BPA REGIONAL PROGRAMS
Energy Smart Industrial

Program Name: Energy Smart Industrial (ESI)

Energy Smart Industrial (ESI) is Bonneville Power Administration's regional program designed to increase the adoption of energy-efficient measures and practices at industrial facilities. ESI is a fully-integrated program that defines, develops, and manages to completion cost-effective industrial projects, such as lighting, custom projects, and energy management. Through the use of one point-of-contact and varied program offerings, ESI provides flexibility that serves a broad range of participating customer utility and industrial needs, end-use facility sizes, and technologies.

Energy Smart Industrial
BPA ENERGY EFFICIENCY

Program Components

Energy Smart Industrial Partner (ESIP)	A representative of the ESI program that works with BPA's preference customers and industrial facilities to support their energy efficiency goals.
Custom Projects	Capital projects that are tailored to individual facility needs which install more efficient equipment to reduce energy costs and improve processes.
Small Industrial, Enhanced Lighting, Green Motors	Components that are vendor-driven to deliver savings.
Technical Service Providers (TSP)	Technical consulting support to identify, develop, and verify projects.
Energy Management Pilot Program	Program components utilize improvements to processes and overall operations and maintenance (O&M) to achieve energy savings.
Energy Program Manager (EPM)	On-site, co-funded staff resource for qualifying industrial facilities dedicated to developing and managing energy projects.
Track and Tune	Low-/no-cost O&M improvements including tools for interval data acquisition and performance tracking.
Refrigeration Operator Coaching (ROC)	Focused technical training plus on-site help identifying energy-saving opportunities and achieving savings through O&M improvements.
High-Performance Energy Management (HPEM)	Strategic energy management approach to energy efficiency, using behavior-based and continuous improvement methods to drive ongoing savings.

Small Industrial HPEM	Applies principles and strategy inherent in HPEM, but is specifically designed and targeted to smaller or geographically remote industrial facilities with limited staff resources.
Energy Efficiency-Demand Response (EE-DR) Demonstration	Demonstration project to investigate the effects and interaction between ongoing energy efficiency or energy management projects and demand response actions within a facility.

Program Background

In 2004, BPA began to ramp-up its services and resource acquisition in the industrial sector. In spite of those efforts, results fell below anticipated targets. Given new regional and state energy efficiency goals, the need for a significant, prolonged increase in industrial energy savings was clear. To meet the higher targets, BPA selected Cascade Energy, Inc. to partner with its industrial team to design and implement an energy efficiency regional program for the industrial sector. BPA and Cascade Energy, Inc. developed the ESI program and made it available to BPA's preference customers in October 2009. With strong support and collaboration from BPA's customers throughout the region, the program's market penetration and savings performance has exceeded expectations.

Program Statistics (all information reflects the first five years of the program FY2010 – FY2014)

Energy Savings	650,619,164 kWh / 74.26 aMW	Utility Incentives Paid: $92,044,105	
Utility Participation:	111	Custom Projects Completed	730
Companies Initiating an Energy Mgmt Project	80	Utilities with new Industrial Pursuit/Focus	44

Specific Geographic Value	• Utilities from seven states have enrolled in the program to date. • Represents a 93% sign-up rate and 99% of BPA's overall industrial load.
Geography-specific Measure Creation	• Strong growth in support of the water and wastewater (W/WW) sector. W/WW projects are commonly implemented by smaller utilities with no other industrial end-users. • In 2014, performed targeted marketing to rural and eastern-region utilities; led to a 45% increase in participation from utilities with no prior program engagement.
Industry or Economic Support	• Food Processing: Numerous partnerships with Northwest Food Processors Association, including development of a food-processing sector-specific EPM position for a utility. • Water/Wastewater: ESI's W/WW sector specialists have implemented outreach efforts across many professional and technical forums as well as Washington State Departments of Health, Ecology, and the Public Works Trust Fund.
Interactive Effects with Other Programs and Measures	• Working closely with BPA's commercial DR team and Power Service's Long-term Sales & Purchases on the ESI EE-DR demonstration project. • ESI is one of the few programs in the U.S. that promotes water leak detection and repair as an "energy" project, resulting in conservation of both water and electricity. • Outreach for the ROC cohort in eastern region is co-sponsored by the Energy Trust of Oregon. • Working with the US Department of Energy on the potential application of Superior Energy Performance for a northwest lumber mill.

Spillover Community Support	• Local positive press on energy savings accomplishments: o Clark Public Utilities – WaferTech free cooling project o Benton PUD – Zirkle Fruit refrigeration project and big check ceremony o Flathead Electric – Plum Creek compressed air project o Columbia River PUD – City of St. Helens WWTP SolarBee project • TSP consultant businesses receive additional business.
Summary of Contract Terms	• Contract time period and terms are renewable typically every two years, aligned with BPA's biennium. • Statement of work outlines the delivery for each program element in detail (largely outlined in ESI Program Delivery Manual). • Responsibilities and accountabilities clearly defined for each program partner team member for the broader program and by component. • Program dedicated full time employee resources are specified.
Contract (Program Partner) Costs	$41,381,235 (program to date)
Cost Structure (What is Paid and Under What Conditions)	• The ESI program is delivered under contract by Cascade Energy, Inc. and its subcontractors: o Evergreen LLC (Lighting) o Triple Point Energy, LLC (HPEM delivery) o JE Engineering, LLC (ESIP services) o 15-18 Technical Service Providers • The program is delivered by a fixed fee for either staff, or specific tasks/work products, and also includes all travel and overhead expenses. The fixed fee also includes: o Management of TSP contracts with pool of 15-18 technical service providers o Quality Control of all ESI products o ESI program marketing function o ESI program data management • From October 2009, the overall staffing and related expenses for delivery was reduced by over 30% (in September 2011) to align with market dynamics and program maturity/efficiency.

Program Costs

Costs below reflect all delivery, incentives (includes utility self-funding), and (BPA/Program Partner) overhead costs.

	FY2010 - FY2011 BIENNIUM	FY2012-FY2013 BIENNIUM	FY2014*
$/kWh	$0.19	$0.19	$0.22
$M/aMW	$1.62	$1.67	$1.92
Levelized Cost ($/kWh)	$0.025	$0.026	$0.030

*Biennium trend: lower savings and higher unit costs in the first year, when compared with the second year.

FY2015 costs are projected to be in alignment with historical final year of biennium levels, with FY14/15 biennium levels comparable or lower than prior biennia.

Customer Response

ESI customer engagement is high and feedback has been overwhelmingly positive. Consultants from Research into Action completed a thorough process evaluation of the program in 2012. Approximately 8 of 10 survey respondents from the industrial sector said they were highly satisfied with the program's services, and three out of four utilities said ESI helped them complete more energy efficiency projects in the industrial sector.

Conclusion

The ESI program, with strong support and collaboration from BPA's preference customers, has significantly improved industrial energy savings acquisition from historic levels over a short period of time. This has been done in a very cost-effective manner, with industrial acquisition total costs ranked among the lowest of the sectors at BPA. The ease of using the program and the variety of offerings has led to a significant increase in customer utility and industry participation. Prior to ESI, approximately 116 industrial facilities in BPA's territory had completed a custom project; however, this number more than quadrupled to 473 by the end of FY2014. Participating utilities of all sizes have found the right program component mix to offer their industries.

Testimonials on the ESI Program

KapStone has tripled its energy conservation activities and results since the Energy Project Managers have been in place. It's been a very successful arrangement that is helping all of us achieve our energy efficiency goals.

~ **Doug Swier, Conservation Engineer – Cowlitz PUD**

Because we have limited staff, Track and Tune allows us to tap into resources and expertise our customers wouldn't have the same degree of access to otherwise. Saving energy helps all our customers, so the magnitude of savings achieved by this customer through ESI is extremely valuable.

~ **Van Ashton, Energy Service Manager – Idaho Falls Power**

The ESI program doesn't just provide incentive dollars, they helped us expose and quantify significant problems. And they brought invaluable technical assistance and ideas to the table.

~ **Mike Klaus, District Engineer - Cabinet Mountain Water District**

BPA was fabulous to work with. They clearly explained the project and the process. They worked hand-in-hand with OTEC (Oregon Trail Electric Coop). And most importantly, they saved us a bunch of money and helped bring our compressed air system into the 21st century. We couldn't be happier.

~ **Scott Noble, Environmental Engineer and Electronics Specialist – Boise Cascade**

I was really impressed with the skills Clatskanie PUD and the BPA ESI team brought to the table. They knew exactly what to monitor and check. They handled the proposal and the incentive paperwork. And they made the process fast and seamless. It was a small project, but a very successful one.

~ **Spencer Hull, Electrician and Energy Champion – Stimson Lumber**

It's been great working with Clark Public Utilities and BPA. The ESI program is unbelievably well organized. They included and motivated our entire staff. They were actively engaged throughout the process, from baseline testing to ongoing monitoring. And they continually look for additional energy efficiency opportunities. We've been thrilled with the results.

~ **Frank Dick, Industrial Pretreatment Coordinator – City of Vancouver**

ESI…opened a lot of doors for us, and the savings and incentives were fantastic. Everything they promised, they delivered.

~ **Jeff Gill, Project Manager – Zirkle Fruit**