

Smart Grid Demonstration Advisory Update



An EPRI Progress Report

March 3, 2009

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The EPRI Smart Grid Demonstration Initiative is a five 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."

The newsletter provides periodic updates on the project as well as updates on relevant industry news and events and is published as news warrants a distribution, but at a minimum, it will be bimonthly. If you have comments about the newsletter, please contact Matt Wakefield at 865-218-8087, mwakefield@epri.com.

PROJECT UPDATE

EPRI's Smart Grid Team Gets Boost

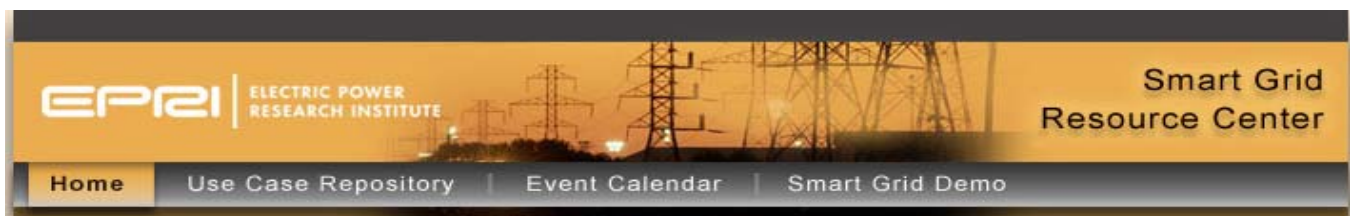
Two new additions to EPRI's IntelliGrid Team will be leveraged in our Smart Grid efforts. Welcome to Stephanie Hamilton and Gale Horst to EPRI's Smart Grid Team. We encourage our EPRI members to leverage Stephanie and Gale in your smart grid projects and we are proud to have them on our team continuing to solidify EPRI's world-class smart grid qualifications.

Stephanie Hamilton (shamilton@epri.com) is a member of the GridWise Architecture Council that is focused on identifying areas for standardization that allow significant levels of interoperation between systems and components. Stephanie will be leading efforts related to industry body collaboration and coordination.

Gale Horst (ghorst@epri.com) comes from Whirlpool where he was a Lead Engineer and patent owner in the Advanced Electronic Technology Department performing significant research related to White Goods Energy Management including the project manager for Whirlpool's role in the DOE "Pacific Northwest GridWise Test bed Initiative." Gale will be leading efforts primarily related to managing smart grid host-site projects.

EPRI Launches Smart Grid Resource Center & Use Case Repository

www.smartgrid.epri.com is now LIVE!



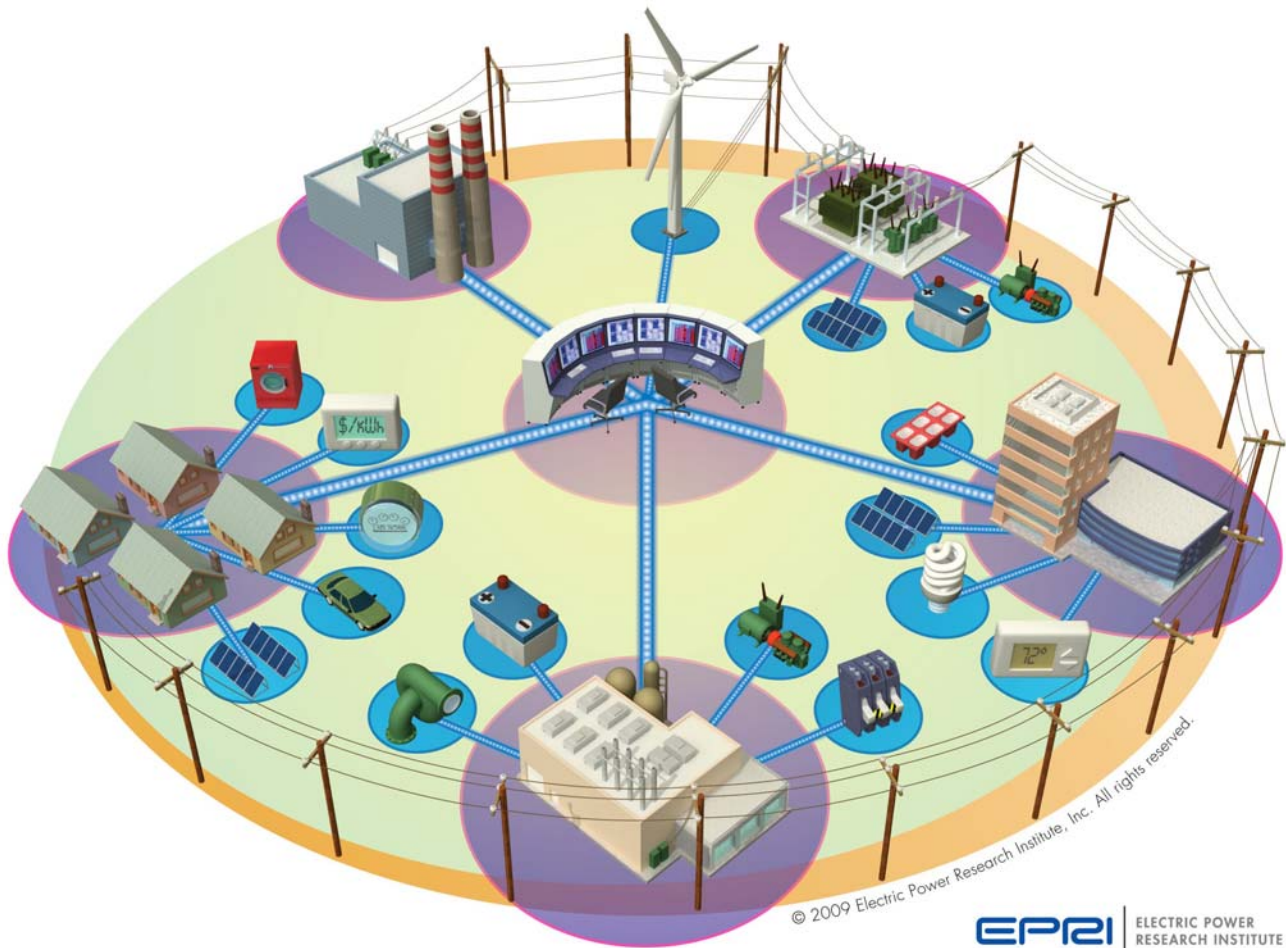
The EPRI Smart Grid Resource Center is a collaborative resource that is just the start of our efforts to compliment the number of already available public resources related to the smart grid. The scope of this resource will be expanded over the next year.

The site currently includes:

- Industry Use Case Repository
- Smart Grid Calendar of Events
- EPRI Smart Grid Advisory Newsletters
- EPRI Smart Grid Demonstration Initiative Information
- Smart Grid News
- Industry Links

MARK YOUR CALENDARS! Next EPRI Smart Grid Advisory Team Meeting Date is Set June 23rd & 24th hosted by FirstEnergy in Red Bank, NJ. See "Key EPRI Smart Grid Dates" for details

New Graphic Representation of the Smart Grid and EPRI's Demonstration Initiative



This graphic represents the system view of a smart grid that integrates distributed energy resources.

Task 1: Analytics work in progress

Subtask 1.1 – Development of Regional Profiles

In progress, EPRI Project Manager is Dr. Angela Chuang.

Subtask 1.2 – Develop Integration Framework

Estimated Start Date is April 2009. EPRI Project Manager is Dr. Angela Chuang

Subtask 1.5 – Develop Framework for Economic Assessment

In progress, being coordinated with the U.S. Department of Energy. EPRI Project Manager is Dr. Bernie Neenan.

Subtask 1.6 – Develop Scope and Mapping of Demonstration Projects

In Progress, Estimated Completion Date is April 2009. EPRI Project Manager is Matt Wakefield

Task 2: Critical Integration Technologies

Subtask 2.1 – Develop Architecture Reference Guide for Distributed Resource Integration.

In Progress, EPRI Project Manager is Matt Wakefield.

Subtask 2.4 – Develop Aggregation Methods and Tools

Estimated Start Date is March 2009. EPRI Project Manager is Dr. Angela Chuang

Subtask 2.6 – Critical Integration Technologies

Several Technologies and Field Trials are being considered for 2009. As plans mature, updates will be provided

Task 3: Demonstrate Technologies in Actual Applications

Host Site Projects. Detailed Project Implementation Plans are in Progress

- Con Edison
- FirstEnergy
- PNM Resources

Current Host Site Project Proposals

AEP has a smart grid project proposal that is completing the EPRI Technical Review process. A peer review webcast is scheduled for March 23rd and it will be presented to the EPRI Board of Directors on April 15.

Future Host Site Selection Timeline

All host-sites project proposals need to complete the review process by August 2010. There is an approximate three (3) month window from the start of the review process until the associated EPRI Board of Directors meeting as outlined below.

Start Proposal Review Process with EPRI Technical Staff no later than:	Presented Qualified Proposals at EPRI Board of Directors Meeting
April 30, 2009 ▶▶▶▶▶	▶▶▶▶▶ August 4, 2009
August 21, 2009 ▶▶▶▶▶	▶▶▶▶▶ November 18, 2009
January 15, 2010 ▶▶▶▶▶	▶▶▶▶▶ April 6, 2010
April 29, 2010 ▶▶▶▶▶	▶▶▶▶▶ August 3, 2010

All Smart Grid Demonstration Collaborators are eligible to be a host site. If you have a project you would like to be considered as a host-site, please contact Matt Wakefield (mwakefield@epri.com)

Task 4: Technology Transfer

Subtask 4.2 – Industry Coordination

In Progress, EPRI Project Manager is Stephanie Hamilton

Subtask 4.3 – Standards Development

Integration of Integrated Energy and Communications Systems Project results and IntelliGrid Architecture into NIST Standards Landscape and Knowledge Base. In Progress, EPRI Project Manager is Joe Hughes

Subtask 4.4 – Use Case Repository

In Progress, web-site is live with over 120 use cases. EPRI Project Manager is Brian Green

KEY EPRI SMART GRID DATES

Webcast: AEP Smart Grid Host-Site Proposal Peer Review

This web-cast will provide an overview of AEP's smart grid project and discuss how the project aligns with the six critical elements in EPRI's Smart Grid Demonstration Initiative

The Peer Review process is an opportunity for Smart Grid Demo Utility Collaborators and key industry stakeholders to learn about the project, ask questions and provide feedback. The project has gone through EPRI's technical review process, but it is important to have a peer review prior to presenting the project to the EPRI Board of Directors for final approval.

When: March 23rd, 2009, 2 PM (Eastern). 1 hour

Webcast: Invitations to Utility Collaborators and Peer Review Team will be sent shortly

Webcast: Use Case Workshops

This is a technical presentation outlining the use case workshop process that will be used to develop requirements for smart grid projects.

The intended audience is for all member utilities to gain an understanding of the path forward, key milestones, and collaborative opportunities.

When: Week of April 6th, 2009. 2-3 hours. Exact date and time TBD

Webcast: Invitations to Utility Collaborators in the Smart Grid Demonstration Project will be sent shortly

Webcast: Distributed Energy Resources Aggregation Methods and Tools

This is a kick-off webcast providing background on the differences among the various markets, the processes involved distributed energy resources to participate in markets, and factors affecting their participation.

The intended audience is for all member utilities to gain an understanding of the path forward, key milestones, and collaborative opportunities.

When: Date TBD, Late March / April, 2009. 1-1.5 hours

Webcast: Invitations to Utility Collaborators will be sent shortly

June 2009 EPRI Smart Grid Advisory Team Meeting, hosted by FirstEnergy, Red Bank NJ

This will be the next face-to-face meeting for sharing information, collaborating, providing a project update and addressing issues for Members of the EPRI Smart Grid Initiative.

The intended audience is for all EPRI smart grid demonstration member utilities and will include deliverables update as well as working meetings to support ongoing tasks.

When/Where: Tuesday, June 23rd, 2009 (Optional) 3pm – 5pm, FE / JCP&L Operations Center Tour and System Demonstration
6pm – EPRI Hosted Dinner, Location TBD

Wednesday, June 24th, 2009 8:30am – 4pm. Advisory Meeting, Deliverables Update. Details TBD

Webcast & Audio: Invitations to Utility Collaborators & Peer Review Team will be sent shortly

EPRI Power Delivery & Utilization Area Advisory Council Meeting

When/Where: August 31- September 2, 2009, Chicago, IL

Link: <http://quest.cvent.com/EVENTS/info/summary.aspx?e=75c3f45c-7ad0-4bdc-8eb4-69536544b401>

KEY INDUSTRY DATES

All Smart Grid Related Events are Listed on EPRI's Smart Grid Resource Center, now LIVE!

www.smartgrid.epri.com/calendar.html

Want to add an Event? Email Matt Wakefield (mwakefield@epri.com), Name of event, Date, location and web site link to add an event.

INDUSTRY NEWS

Smart Grid Industry News

United States Senate Committee on Energy & Natural Resources – Full Committee Oversight Hearing: to receive testimony on the process of smart grid initiatives and technologies

March 3, 2009, 10 AM

http://energy.senate.gov/public/index.cfm?FuseAction=Hearings.Hearing&Hearing_ID=aa1ce631-aae4-f0e3-0756-d667268c8551

Plug Into the Smart Grid: Google – GE Conference in Washington DC

YouTube Video (2hr, 16min), February, 17, 2009

<http://www.youtube.com/watch?v=DGiy7Safnhg>

Google unveils software to cut household energy waste

By Matt Nauman, Mercury News, February 10, 2009

http://www.mercurynews.com/google/ci_11666399?nclick_check=1

Tendril Achieves OpenADR Compliant Platform

Tendril, January 29, 2009

<http://www.tendrilinc.com/2009/01/tendril-achieves-first-open-adr-compliant-platform-2/>

Understanding the Smart Grid

By Joe Salimando, TED Magazine, January 29, 2009

<http://www.tedmag.com/common/webnewslink.asp?currentpage=7276>

A Smart Grid for Intelligent Energy Use

YouTube Video (9 minutes), January 19, 2009

Comments from Clark Gellings of EPRI and a number of industry experts

http://www.youtube.com/watch?v=YrcqA_cqRD8

The American Recovery and Reinvestment Act (aka Stimulus Package)

Over \$49.7 billion towards Energy Industry, Signed by President Barack Obama February 17, 2009

<http://www.recovery.gov/> or http://en.wikipedia.org/wiki/American_Recovery_and_Reinvestment_Act_of_2009

- \$11 billion funding for an electric smart grid
- \$6.3 billion for state and local governments to make investments in energy efficiency
- \$6 billion for renewable energy and electric transmission technologies loan guarantees
- \$6 billion for the cleanup of radioactive waste (mostly nuclear power plant sites)
- \$5 billion for weatherizing modest-income homes
- \$4.5 billion for the Office of Electricity and Energy Reliability to modernize nation's electrical grid and smart grid.
- \$4.5 billion for state and local governments to increase energy efficiency in federal buildings
- \$3.4 billion for carbon capture experiments
- \$3.25 billion for the Western Area Power Administration for power transmission system upgrades.
- \$2.5 billion for energy efficiency research
- \$2 billion for manufacturing of advanced car battery (traction) systems and components.
- \$3.2 billion toward Energy Efficiency and Conservation Block Grants
- \$500 million for training of green-collar workers (by the Department of Labor)
- \$400 million for electric vehicle technologies
- \$300 million for federal vehicle fleets, to cover the cost of acquiring electric vehicles, including plug-in hybrid vehicles.
- \$300 million to buy energy efficient appliances
- \$300 million for reducing diesel fuel emissions
- \$300 million for state and local governments to purchase energy efficient vehicles
- \$250 million to increase energy efficiency in low-income housing
- \$600 million to cleanup hazardous waste that threaten health and the environment
- \$200 million to cleanup petroleum leaks from underground storage tanks
- \$100 million to evaluate and cleanup brownfield land
- \$400 million for the Geothermal Technologies Program

America's Untapped Energy Resource: Boosting Efficiency

By Michael Grunwald, Time Magazine, December 31, 2009

<http://www.time.com/time/magazine/article/0,9171,1869224-1,00.html>

Standards News

DOE Chief Chu to Push for Smart Grid Standards

By Josie Garthwaite, earth2tech, February 18, 2009

<http://earth2tech.com/2009/02/18/doe-chief-chu-to-push-for-smart-grid-standards/>

Panasonic Technology Ratified as Key Element of IEEE P1901 Baseline Standard for Broadband Over Powerline

PRNewswire, January 9, 2009

<http://sev.prnewswire.com/null/20090109/NY5720509012009-1.html>

XML.org launches OASIS Blue Initiative to foster discussion on the role of open standards and sustainability

December, 2008

<http://www.oasis-open.org/resources/white-papers/blue/>

Technology Trends

\$100 Linux wall-wart launches

Make Magazine, February 24, 2009

Marvell Semiconductor is shipping a hardware/software development kit suitable for always-on home automation devices and service gateways. Comes with Linux and boasts completely open hardware and software designs.

http://blog.makezine.com/archive/2009/02/100_linux_wallwart_launches.html?CMP=OTC-0D6B48984890

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