Northwest Power and Conservation Council

December 1, 2010

MEMORANDUM

TO: Council Members

FROM: Charlie Grist

SUBJECT: Presentation on Bonneville's Energy Smart Industrial program design and achievements

The Sixth Power Plan identified twice as much industrial conservation potential as the Fifth Power Plan - about 800 average megawatts over 20 years. It was also the first of the Council's Power Plans to identify significant potential savings from energy management practices. This culminated in regional industrial conservation targets that ramp up significantly from 2005-2009 levels and appear daunting to some implementers.

Even before the Sixth Power Plan was finalized, the Bonneville Power Administration recognized the need to develop a fresh approach to tapping into industrial conservation potential in its service territory. In 2009, Bonneville set out on that mission. Bonneville's industrial sector lead, Jennifer Eskil, will brief the committee on the trials and tribulations of developing the Energy Smart Industrial program and will touch on early results.

The packet includes the Energy Smart Industrial fact sheet and details on the individual ESI program components.

851 S.W. Sixth Avenue, Suite 1100
Portland, Oregon 97204-1348
www.nwcouncil.org

Steve Crow
Executive Director

503-222-5161
800-452-5161
Fax: 503-820-2370

Energy Smart Industrial

Fact Sheet for Industrial Facilities

October 2010

Overview

Public utilities in the Pacific Northwest serve more than 2,000 megawatts of industrial load, and BPA has a long history of supporting and advancing energy efficiency in the region.

BPA recently launched the Energy Smart Industrial (ESI) program to assist BPA utility customers and their industrial facility customers in increasing cost-effective energy efficiency savings. The program is a primary mechanism for BPA utility customers to achieve industrial load energy savings targets of 12 aMW in fiscal year 2010 and 15 aMW in fiscal year 2011 as found in the Sixth Power Plan, nearly double the energy savings that were achieved in the previous two years. The ESI program encompasses all BPA offered industrial sector programs moving forward.

The ESI program is designed to provide regional consistency for BPA utility customers and end users in delivering cost-effective energy efficiency savings in the industrial sector, and encompasses all BPA offered industrial sector programs. BPA industrial sector staff provides overall ESI program management. There are dedicated BPA engineers and staff to manage industrial project technical reviews and approvals. BPA program partner Cascade Energy Engineering and its subcontractors, Evergreen Consulting and Strategic Energy Group, work with BPA and utilities to complement a variety of industrial services. These services include project development, marketing, Technical Service Proposal (TSP) consultant contracting, and implementation of industrial sector energy efficiency acquisition.

The ESI program works with industrial facility customers through their local public utility to deliver cost-effective energy efficiency in all industrial sectors. There are a wide variety of program options for industrial users of all sizes and budget levels. By participating, businesses in the industrial sector can save money and energy, and may increase productivity and profitability.

The ESI program staff include experts specific to several industries, including pulp and paper, wood products, food processing, high tech, data centers, water / wastewater, mining, and many more. These professionals provide technical expertise and resources to assure projects meet quality assurance standards and are completed as planned. Not only that, ESI program staff work with industrial customers to develop a customized solution that protect their privacy and minimizes the impact to production process while delivering the highest return on investment possible.

Timeline

The ESI program takes affect from Oct. 1, 2009 through Sept. 30, 2011, with subsequent program renewal to be considered thereafter.

Reimbursements

As of April 1, 2010, the reimbursement level for *new* and *retrofit* projects will be $0.25 / kWh up to 70% of incremental project cost for qualifying measures.

Energy Smart Industrial
BPA ENERGY EFFICIENCY
www.energysmartindustrial.com

ESI Program Components

- **Energy Smart Industrial Partner (ESIP)**: An ESIP is an industrial energy efficiency expert assigned by the ESI program to provide utility efficiency program staff with a single point of contact for coordinating ESI programs and resources to meet the goals and needs of their conservation program. In addition to providing technical expertise and other assistance to utility staff, the ESIP assists in representing the ESI program to utility end users (when requested), and facilitates the development and implementation of ESI program projects. ESIPs are provided, assigned and managed by the ESI program. Utilities continue to be the face of industrial energy efficiency to their end users and will define the "rules of engagement" for ESIP interaction with utility end users.

- **Energy Management**: Energy Management is a pilot component of the ESI program that addresses the opportunities to acquire energy savings through improved operations and maintenance (O&M) and management practices. There are three core features of Energy Management:

    1. **Energy Project Manager co-funding** – The goal of Energy Project Manager co-funding is to increase end user management and engineering efforts devoted to electrical energy projects/activities and increase the number of projects entering the ESI program. The participating end user sets its own annual verifiable energy savings goal and receives co-funding proportionate to that goal (subject to minimum and maximum co-funding levels). If the end user meets its own self-set and verified goals on schedule, co-funding continues. If milestones are missed, co-funding is suspended and ultimately ended.

    2. **Track and Tune Projects** – Track and Tune is designed to financially and technically help the end user "do the little things well" while putting a system in place that allows the program and end user to track energy performance and savings over a multi-year horizon. Track and Tune centers on operations and maintenance (O&M) savings, not on large capital projects. To achieve solid savings on industrial projects, Track and Tune continuously tracks the performance of the area of focus (whole facility, system or process). This tracking establishes the baseline, shows the effect of the initial tune-up effort and tracks the performance over the long haul. This methodology transforms industrial O&M savings into a reliable, long-term source of savings.

    3. **High Performance Energy Management** – High Performance Energy Management provides training and support to end users on how to implement energy management into their core business practices. High Performance Energy Management is the application of the principles and practices of continuous improvement to energy management within an end user's organization.

- **Small Industrial Measures**: The Small Industrial component provides a cost-effective mechanism to handle specific efficiency measures where the energy savings on individual projects are small relative to typical industrial projects. This allows the ESI program to target small scale industrial facilities and small systems that are historically underserved by traditional industrial efficiency programs. Currently, small compressed air (<75 hp) measures are included in Small Industrial. Additional technologies (e.g., refrigeration, variable frequency drives, etc.) may be added in the future.

- **Enhanced Lighting**: Enhanced Lighting can be considered an extension of the existing Northwest Trade Ally Network to drive more industrial lighting projects. Industrial Lighting Specialists are assigned to participating utilities to assist in these efforts.

- **Enhanced TSP**: This includes expansion and enhancement of traditional TSP services, including quick-response time and materials work, and BPA funding of scoping, measurement and verification activities where appropriate.

Energy Smart
Industrial
BPA ENERGY EFFICIENCY

Custom Projects

Save money and energy through Custom Project funding and incentives

Take advantage of funding incentives provided by the BPA Energy Smart Industrial program offered through your participating electric utility. A dedicated Energy Smart Industrial Partner (ESIP) who is a specialist in your industry will help you navigate the entire process from beginning to end, and answer any questions you may have.

What qualifies as a Custom Project?

Custom Projects encompass retrofit, expansion and new construction capital energy efficiency projects. The program helps you acquire and install the most energy efficient equipment and processes in the industry.

What financial incentives are available for energy savings?

The ESI Program will pay for up to 100% of the technical consulting work needed to identify energy savings opportunities, analyze the impact of projects and generate the appropriate technical reports.

- **Project incentives –** $0.25 per kWh of verified energy savings up to 70% of incremental project cost.

In addition, these projects may qualify for federal, state, and/or local tax credits.

How does the Custom Project process work?

1. **Scoping Assessment –** A designated staff member at your industrial facility works with your utility and ESIP to assess possible energy savings and project costs.
2. **Project Assessment –** Technical consultant resources may be assigned to complete the project assessment. The ESIP guides the project through the approval process with the utility and Bonneville Power Administration. The facility agrees to proceed with project implementation.
3. **Project Implementation –** The ESIP facilitates the project work through project completion.
4. **Project Close Out –** The ESIP works with the utility and BPA to complete the reporting and measurement and verification requirements.
5. **Incentive Paid –** Once all requirements have been met, an incentive check is issued by the utility to the facility.

For more information, please contact your Energy Smart Industrial Partner or your utility

The BPA Energy Smart Industrial program is sponsored by your local public utility and the Bonneville Power Administration.

Learn more at www.EnergySmartIndustrial.com

2010-06-01

Energy Smart Industrial

BPA ENERGY EFFICIENCY

Energy Project Manager

A co-funded staff position at your facility is available for developing and managing energy projects

Take advantage of BPA Energy Smart Industrial co-funding for a staff position at your facility to manage and facilitate projects that will lead to reduced energy usage. The Energy Project Manager (EPM) will identify energy savings opportunities and help manage projects from beginning to end.

How do I qualify for the EPM component?

To qualify for the EPM component an industrial facility must meet the following requirements:

- Commit to an annual electrical energy savings goal of at least 1,000,000 kWh
- Commit to allocating sufficient capital to support upcoming energy projects
- Commit to dedicating sufficient maintenance staff to support new project workload

How does the EPM component work?

Once program requirements are met, the process to qualify for EPM co-funding includes:

1. Agree to EPM program terms and sign a one-year EPM agreement with your utility.
2. Once the EPM agreement is executed, an EPM is assigned, and the utility funding is secured, an initial $25,000 funding payment is made to the facility. (See Tables 1 and 2 for details).
3. The facility hires an EPM of their choice. This person may be an existing employee, a new hire or a sub-contracted employee. The EPM is employed or contracted directly by the facility.
4. Develop an EPM Comprehensive Plan to implement energy efficiency projects (both capital and operations and maintenance). The plan includes milestones for energy savings.
5. Attend program review meetings between the utility and facility six months into the agreement and again at one year to review energy savings status versus targeted savings.
6. If milestone targets are missed, EPM co-funding will be suspended. When the facility meets the missed milestone, co-funding is restored in full. If a milestone is not met within six months after being suspended, the EPM agreement is terminated.

Are there financial incentives available for energy savings?

Yes, the following incentives are available for EPM participants:

- Annual EPM co-funding = $0.025 per kWh of energy savings, not to exceed the total EPM salary plus overhead ($250,000 maximum annual amount).
- Additional incentives available for capital projects, and operations and maintenance projects.
- Contact your Energy Smart Industrial Partner or utility for more information.

How are co-funding payments calculated and paid?

Tables 1 and 2 below provides an example of potential EPM co-funding, incentives and payment schedule for a facility with an energy savings target of 4,000,000 kWh in Year 1. The tables show how payments would be calculated and when they are paid.

Table 1: EPM Co-Funding Example – Annual Inputs

Annual Inputs	
Annual Incentive Level	$0.025 / kWh
Energy Savings Goal	4,000,000 kWh / yr
Actual Energy Savings Achieved	4,200,000 kWh / yr
EPM Co-Funding from Savings Goal	$100,000 / yr
EPM Co-Funding from Savings Achieved	$105,000 / yr

Table 2: EPM Co-Funding Example – Payment Schedule

Annual EPM Installment	Timeline	EPM Payment Amount	Annual EPM Co-Funding To Date	EPM Payment Methodology
1a	EPM Assigned	$25,000	$25,000	$0.025 per kWh at the 1,000,000 kWh per year minimum savings goal requirement
1b	Comprehensive Plan Approved	$8,333	$33,333	1/3 of the energy savings **goal** less payment 1a
2	6 Months After EPM Assigned	$33,333	$66,666	2/3 of the energy savings **goal** less payments 1a and 1b
3	12 Months After EPM Assigned	$38,334	$105,000	100% of the energy savings **achieved** less payments 1a, 1b, and 2

For more information, please contact your Energy Smart Industrial Partner or your utility

The BPA Energy Smart Industrial program is sponsored by your local public utility and the Bonneville Power Administration.

Learn more at www.EnergySmartIndustrial.com

Energy Smart
Industrial
BPA ENERGY EFFICIENCY

Track and Tune

Low-cost and no-cost solutions to save energy and money

Scarce capital can be a significant hurdle to overcome in achieving energy efficiency savings. The BPA Energy Smart Industrial (ESI) program's Track and Tune (T&T) offering allows industrial facilities to realize significant energy savings for little to no cost.

T&T focuses on operations and maintenance savings instead of typical capital-intensive projects. Benefits to industrial facilities include:

- Immediate achievement of energy cost savings when tune-up actions are implemented
- Little to no capital investment required to achieve cost savings
- Co-funding of technical resources to support tune-up events and action implementation
- Incentives are available to encourage facilities to sustain and improve efficiency

What are the requirements to qualify for the T&T component?

To qualify for the T&T component an industrial facility must meet the following requirements:

- Statement of commitment to the operations and maintenance tune-up, implementation and maintenance over time
- Willingness to share data required for tracking energy performance over time
- Willingness to implement an energy performance tracking system. Technical and funding assistance is provided by the ESI program
- Annual energy savings potential of at least 250,000 kWh/yr (facility, system, or process)

How does the T&T component work?

The T&T process follows the steps defined below:

1. An initial project screening is provided by your utility and Energy Smart Industrial Partner (ESIP).
2. A T&T project scoping is conducted by either an outside technical expert or in-house resource.
3. A T&T agreement between the facility and utility is signed.
4. A T&T performance tracking system is installed.
5. A tune-up provider is selected (outside technical expert or in-house resource).
6. Perform tune-up on area of focus (facility, system or process).
7. Implement action items.
8. Provide T&T completion report. An incentive check is issued by the utility to the facility for completed action items.
9. Provide sustained savings over time. An incentive check is issued by the utility to the facility annually based on actual performance for five years.

Are there financial incentives available for energy savings?

Yes, the following incentives are available for qualifying T&T projects:

- $0.075 per kWh of verified energy savings up to 70% of incremental project cost.
- $0.025 per kWh of energy savings for each year in years 1 through 5 (after action item implementation) for verified and sustained savings.
- $0.0025 per kWh of baseline energy use (up to $50,000) for purchase and installation of performance tracking system.
- Contact your Energy Smart Industrial Partner or utility for more information.

For more information, please contact your Energy Smart Industrial Partner or your utility

The BPA Energy Smart Industrial program is sponsored by your local public utility and the Bonneville Power Administration.

Learn more at www.EnergySmartIndustrial.com

Energy Smart Industrial

BPA ENERGY EFFICIENCY

High Performance Energy Management

Reduce energy use and meet your business objectives

By applying continuous improvement practices similar to Lean and Six Sigma, the BPA Energy Smart Industrial program's High Performance Energy Management (HPEM) component can reduce a facility's energy usage by 5 to 10% with no financial cost to your company.

Consider these additional benefits

Capital investments in cost-effective energy efficiency can realize an additional 5 to 10% savings. Applying continuous improvement practices to energy has other benefits as well, including enhanced productivity, employee satisfaction, safety and environmental impacts.

HPEM helps you deliver a structured, sustainable energy program where you and your staff learn by doing. The program creates a long-term vision for your facility with short-term actions to control and reduce your energy costs.

How does HPEM work?

In cooperation with your utility, HPEM experts facilitate the entire process. They work with you and your staff to:

- Identify and cultivate an energy champion or team leader
- Create an energy team (or add energy to an existing team)
- Establish an energy strategy customized for your plant through development of a policy or mission statement
- Conduct an energy management assessment
- Set energy savings goals (i.e. 5% reduction over 12 months)
- Identify and prioritize activities and projects that reduce energy use with no degradation of your process
- Connect energy efficiency to other business objectives (i.e. safety, quality, etc.)
- Develop performance indicators to monitor and track energy
- Engage your utility, vendors and other relevant third-party resources
- Develop a value stream energy map for your facility.
- Identify current energy use and plan for the future

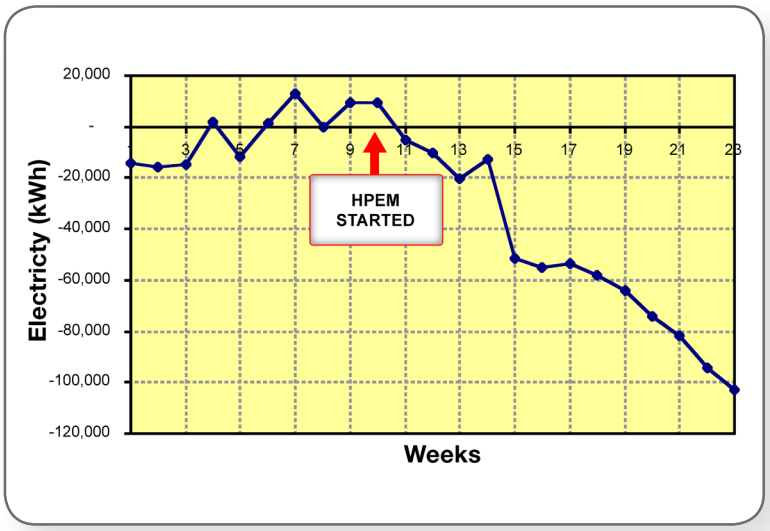
Structured Network Groups

Structured network groups are composed of approximately 10 non-competitive industrial HPEM program participants sharing best practices and learning together in a group setting. The program includes monthly group meetings, facilitated by HPEM coaches, where participants learn from the experiences of their peers. During these meetings you can share your experiences and will hear from your peers on their experience. The HPEM coach brings proven energy management tools, including energy policy templates and statistical analysis tools, and the training necessary to apply them to your organization. The synergy of this approach produces great results for all participants.

How do I know if HPEM will work for us?

Our industrial energy experts work with dozens of companies throughout the region and bring that experience to your facility. In addition to coaching you and your team through the process, we provide business tools to ensure success for your company.

HPEM is proven in industry by market leaders. These principles and practices have improved safety, quality, productivity and environmental measures in industry for more than 20 years.



Note: Actual industrial facility data showing energy savings

How much does it cost to participate?

There is no financial cost to participate. However, you and your team need to invest time and effort working through the process to ensure success. In addition, your company will be screened prior to acceptance in order to ensure a good fit for the program.

Are there financial incentives available for energy savings?

Yes, the following incentives are available for HPEM participants:

- $0.025 per kWh of energy savings for each year in years 1 through 5 based on the energy savings goal agreed to by the company and its utility.
- Incentive payments are based upon verified savings over the previous 12 months.
- Additional incentives are available for custom projects and operations and maintenance projects. Contact your utility for more information.
- Some projects may qualify for state or federal tax incentives.

NOTE: Incentives are only paid when: 1) an accurate model of facility energy use can be created, and 2) when energy savings is realized that is not associated with capital projects or changes in production.

Your commitment to participate

To maximize the benefit from HPEM you need to commit to:

- Participation through a minimum 13 month process
- Management support of an energy champion and team with energy savings goals
- Engagement in activities and projects to reduce energy consumption
- Participation of at least two staff members in monthly meetings plus seven all-day workshops and six webinars
- Sharing your learning experience with other participants by giving three presentations during the course of the program
- Tracking and sharing your energy and production (or other key energy-driver data) to measure energy intensity reduction. All data is kept private and confidential

For more information, please contact your Energy Smart Industrial Partner or your utility

The BPA Energy Smart Industrial program is sponsored by your local public utility and the Bonneville Power Administration.

Learn more at www.EnergySmartIndustrial.com

Northwest Trade Ally Network
Commercial & Industrial Lighting

Illuminating opportunities

Energy Smart Industrial

BPA ENERGY EFFICIENCY

Industrial Lighting Projects

Reduce operating costs by upgrading your lighting

The Bonneville Power Administration Energy Smart Industrial program has partnered with your local public utility and the Northwest Trade Ally Network to help industrial facilities implement cost effective energy efficient lighting projects.

Significant incentive levels are available to improve the payback period of lighting projects. These incentives can cover up to 70% of incremental project cost.

In addition, Lighting Specialists from the Northwest Trade Ally Network can help you save energy and increase profitability by providing a variety of services, including: project analysis, completing program paperwork, advising on the best lighting technology for your specific application, and using the BPA lighting calculator tool.

Consider the benefits of upgrading your lighting

1. **Reduction of controllable operating costs.** By installing energy efficient lighting facilities can significantly reduce their energy costs and increase profitability.
2. **Increased worker productivity.** Studies have consistently shown an increase in productivity when lighting is improved in the workplace.
3. **Improved safety conditions.** Upgraded lighting can lead to fewer workplace injuries.
4. **Upgraded appearance of the facility.** Improved lighting creates a more visually appealing workplace.

BEFORE: *400 MH – 461 watts, 6 foot-candles*

AFTER: *T5/HO – 234 watts, 20 foot-candles*

What financial assistance is available for lighting projects?

Significant incentives are available from utilities participating in the Energy Smart Industrial program to offset industrial facility's cost to install energy efficient lighting projects. These incentives can cover up to 70% of incremental project cost.

In addition, these projects may qualify for federal, state, and/or local tax credits.

Who is available to assist in the process?

Your trade ally or Northwest Trade Ally Network Lighting Specialist is available to assist industrial facilities through the process. In addition, a specialized industrial energy efficiency expert, the Energy Smart Industrial Partner, can be assigned to your facility to provide assistance with scoping, paperwork, understanding incentives, etc.

How do I get started?

The first step is to find out if your electric utility is participating in the Energy Smart Industrial program. There are two ways to determine this:

1. Call the utility and ask if they are participating in the program, or

2. Visit www.EnergySmartIndustrial.com and click on "ESI Utility Participants" in the *Resources* box.

If the utility is enrolled, you may contact either a Lighting Specialist or the Energy Smart Industrial Partner listed on the "ESI Utility Participants" page to get started.

For questions about industrial lighting projects or to get assistance from a Lighting Specialist, contact Mike Porter:

MIKE PORTER, *Manager*
Northwest Trade Ally Network
(503) 730-3122
mike.porter@northwest-lighting.org

For more information, please contact your Energy Smart Industrial Partner or your utility

The BPA Energy Smart Industrial program is sponsored by your local public utility and the Bonneville Power Administration.

Learn more at www.EnergySmartIndustrial.com

Energy Smart
Industrial
BPA ENERGY EFFICIENCY

Small Industrial Measures

Streamlined process for quick turnaround

Save energy and improve productivity by taking advantage of possible incentives provided by your local public utility and the Bonneville Power Administration (BPA) Energy Smart Industrial (ESI) program. Incentives up to 70% of incremental project cost enable you to cut energy costs and acquire new equipment while helping regional utilities meet the growing demand for power.

What qualifies as a Small Industrial Measure?

Small Industrial Measures commonly address equipment issues such as air compressors, pumps, or fans that use 10% to 50% more energy than necessary because of equipment age, suboptimal components, or inherently inefficient part-load control.

A project may be considered a Small Industrial Measure if the estimated annual savings are less than 200,000 kWh. Incentive funding is offered to help cover the cost of replacing such equipment and controls with more efficient alternatives. Small Industrial Measures cover a wide range of equipment including

- Pumps
- Fans
- Welders
- Controls
- Compressed Air
- Refrigeration
- Variable-Frequency Drives
- Motor-Driven Equipment

How does the funding process work?

1. **Determine energy savings.** For Small Industrial Measures a brief analysis is performed by an ESI team member to estimate annual energy savings.
2. **Calculate the incentive amount.** The estimated incentive amount is then calculated as $0.25 per kWh of estimated annual energy savings, up to a limit of 70% of the incremental project cost.
3. **Secure funding approval.** The analysis and funding application are submitted by an ESI team member. Funding must be approved by the utility and BPA prior to placing orders for equipment.
4. **Order and install equipment.** After receiving approval from the utility and BPA, equipment may be ordered and installed.
5. **Inspect and close out.** An ESI team member will collect invoices to document actual project cost, may inspect the installation, and may collect data to verify assumptions about operation of the affected equipment. The incentive amount paid may change from the initial estimate if energy savings or project costs differ from the estimates provided when funding was approved.
6. **Incentive is paid.** An ESI team member submits closeout documentation for utility and BPA approval. Upon closeout the utility issues the incentive check. This process typically takes three to six weeks.

How are Small Industrial Measures different from other Custom Projects?

Project Size – A project may be considered a Small Industrial Measure if the estimated annual savings are less than 200,000 kWh. Custom Projects have no upper limit for energy savings.

Measurement and Verification (M&V) – Small Industrial Measures typically follow an M&V plan that requires less operational data and fewer measurement points as compared with other industrial Custom Projects.

Timeline – The turnaround time (from start to finish) for Small Industrial Measures is typically less than general Custom Projects given the M&V requirements (see above) and other project related factors.

Examples of Actual Small Industrial Measures

Project Type:	Air Compressor VFD
New or Retrofit:	Retrofit
Size:	50 hp
Energy Savings:	171,431 kWh
Incentive Paid:	$32,495
Simple Payback:	1.8 years

Project Type:	Compressed Air Desiccant Dryer Controls
New or Retrofit:	New
Size:	5 hp
Energy Savings:	28,107 kWh
Incentive Paid:	$5,263
Simple Payback:	1.5 years

Project Type:	Pump VFD
New or Retrofit:	Retrofit
Size:	75 hp
Energy Savings:	123,120 kWh
Incentive Paid:	$15,400
Simple Payback:	1.3 years

Project Type:	Cycling Compressed Air Dryer
New or Retrofit:	New
Size:	250 scfm
Energy Savings:	4,080 kWh
Incentive Paid:	$1,112
Simple Payback:	2.4 years

Project Type:	Fan VFD
New or Retrofit:	Retrofit
Size:	75 hp
Energy Savings:	88,423 kWh
Incentive Paid:	$16,100
Simple Payback:	2.0 years

Project Type:	Dust Collection System VFD
New or Retrofit:	New
Size:	60 hp
Energy Savings:	100,000 kWh
Incentive Paid:	$27,264
Simple Payback:	3.4 years

For more information, please contact your Energy Smart Industrial Partner or your utility

The BPA Energy Smart Industrial program is sponsored by your local public utility and the Bonneville Power Administration.

Learn more at www.EnergySmartIndustrial.com

Bonneville Power Administration's Energy Smart Industrial

by

Jennifer Eskil, Agricultural/Industrial/Utility Efficiency Sector Lead

December 14, 2010

Energy Smart Industrial
BPA ENERGY EFFICIENCY

History and Background

January 2008 – to Present

January-Sept 2008
BPA industrial program review

April-July 2009
BPA worked w/Council on Industrial Supply Curves (50% target increase)

June 2009
BPA hired Program Partner (Cascade Energy, Evergreen and SEG)

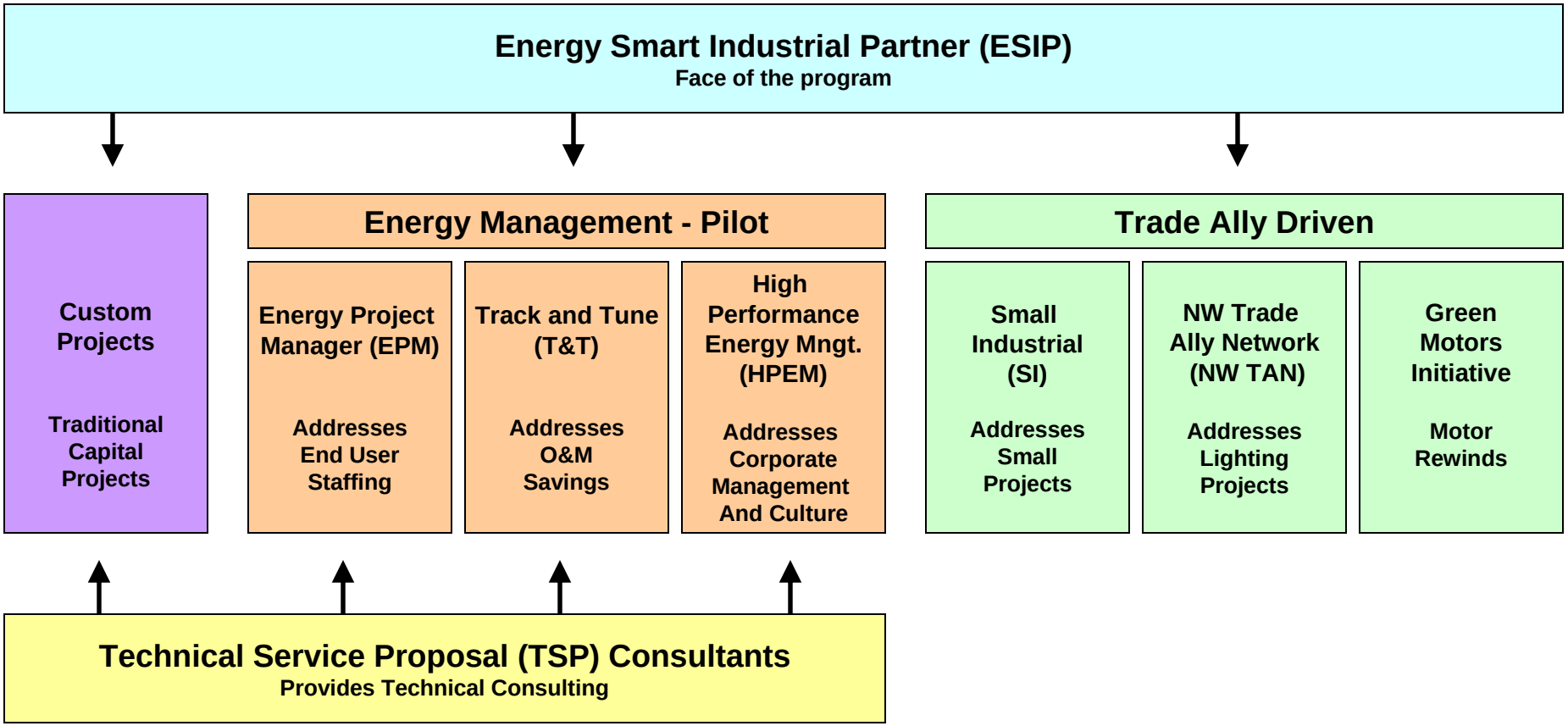
June-Sept 2009
BPA / Program Partner designed Energy Smart Industrial (ESI)

September 2009
BPA / Program Partner visits Top-20 Utilities

October 2009
BPA launches ESI Program

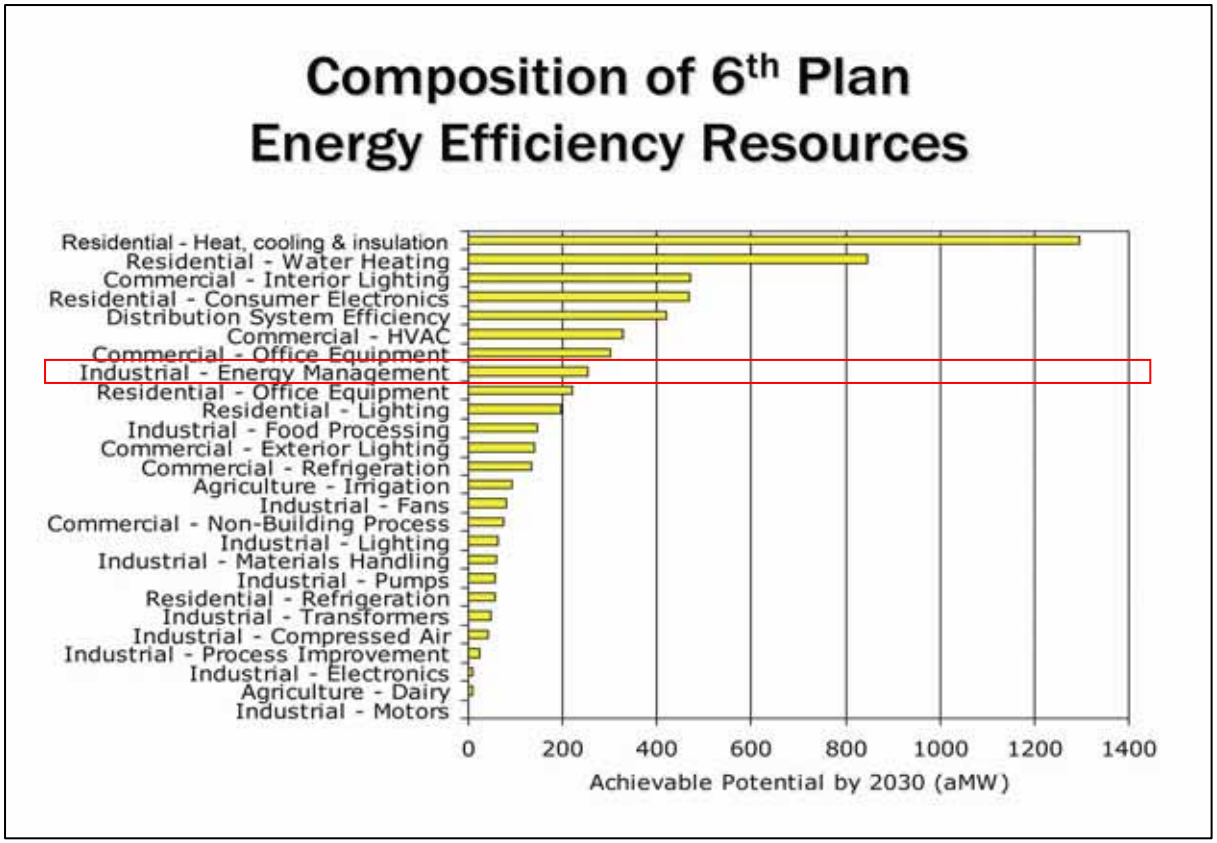
Energy Smart Industrial
BPA ENERGY EFFICIENCY

ESI Program Components



Energy Smart Industrial
BPA ENERGY EFFICIENCY

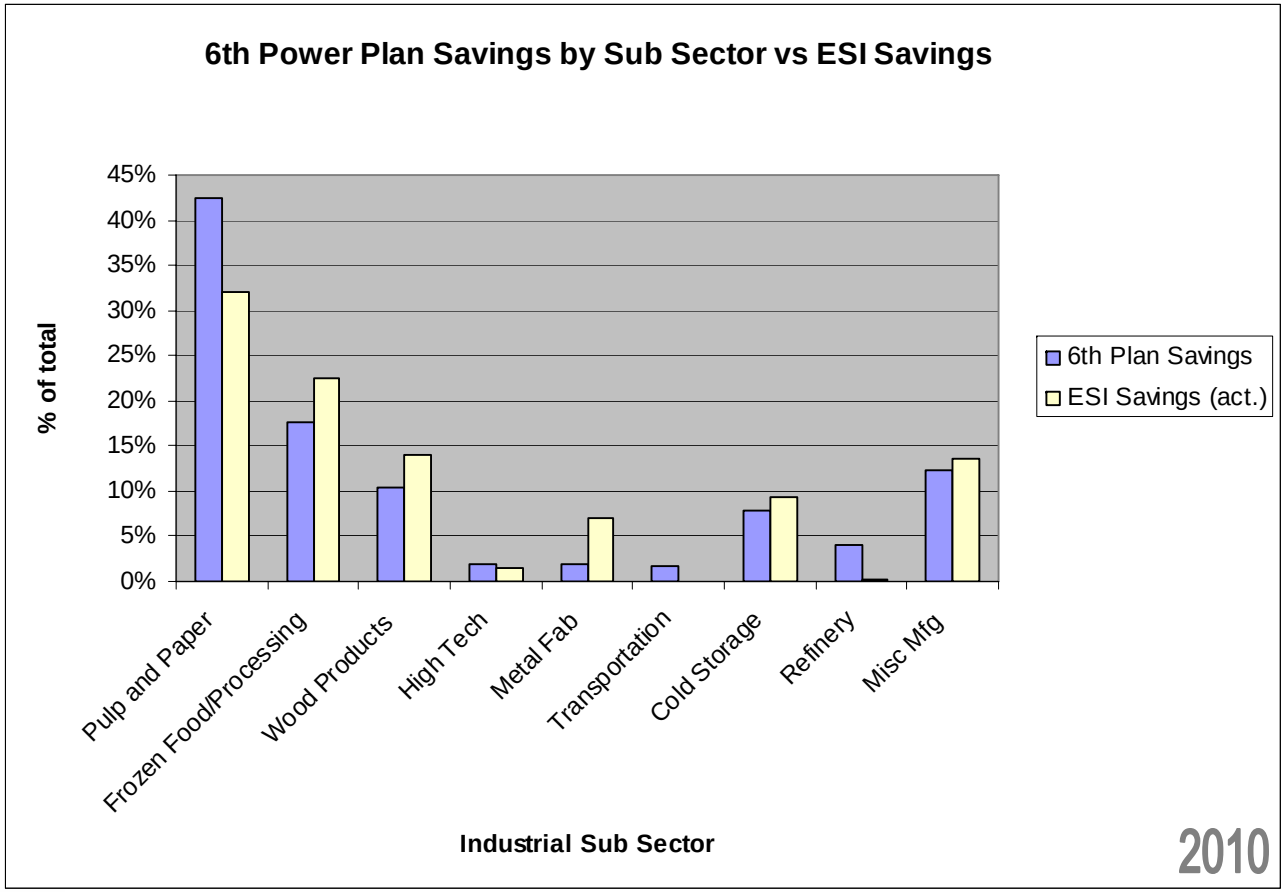
6th Power Plan Summary: Sector Resources



* Energy Management is the largest Industrial EE resource identified

Energy Smart Industrial
BPA ENERGY EFFICIENCY

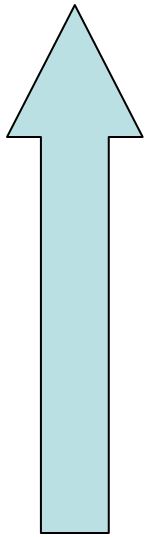
ESI Program Response to 6th Power Plan



Energy Smart Industrial
BPA ENERGY EFFICIENCY

Whole Plant Energy Management Tiers[1]

Integrated Energy Management



General Energy Management

Level 3 (Integrated Plant Management)

Adoption of an Energy Management Plan
Advanced Operations and Maintenance (O&M) approach
Benchmarking of energy intensity relative to similar systems or operations

T&T/HPEM

Level 2 (Energy Project Management)

Assigned responsibility for energy (e.g. Energy Engineer)
Tracking of energy as a controllable expense
Inclusion of energy projects in capital planning

EPM

Level 1 (Plant Energy Management)

Good Preventative Maintenance Practices
Consideration of energy in Operations and Maintenance (O&M) activities
Some application of new technologies

[1]Source: System Optimization Measures Guide for 6th Power Plan, SEG, 03/23/2009

Energy Smart Industrial
BPA ENERGY EFFICIENCY

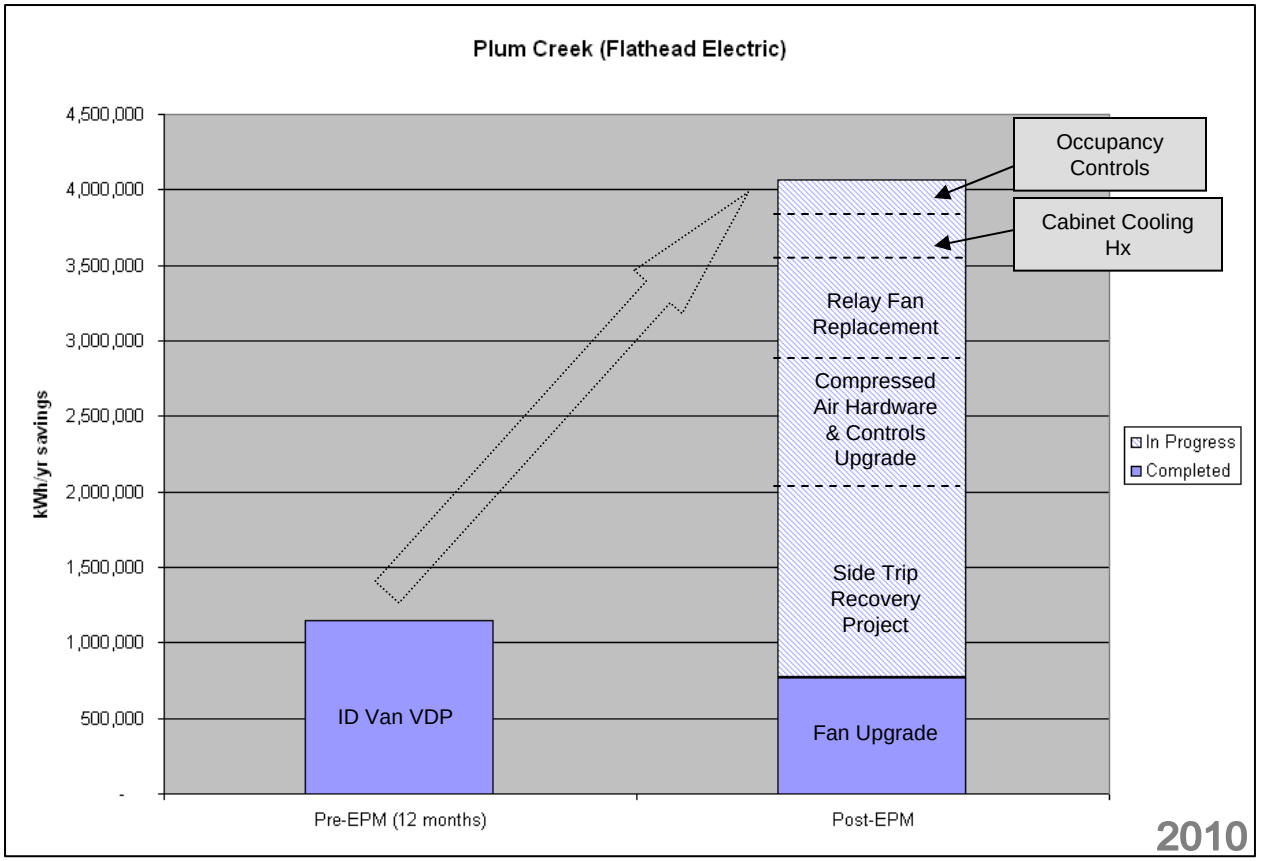
Energy Project Managers

- Currently 15 EPMs; 13 are existing employees assigned to focus on energy projects and company energy goals.
- Four EPMs span multiple facilities (i.e., Hampton, Boeing* and ConAgra*).
- EPMs are driving ~8.5 aMW in projects.
- Types of industries with EPMs
  - Food Processing
  - High-tech Manufacturing
  - Wood Products (non-pulp & paper)
  - Pulp & Paper
  - Metal Processing

Energy Smart Industrial
BPA ENERGY EFFICIENCY

*BPA has direct contracts to avoid multiple agreements with serving utilities.

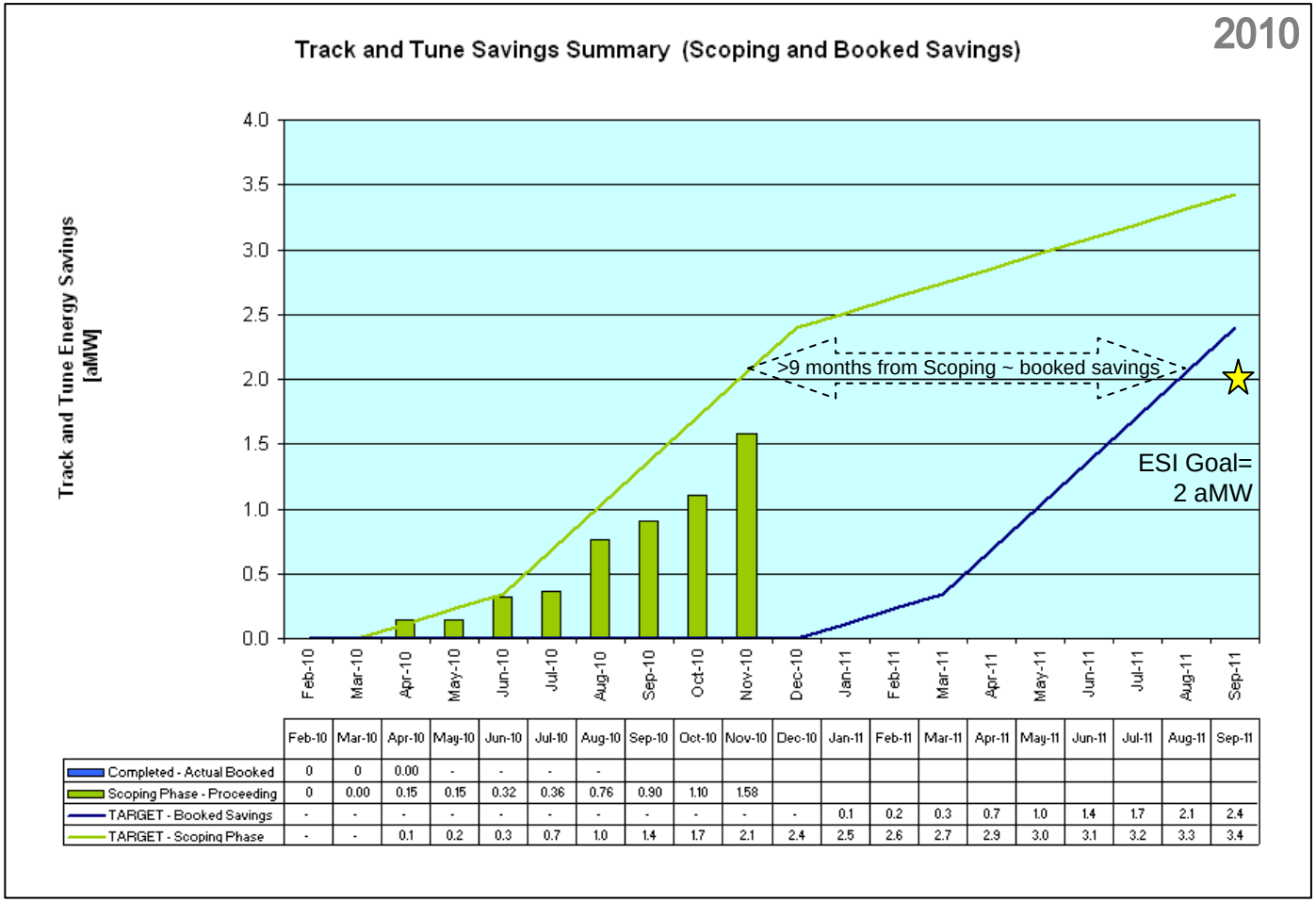
EPM Example: Plum Creek[2]



[2]Plum Creek is served by Flathead Electric Cooperative

Energy Smart Industrial
BPA ENERGY EFFICIENCY

Track and Tune



	Feb-10	Mar-10	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11
Completed - Actual Booked	0	0	0.00	-	-	-	-													
Scoping Phase - Proceeding	0	0.00	0.15	0.15	0.32	0.36	0.76	0.90	1.10	1.58										
TARGET - Booked Savings	-	-	-	-	-	-	-	-	-	-	-	0.1	0.2	0.3	0.7	1.0	1.4	1.7	2.1	2.4
TARGET - Scoping Phase	-	-	0.1	0.2	0.3	0.7	1.0	1.4	1.7	2.1	2.4	2.5	2.6	2.7	2.9	3.0	3.1	3.2	3.3	3.4

Executed Agreements (4)

- ConAgra Foods (refrigeration)
- Columbia Colstor: Woodland & Quincy (refrigeration)
- SEH America (chilled water)

Scoping Completed

- Linear Technology (chilled water/HVAC)
- Anheuser Busch (fans/blowers)
- City of Bend W/WW (pumps/blowers)
- ConAgra Foods

Energy Smart Industrial
BPA ENERGY EFFICIENCY

High Performance Energy Management

- Primary mode of HPEM delivery – structured network group / cohorts.
- SW Washington cohort participants.
  - 14 end users (31 aMW load)
  - Five utilities (Clark, Clatskanie, Cowlitz, Lewis Co PUDs and City of Richland)
- Coming months, confirm execution of HPEM Agreement with Georgia Pacific-Toledo.
- Establish a Puget Sound cohort.

Energy Smart Industrial
BPA ENERGY EFFICIENCY

Energy Management Successes

- Leverage NEEA and Energy Trust of Oregon's past efforts.
- Broad uptake of EPM component.
- Track and Tune is gaining momentum, across a range of industries.
- HPEM industries share knowledge and experience.

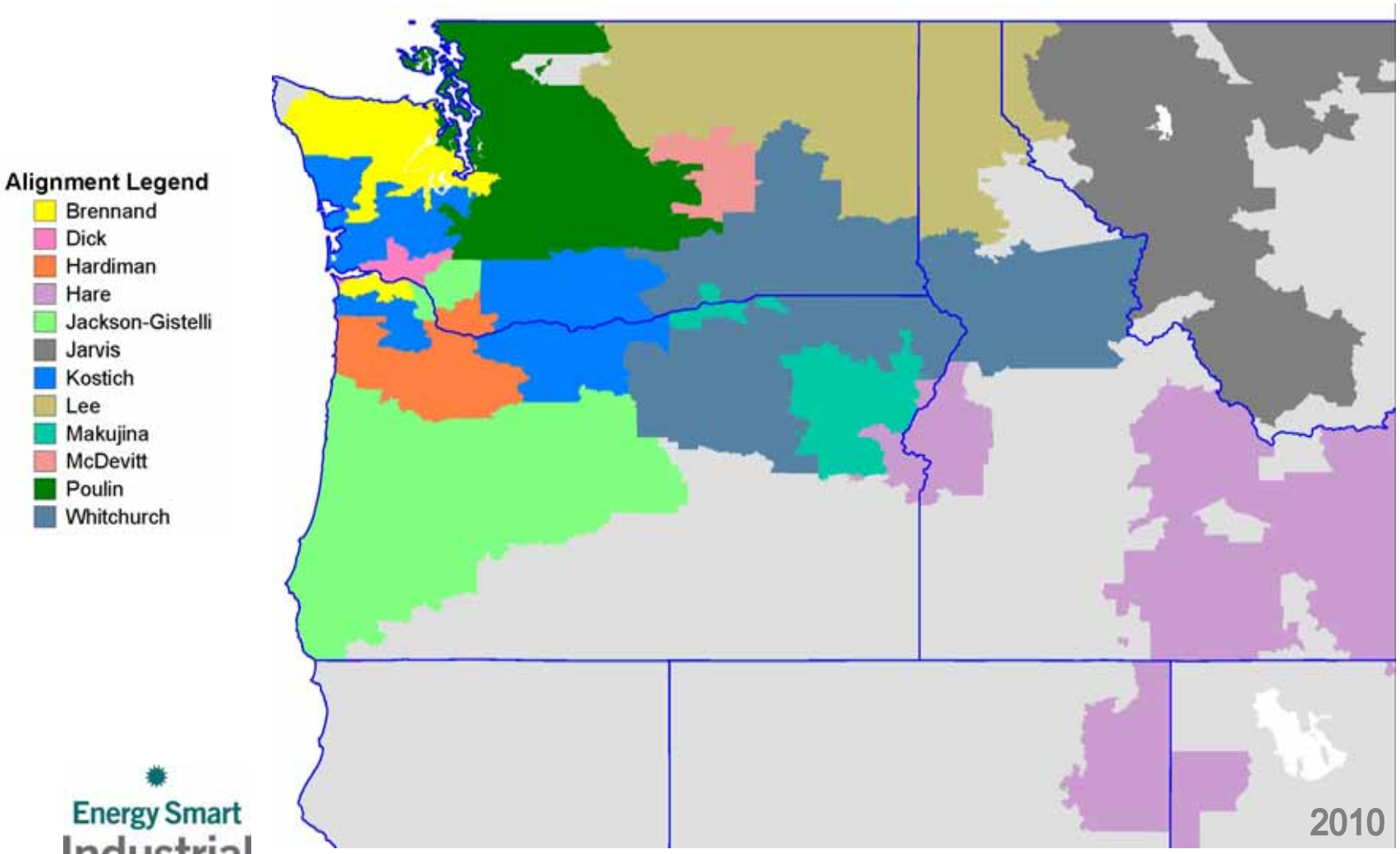
Energy Smart Industrial
BPA ENERGY EFFICIENCY

The ESI Program in the Field

- Dedicated, capable ESIPs serving 100 utilities.
- Developed Energy Management and Small Industrial teams to support utilities and end users.
- Leverage lighting TAN, added industrial lighting specialists.
- Provide technical services using experienced TSP consultants.

Energy Smart Industrial
BPA ENERGY EFFICIENCY

ESI Program's Regional Coverage



Energy Smart Industrial
BPA ENERGY EFFICIENCY

ESI Program Projections

2010	Projections FY2010	*Preliminary[3] Actuals FY2010*	Projections FY2011	*Preliminary Actuals FY2011*
Program Savings (kWh)	105,120,000	*122,640,000*	131,400,000	*n/a*
Program Costs ($)[4]	$ 10,600,000.00	*$ 7,400,000.00*	$ 12,200,000.00	*n/a*
Utility Incentives ($)	$ 17,000,000.00	*$ 14,500,000.00*	$ 21,200,000.00	*n/a*
Totals:	$ 27,600,000.00	*$ 21,900,000.00*	$ 33,400,000.00	*n/a*

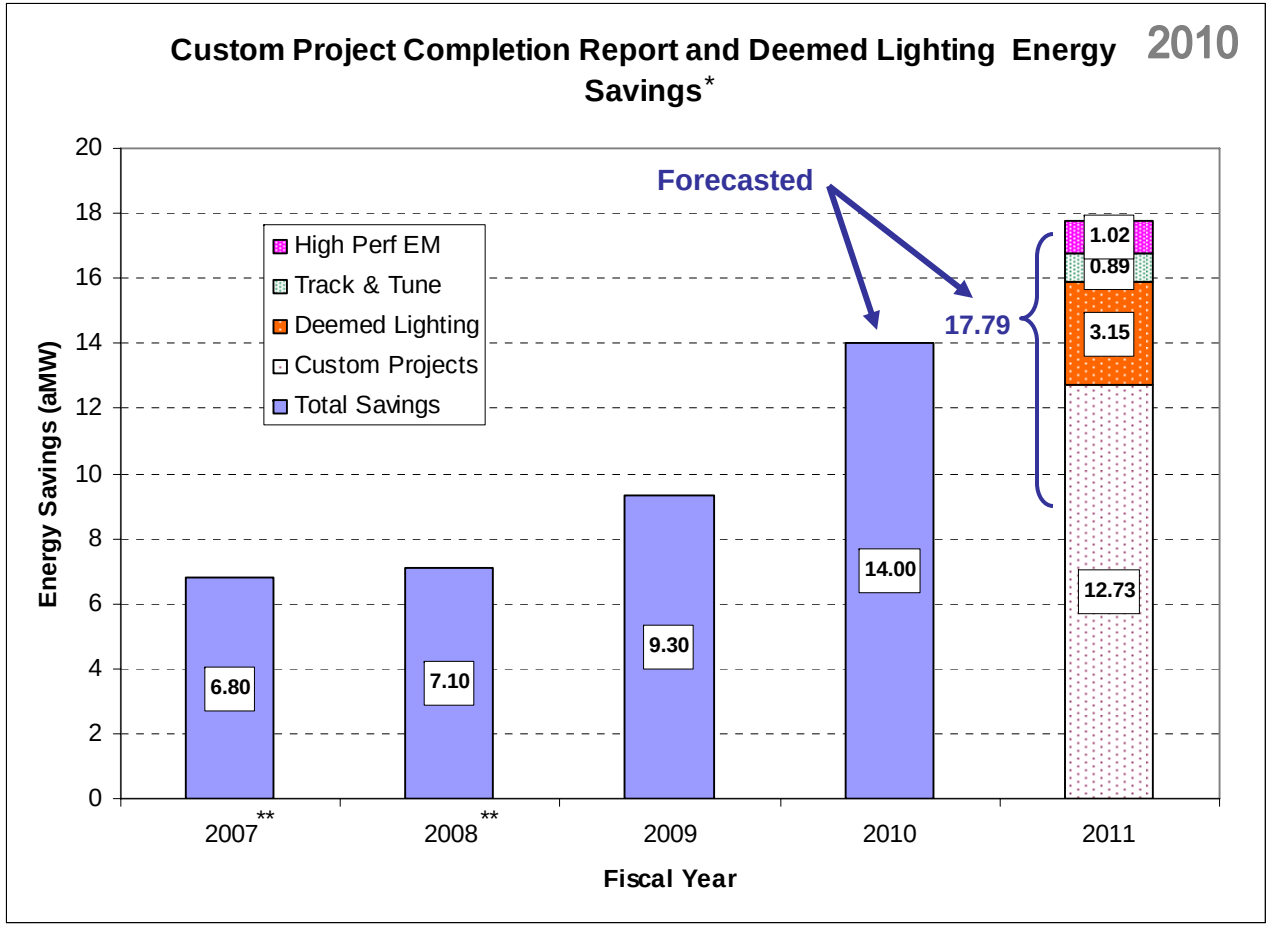
Footnote:

[3] Preliminary Actuals FY2010 - program savings and utility incentives await conclusion of BPA review/acceptance of all Utility FY2010 CRC Annual Reports.

[4] Program costs include technical assessments, Program Partner and program component expenses, marketing, TrakSmart Tool, Energy Management support (e.g., tracking systems).

Energy Smart Industrial
BPA ENERGY EFFICIENCY

Industrial Projects in the PTR System



* Excludes custom projects from Seattle City Light, EWEB and NORPAC.
** As published in the BPA Redbook.

Energy Smart Industrial
BPA ENERGY EFFICIENCY

What We've Accomplished / Achieved

- Designed / implemented flexible industrial program
  - Joint (BPA/Program Partner) collaboration necessary
  - More "boots on the ground"
  - Created Energy Management pilot
  - Developed structured systems and processes
  - Accountability – project management
- Established the ESI Utility Focus Group
- Developed TrakSmart project tracking tool
- Access into more facilities

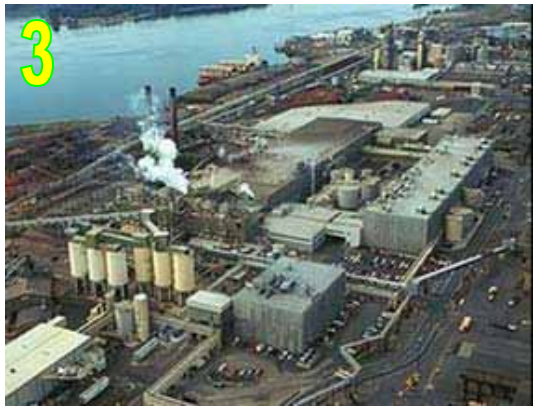
Energy Smart Industrial
BPA ENERGY EFFICIENCY

The Vision Going Forward

- ESI program **must** be viewed as complete package
- Relationships are critical
  (i.e., communication / trust / accountability)
- Post-2011 preparedness is critical
  - ESI program interaction with Post-2011 outcomes
  - Exceed the energy savings goals cost-effectively

Energy Smart Industrial
BPA ENERGY EFFICIENCY

ESI Program Meets Industry Needs



Energy Smart Industrial
BPA ENERGY EFFICIENCY

1-Grays Harbor Paper, Hoquiam WA 2-Boeing, Seattle WA 3-NORPAC, Longview WA
4-SEH America, Vancouver WA 5-Areva, Richland WA

Questions?

- Contact Information:
  - Jennifer Eskil, Energy Smart Industrial Program Manager (Agricultural/Industrial/Utility Efficiency Sector Lead)
    - Phone: 509.527.6232
    - E-mail: jleskil@bpa.gov

Energy Smart Industrial
BPA ENERGY EFFICIENCY