

# Technology Innovation Project



*Project Brief*

## TIP 272: EPRI Program 170 - End-Use Energy Efficiency and Demand Response

### 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) is an independent, non-profit company performing research in coordination with its members, which represent approximately 90% of the electricity generated and delivered in the U.S. In September 2012, BPA and EPRI co-sponsored the National Energy Efficiency Roadmapping Summit to create a shared research agenda, identifying technologies and research efforts that would accelerate the energy efficiency resource nationwide.

EPRI has 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 additional opportunities to join “supplemental projects” defined to meet the needs of a subset of utilities and other partners, and funded separately.

### Description

This TIP 272 project covers the base membership in Program 170, called “End Use Energy Efficiency and Demand Response” which is focused on the assessment of technologies, as well as research and analysis to understand end use loads and customers, and forecast the potential for energy efficiency and demand response.

The base program elements include the following types of components:

- Analytical Frameworks (170a)
  - Impact of Energy Efficiency on Emissions of CO<sub>2</sub> and Other Pollutants
  - Load Research: Customer Insights & End-Use Data Collection

- Energy Efficiency Potential Analysis Tools: Model and Database
- Integrating Energy Efficiency and Demand Response into Resource Planning
- Demand Response (170b) includes
  - Enabling DR-Ready Devices and Programs
  - Peak Load Management of Thermal Loads
  - Intelligent Buildings
  - Demand Response Program Assessment Tools (Retail and Wholesale)
- Energy Efficient Technologies (170c) includes
  - HVAC and Water Heating Technologies
  - Increasing Industrial Energy Efficiency Through Process Optimization and Automation
  - High-Performance Homes and Buildings
  - Electronics, Plug Loads, and Lighting Efficiency

### Why It Matters

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.

BPA’s participation in EPRI Program 170 allows BPA to use the results of EPRI’s research (available free of charge only to funding members), apply the results toward program offers to utilities, and to contribute to setting the agenda for their research. In addition, BPA is able to offer opportunities to PNW utilities to participate in research projects.

### Goals and Objectives

Objectives for this membership and associated staff support include the following:

- Reduced research cost to BPA, through shared costs of strategically influenced national research
- Development of additional measures ready for program implementation
- Development of strategies that meet both EE and DR needs

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**Project Start Date:** January 1, 2015

**Project End Date:** December 31, 2015

## Funding

BPA FY2015 Membership: \$178,542

## Reports & References (Optional)

## Links (Optional)

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## Participating Organizations

Electric Power Research Institute

