

The Bonneville Power Administration (BPA) is a federal, nonprofit agency, based in the Pacific Northwest. BPA markets wholesale electrical power from 31 federal hydro projects in the Columbia River Basin to over 100 utility customers. As part of its responsibilities, BPA promotes energy efficiency, renewable energy, and new technologies. In 2005, BPA began to ramp up its service to, and resource acquisition from, the industrial sector. However, the program's results were falling below anticipated savings targets. To meet new energy savings' targets, BPA management decided to collaborate with an outside partner (Cascade Energy, Inc.) to assist with the design and implementation of a new industrial program. In just four months, BPA and Cascade had developed the Energy Smart Industrial (ESI) program, and on October 1, 2009, the new regional industrial program was rolled-out to BPA's utility customers.

ESI provides a fully integrated set of program offerings, including custom capital projects, industrial lighting projects, and streamlined industrial measures; as well as a state-of-the-art energy management (EM) pilot program. One unique feature of the ESI program is the single point of contact, an energy-efficiency engineer known as an Energy Smart Industrial Partner (ESIP), who defines, develops, and manages to completion all types of industrial, electrical energy-savings projects. The ESIPs provide the flexibility required to serve a broad range of industrial needs, facility sizes, and technologies.

Key factors enabling ESI program success include:

- The implementation of the ESIP model to help boost program enrollment and promote long-term participation. ESIPs provide a single point of contact focused solely on helping utilities and their industrial customers meet their savings goals. This simplified communication approach initially helped utilities better access and understand the ESI program. The ESIPs have proven invaluable in building long-term relationships with industrial end-users. Prior to ESI, approximately 116 end-use facilities from 36 utilities had completed a custom project through BPA's industrial energy efficiency program (2007-2009). Through ESI ESIP engagement, the number of participating facilities had more than quadrupled by the end of 2013.
- The early engagement of utilities leading to increased regional support. During the ESI program design and implementation process, BPA implemented monthly utility focus groups in order to regularly review progress and solicit feedback from BPA utility customers. This process cultivated significant program design improvements and increased utility support. To date, 108 of 117 utilities have enrolled in ESI, representing a 92% sign-up rate and 99% of BPA's overall industrial load.
- The ESI energy management pilot component promotes the institutionalization of energy efficiency projects and best practices at industrial facilities. At the onset of the ESI program, EM principles were still evolving in the marketplace. The ESI program has developed the processes and procedures for market delivery within the BPA region into four pilot components (Energy Project Manager [EPM], Track and Tune [T&T], Refrigeration Operator Coaching [ROC] T&T, and High Performance Energy Management [HPEM]) which aim to educate and train industrial energy users to integrate energy-planning strategies and incorporate ongoing energy-management principles into their business planning on a permanent basis. A new EM pilot component (Small Industrial HPEM) is currently in the process of being launched.

The ESI program has delivered unprecedented energy savings in the industrial sector. In its first four years, ESI delivered approximately 622 million kWh. The program exceeded its 2010, 2011, 2012, and 2013 savings targets, and is projected to exceed 2014 targets as well. This savings has been achieved in a very cost-effective manner, with the total cost of industrial acquisition (averaging \$0.18/kWh) ranking among the lowest of the sectors at BPA (i.e., commercial, industrial, agricultural, residential, and federal).

Finally, ESI has undergone both a thorough [process evaluation](#), as well as an initial [impact evaluation](#) specific to the EM pilot program. The reports are available on line, and the results from both evaluations were very positive. For example, nearly nine of 10 utility respondents surveyed as part of the process evaluation, said ESI equipped them to expand efficiency-related technical support to their industrial accounts. One respondent whose business took advantage of ESI offerings stated, "We have vastly increased production and, at the same time, have held energy constant."

**2014 Stars of Energy Efficiency Super Nova Level Award Application – Nest Labs Inc.
The Nest Learning Thermostat**

Nest's Outstanding Contribution: Reinventing the Thermostat; Helping Consumers Save Energy and Money

Nest focuses on delighting customers with simple, beautiful and thoughtful hardware, software and services. Nest's Learning Thermostat and Energy Services offerings are designed to decrease home energy consumption and enable utility-led energy efficiency programs. Nest remembers customers' temperature preferences, creates a custom schedule for the home, and turns itself down when everyone is away. Once it learns the household schedule, Nest can save up to 20% on heating and cooling bills. With Nest, consumers have the only climate control package that combines the ability to learn user needs, automate energy savings and then drive further reductions through behavioral approaches making it best in class for residential and utility-channeled energy efficiency in addition to demand response programs. Nest also offers remote control with its apps for smartphones, tablets and computers. Scaling at a rapid pace through the appeal of its design and features, Nest now has the wind at its back to transform how conveniently (and comfortably) people manage their home energy use in addition to providing services that will help utilities precisely manage loads and become hyper efficient.

Programs Designed for Utilities and Homeowners

The Nest thermostat's unique capabilities are essential to the company's primary program offerings: "Rush Hour Rewards" and "Seasonal Savings". Rush Hour Rewards is Nest's take on traditional demand response programs. It uses the ability to communicate with homeowners to provide uninterrupted comfort during load shedding events and, because of this interaction, has been shown to produce a great deal of customer satisfaction (and related ease of recruitment and retention for program administrators). Seasonal Savings draws on Nest's knowledge of customers' schedules and preferences to fine-tune HVAC settings throughout the year as comfort needs change based on outside conditions. Through its technology and service offerings, Nest is transforming residential energy use and the way utilities relate to their customers.

Savings Achieved via Nest Device and Programs

Nest products and programs have achieved an overall savings of more than 1,500,000,000 kWh over the last three years – an average of 500,000,000 kWh per year. Metered data shows customers in southern California, as an example, save an average of 1.16 kWh per day or 11.3% of AC-related energy from installing a Nest Thermostat and letting it operate. These savings result in an average peak demand reduction of 0.10 kW during 2-6 pm on weekdays. Seasonal Savings customers typically used an average 1.23 kWh / day less than they would have with their pre-Seasonal Savings usage patterns. This change accounts for a savings of 2.3% of their total electricity usage and 4.4% of the disaggregated AC portion of their electricity usage. Lastly, Nest's Rush Hour Rewards program showed reductions of 1.2 kW per home, per event.

Early Success Already Being Replicated

Nest has shown significant uptake in its product and service offerings, which is an indication that replication is already happening. In terms of bringing advanced, learning thermostats to new markets Nest has demonstrated sales to consumers in every US state and many international countries. Nest products have also been used by competitive energy suppliers, like Reliant, to secure new customers and capture additional revenue. The Rush Hour Rewards and Seasonal Savings programs have proven to be highly replicable across the country and useful in lowering peak load and overall demand. Nest has partnered with a variety of utilities ranging from investor-owned organizations like Southern California Edison to municipal providers like Austin Energy to offer its Rush Hour Rewards program. Nest will continue to add utility partners throughout the US, and is also identifying opportunities to provide similar services abroad, meaning the company's impact will continue to grow.

The Alliance to Save Energy: Star of Energy Efficiency Awards

Deadline: March 28, 2014

Overview or Explanation of Nomination

We sit at the middle of three powerful trends: the global need by public utilities to reduce demand for energy and improve their customer relationships, the desire from consumers to reduce household energy waste and lower their costs and the universal desire to reduce the amount of carbon emissions released into the earth's atmosphere.

Opower is a leading provider of cloud-based software to the \$2.2 trillion utility industry, using behavioral science to help utilities around the world reduce energy consumption and improve their relationship with their customers. This helps consumers lower energy use and costs, as well as significantly reducing carbon emissions.

Opower pioneered behavioral science by offering consumers the chance to compare their power use to those of their neighbors. By contextualizing how individuals compare to others and providing consumers with individually tailored energy efficiency tips, this has made a significant impact to most consumers to save energy.

To date, the company serves 28 of the 50 largest utilities in the United States, with 93 partners worldwide. Through Opower's, the company has increased the households served from 1.4 million in 2010 to over 32 million in 2014. That leads to 300 billion meter reads and 4 terawatt hours saved, equivalent to \$444 million in bill savings and 6 billion pounds of carbon abated.

By saving that much energy, we could:

- Save enough to power all the homes in a city of 800,000 people, such as San Francisco, for a year
- Remove 600,000 passenger vehicles from the road for a full year
- Preserve 21,700 acres of forest from deforestation
- Save six times more energy than is produced each year from the world's largest solar panel farm

Opower's mission is to motivate everyone on earth to save energy by analyzing data provided to by utilities, third parties and consumers themselves, to give consumers the information they need to take control of their energy use.

WISCONSIN FOCUS ON ENERGY SMALL BUSINESS DIRECT INSTALL PROGRAM

In April 2012, Staples Energy was awarded a contract in Wisconsin to design and implement a Small Business Direct Install program. The resulting program design includes a free energy assessment as well as three package options – free, \$129 customer copay and additional copay measures. In order to deliver the program, Staples & Associates trained a network of 147 electrical contractors (Trade Allies). The training included specifics on the program offering as well as use of our proprietary database known as Energy SnapShot™. Energy SnapShot serves as a data gathering and program tracking and reporting tool. In addition the tool is used to manage the overall program process including lead management and generation of work orders and savings reports. The program received the 2014 Midwest Energy Efficiency Alliance's Innovation Award for Program Design.

The program launched July 2, 2012 and has been well received. During the first 19 months of the program, the Trade Ally network (148 allies) established and trained by Staples Energy achieved very impressive results:

- 12,345 total assessments completed
- 7,805 total installs
- Conversion rate from assessment to install of 69%
- Customer copayment of 30-35%
- 115,333,819 annual kWh savings installed
- Pipeline of 14,162,456 kWh
- Customer satisfaction score of 4.8 on a 5.0 scale

In 2013/2014 the Wisconsin Focus on Energy program transitioned to lifecycle savings. As a result, the program has driven the installation of LED screw in lamps, LED troffers and LED highbays throughout Wisconsin.