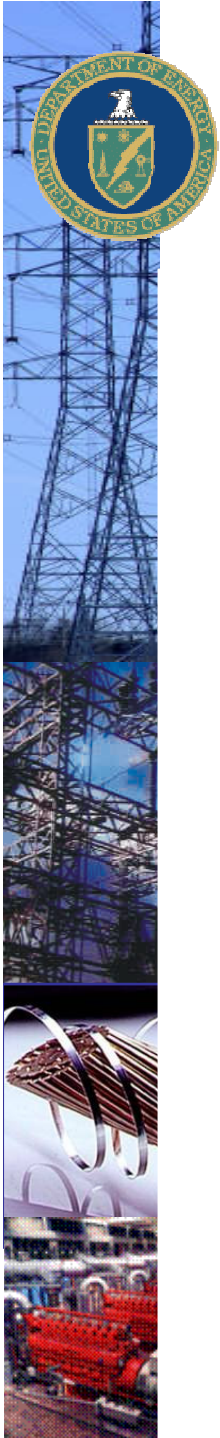


# Smart Grid Title XIII Implementation at DOE

**CITRIS Workshop on Underground Power Cables**

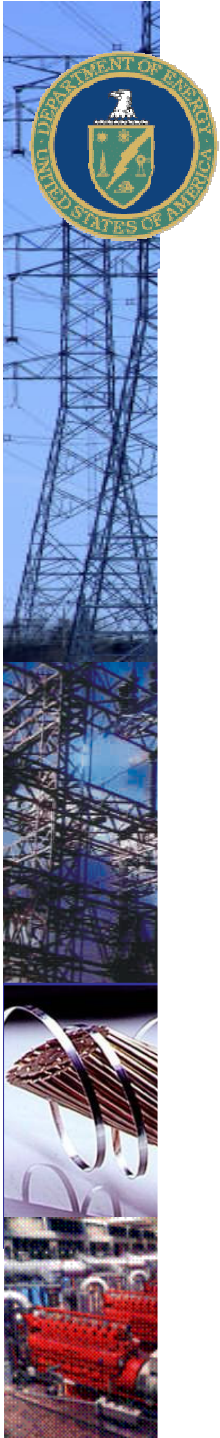
February 25, 2008      Berkeley, CA

**W-T Paul Wang, President  
Energy & Environmental Resources Group, LLC**



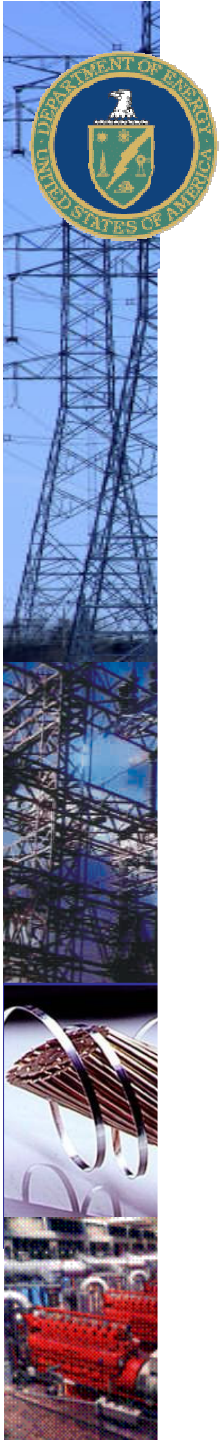
This Presentation is adapted from a recent presentation by Eric Lightner, Director of Smart Grid Task Force at the DOE titled:

## ***Smart Grid Development at the OE***



## **OE Actions on Implementing Title XIII of the Energy Independence and Security Act of 2007**

- **Establish a Smart Grid Advisory Committee (By 3/29/2008)**
- **Establish a Smart Grid Task Force (By 3/29/2008)**
- **Submit to Congress a report concerning the status of Smart Grid system deployments (Due 12/19/2008)**
- **Submit to Congress a study assessing laws and regulations affecting siting of privately owned electricity distribution wires on and across public rights-of-way (Due 12/19/2008)**
- **Carry out a program to research, develop, and demonstrate Smart Grid technologies (Planned 1<sup>st</sup> Q-FY09 following development of RD&D plan)**
- **Establish a Smart Grid regional demonstration initiative showcasing advanced technologies (Planned 1<sup>st</sup> Q-FY09, guided by RD&D plan)**
- **Establish a federal matching funds program (By 12/29/2008)**
- **Submit to Congress a quantitative assessment concerning the security implications of Smart Grid system deployments (Due 6/19/2009)**



# Smart Grid Task Force

## Functions

- Serves as Federal focal point on all things “smart grid”
- Coordinates and integrates intra- and inter-governmental activities
- Oversees report production for submission to Congress
- Oversees development of smart grid RD&D plan
- Guides smart grid regional demonstrations
- Advises on interoperability framework
- Guides establishment of the federal matching funds program
- Develops tech assistance plan to States and guides plan implementation
- Guides outreach and communications to build awareness and educate decision makers
- Collaborates with and supports FACA

## Members

**OE:** leadership, RD&D, policy analysis, infrastructure protection

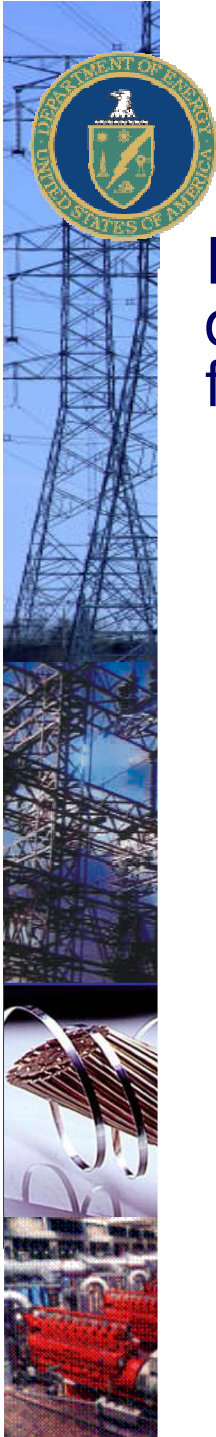
**FERC:** wholesale markets

**NIST:** interoperability standards

**EERE:** energy efficiency and renewables

**DHS:** homeland security

**DoD:** national security



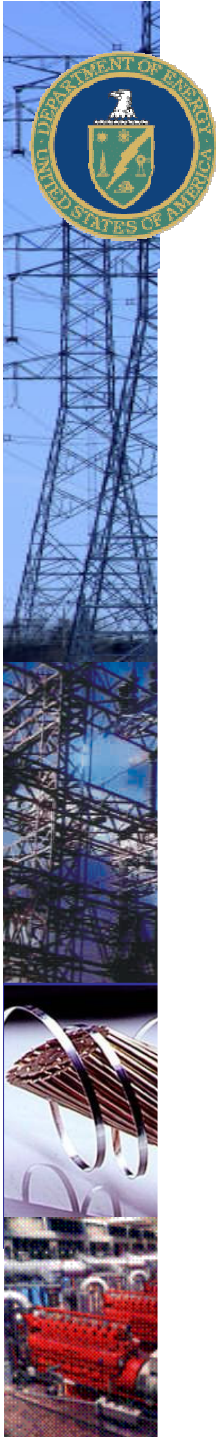
# Defining “Smart Grid”

Electricity delivery network modernized using latest digital/information technologies to meet key defining functions\*

- ❑ Enabling active participation by consumers
- ❑ Accommodating all generation and storage options
- ❑ Enabling new products, services, and markets
- ❑ Optimizing assets and operating efficiently
- ❑ Anticipating and responding to system disturbances in a self-healing manner
- ❑ Operating resiliently against physical and cyber attack and natural disasters
- ❑ Providing the power quality for the range of needs in a digital economy

***The evolution of a smart grid will be one of continuous improvement.***

*\* Identified through the Modern Grid Strategy development efforts led by the NETL project team*



# Smart Grid Implementation Workshop

**Planned for June 19-20, 2008 in DC, with broad stakeholder engagement to reach consensus on and acceptance of:**

- Key defining functions or “characteristics” of a smart grid
- Values associated with a smart grid
- Metrics for measuring progress toward a smart grid



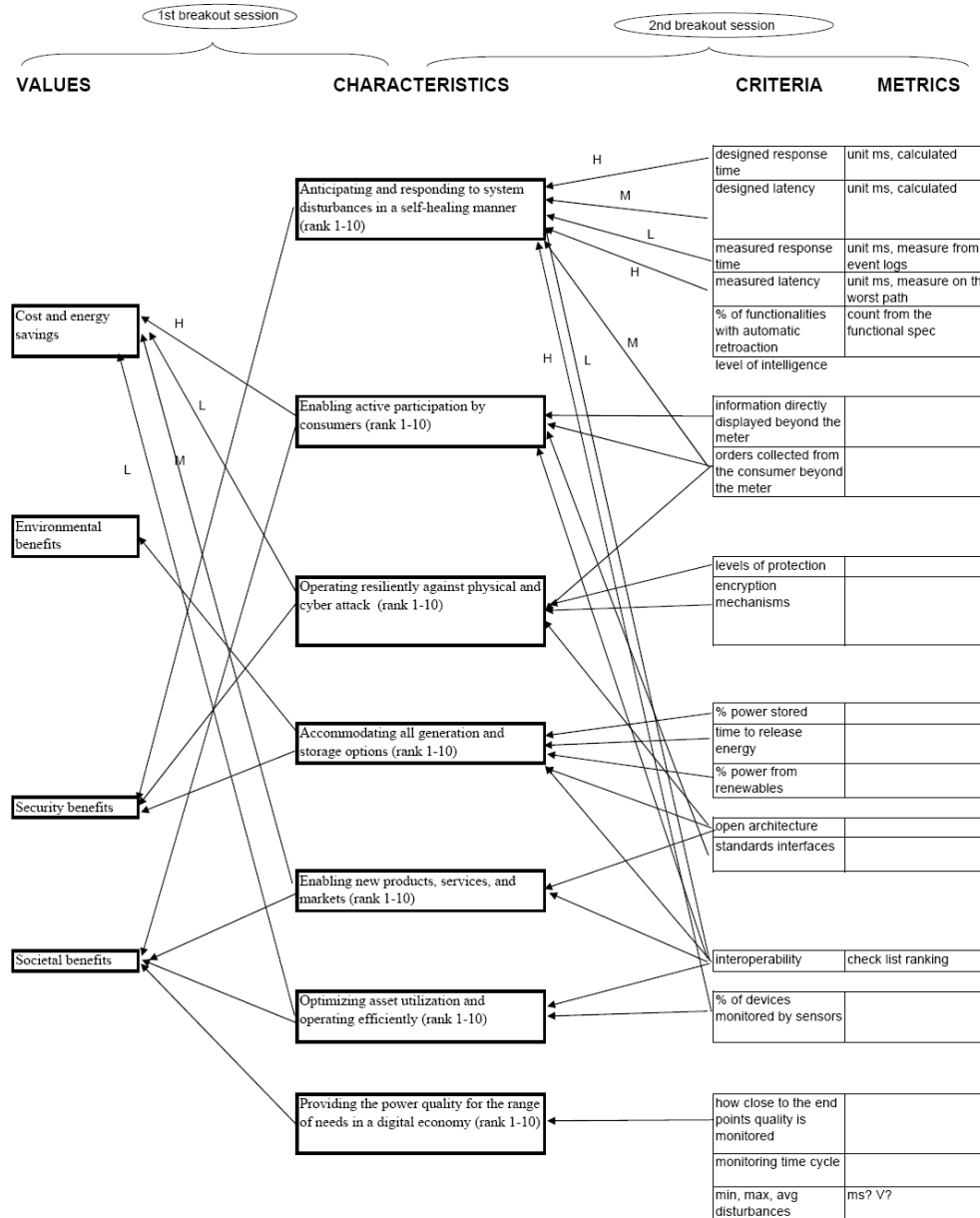
## **Input to:**

- Smart Grid RD&D Plan development
- Soliciting and selecting smart grid regional demo activities

**A Planning Committee comprising a broad representation of smart grid stakeholders is being charged to organize the Workshop.**

**Smart Grid Values-Characteristics-Metrics Example of tree built in 20 minutes**

arrows directions to show how to use the tree on a project  
 High/Medium/Low assigned to each arrow can guide investment decisions by different stakeholders in identifying projects having the highest values for them



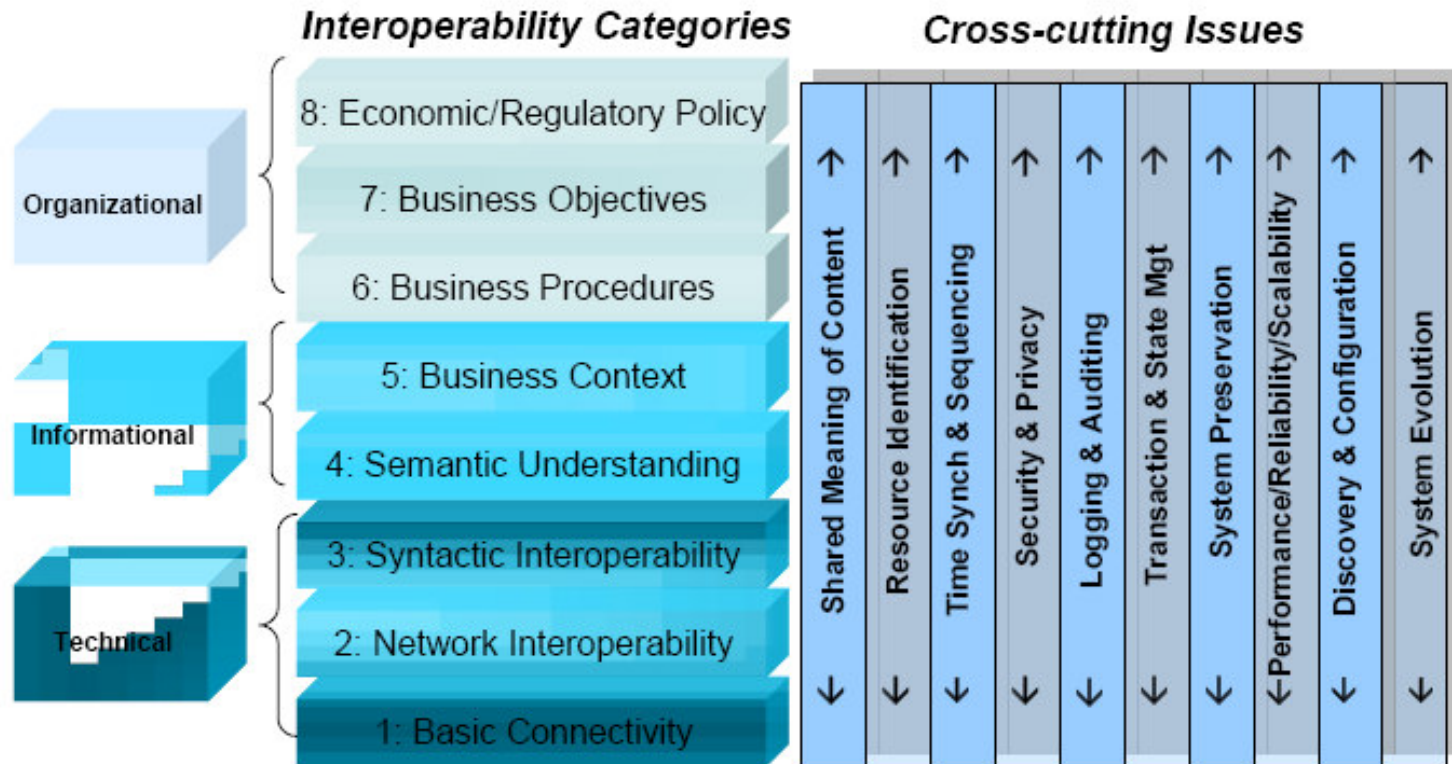
Note: Courtesy of Richard Schomberg, EDF, Workshop Planning Committee Member



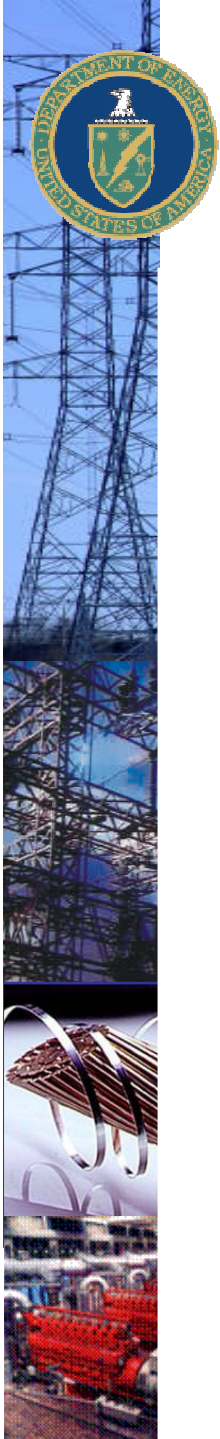
# Interoperability Framework Development

## GridWise Architecture Council (GWAC)

To establish guiding principles for interaction between participants and interoperability between technologies and systems



Framework Areas



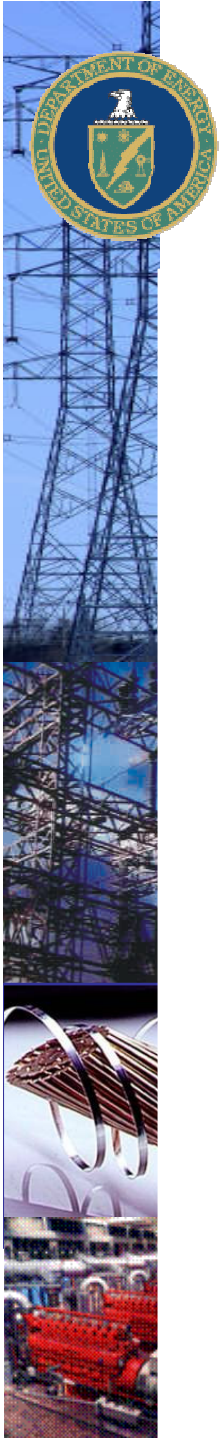
# Tech Assistance to States

- Modern Grid Strategy team working with State regulators to formulate State strategies for modernization
  - Promoting deployment of smart grid technologies
  - Focusing on business case model
  - Providing feedback into State program direction and performance
  - Suggesting regulatory actions to address barriers
  - Supporting, and supported by, WV and OH regulators



## **Input to:**

Tech assistance plan to support States in developing and implementing smart grid pathways



# Communications and Outreach for Public Awareness

## National GridWeek 2007, April 2007 in DC

- Aligning and coordinating national agenda on grid modernization
- 634 participants, including federal/state/industry/Lab leaders
- Inaugural event organized and sponsored by OE



## National GridWeek 2008, September 2008 in DC

- GridWise Alliance as Lead Organizer; OE as major sponsor
- Becoming *the* national event on smart grid
  - technologies and practices
  - policies and regulations
  - lessons learned and success stories
  - business cases
  - education and outreach

## Smart Grid Newsletter

Monthly publication covering news, trends, research and marketplace information relevant to grid automation (<http://www.smartgridnews.com/>)

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