Technology Innovation Project

Project Brief

TIP 272d: EPRI P170.015 Supplemental: Coordinated Early Deployments of Efficient End-Use Technologies

Context

The electricity industry faces growing demand for power and the imperative to maintain reliable, affordable service while reducing carbon emissions. Utilities and policy makers in the United States and abroad are turning to energy efficiency and demand response resources meet these needs. BPA works collaboratively with others to "fill the pipeline" of energy efficiency opportunities for utilities to offer their customers.

The Electric Power Research Institute (EPRI) and its membership represent approximately 90% of the electricity generated and delivered in the U.S. EPRI created a research framework to evaluate the readiness of emerging end-use technologies for utility programs, along a continuum spanning technology scouting, assessment and lab testing, research and development (R&D) field testing and demonstration, coordinated early deployment, and full program rollout.

Participation in EPRI projects includes "membership" in their base program for a particular topic, plus opportunities to join "supplemental projects" defined to meet the needs of a subset of utilities and other partners, and funded separately.

Description

This project supports BPA's participation in EPRI Supplemental Project 170.015. It is part of EPRI Program 170: End-Use Energy Efficiency and Demand Response.

This supplemental project was initiated at the request of members (including BPA) to take technologies that have performed well in the lab and limited field tests, and deploy them on a broader scale quickly and cost-effectively by addressing infrastructure, technical and market based challenges. Multiple utilities engage in the planning for each technology and several may conduct early deployments, learning from each other's experience to improve the rollout and reduce the cost in each of their programs.

Each participating utility has the option of being a member of the collaborative, with access to learnings, or being a "host" which means that they will actually develop a program offer in their territory. In March 2013, BPA chose to be a member, but is considering the option of hosting programs.

For each of the selected technologies, EPRI works with the utilities to conduct consumer and supply chain research, identify innovative strategies to overcome remaining gaps, and design the early deployments with the intent to produce transferable results within a single territory and across multiple territories. Utilities conduct the early deployments with EPRI guidance. EPRI analyzes and evaluates the results.

EPRI coordinates the early deployment plans and projects, facilitates frequent communications among collaborators, and conducts technology transfer to inform public and other stakeholders of the early deployment process and results. EPRI facilitates interactions with manufacturers and other supply chain actors to help promote delivery of products that meet consumer needs.

Specific technologies to be supported by this project in 2014 include commercial heat pump systems with variable refrigerant flow, and for data centers: automated air flow management, DC power, and efficient power supplies and dynamic power management for servers (now combined as server consolidation).

Why It Matters

The Coordinated Early Deployments project is designed to reduce the cost of accelerating the readiness of emerging technologies by deploying multiple technologies in parallel and enabling collaborators to use results from early deployments from other participants.

This project is part of BPA's commitment to acquire cost effective energy efficiency. BPA has determined that in order to meet its energy efficiency goals cost effectively over the long term, it is necessary to conduct ongoing R&D and emerging technology research. This includes development and adoption of energy-efficient and demand response technologies to accelerate their adoption into utility programs, influencing the progress of codes and standards, and ultimately creating market transformation – achieving the savings at little or no cost to the utility.

Goals and Objectives

The objectives for this collaborative project include:

- increase adoption by overcoming consumer, regulatory, and supply chain market barriers,
- generate transferrable results,
- And, developed a framework for planning coordinated early deployments

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Project Start Date: July 1, 2013

Project End Date: December 31, 2014

Funding

BPA FY2014 Membership: $62,500

Reports & References (Optional)

Links (Optional)

Participating Organizations

Electric Power Research Institute
Southern California Edison
San Diego Gas & Electric
Tennessee Valley Authority
Sacramento Municipal Utility District
Salt River Project
Oncor
CPS Energy

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