

## 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

### Welcome new members of the demonstration project:

#### Ergon Welcome

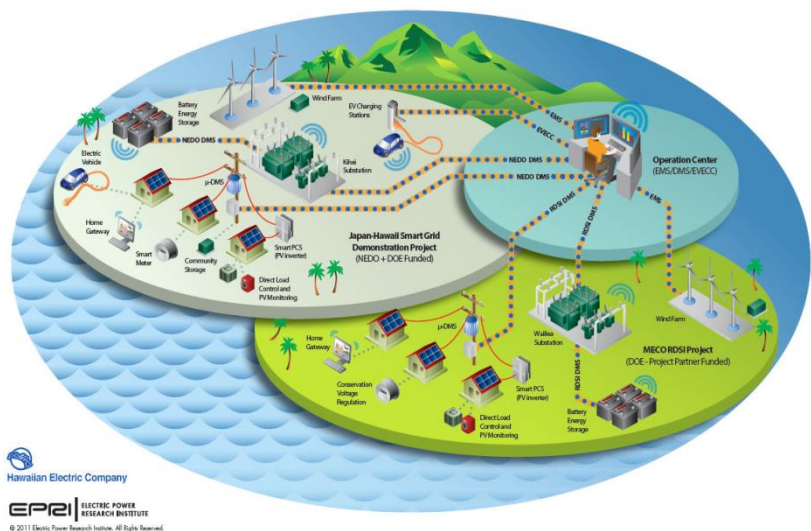
On behalf of the members of the Smart Grid Demonstration Initiative, we would like to welcome Ergon Energy as both a member and a host site candidate. Although the press-time for this newsletter preceded the Ergon peer review webcast, we look forward to hearing more about Ergon Energy's *Energy Sense Communities Program*, which will be implemented in Townsville as a 'first release' site, and their umbrella program which integrates all of Ergon Energy's existing and pre-approved 'smart grid' initiatives. We look forward to further information and synchronization with the EPRI SG Demo Initiative members.

#### HECO Welcome

On behalf of the members of the Smart Grid Demonstration Initiative, we would like to welcome Hawaiian Electric Company (HECO) as both a member and a host site. On November 7th, HECO presented their demonstration project to the collaborative members in a peer review webcast. Marc Matsuura presented the island smart grid projects and the general landscape of the systems. Maui has renewable generation from biomass, hydro, wind farms, wave generation (in development) and high growth of distributed PV. The presentation also included discussion of issues facing Hawaii Grids. These include balancing and frequency regulation, ride-through and anti-islanding, reserve requirements, and handling of periods of excess energy.

Hawaii acknowledges it must transition to a more independent economy and increase its energy security by using more indigenous renewable resources such as solar, wind, waste-to-energy, geothermal, and wave-technologies. In 2009, renewable resources accounted for 9.5% of electricity sales in Hawaii. However, the percentage of renewables will continue to increase due to Hawaii's extremely aggressive Renewable Portfolio Standards and Energy Efficiency Portfolio Standards. To reach a goal of 70% clean energy by 2030, Hawaii also recognizes the need to push for new technologies and be prepared to respond to reliability issues inherent in adding such large amounts of distributed renewable generation on an isolated island electric system.

On the November 7 webcast, collaboration members learned about demonstrations including wind, PV, micro-DMS, smart inverters, and EV charging stations and more. The charging stations enable residents and tourist renting EVs to travel the island confident of available fast-charging stations. We look forward to including HECO in the demonstration and sharing of project learning.



### Resident Researcher - The EPRI team welcomes resident researcher from TEPCO.

Dr. Sugita-san is a **TEPCO** employee but is located at EPRI (Knoxville office) supporting smart grid research. Dr Sugita has done research on the effects of wide scale introduction of photovoltaic's into the future power system in terms of power stability and, more specifically, estimated the impact of massive dropouts of photovoltaic generation on power systems. He belonged to the bulk power planning group in the engineering department at TEPCO where he worked with plans to improve the power system while analyzing power flow, voltage stability, fault current and power stability. In the past Dr. Sugita worked as a maintenance engineer and a field worker on the 6.6kV distributed lines and local substations (66kV/6.6kV). We look forward to working with Dr. Sugita over the next several years.

## October 2011 Smart Grid Demonstration Advisory Meeting Overview



Hosted at the KCP&L office in Kansas City Missouri, the October advisory meeting started with an optional half day training session by EPRI staff members. Anabelle Lee, Galen Rasche and Tim Godfrey presented the training session on *Cyber Security for the Smart Grid*. The training session covered topics including fundamentals of cyber security and privacy, challenges and strategies for securing the electric sector, security and privacy for smart grid systems, wireless security, and best practices in cyber security. 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 in detail along with examples given from current project work. The final deliverable document for each strategic topic is now available for download.

The Smart Grid Reference Guide was discussed as one of the key project deliverables. The advantages of an electronic format were presented and discussed. Future updates to the reference guide will include webcasts and training videos. Therefore EPRI staff will be looking at potential electronic formats, although a printed or printable text version will remain an option. The advantages of an electronic data format will provide extended usability including: extended indexing, searching, cross-reference links, links to external documents, embedded video, animations, webcasts, training and allows real-time updatable materials.

The project team at KCP&L provided a great tour for the Smart Grid Advisory Team members and the Public Advisory Group. First we toured the Green Impact Zone by bus and listened as two representatives from the Mid-America Regional Council (MARC) discussed urban renewal in the area. Upon arriving at the Anita B. Gorman Discovery Center we were treated to a presentation of the "KCP&L SmartGrid Demonstration Grant Overview" by Bill Menge, KCP&L, Director, SmartGrid. Next we toured the *Project Living Proof* demonstration home and returned to the Discovery Center to showcase the KCP&L's SmartGrid animation. During the bus tour back to the hotel, the KCP&L team spoke about the commercial areas that are part of the Green Impact Zone.

A major goal of our October Advisory meetings is to select strategic topics where additional focus will be applied during the next year. The three strategic topics selected for 2012 and a high-level overview of these areas of focus are as follows:

### **Advanced Applications Integrating Distributed Energy Resources**

- Smart Grid Demo and Industry Evaluation of Distributed Energy Resource Management System (DERMS) Applications being implemented at host-sites and other Smart Grid projects around the world.

- Impacts of and requirements for advanced DERMS applications
- Data required and methodology for a Cost Benefit Analysis (CBA) for advanced DERMS applications

**OMS/DMS Integration with AMI Systems and Distributed Energy Resource Management Systems (DERMS)**

- Examination of architectures being implemented to support various control authorities and hierarchy of decisions.
- Develop UML model and messaging for DER. Examine how to convey targeted resource information from one system to another.
- Monetization of DER benefits. Existing host projects will be used for developing examples.

**Cyber Security for Distributed Energy Resource Related Field Equipment**

- Field Equipment Cyber Security Risk Assessment Plan for Smart Grid Deployments
- Security Test & Evaluation Plan for DER, Field Equipment and related Substation Equipment
- Overall Cyber & Physical Strategy for Substation and DER Related Field Equipment (Greenfield and Legacy)

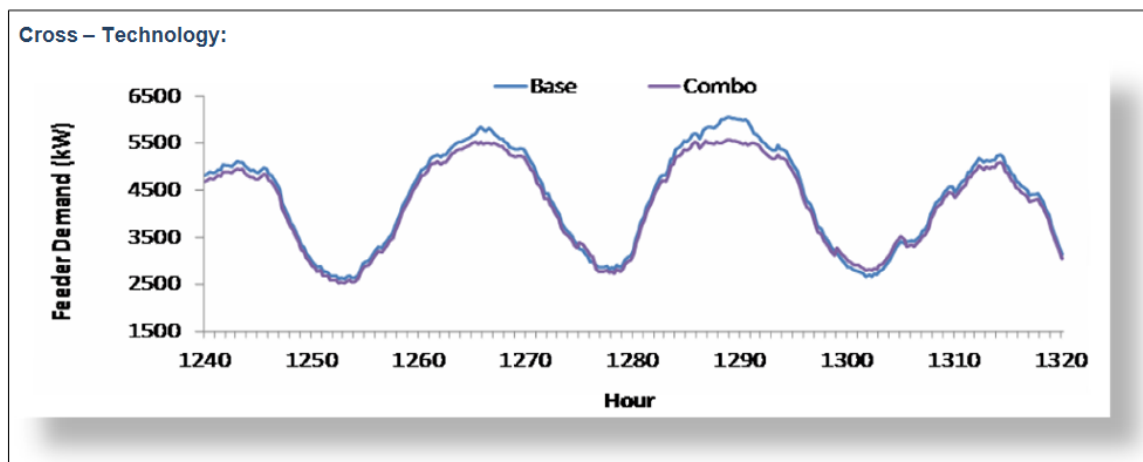
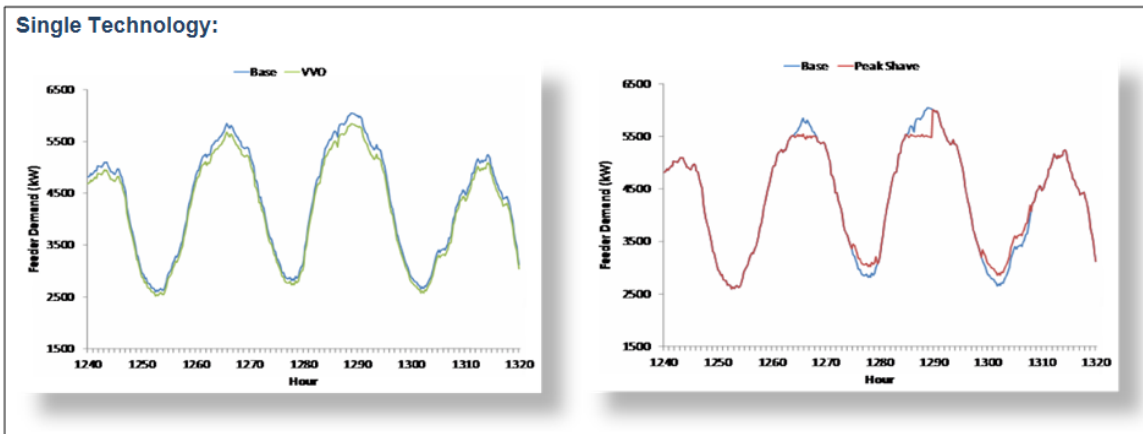
Attendees had some informal interface time with other members of the collaborative in addition to the public advisory group who joined us for the tour and dinner on Tuesday evening. The next SG demo advisory meeting is planned for March 6-8, 2012 and will be hosted by CenterPoint Energy in Houston, Texas.

**EPRI Smart Grid Demonstration Host-Site Updates**

**American Electric Power (AEP) Smart Grid Demonstration Update**

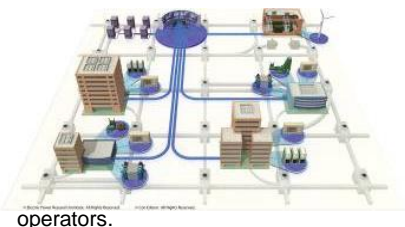


The AEP demonstration has conducted the first of several “Cross Technology” simulations planned. Moving beyond the single-technology simulations, this step is to understand potential impact of various combinations of smart grid technologies functioning concurrently. The project team has looked first at the combination of community energy storage (CES) along with conservation voltage reduction (CVR), each of which was first evaluated separately in the single-technology phase of the simulation project. The graphs below show simulation of CES and CVR simulation separately, and in parallel in the larger combined graph. Although this is preliminary, an interesting observation is the difference in hours around the 1290 point. In this case, CES operation when combined with the CVR response was able to fully shave the peak demand to the target level whereas the CES battery operation alone did not have sufficient energy to meet the specified control targets.





### Consolidated Edison Smart Grid Demonstration Update



Con Edison successfully conducted system testing in the Interoperability of Demand Response Resources in NY Demonstration. Testing included a third party aggregator demonstrating methods to view, dispatch, and utilize customer-owned demand response resources located at retail customer facilities. The system allows the utility distribution operator to activate customer owned demand response resources via curtailment triggers sent through the Demand Response Command Center (DRCC). The DRCC acts as the communication gateway between customer DR resources and distribution system operators.

In a "Deep Dive" presentation on October 27, 2011, (webcast recording is available for download) EPRI Demo members were able to see a glimpse of the network operator interface that provides the utility operator access to customer resources. The interface allows the operator to identify and select resources by physical location, network feeder, plate, zipcode, etc. The system also includes a facility manager interface, providing full monitoring and control for the customer facility manager.

Dispatch involves three primary players, the utility distribution network operator, the DRCC administrator/operator, and the customer facility manager. The testing included a secured facility manager interface implemented on customer-administered mobile devices. In the recent tests, the system achieved a response time well under the targeted 10 minute response requirement target. Future testing of the system will include the benefits of maintaining system reliability and empowering customers to participate in ancillary services, capacity, and regulation markets.



### Duke Smart Grid Demonstration Update

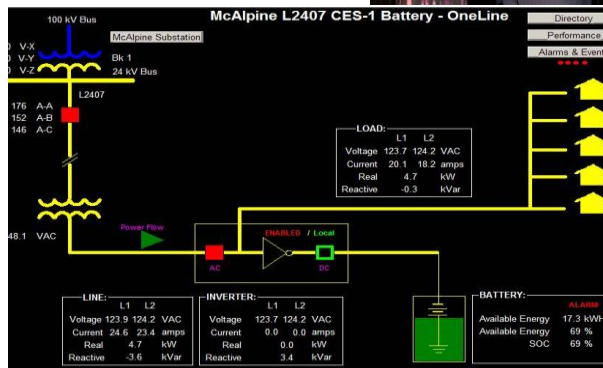


Duke Energy was awarded the GridWeek "Leadership in Strategic Solutions Award" with recognition to Melanie Miller. This award recognizes an individual or organization providing a critically valuable strategic solution that will significantly advance the implementation of smart energy systems. Candidates are considered relative to solutions that create value for all stakeholders, facilitate speedy deployment of Smart Grid, and make use of existing assets and technologies based on open standards.

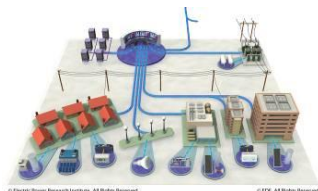


One of two Community Energy

Storage (CES) units planned for the Smart Grid Demo was installed in September. This unit has a 25 kWh, 25 kW Superior Lithium Polymer battery with an S&C system integration module. It is connected to a 50 KVA pad mounted transformer as shown in the SCADA image. The normal peak loading on this transformer is up to 91 KVA during a winter peak and up to 76 KVA during a summer peak. As a result, this installation has and will continue to demonstrate transformer-level peak shaving capabilities of CES units. Plug-in electric vehicle charging support and integration into the Distribution Energy Resource Management System are planned for the CES units.



### Electricité de France (EDF) Smart Grid Demonstration Update



Since the project was launched, many objectives have been achieved. The communication to eight different types of Distributed Energy Resources (DER) was developed for their integration in an intelligent control system. A Control Unit was built up and able to aggregate the capacity from all DER for load reduction in order to send them individual requests corresponding to an upstream operator's critical periods. A real-time visual interface was developed in order to visualize the operation of the Virtual Power Plant (VPP). Over the first three months of operation in 2011, the PREMIO VPP responded to 140 critical periods of various durations coming from a simulated upstream operator. In addition, a specific interface dedicated to a power system operator (RTE, French TSO) allowed the latter to transmit and test real load critical periods.

Some Distributed Resources could not be connected to the Control Unit in time for the first round of tests. Therefore the project was extended over the year 2012, in order to obtain results for distributed resources recently connected and consolidate those of the systems in operation.

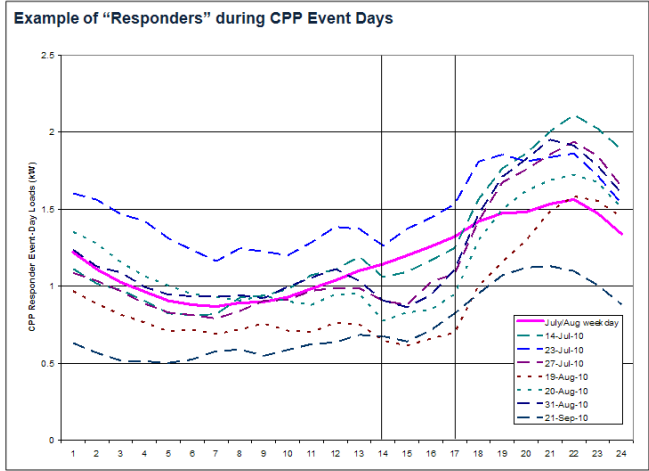
The preparation of the second round tests led to some modifications. In the case of MICROSCOPE for instance, currently operating open lead-acid batteries are replaced with sealed lead-acid batteries, which will allow maintenance costs to be reduced. In some other cases, more sensitive sensors substitute for former ones so new operating modes may be tested. After a first round test over the winter 2010-2011 which provided a wealth of lessons, this second winter season is expected to enable further understanding including the remaining aspects of the demonstration project.

**Exelon (ComEd/PECO) Smart Grid Demonstration Update**



**ComEd** - The opt-out study of more than 8,000 Commonwealth Edison electricity consumers found that over the aggregate load, the consumer response was not detectable in the overall consumption patterns, even when prices increased by \$1.74/kilowatt-hour during the 7 critical events initiated by ComEd during the summer of 2010. However, in a detailed analysis conducted by EPRI, a significant finding revealed that a small group of consumers, 4 percent to 8 percent, did reduce their consumption by up to 20 percent in response to the higher peak price. These customers exhibiting this response were a subset of customers EPRI

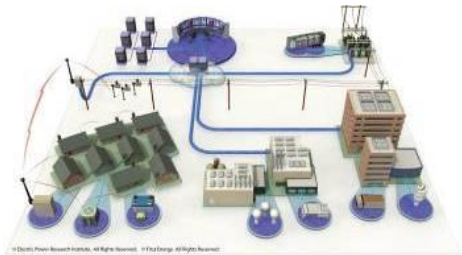
identified as “responders” in this study. As shown in the example graph, compared with the July average shown in the solid line, the responders exhibited a significant response for the peak days. When isolating the responders in this way, the results in this group appear somewhat similar to what was reported by other pilots that used an opt-in method of enrollment/recruitment. The findings suggest that using an opt-out method of enrollment will not necessarily cause consumers to respond even if very few customers opt out of the program.



The study also tested other rate structures, such as peak-time rebate, inclining block, and “time-of-day”, rates, and found no significant effect on load. The degree of customer response and impact on load was not influenced by the enabling technologies such as a web portal, a basic in-home display, and an advanced in-home display. This was attributed in part to the relatively low installation rate of the in-home displays (10 percent to 30 percent) and the low registration and usage of the web portal.

**PECO** – The Peco project utilizes a third party, Veridity Energy, to support the implementation of smart grid technologies through its partnership with Drexel University. Viridity is coupling Siemens' DEMS (decentralized energy management system) with its VPower system on the Drexel campus for forecasting and optimization to deliver solutions and services for the management and bidding of controllable load, customer-owned generation, and storage resources into energy markets. The markets include capacity, day-ahead, real-time and ancillary markets. This offering of distributed resource management and load curtailment creates a revenue opportunity for a customer via participation in the PJM market.

**FirstEnergy**



Jersey Central Power & Light installed and evaluated a unitary electro-thermal energy storage system. The Ice Bear 30 from Ice Energy was installed and evaluated as part of the FirstEnergy project. The system, installed in Howell NJ, demonstrated how it can provide permanent peak load shifting for energy delivery systems. The energy delivery utility benefited from these electro-thermal ice storage units to permanently shift peak load at the facility and thereby benefit the associated electric distribution circuit. The use of the Ice Bear by small and medium commercial customers provides them the same comfort and even improved dehumidification management while shifting some of their demand to off peak. As an alternative to attempting to alter customer behavior via Time of Use tariffs with customer incentives to reduce consumption during system peaks, this system avoids risk to retailers relative to satisfaction or comfort of their retail customers.

This research project shows that each Ice Bear unit stored about 32 kWh of energy in 10 off-peak hours and reduced demand by about 5 kW of site energy demand for up to and beyond a six-hour on-peak period. Through the 2010 summer peak season, the four Ice Bear units performed as expected, providing building cooling using ice during the daily utility system peaks. The mean discharge time during the week of August 29th was 7.73 hours, and the median discharge time was 7.98 hours. When the building was being cooled via the stored energy, there more than 18 kW of energy reduction at the site, which equates to 20.4 kW at the PJM bus after accounting for losses.

The image shown, taken from the FirstEnergy utility dashboard view, shows the monthly aggregation of Ice Bear performance metrics from June 2010 to May of 2011. The apparent sharp increase in performance in August 2010 reflects one of the integrated HVAC units returning to service on 8/11/2010 after being repaired. The Ice Energy’s remote diagnostics identified the failed HVAC unit, the associated Ice Bear was taken off line via the central control system, and the local facilities manager was notified to repair the unit. Once HVAC unit #3 was on line, and with all four Ice Bear systems providing cooling, a maximum demand reduction for August was 19.54kW locally and 22.2 kW at the PJM bus based on standard T&D losses. The aggregate Ice Bear system operations provide 100% coverage of the scheduled peak period (12pm – 6pm).





## Hydro-Québec Smart Grid Demonstration Update

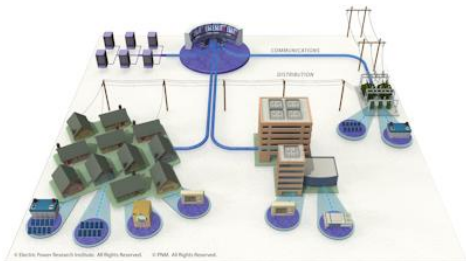


Hydro-Québec continues to advance their Smart Grid deployment in the Smart Zone shown in the graphic. The Smart Zone is fed from the 120/25-kV Pierre-Boucher substation, which provides electricity to the city of Boucherville, Québec. The substation with 12 circuits serves

13,500 commercial, residential, and industrial customers consuming 110 MVA of load. The Volt-VAR Optimization (VVO) project has expanded beyond the Smart Zone. Work is currently underway to add VVO equipment and associated communications to 4 more substations by the end of the year. This work includes the Distribution Automation (DA) projects to further enhance VVO capabilities in addition to laying the foundation for fault location and automatic service restoration. Within the Electric Vehicle project, level II EVSE (Electric Vehicle Supply Equipment) call for tenders is currently being held. The biggest development within the Hydro-Quebec Smart Grid Demo project has been the decision to accelerate the implementation of AMI functionalities for service restoration, energy theft, and to investigate the possibility of using the AMI telecom infrastructure for DA



## PNM



On Saturday, September 24, PNM hosted an event kickoff for their new Prosperity Smart Grid Project. The 500-kilowatt PNM Prosperity Energy Storage Project, partially funded by ARRA is a collaborative research project that features one of the largest combinations of battery storage and photovoltaic capacity in the nation. It is also the first ARRA energy storage project to go online. Involved in the project along with EPRI is: East Penn Manufacturing Co (batteries), Northern New Mexico College, Sandia National Laboratories and the



Jon Hawkins explaining the data acquisition system

University of New Mexico. The project incorporates 2,158 solar panels, 1,280 advanced lead-acid batteries, and includes metering and monitoring technology developed by Sandia Labs. The storage system can automatically smooth the output of the solar panels and also has the capability to support both peak demand and regulation. In the months ahead PNM will be actively engaged in collecting performance data.

The kick-off event received media coverage and was well attended by a number of local, state and national politicians. PNM CEO, Pat Vincent-Collawn kicked off the event, followed by comments by Senator Bingaman. Also providing short comments were representatives from the offices of U.S. Senator Udall and U.S. representative Martin Heinrich.

## Sacramento Municipal Utility District (SMUD)

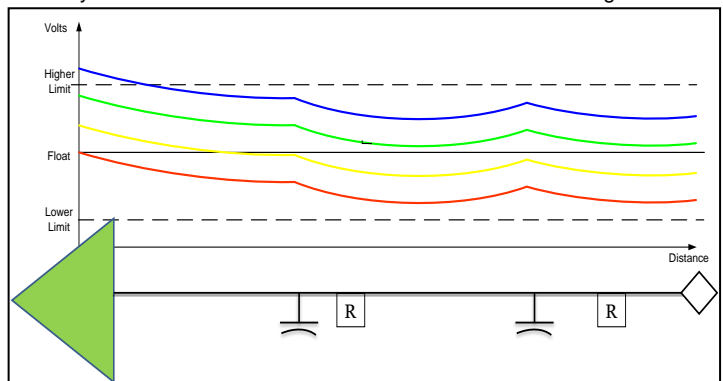


**Distribution Automation (DA)** – SMUD began conservation voltage reduction (CVR) and volt-var optimization (VVO) measurements August 8, 2011. CVR and VVO tests are planned at 3 different voltage levels as shown in the graph below (**Blue** – normal voltage level, **Green** – Tier 1, **Yellow** – Tier 2, and **Red** – Tier 3). Tier 1 tests consist of a marginal change in the LTC control setpoint. This may not result in a tap position change thereby preventing collection of meaningful data on the small sample of pilot circuits. The majority of CVR and VVO tests are occurring at the Tier 2 voltage range. Tier 2 tests occur Monday-Thursday each week during the 4 week test periods. Fridays are reserved for Tier 1 and Tier 3 tests. Tier 3 is a significant

change in the LTC setpoint. As a result, only a small number of tests are anticipated during the summer testing period. Preliminary results from initial CVR and VVO testing are very promising. In addition, here are a few other DA highlights:

- Completed circuit analysis for 26 of 109 12-kv circuits, all planned 69-kv circuits, and all planned 21 kV circuits
- Installed Siemens SiCam which will allow operators visibility on status of re-closers and other line equipment
- Installed GridScope which allows remote configuration of radios within the line equipment and other communication network devices
- Completed 13 of 40 substation automation projects

**Other SMUD Projects Highlights** – AMI meter installations have exceeded 560,000. Remote meter reprogramming tests continue in order to support rate changes. In a reprogramming test, 500 meters per hour were reprogrammed remotely. The Demand Response Management System RFP was released and proposals received.



Micro-turbine units for the micro-grid field demonstration are in the final stages of testing. The Solar Highway project was canceled due to complexities of installing panels along urban highways which resulted in a higher than expected project cost.

**Southern California Edison (SCE)**



The Southern California Edison (SCE) Irvine Smart Grid Demonstration (ISGD) project is currently in the final planning and engineering design stage, with one of the sub-projects in the early installation stage. The project team is in discussion with potential vendors for the Zero Net Energy (ZNE) Homes project. For the Plug-in Electric Vehicle (PEV) project, vendor selection for major segments of the car shade system are being finalized along with proposed location, permitting and easement requirements. Engineering continues on the design of the car shade system, including the inverters and batteries. The project team is working on locations, installation and operation of a 2MW/500 kWh Energy Storage Unit. The Large Energy Storage system was commissioned and successfully cycle tested in September. The project team completed a first draft of the ISGD system integration and validation testing schedule for the Secure Energy Network (SENet). SCE submitted the Metric and Benefits Reporting Plan (MBRP) document to the Department of Energy after reviews by sub-project leads,

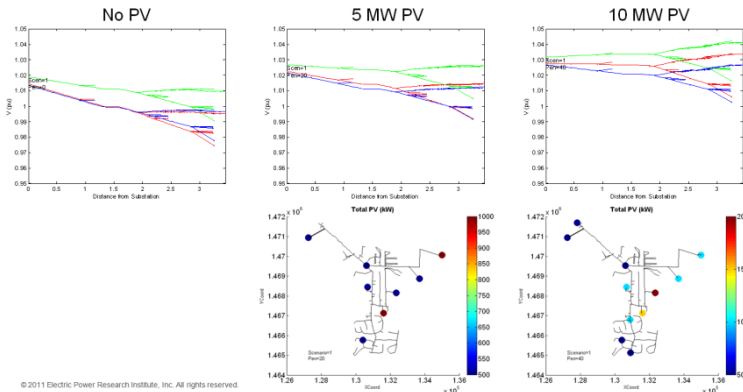
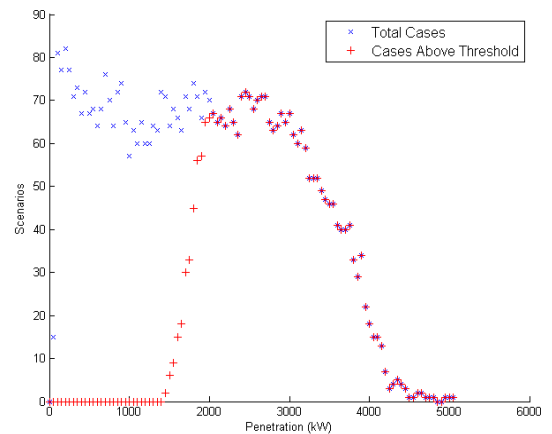
legal, EPRI and SCE management. The MBRP was finalized on 6/29/2011. The additional sub-projects are in various stages of design, sourcing, and planning.

**Southern Company Smart Grid Demonstration Update**



Distributed solar generation is becoming more and more attractive for residential and commercial customers. This new form of dynamic generation is a concern to the utility because of its potential impact to the distribution system. As a result, Southern Company is working with EPRI on the Distributed

Photovoltaic Project (DPV) to study the effects of higher PV generation on distribution circuits. Southern Company has chosen three of their DPV circuits to model in OpenDSS. These three circuits have 6-8 PV installations spread across the circuit. Each installation has a 200W pole mounted grid-tied solar panel with 1-second remote power monitoring capability. The OpenDSS model allows the actual output of each solar panel to be scaled up in size to simulate higher penetration of solar generation on the circuit. The graph on the left shows the comparison of no-load conditions with two simulations of 5 and 10 MWs of solar generation on one feeder at peak conditions. The different colored lines in



the top part of the three plots at the left are the steady state voltage profiles for each of the three phases. The bottom two plots at the left show the location of the solar generation for each analysis. With 5 and 10 MWs of solar generation on this 8 MW circuit, potential voltage issues become evident even at peak steady state conditions. The graph above shows that even a smaller amount of solar generation, around 1500 kW on this circuit, causes switched capacitor bank control thresholds to be exceeded.

A first round of overvoltage and voltage regulation DPV tests has been completed. DPV research in the areas of anti-islanding, protection, demand/thermal loading, and power quality will take place over the next 12-18 months.

**Strategic Smart Grid Research Topics Selected for 2012**

At the recent advisory meeting the attendees, and designates on the conference call/webcast, voted for the top three selected strategic areas to focus on in 2012. Note that these are in addition to regular project host sites and other activities. Breakout sessions were utilized to complete the basic charter for each of the selected focus areas listing the three primary issues to be addressed. Note that during the next several months, each will be further defined and detailed.

**Topic One - Cyber Security for Field Equipment**

- Issue A: Examine how we could enhance the physical security for field devices?
- Issue B: Focus on a Cyber Security Guideline that the Operations people can use and apply.
- Issue C: Look at how we might apply NISTIR 7628 to a class of devices or device? Can we also apply parts of NIST SP 800-82 and/or NIST SP 800-53? How do these apply to cyber equipment/field devices?

**Topic Two - Advanced DMS Applications**

The Distribution Management System (DMS) of today helps control center operators manage the distribution system reliably and efficiently. The DMS has links to other systems such as the geographic information system (GIS), customer information system (CIS) and other systems that provide data to build and maintain a model of the system. One of the core components now and especially in the

future is the advanced DMS applications module. Advanced applications and other innovative ones to be created in the future will be used to support new operating models that includes a wide range of Smart Grid enabled devices and generation resources. The topics to be addressed in this research project are as follows (research to be centered on member demonstrations):

- Issue A: DMS advanced applications that are used to deploy Distribution Energy Resources (DER) and Demand Response (DR) programs.
- Issue B: Impacts of and requirements for DMS advanced applications such as Demand Response Management System (DRMS), Distributed Energy Resource Management System (DERMS), Volt-VAR Manager (VVM), and a training tool for these systems.
- Issue C: Data required and methodology for a Cost Benefit Analysis (CBA) for advanced applications mentioned in Topics A&B. Demonstration of the CBA tool being developed by Program 180.
- Issue D: Types and frequency of the data required by the system operators to efficiently operate advanced applications.

**Topic Three - OMS/DMS Integration with AMI Systems and DERMS**

Topic three is focused on identification of needs for load reduction and the methods of requesting demand response. A look at OpenADR, for example, needs to be included as a method to determine the controlling authority for each device class. The architecture and data requirements need to be determined along with the distributed logic and hierarchy of decision making, latency and cost of distributed vs. centralized approaches .

- Issue A: Examination of architectures to support various control authorities and hierarchy of decisions.
- Issue B: Develop UML model and messaging for DER. How to convey targeted resource information from one system to another.
- Issue C: Monetization of DER. Use existing host projects.

**Highlights since Last Newsletter**

The 2011 Strategy Topic, consumer engagement, was presented at the October meeting. As requested by the members, the results of this strategic topic need to be sharable with additional stakeholders. The key points of this research are now available in a public paper titled “*Consumer Engagement: Facts, Myths, and Motivations*” as an *EPRI Issues Analysis*. The EPRI product number is **1024566**.

The 2011 Strategy Topic, distribution management system data visualization is now available in a public format. As utilities invest in the enabling technologies of the smart grid, they have been left without the necessary technology to manage the newfound complexity of the distribution system. This report describes utility and vendor plans for DMS functionality and the gaps between them. The report titled **Grid Strategy 2011: Distribution Management System Data Visualization**, is EPRI product number **1024621**.

The 2011 Strategic Topic, Conservation Voltage Reduction (CVR) and Volt VAR Optimization (VVO) final report is now available. This document covers the basics of CVR/VVO, monetization, modeling and provides utility updates of the current CVR/VVO projects within the Demonstration Project. The report titled, **Grid Strategy 2011: Conservation Voltage Reduction and Volt VAR Optimization in the Smart Grid**, is EPRI product ID # **1024482**.

**List of Deliverables Since Last Newsletter**

Product ID	Name	Published
<a href="#">1024590</a>	A Utility Application Implementation Strategy Using the EPRI IntelliGrid Methodology and the GridWise Architecture Council Stack as a Model	14-Nov-11
<a href="#">1024482</a>	Grid Strategy 2011: Conservation Voltage Reduction and Volt VAR Optimization in the Smart Grid	11-Nov-11
<a href="#">1024459</a>	Standard Portfolio Analysis at Public Service of New Mexico	31-Oct-11
<a href="#">1024566</a>	Consumer Engagement: Facts Myths and Motivations	28-Oct-11
<a href="#">1023644</a>	The Effect on Electricity Consumption of the Commonwealth Edison Customer Applications Program: Phase 2 Final Analysis	20-Oct-11
<a href="#">1024574</a>	Southern California Edison Smart Grid Host Site Progress Report	19-Oct-11
<a href="#">1024460</a>	Electricite de France Smart Grid Host Site Evaluation Report After Six Months of Operation	18-Oct-11
<a href="#">1024565</a>	Grid Strategy 2011: Consumer Engagement	17-Oct-11
<a href="#">1024483</a>	Grid Strategy 2011: Energy Storage Monetization	14-Oct-11
<a href="#">1024573</a>	Grid Strategy 2011: Security in Demonstrations	14-Oct-11
<a href="#">1024661</a>	Grid Strategy 2011: Distribution Management System Data Visibility	14-Oct-11
<a href="#">1023428</a>	Smart Grid Communications Training - Smart Grid Training Session #2	3-Oct-11
<a href="#">1023427</a>	Strategic Intelligence Update - Smart Grid Conferences and Events	27-Sep-11

**EPRI Program COCKPITS**



**Access ALL program and project information in one, centralized place!**

EPRI’s new [Program Cockpits](#) 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 and Other 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.



- HECO Demonstration Peer Review November 7, 2011 Webcast (38 MB) Meeting Materials (1.85 MB)
- ConEdison Smart Grid Demonstration Web Cast, October 2011 Webcast (22.76 MB) Meeting Materials (970 K)
- Duke Energy Grid Demonstration Web Cast, August 2011 Webcast (36.21 MB) Meeting Materials (4.65 MB)
- 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 2011 Webcast (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

## KEY EPRI SMART GRID DATES

### EPRI Smart Grid Demonstration Advisory Meeting – March 6-8 2012

**When/Where:** Hosted by CenterPoint Energy in Houston, Texas.

**Why attend:** Smart Grid Demonstration Advisory Meetings – member statements



- “Attending the EPRI Smart Grid Demo Advisory Meeting allows me to hear about the SG projects underway at different utilities. These projects are both similar and non-similar in nature to what my utility is doing.”
- “I have the opportunity to hear problems and solutions including some issues I haven’t even thought of so far.”
- “I can learn from other SG deployments and communicate, back at my utility, about shared learning, ideas for projects, or a project approach for further consideration.”
- “Excellent and very valuable presentations.”
- “Most of the utilities are working on the same and different initiative and all of us have similar challenges. This is a great group to discuss those.”
- “Discussions in the small groups were really interesting!! Good team decisions around all topics.”
- “It was very good to hear other people’s opinions and priorities.”

**Location Information:** There are numerous interesting facts about Texas for those with some level of curiosity about history. Texas was one of only three states that were once officially recognized independent nations (Republic of Texas) before joining the Union. (Read more information at: [http://wiki.answers.com/Q/What\\_are\\_some\\_unique\\_things\\_about\\_Texas](http://wiki.answers.com/Q/What_are_some_unique_things_about_Texas)) Of course Texas is also the only state holding an EPRI Smart Grid Advisory Meeting (SGAM) during March of 2012 so you don’t want to miss your opportunity to visit not only Texas but CenterPoint Energy in Houston.

**Expectations:** The March SGAM will focus on a number of case studies from the demonstration projects presented by members. These will be selected programs or technologies, from the demo project, that are at a point where sharable learnings have resulted. This should bring some end-to-end closure to certain project aspects or technologies for the benefit of participants. You will want to select your projects or technologies and be prepared to both present and absorb the information.

### Schedule of 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).

<b>2012</b>	March 6-8	Meeting Hosted by <b>CenterPoint Energy</b> , in Houston, TX
	June 12–14	Meeting Hosted by <b>Southern California Edison</b> , in Huntington Beach, CA
	October –	Meeting Hosted by <b>SMUD</b> , in Sacramento CA
<b>2013</b>	3 Meetings	Meeting Hosts TBD
<b>2014</b>	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 [Gale Horst](#) for more information. Note that to avoid date conflicts with other meetings, the Exelon webcast was moved to December 1<sup>st</sup> and the Con Edison webcast was rescheduled for October 27.

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

- |  |  |
|--|--|
| • January 20 <sup>th</sup> , ESB Networks ( <b>COMPLETE</b> )            | • July 21 <sup>st</sup> , Southern Company ( <b>COMPLETE</b> ) |
| • February 17 <sup>th</sup> , FirstEnergy ( <b>COMPLETE</b> )            | • August 18 <sup>th</sup> , Duke Energy ( <b>COMPLETE</b> )    |
| • March 17 <sup>th</sup> , Electricité de France ( <b>COMPLETE</b> )     | • October 27 <sup>th</sup> , Con Edison ( <b>COMPLETE</b> )    |
| • April 21 <sup>st</sup> , American Electric Power ( <b>COMPLETE</b> )   | • November 17 <sup>th</sup> , KCP&L ( <b>COMPLETE</b> )        |
| • May 19 <sup>th</sup> , PNM Resources ( <b>COMPLETE</b> )               | • December 1 <sup>st</sup> , Exelon (ComEd, PECO)              |
| • June 16 <sup>th</sup> , Southern California Edison ( <b>COMPLETE</b> ) | • December 15 <sup>th</sup> , SMUD                             |



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**A continuous thank you to the 23 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 | Ergon | ESB Networks | Exelon (ComEd & PECO) | HECO | 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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