



Office of Electricity Delivery
and Energy Reliability

Smart Grid Customer Education Symposium

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Vision

A smart grid that uses digital technology to improve reliability, security, and efficiency (both economic and energy) of the electric system from large generation, through the delivery systems to electricity consumers and a growing number of distributed-generation and storage resources

Smart Grid Characteristics

Enables Informed Participation by Customers

Accommodates All Generation & Storage Options

Enables New Products, Services, & Markets

Provides Power Quality for the Range of Needs

Optimizes Asset Utilization & Operating Efficiency

Operates Resiliently to Disturbances, Attacks, & Natural Disasters

Smart Grid Challenges

Advancing Functionality with New Technologies

Building a Strong Business Case for Smart Grid Investment

Enabling Interoperability through Standards Conformance

Expanding Consumer Participation in Energy Management

Enhancing Cybersecurity

Sustaining a Skilled Workforce

Key Activities

Smart Grid Demonstrations and Deployment

Research and Development

Standards

Interconnection Planning and Analysis

Workforce Training

Stakeholder Engagement and Outreach

Monitoring National Progress

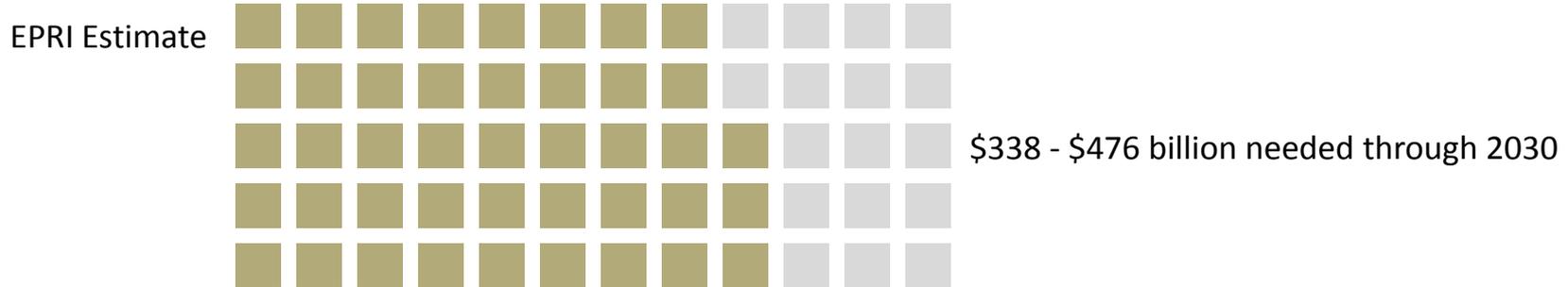
Smart Grid Investment Grant (SGIG)

Deploying technologies for immediate commercial use
supporting manufacturing, purchasing, and installation of smart grid technologies

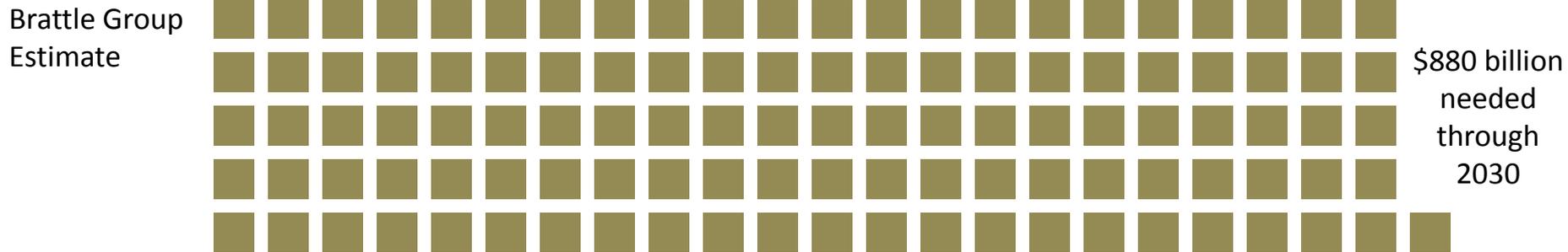
Customer Systems	Advance Metering Infrastructure	Electric Distribution Systems	Electric Transmission Systems	Equipment Manufacturing
				
<ul style="list-style-type: none"> • Displays • Portals • Energy management • Direct load controls 	<ul style="list-style-type: none"> • Smart meters • Data management • Back office integration 	<ul style="list-style-type: none"> • Switches • Feeder optimization • Equipment monitoring • Energy storage 	<ul style="list-style-type: none"> • Wide area monitoring and visualization • Synchrophasor technology • Energy storage 	<ul style="list-style-type: none"> • Energy devices • Software • Appliances

99 projects, \$3.4B Federal + \$4.6B Private Investments

SGIG Spending  \$7.9 billion with cost share to be spent through 2015



EPRI. 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.



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.

- Local- and State-level decisions primarily affect investments in smart grid technology, especially decisions affecting consumers
- Utilities are working through interoperability, systems integration and cyber security issues at an unprecedented level
 - There is intense interest to share experiences, lessons-learned and best practices throughout the industry
 - Every utility is at a different starting point
- The value proposition of smart grid technology is still under review
- **Customer Engagement and Education is key to success**

Stakeholder Engagement and Outreach

Key to effective and efficient deployment of smart grid technologies, practices, and policies nationwide

Government Agencies

Smart Grid Task Force to coordinate with federal agencies

Technical assistance to state agencies

International Smart Grid Action Network to coordinate smart grid development internationally

Technology Development Partners

Partnerships with national labs, industry, and universities from planning through implementation of RD³ activities

Electricity Industry

Sharing RD³ results with and among utilities, regulators, and consumer advocates

Peer-to-peer workshop to share lessons learned

Consumers & Advocates

Green-button data and information tools to empower consumers

Smart grid privacy workshop to facilitate a dialog on consumer electricity data access and privacy

Workshops on consumer engagement and technical implementation of smart grid related technologies:

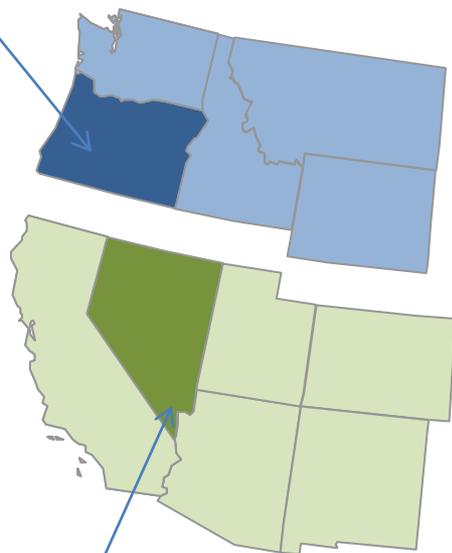
- › Co-hosted with an ARRA recipient to focus
- › on regional issues
- › Typically a two day event (First Day for Utilities only)
- › Provide a forum to share lessons learned with non-ARRA utilities
- › Foster productive communication among stakeholder groups (consumers, utilities, and the various governing bodies)
- › Help keep DOE informed of any ongoing challenges



“...there was a consistent theme of community involvement as essential to the success of smart grid deployments,” blog by Assistant Secretary Pat Hoffman on her attendance of the Southeast Workshop

Regional Smart Grid Peer-to-Peer Meetings

Northwest Meeting
Location: Portland, OR
Timeframe: May 9 & 10, 2012
Host: Portland General Electric



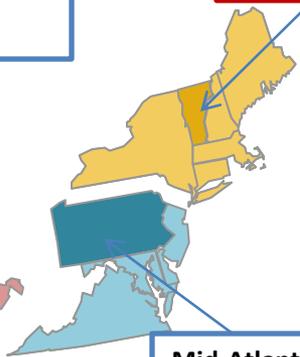
Midwest Meeting
Location: TBD
Timeframe: Fall 2012
Possible Host: KCP&L



Great Lakes Meeting
Location: TBD
Timeframe: TBD
Host: TBD



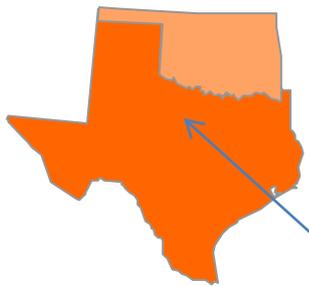
Northeast Meeting
Location: Burlington, VT
Date: July 19 & 20, 2011
Host: VELCO



Mid-Atlantic Meeting
Potential Location: Philadelphia, PA
Timeframe: July 11 & 12, 2012
Possible Host: PECO



Southwest Meeting
Location: Las Vegas, NV
Timeframe: March 21 & 22, 2012
Host: NV Energy
**Focus exclusively on Consumer Engagement*



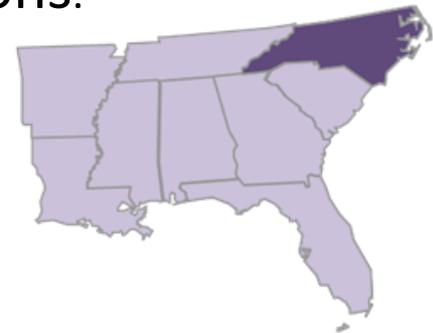
Southern Meeting
Location: Dallas, TX
Date: April 29
Host: Oncor

Southeast Meeting
Location: Charlotte, NC
Date: October 26, 27, 2011
Host: Duke Energy/Progress Energy

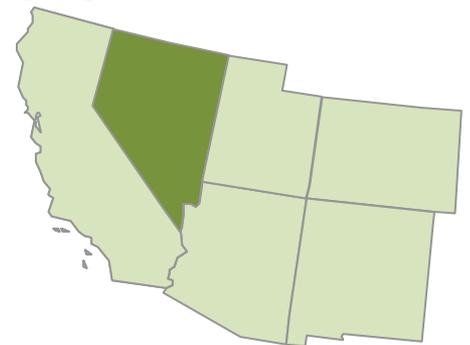
- **Be Prepared to Address Customer Concerns on Sensitive Issues**
 - providing resources from unbiased, third parties
 - Identify multiple sources of information to allow customers to do their own research
- **Communicate with Customers and the Community**
 - Engage community leaders and local decision makers early
- **One size does NOT fit all**
 - Communities are unique; therefore, their smart grids will be unique.
- **Set Reasonable Expectations**
 - Don't overstate potential customer cost savings.
 - Inform customers of outage management and other operational benefits



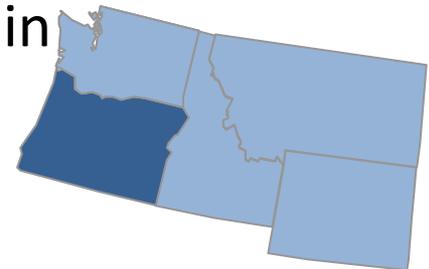
- **Prepay is showing promise for low income customers**
 - Provides a means to budget for and manage energy bills
 - Allows for a better understanding of the value of electricity.
- **Change is accelerating**
 - Smart Grid implementation is challenging traditional business modes.
- **Success requires a strategy for change management**
 - Requires well-articulated vision, champions of change, and engaged regulators
 - Includes, working across silos, staff training, new customer engagement methods, upgrading data management systems, and improving vendor management.
- **Customers are diverse and require diverse solutions.**
 - Customers have diverse energy needs and preferences
 - Outreach programs must consider customer segmentation
- **Successful deployments measure and effectively communicate benefits to consumers**



- **Opt-out provisions are an important component of smart meter deployment programs**
 - Customers just want choice
- **Invest in staff training**
 - Customer service and field personnel should be well informed about the full range of smart grid issues and benefits
- Customers are diverse and require diverse solutions
 - Deploy different methods to engage different audiences
 - When communicating with customers, be direct and avoid jargon
- Successful projects
 - Identify benefits that are most meaningful to customers,
 - Communicate these benefits effectively, and
 - Measure results
- Success requires a strategy for change management



- **Consumers need actionable information**
 - Where are the Apps? Going beyond tracking usage data.
- Grid modernization is a natural progression – Smart Grid is an evolution not a revolution
- Vendor management is important
 - Utilities must work closely with vendors to ensure promised performance is delivered
- Data management and mining is a growing challenge
- Keep customer incentives simple
 - Don't over complicate dynamic pricing or demand response programs
- Engage local consumer advocates and regulators in collaborative process
- Important to develop a thorough change control process



- Complete remaining Peer-to-Peer Workshops
 - Mid-Atlantic - hosted by PECO, July 11 & 12 in Philadelphia
 - Midwest - hosted by KCP&L this Fall in Kansas City
 - Great Lakes – host and dates TBD
- Document and publish summaries from all workshops and make available on Smartgrid.gov
- Incorporate best practices from each workshop into a new effort to develop a Customer Engagement Model or Strategy
 - Working with Smart Energy IP

Model Objective

Identify best practices for smart grid customer education and engagement, and develop a model for utilities that provides a framework on the most effective methods for communicating Advanced Metering Infrastructure (AMI) deployment and benefits to consumers.

Why is a Model Necessary

The Success of Smart Grid Lies in the Customer's Hands:

The overall success of smart grid depends on whether or not customers will take a more proactive role in managing their energy use.

Both Utilities and Regulators Alike Are Looking for a Way to Measure the Success of Customer Education Programs

Today many utilities are in search of best practices around how to successfully engage the customer. Similarly, regulators are looking for a way to measure successful customer education initiatives.

Developing a Model will Help Solve These Current Market Challenges

Our goal is to develop a best practices model around smart grid customer education and engagement, with a focus on how utilities can effectively communicate the deployment and benefits of Advanced Metering Infrastructure (AMI).

Build the Smart Grid Customer
Education Working Group



Collect Best Practices and Develop
the Model



Focus on Implementation of the
Model

Model Development: Utilizing Industry Experts to Collect Best Practices

- Collect Best Practices in AMI Customer Education through working with stakeholders in the energy and utility industry
 - Investor-Owned Utilities
 - Municipal Utilities
 - Cooperative Utilities
 - Solutions Providers
 - Research Organizations
 - Industry Associations
 - Regulators
 - Public Advocates
- Leverage insights learned through regional smart grid Peer-to-Peer workshops

Model Development: Collecting Best Practices on AMI Customer Education

- Form a Working Group to develop Best Practices and Recommendations in all areas of customer engagement, including:
 - Messaging
 - Market Research and Benchmarking on utility customer care behavior
 - Community Outreach
 - Budgeting
 - Media
 - Social Media
 - Direct Mail
 - Online Presence
 - Stakeholder Relationships

- Stakeholder participants and contributors will be encouraged to adopt and promote
- Organized promotion effort including presentations at events
- Widespread PR Effort
- In person events
- Non-utility member participants will be asked to contribute a piece of intellectual property on the topic

- Launch SGCEWG by the end of May 2012
- Conduct first working group meeting in June and organize subcommittees
- Collect best practices, recommendations and success stories across the industry
- Detailed best practices report and consumer engagement model with supporting materials available by the end of 2012

Questions