S.1462 (Senate Bill)**

ENERGY AND SECURITY ACT OF 2009 (PASSED THE HOUSE)

- Sets forth provisions concerning the development of a smart grid, including provisions: (1) amending the Energy Policy and Conservation Act to provide for the inclusion of smart grid capability information on appliance energy guide labels; (2) requiring the Federal Energy Regulatory Commission (FERC) to support load-serving entities in developing their peak demand reduction goals; (3) amending the Energy Policy Act of 2005 to reauthorize the energy efficiency public information program and to include smart grid information in it; and (4) reauthorizing the energy efficient and smart appliance rebate program and revising it to include smart-grid features.

American Clean Energy Leadership Act of 2009 (ACELA)– S.1462 (Senate Bill on the Calendar for vote)

- SUBTITLE A--CYBER SECURITY OF THE ELECTRIC TRANSMISSION GRID
- Subtitle D improves the efficiency of the national electric grid by: (1) establishing a national electric system efficiency and peak demand reduction goal that can be met through the use of smart grid and demand response technologies and practices; and (2) requiring the Federal Energy Regulatory Commission to establish a national interconnection standard.

FCC AND SMART GRID

- FEDERAL COMMUNICATIONS COMMISSION AND SMART GRID

The FCC will have an important part to play when it comes to dictating the rules for smart grid services using wireless spectrum and broadband technologies.

In early August, FCC announced the hiring of Nicholas Sinai, a ventura capitalist from Polaris Ventures (previously with Tenaya Capital/Lehman Brothers Venture Partners) as FCC's Energy and Environmental Director. In describing his position at FCC, Sinai has reported that he will lead "a team that will examine how broadband/communications infrastructure and policies can support our national energy and environmental goals, with an emphasis on the Smart Grid." The team's recommendations will feed into the work of the FCC's National Broadband Task Force.

FCC WORKSHOP

AUGUST 25, 2009

- **Workshop: Smart Grid, Broadband and Climate Change**
- The goal of this workshop is to identify potential impacts of a National Broadband Plan on energy, the environment, and transportation. The workshop panelists will explore how the broadband and communications infrastructure can play a transformative role in meeting our national energy, environmental, and transportation goals, including energy independence, greenhouse gas emissions reductions and clean energy generation.
- **Topics**
 - The following are some of the preliminary topics that will be covered at this workshop. If you would like to discuss any other topics, please send us your [suggestions](#).
 - What types of communications networks can and should be used for various Smart Grid applications?
 - What are the pros and cons of the various types of networks?
 - How much bandwidth is needed to support Smart Grid communications? Do current networks meet these needs?
 - What are the biggest obstacles to deploying Smart Grid equipment and to generating benefits from these deployments?
 - What are the panelists' recommendations for achieving maximum adoption and utilization of Smart Grid equipment throughout the energy ecosystem, from generation to consumption?
 - What are the specific communications and information technologies that can be leveraged to reduce greenhouse gas emissions?
 - How can these technologies be implemented across America?
 - What are the challenges in the adoption of these technologies and how can these obstacles be overcome?
 - What are the panelists' recommendations for achieving maximum adoption and utilization of these communications and information technologies?

AGENDA

- **1:30 pm** Introductory Remarks from Commissioner Mignon Clyburn

1:35 pm Smart Grid Panel Opening Remarks

Moderator, Nick Sinai, Energy and Environment Director, National Broadband Taskforce

1:40 pm Smart Grid Panelist Presentations

Eric Lightner, Director, Federal Smart Grid Task Force, U.S. Department of Energy

Dean Prochaska, National Coordinator for Smart Grid Conformance, NIST

Mark Dudzinski, CMO, GE Energy

Eric Miller, SVP of Solutions, Trilliant

Henry Jones, Chief Scientist, SmartSynch

Joby Lafky, Program Manager, Electric Vehicle Management Platform, Gridpoint

Jason Griffith, Director, IT Telecom Engineering, AEP

2:10 pm Panel Discussion and Q&A Period

FCC Participants: Colin Crowell, Senior Counselor to the Chairman; Julius Knapp, Chief, Office of Engineering; John Leibovitz, Deputy Chief, Wireless Bureau; Dr. Jon Peha, Chief Technologist

3:00 pm Panel Conclusion