



## TIP 296: EPRI End Use Loads – Phase 2 End Use Load Research and Library

### 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.

One supplemental project related to “End Use Loads” – or understanding the size and timing of various loads - is covered by TIP 295 and 296. Phase 1 involves testing of metering devices, and phase 2 involves planning national studies and compiling a library of information related to end use load shapes.

### Description

This TIP 296 project supports phase 2 of the End Use Loads project. EPRI is currently in the process of defining the scope of the effort, and BPA has not determined the appropriate level of involvement.

To date EPRI has developed software which serves as access to a library of information about statistically valid load shapes (e.g., what a typical load profile would be for water heating in residences for every hour of the year). It is a web-accessible repository of end-use load data, structured for convenient navigation, visualization, and download.

Phase 2 is also expected to investigate alternative cost-effective methods for collecting end-use data. These include conditional demand analysis, use of nonintrusive load monitoring and surveys, and AMI meters, among others.

EPRI’s goal is to define a load research effort that will begin in 2014 that employs various cost-effective methods of data collection, across a statistically valid sample covering geographic areas of funding entities.

### Why it Matters

BPA conducted load research 25 years ago which is still the point of reference for utilities across the nation for the best and most detailed study of end use loads. However, the development of new technologies, pricing programs, efficiency standards, and rebate programs have combined to produce potentially significant changes in end-use loads and load shapes. This effort, including phase I and II, would rectify those data shortcomings by developing a national end-use load research program.

Better household and end-use load-shape data would greatly benefit load forecasters, transmission system planners, energy efficiency program analysts, and rate-design analysts. More detailed and accurate end-use information would help identify the drivers of system load shapes and improve the understanding of which loads could be utilized to meet system operational needs.

### Goals and Objectives

Objectives for this project include:

- Identification of the relative value and costs of various load research techniques
- Reduced research cost to BPA, through shared costs of strategically influenced national research

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**Project Start Date:** January 1, 2013

**Project End Date:** December 31, 2013

## Reports & References (Optional)

## Links (Optional)

## Participating Organizations

EPRI

## Funding

Total Project Cost:	Not determined
BPA Share:	\$20,000
External Share:	Not determined
BPA FY2013 Budget:	\$20,000

## For More Information Contact:

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