

EPRI Smart Grid Demonstration Update

An EPRI Progress Report

August 15, 2011



ABOUT THE NEWSLETTER

The EPRI Smart Grid Demonstration Initiative is a seven-year collaborative research effort focused on design, implementation, and assessment of field demonstrations to address prevalent challenges with **integrating distributed energy resources** in grid and market operations to create a "Virtual Power Plant." This newsletter provides periodic updates on the project, relevant industry news, and events.

PROJECT UPDATE

Sacramento Municipal Utility District Smart Grid Demonstration Project Selected as the 13th Host-Site

SMUD's SmartSacramento Smart Grid Demonstration project has completed the review process and was presented to the EPRI Board of Directors in August as the 13th Host-Site project in EPRI's Seven-Year International Smart Grid Demonstration Initiative. This is likely the last Host-Site in the initiative although there are some ongoing discussions with potential new utility collaborators that could propose a Host-Site project within the next month.



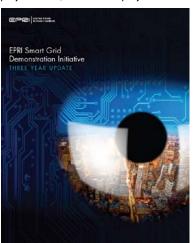
The SMUD Demonstration is comprised of over 20 individual projects that will be implemented and evaluated over the next three years. These projects combine the implementation of existing, proven technologies along with the pilot testing and demonstration of several emerging smart grid technologies. The results of this project will be used to develop a long-term plan for moving this smart grid forward. Where feasible, the individual project elements will be condensed into one or more focused areas to establish the interactive effects and to determine the full potential and associated costs of the smart grid. By condensing smart grid elements in focused areas and performing detailed measurement, evaluation and verification, it will be easier to determine smart grid benefits and cost-effectiveness to determine which smart grid elements are appropriate for broad scale deployment. The expected outcomes are to:

- Improve grid reliability & efficiency
- Enable customer participation & control
- Evaluate impacts of smart grid measures
- Determine replicability of projects

- Determine customer acceptance
- Determine ability to integrate renewables and DER
- Determine ability to integrate emerging technologies

EPRI Smart Grid Demonstration Initiative Three Year Update – NOW AVAILABLE

Thank you to the 21 utility members of the initiative and the EPRI Technical staff or contributions to the 3-Year update that is now available for download (EPRI Report 1023411). The three-year update picks up where the two-year update (EPRI Report 1021497) left off. Last year, we primarily reported on methodologies and tools that were used in developing the foundational research plans for each project. Now, most of the projects are transitioning from planning phases into deployment phases. Thus, the theme of this update is "State



of Deployment." To capture the State of Deployment of each project, this year's annual update shares small examples of the people, equipment and work being performed by the members of this initiative. At the end of the report, it lists over 20 new deliverables and 50 new use cases added since the 2-year update. Several demo projects will be presenting project updates during this year's "State of Deployment" session at GridWeek September 15th in Washington, DC.



Update: 1

June 2011 Smart Grid Demonstration Advisory Meeting Overview



Hosted at the Duke Energy Cincinnati office, the June advisory Meeting started with an optional ½ day training session. Tim Godfrey, EPRI, presented on communication technology with an emphasis on wireless. This session was video taped and will be available on DVD for those who missed this detailed presentation or would like to share with other personnel at their respective organizations.

Each strategic topic selected at the October 2010 advisory meeting was presented with details and examples from current project work with an eye toward final deliverables for each of these efforts. The strategic topics for 2011 are Consumer Engagement, DMS Integration & Visualization, Conservation Voltage Reduction, and Energy Storage Monetization. Cyber security efforts and challenges were presented that were compiled from the interview process conducted by EPRI.

The Smart Grid Reference Guide was discussed as one of the key project deliverables. A review of the table of contents revealed numerous opportunities for embellishment of this document. Various suggestions were discussed and moving forward, project managers and collaborators will consider how their projects are best represented in the reference guide when preparing future deliverables. Discussion revealed that participants are using differing terminology to describe the project technology or the application of the technology. It became apparent that an exhaustive index will be needed to resolve this issue and help readers fully utilize the guide.

Attendees pointed out that the informal interface time with other members of the collaborative is valuable. The off-line face-to-face time is one of the key benefits of attending the advisory meetings. The next SG demo advisory meeting is planned for October 18-20 and will be hosted by KCP&L in Kansas City MO.

The Buildy Award

Presented to EDF

The Buildy Award, presented annually since Connectivity Week 2004, for the "Smart Grid" category is presented to a company, organization, or individual that has shown or used new and innovative ideas and technologies related to Smart Grid connectivity, particularly as it relates to enabling Smart Grid benefits beyond the grid into energy end-use sectors. The EDF PREMIO project was nominated by EPRI and selected as the 2011 winner as announced at Connectivity Week May of 2011. Pictured are Carolina Tranchita Rativa of EDF along with EPRI project manager John Simmins.



EPRI Smart Grid Demonstration Host-Site Updates

American Electric Power (AEP) Smart Grid Demonstration Update



AEP completed an analysis on Plug-in Electric Vehicles (PEV) via simulation on the selected NE Columbus project circuit. This study included an analysis of individual asset capacities and projected PEV demands designed to identify assets potentially at risk of exceeding their specified thermal ratings. Projected PEV demands were derived from customer behavioral data including typical home arrival times, miles driven, as well as vehicle type information such as level 1 or level 2 charging. Existing circuit conditions and customer connections were taken from the circuit model and AMI measurements. As illustrated in Figure 1-1 below, medium voltage assets such as primary and

lateral lines are highly unlikely to be impacted due to per-capita PEV load growth. In contrast, assets closer to the end user - such as individual service transformers - are more likely to be at risk in response to the additional demand.

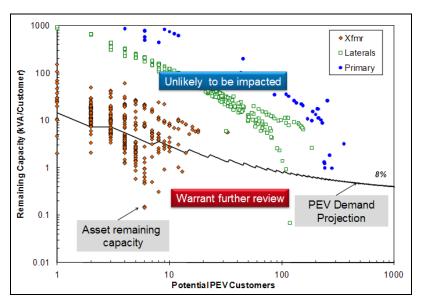


Figure 1-1 Circuit Asset Analysis for PEV

Consolidated Edison Smart Grid Demonstration Update



Con Edison is partnering with a multi-location communications provider and a third party system aggregator to develop and demonstrate methods to view, dispatch, and utilize customer-owned demand response resources located at retail customer facilities. Several lessons learned at Con Edison in the project titled **Interoperability of Demand Response Resources Demonstration in NY** (DOE Project NT02869) are offered below:

1. The complexity of implementing automated demand response increases as the significance and capacity of the curtailed load increases. Protocols that worked well with dayahead notifications do not align with rapid-response programs.

2. Demand response programs involving large, multi-site, multi-department organizations are inherently more complex than programs involving smaller, single site customers. The program sponsors must understand that there are numerous stakeholders in a large organization and each has the right to participate in the process to the extent they feel is appropriate. The more stakeholders that are involved, the longer the development and review period required to implement new demand response programs and procedures.

Electricité de France (EDF) Smart Grid Demonstration Update



MICROSCOPE is the French acronym for "Micro-Injecteur Connecté au Réseau pour Optimiser par le Stockage la Courbe de Production Electrique" or in English, "micro-injector connected to the grid for the optimization of the electrical load profile through storage". It is the electrical storage technology being evaluated in PREMIO, the EDF portion of the EPRI Smart Grid Demonstration Project.

This technology, developed by EDF, brings together electrical storage and Distributed Generation. MICROSCOPE is a Distributed Resource combining batteries and photovoltaic (PV) panels to store and to provide electricity to the grid. This technology can charge and discharge electric power according to the needs of the electrical power system (e.g. need of generation or voltage regulation).

Presently, the average power for a single unit is around 700W and the interest is clearly to deploy several units per site.

This technology was previously aimed at supporting the development of photovoltaic installations in French Western Caribbean island power systems. Peak loads in these islands are mostly supported by generation from fossil fuels even though there is good potential for solar power in this location. Connecting electrical storage solutions to solar panels would enable electricity from high radiation hours to be injected into the grid during peak load periods and help to integrate this type of renewable energy by minimizing its intermittence. Multiplying these decentralized sources would then allow the reduction of polluting centralized sources.

Microscope was the first Distributed Resource to be connected in the PREMIO project and to operate fully, which shows its capacity to be integrated in flexible architectures.

System efficiencies were lower than expected due to adjustments that occurred during the testing period. Several reasons can be cited such as the output power range of inverters, deep discharges damaging batteries due to charger reliability, overloads causing thermal losses, and battery types. Equipment will be replaced for the second test period and regulation will be key considering the lessons learned and the optimization of charge/discharge periods. Early project experiences show that the range of power and energy could be bigger to enhance load reduction capacity. System capacities of 10 kWh delivering 2-3kW are expected in a next development stage of this technology.

The use of open lead batteries entails relatively frequent maintenance operations (2-3 months). Replacing them with sealed lead batteries would allow maintenance costs to be reduced but would bring other challenges in regulation (such as taking into account battery temperature).

Exelon (ComEd/PECO) Smart Grid Demonstration Update



The Commonwealth Edison Customer Applications Project has been completed. The 12-month pilot concluded May 2011 for approximately 8,000 ComEd customers enrolled in the opt-out pilot program designed to study numerous combinations of tariffs and technologies. The project opt-out rate remained at roughly 2% overall with a slightly higher opt-out rate from the critical peak price segment.

An extensive survey was administered during May and June to the pilot customers to gather customer opinions from the diverse mix of pilot customers. Customers who take the survey receive a substantial credit on their bills for completing the survey. The survey response rate was roughly 27%. Customer responses to an

open-ended survey question included "I'm satisfied, I wouldn't change anything", "Needs iPhone App for electricity usage and viewing alerts", "Quite frankly I forgot I was even on it.", "Peak cost is way to high" and many other observations. The final report will include the analysis of detailed usage data in combination with all other aspects such as the numerical survey data, customer report utilization, and weather history. The rather exhaustive project database is being updated and loaded for the final analysis task that will be completed by EPRI this fall.

Duke Smart Grid Demonstration Update



The Envision Energy project in South Carolina is focused on two 100-24 kV subs. The McAlpine substation has 2400 communication nodes installed, 50 kW of ground-mounted solar equipment at the substation, and five installations of intelligent Electric Vehicle Supply Equipment (EVSE) along with five Plug-In Electric Vehicles (PEVs) already in use on the circuits. In addition, Duke is currently deploying Home Energy Managers (HEM) on the McAlpine feeders to provide near real time usage information to the customer and to signal the customer of demand response events.

In Indiana, Duke is partnering with a number of strategic partners in Project Plug-IN. This project will evaluate the performance of each electric vehicle, commuter patterns, charging equipment, combined use with energy storage, control capabilities and user interfaces. Currently, 80 EVs with associated monitoring equipment are in service.

Hydro-Québec Smart Grid Demonstration Update



The Volt-VAR program, called CATVAR, is fully deployed and operational in the Smart Grid Zone. In addition 8 of 15 planned new substations have been added to this program that are outside of the Smart Grid Zone. 3000 of the planned 5800 AMI meters have been installed in the Smart Grid Zone. 35 of 50 planned Electric Vehicle (EV) charging stations planned for 2011 have been installed and are operational. 25 special equipped EVs are on the road with on-board data acquisition to track data such as usage parameters and charging requirements.

Southern Company Smart Grid Demonstration Update



The Distribution Energy Efficiency Program (DEEP) and the Distribution Efficiency Program (DEP) seek to provide energy efficiency benefits by minimizing losses on the grid. These programs will provide up to 425 MW of demand response. 25% of the equipment is currently in place.

Southern Company is participating in the EPRI Distributed Photovoltaic (DPV) program. The DPV project will explore how different levels of PV will affect the operation of the distribution system. 75 of the 106 planned 200W panels are now operational. 18 months of 1 second interval field data will be collected from this system.

Of the planned 4.4 million AMI meter installs, 3.8 million have been installed to date.

Strategic Smart Grid Research Issues and Topics

Strategic Research Topics for Cross-Collaboration in 2011

Four strategic issues were identified as top priority research topics to collaborate across host-sites in 2011. Below is an update on the progress of the 2011 topics. Formal updates will be presented during each of the three EPRI Smart Grid Demonstration Advisory Meetings. Selection of new topics for 2012 will occur during the fall advisory meeting. A similar process will follow for 2013 & 2014.

Conservation Voltage Reduction (CVR) and Volt/VAR Optimization (VVO)

At the June SG Demo Advisory Meeting, Conservation Voltage Reduction (CVR)/Volt Var Optimization (VVO) Strategic Topic was presented by Tom Weaver of AEP and Jason Taylor of EPRI's Modeling Group. Tom discussed the AEP VVO implementation. Jason presented to the group how modeling and analysis using OpenDSS has advanced into CVR/VVO applications. The final deliverable for the topic will be a document that encompasses the group's objectives furthering our understanding of CVR and VVO. The deliverable will include best practices in CVR/VVO, modeling analysis using OpenDSS, briefs on what the Smart Grid Demonstration utilities are doing in their CVR/VVO implementations, monetization of CVR/VVO, use cases for CVR/VVO, history of industry uses, and a section that will cover the Basics of CVR/VVO.

Energy Storage Monetization

Case studies are being developed with Duke Energy and FirstEnergy to investigate site-specific energy storage cost-benefit analysis with the Energy Storage Valuation Tool (V3.0) currently in development. A similar analysis has been completed in conjunction with SMUD. The case studies are intended to improve the usability of the software and test model assumptions prior to release of the prototype software to SG Demo members targeted for the end of 2011. A white paper summary of case studies and a demo of the final prototype will be provided at the October SG Advisory meeting.

Consumer Behavior and Engagement



A Discussion Guide was developed for the moderators of the interactive on-line consumer interaction sessions which have been scheduled for the weeks of August 8-12 and 15-19. Two sets of consumers have been recruited by the selected customer research firm. Two sets of criteria were utilized for the consumer selection. The first group was selected from those who have some basic knowledge about smart grid technology while the second group was selected from those consumers without previous knowledge.

From customer responses to an open-ended question, utilized as part of the selection process, some interesting consumer perceptions were ascertained. The quotes below are example excerpts from residential customer responses describing their current understanding of smart grid technology:

- "A more efficient way of receiving electricity."
- "Technology used to supply more reliable and efficient energy."
- "An electronic grid that predicts and adjusts electrical use in homes/areas for a more efficient and affordable use for energy."
- "An electrical system that attempts to guess usage of electric and makes it more efficient."
- "Sharing energy in the areas that need it (like blackouts) and reducing in areas that don't need it."
- "An interconnected grid of electric resources where you have a meter in your house to regulate and conserve energy. It is
 connected to different electronics in your house and allows for shared energy and conservation."
- "It is a two-way system monitoring energy use in homes. It uses smart meters to manage electric flow."
- "A better way of conserving energy. Lower power bills. You put a box on appliances and electric company can regulate and the
 consumer can get credits for the energy they share."
- "Helps consumer play larger role in conserving and using."
- "Gives people more familiarity with their energy use and be more accurate. Switch to a digital system."
- "It is an electrical grid that predicts and responds to actions of power users to deliver reliable and economic services."
- "Computer controlled electric devices to increase energy efficiency."

The October deliverable for the consumer engagement strategic topic will be a white paper covering the customer learning process and other observations learned from the consumer interaction sessions. The paper will identify key concepts that helped the consumers learn about smart grid technologies and benefits that drive consumer acceptance and personalization of smart grid technologies.

Cyber Security Strategies & Practices

A presentation was given at the Cincinnati, Ohio Advisory meeting on the initial results from the cyber security interviews conducted with ten participants from the Smart Grid Demonstration Project. The task is to address the cyber security requirements, particularly in the integration framework, reference architecture, and information exchange model. The objectives are to document the cyber security strategies and requirements specifications and identify mitigation controls. The information is being used to identify security gaps, issues and best practices. The analysis was done using the National Institute of Standards and Technology (NIST) Interagency Report (NISTIR) 7628, Guidelines for Smart Grid Cyber Security, August 2010. A summary of the results follows.

Typically in an organization, the high level security policy is defined at the enterprise level. At the next level, there is significant variation across the organizations. The overall cyber security strategy is also typically defined at the enterprise level, with implementation performed by the operations organization. The risk assessment and the security architecture are still in the planning stages for several of the utilities. The major threats are from organized crime, terrorists, nation states, and insiders. The primary vulnerability is software bugs. Countermeasures were selected based on impact to safety and reliability and from a risk assessment. There is no common approach for access control and authentication for users/operators and devices. Privacy needs to be distinguished from confidentiality and privacy is a major issue for AMI. Many of the standards are IT oriented and there are still gaps in control systems standards as related to cyber security.

Key Deliverables and Information since Last Newsletter

EPRI Program COCKPITS





EPRI's new <u>Program Cockpits</u> provide EPRI Members a centralized location to bring together research results, events and event materials, links to collaboration and user groups, contacts, committees, technology transfer and more. The Smart Grid Demonstration program information is also available in the Cockpits including access to the monthly web casts and the advisory meeting presentations which are available for download.

Deep-Dive Webcast Recordings Available for Download by members of the initiative

To view the webcast videos from the program cockpits page (see link above) select Program D_SG: Smart Grid Demonstration, select "Webcasts" from the column of selections at the left side of the page, and the list of webcasts should appear showing these selections.

- Southern Co Smart Grid Demonstration Web Cast, July 2011 Webcast (50.08 MB) Meeting Materials (7.50 MB)
- SCE Smart Grid Demonstration Web Cast, June 2011 Webcast (29.03 MB) Meeting Materials (3.27 MB)
- PNM Smart Grid Demonstration Web Cast, May 2011 Webcast (40.72 MB)
- AEP Smart Grid Demonstration Web Cast, April 2011 Webcast (36 MB) Meeting Materials (5.85 MB)
- EDF Smart Grid Demonstration Web Cast, March 2011Webcast (40.12 MB) Meeting Materials (5.11 MB)
- FirstEnergy Smart Grid Demonstration Web Cast, February 2011 Webcast (27.9 MB) Meeting Materials (1.94 MB)
- ESB Networks Smart Grid Demonstration Web Cast, January 2011 Meeting materials available for download

Sacramento Municipal Utility District (SMUD) Smart Grid Demonstration Host-Site Overview

Product ID: 1023413

The SMUD SmartSacramento® smart grid demonstration project is comprised of over 20 individual projects that will be implemented and evaluated over the next three years. These projects combine the implementation of existing, proven technologies along with the pilot testing and demonstration of several emerging smart grid technologies. The results of this project will be used to develop a long-term plan for moving the smart grid forward. Where feasible, the individual project elements will be condensed into one or more focused areas to establish the interactive effects and to determine the full potential and associated costs of the smart grid.

Sacramento Municipal Utility District Smart Grid Demonstration Host-Site Project Description

Product ID: 1023406

This report provides a full description of the Sacramento Municipal Utility District Smart Grid Demonstration Host-Site Project

Hydro-Quebec Smart Grid Demonstration Host-Site Overview

Product ID: 1023414

This project intends to address performance and interoperability of a smart distribution system consisting of a number of advanced distribution applications and the associated technologies. Leveraging the site of the conservation voltage reduction pilot, control of the project's numerous distributed energy resources is centered around a real-time simulation based advanced Volt/Var optimization algorithm integrated in the distribution management system. The Hydro-Quebec project includes utilization of AMI, MDMS, demand response via water heaters, space heaters and thermal storage. Electric vehicles and charging stations will be used for charging schemes and assessment of the potential for vehicle to grid utilization. Residential PV and monitoring integration will utilize a combination of WiMax and telephone lines together with the meshed meter technology to link the various components in order to facilitate the required exchange of information.

Hydro-Quebec Smart Grid Demonstration Host-Site Project Description

Product ID: 1023405

This report provides a full description of the Hydro-Quebec Smart Grid Demonstration Host-Site Project.

Industry, Government, and Regulatory Notes

ICECalculator: see http://www.icecalculator.com

The Interruption Cost Estimate (ICE) Calculator is an electric reliability planning tool developed by Freeman, Sullivan & Co. and Lawrence Berkeley National Laboratory. This tool is designed for electric reliability planners at utilities, government organizations or other entities that are interested in estimating interruption costs and/or the benefits associated with reliability improvements in the United States. The ICE Calculator was funded by the Office of Electricity Delivery and Energy Reliability at the U.S. Department of Energy.

The ICE Calculator was design to be used to:

- Estimate Interruption Costs Estimate the cost per interruption event, per average kW, per unserved kWh and the total cost of sustained electric power interruptions.
- Estimate Value of Reliability Improvement in a Static Environment Estimate the value associated with a given reliability improvement. The environment is "static" because the expected reliability with and without the improvement does not change over time.
- Estimate Value of Reliability Improvement in a Dynamic Environment Estimate the value associated with a given reliability improvement. The environment is "dynamic" because the expected reliability with and without the improvement changes over time based on forecasts of SAIFI, SAIDI and CAIDI.

Related deliverables, not from Smart Grid Demo, but publicly available for free

Common Language for Distributed Storage Integration: Applying the DNP3 Application Profile for Smart Inverters

Product ID: 1023056

This is a technical update regarding utility communication with community/pad-mounted scale battery storage systems. Six utilities implementing distributed energy storage systems have cooperated with EPRI to evaluate their functional requirements against a new Distributed Network Protocol 3 (DNP3) communication standard for distributed energy resources (DER). These utility projects are at various stages of development: some are at the conceptual stage while others are fully defined and have complete functional specifications. This update evaluates how well the DNP 3 Communication Standard for DER meets the needs of the planned implementations by the participating utilities.

Common Transportation Electrification: A Technology Overview

Product ID: 1021334

This is a report on the status and technology of electric vehicles and the potential role that utilities will play in integrating electric transportation into resource planning. The report provides a detailed status on the commercial rollout of plug-in electric vehicles, describes key vehicle and infrastructure technologies, and outlines plans and actions that utilities can adopt in facilitating widespread use of these vehicles.

Advanced Security Acceleration Project for the Smart Grid 2010

Product ID: 1022395

This report is a follow-up activity to the ASAP (Advanced Metering Infrastructure Security Acceleration Project) work completed in 2009. North American Electric Utilities plan to partner in a public-private collaborative to form the Advanced Security Acceleration Project for the Smart Grid (ASAP-SG) 2010.

Communication Modularity, A practical Approach to Enabling Residential Demand Response

Product ID: 1023245

An important part of the smart grid vision is enabling communication with residential devices so that they can be informed of grid conditions, including energy price, critical peaks, and other curtailment events. This white paper describes an EPRI project through which industry participants developed a modular interface specification that enables products to be compatible with any demand response system through plug-in communication modules. If standardized and broadly adopted, this kind of socket interface would enable standard off-the-shelf products to be used anywhere and allow utilities to evolve their systems over time.

KEY EPRI SMART GRID DATES

EPRI Smart Grid Demonstration Advisory Meeting - October 18-20, 2011

When/Where: Hosted by KCP&L, Kansas City, MO. October 18-20

The Fall EPRI Smart Grid Demonstration advisory meeting will be hosted by Kansas City Power & Light, Kansas City Missouri. The meeting will include a tour of the KCP&L Green Impact Zone, the Project Living Proof Demonstration House and the Anita B. Coleman Discovery Center along with additional detail on the KCP&L projects.

- A half-day optional training on Cyber Security and Privacy will be presented during the morning of October 18th by Annabelle Lee
 and Galen Rasche. Training attendees will need to arrive at 8:00am.
- The regular meeting will kick off with a joint session with the EPRI Public Advisory Group. The meeting will start promptly at noon when the group will take a bus to the Green Impact Zone which covers a 150 block area inside KCP&L's SmartGrid demonstration area. Upon arrival at the Anita Gorman Discovery Center, lunch will be provided along with a presentation by KCP&L on their projects and a tour of the SmartGrid Demonstration House.

The final reports and presentations for the four strategic topics for 2011 will include Consumer Behavior, DMS integration / Visualization, Conservation Voltage Reduction & Volt VAR Optimization, & Energy Storage Monetization. The top three strategic topics for 2012 will be selected by the members. Other planned discussions include the smart grid reference guide, general project information, technology transfer methodology and other "round table" topics brought forth by collaboration members.

Invitations to this meeting have been sent. If you are a member of the Smart Grid Demonstration Initiative but did not receive an invitation, or for additional information regarding the logistics of the Smart Grid Demonstration Meeting, please contact: Robin Pitts@ 865.218.8057.

Future EPRI Smart Grid Demonstration Advisory Meetings

All Smart Grid Demonstration Members (not just Host-Sites) are invited to host future meetings. Members interested in hosting one of the upcoming meetings, Contact Matt Wakefield (mwakefield@epri.com) or Gale Horst (ghorst@epri.com).

2012 March 6-8 Meeting Hosted by CenterPoint Energy, Houston, TX

June – Meeting Hosted by **Southern California Edison**, Westminster, CA

Oct/Nov – Meeting Host TBD
2013 3 Meetings Meeting Hosts TBD
2014 3 Meetings Meeting Hosts TBD

Smart Grid Demonstration Host-Site "Deep Dive" Web Casts for Members

Throughout 2011, each host site will provide an update on their project to facilitate deeper learning and reporting on the individual projects. Members of the Smart Grid Initiative should have received an invitation to these web casts. Contact Matt Wakefield for more information. Note that to avoid date conflicts with other meetings, the Exelon webcast was moved to December 1st and the Con Edison webcast was rescheduled for October 27.

2011 Smart Grid Demonstration Host-Site Webcast Schedule (3rd Thursday of the Month at 11am (Eastern) for 1 ½ to 3 hours)

- January 20th, ESB Networks (COMPLETE)
- February 17th, FirstEnergy (COMPLETE)
- March 17th, Electricité de France (COMPLETE)
- April 21st, American Electric Power (COMPLETE)
- May 19th, PNM Resources (COMPLETE)
- June 16th, Southern California Edison (COMPLETE)
- July 21st, Southern Company (COMPLETE)

- August 18th, Duke Energy
- September 15th, Exclon Rescheduled to Dec 1
- October 27th, Con Edison (rescheduled from Oct 20)
- November 17th, KCP&L
- December 1st, Exelon (ComEd, PECO)
- December 15th, TBD

Other Smart Grid Related Meetings, Conferences and Proceedings

For a full list of national and international smart grid meetings and conferences, visit EPRI's Industry Smart Grid Calendar of Events.

Smart Grid projects in Europe: lessons learned and current developments

This report represents an effort to develop a catalogue of Smart Grid projects in Europe and to carry out a qualitative analysis of their results from innovation to deployment. This work is intended to be the first of a series of snapshots that the European Commission Joint Research Centre will periodically prepare on the development status of Smart Grids in Europe. http://ses.jrc.ec.europa.eu/images/stories/deliverables/jrc%20report%20-%20smart%20grid%20projects%20in%20europe.pdf

International Symposium: The electric power system of the future - Integrating supergrids and microgrids

The power system of the future will see a mix of conventional generation and renewable generation. These may very well be imbedded in local networks, microgrids, or produced on larger focused sites creating a bulk generation source. The Microgrid Symposium, held the 26th of May 2011, addressed technical issues related to future network architecture, planning, control and operation, and promising technologies enabling the evolution of SmartGrids. Presentations and discussions included market and regulatory issues, best practices and practical examples of pilot installations. As information and photos from sessions become available they will be placed on the following link: ://der.lbl.gov/News/international-symposium-electric-power-system-future-integrating-supergrids-microgrids

ADDRESS – Active Distribution networks with full integration of Demand and distributed energy RESourceS

ADDRESS is a large-scale Integrated Project co-founded by the European Commission under the 7th Framework Program, in the Energy area for the "Development of Interactive Distribution Energy Networks". Its target is to enable the <u>Active Demand</u> in the context of the smart grids of the future, or in other words, the active participation of small and commercial consumers in power system markets and provision of services to the different power system participants. Documents presented at the 4th General Assembly include an overview of the project and the results achieved so far are available at the following link:

https://priv.addressfp7.org/TeamSuite?reader=davino&download_file=on&file_id=839&project=ADDRESS

CIRED Conference Proceedings and Photos

The 21st International Conference and Exhibition on Electricity Distribution took place June 6-9, 2011. Presentations of the opening forum are available on this website: http://www.cired2011.org/pages/01111/Opening-Forum.en.php

Photos of CIRED 2011 are also available on the conference website: http://www.cired2011.org/pages/01141/CIRED-2011-photos.en.php

California Energy Commission (CEC) June 22nd Committee workshop on distribution infrastructure challenges and Smart Grid Solutions to Advance 12,000 Megawatts of Distributed Generation

Presentations are available at: ://www.energy.ca.gov/2011_energypolicy/documents/2011-06-22_workshop/presentations/

Additional EPRI Related Meetings	Date	Location More In	fo
EPRI Power Quality & Smart Distribution Conference and Exhibition			
EPRI and TVA, along with the Tennessee Valley Public Power Association (TVPPA) and local conference host, the Nashville Electric Service (NES), invite you to the 2011 EPRI Power Quality (PQ) and Smart Distribution Conference and Exhibition.	August 15-17, 2011	Nashville, TN	
DMS Interest Group Face-to-Face Meeting			
This meeting will occur as a post-conference workshop following the EPRI Power Quality & Smart Distribution Conference and Exhibition. Contact <u>Uluski</u> for more information.	August 18, 2011	Nashville, TN	
Power Delivery & Utilization Program Advisory Council Meeting			
Review past year accomplishments, refine the current year activities, and plan the future program R&D portfolio. Advisors are invited to participate in the meetings, which are held twice each year.	Sept 12-14, 2011	Miston, MA	
GridWeek 2011			
Gathering the industry's top professionals to discuss grid modernization and advancement, business, policy, solutions, and decisions relating to utilities, policymakers, regulators, vendors, environmentalists, consumers and technologists.	Sept 12-15, 2011	Washington, DC	



A continuous thank you to the 21 Member Utilities of EPRI's Smart Grid Demonstration Initiative

American Electric Power | Ameren | Central Hudson Gas & Electric | CenterPoint Energy | Consolidated Edison | Duke Energy Electricité de France | Entergy | ESB Networks | Exelon (ComEd & PECO) | Hydro-Québec | FirstEnergy | KCP&L | PNM Resources Sacramento Municipal Utility District | Southern California Edison | Southern Company | Southwest Power Pool | Salt River Project Tennessee Valley Authority | Wisconsin Public Service Corporation

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