



U.S. DEPARTMENT OF
ENERGY

Energy Efficiency &
Renewable Energy



NORTHWEST INDUSTRIAL ENERGY EFFICIENCY SUMMIT



“Help us change the paradigm so industry takes the leadership in solving these problems. Energy is not the only problem, but is a common thread to a lot of problems industry is facing. Key partnerships can help industry alleviate a lot of these issues.”

-Sergio Dias, Northwest Energy Efficiency Alliance



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Executive Summary

Attendees from Montana, Idaho, Oregon, and Washington descended upon Portland, Oregon to participate in the Northwest Industrial Energy Efficiency Summit (Northwest Summit) on February 17, 2009. The Northwest Summit was a *Call to Action* for regional collaboration by participants from industry, government, energy efficiency and industrial organizations, utilities, and academia. Their purpose at the event was to identify how to build upon existing efforts and forge new partnerships to help reduce regional industrial energy intensity and related carbon emissions.

“If we can figure out energy efficiency in the Northwest, the world will start beating a path to our door and we can start to spread this model to the rest of the world.”

-Oregon State Representative
Tobias Read

More than 100 people attended the Northwest Summit. During the morning session, these participants received information on industry’s importance to the region, no-cost opportunities to reduce energy intensity, potential impacts of carbon legislation, and Best Practices activities implemented by industry. Attendees also witnessed the signing of a Memorandum of Understanding between the U.S. Department of Energy (DOE) and Northwest Food Processors Association (NWFPA) to reduce the energy intensity of NWFPA’s members by 25 percent over the next 10 years.

The afternoon working group sessions expanded on the morning plenary session. During the first working group session, Northwest Summit participants identified energy challenges and reasons why industry in the region has not fully adopted energy efficiency. These challenges were readdressed during the second working group session. Participants came up with solutions for mitigating or overcoming those challenges, and agreed on key regional priorities and activities.

Next Steps: Northwest Industrial Energy Efficiency Coalition

- Invite participants and planning committee members to join the Northwest Industrial Energy Efficiency Coalition
- Launch the Coalition
- Identify short- and long-term activities and slate Coalition members to begin the work
- Develop timelines for those projects
- Hold monthly planning meetings
- Post updates on ITP’s Partnerships Web site
- Establish metrics to measure Coalition success

I. Introduction

A. Overview of the Northwest Summit

In its continued efforts to establish the foundations for a national commitment to reduce industrial energy intensity, the U.S. Department of Energy’s (DOE) Industrial Technologies Program (ITP) hosted the Northwest Industrial Energy Efficiency Summit (Northwest Summit) on February 17, 2009 in Portland, Oregon. The Northwest Summit was the second in a series of regional industrial energy efficiency forums hosted by DOE. It was also the companion event to the highly successful Southeast Industrial Energy Efficiency Summit held June 5, 2008 at Oak Ridge National Laboratory in Oak Ridge, Tennessee.

Like its Southeast counterpart, the Northwest Summit was a Call to Action for industry, utilities, federal and state government, academia and industrial and energy efficiency organizations to strengthen their collaborative work and leverage resources to develop and carry out industrial energy efficiency strategies. When implemented, these strategies will help to sustain the economic viability of the regional industrial manufacturing sector by reducing industrial energy intensity and related carbon emissions. Northwest Summit participants from Montana, Idaho, Oregon, and Washington identified key priorities, developed actions to support those priorities, and in some cases identified who needed to be involved in order to implement the activities.

More than 100 people attended the Northwest Summit. The diverse background of attendees demonstrated that industrial energy efficiency is a central concern to the region. Exhibit 1 shows Northwest Summit representation by sector. Exhibit 2 shows the breakout of the industrial sector attendees by manufacturing sector.

B. Organization of Report

The rest of the report is divided by session at the Northwest Summit. The sessions are placed in chronological order. Each section describes the major ideas, themes, and outcomes from the sessions. Appendix D contains slides from the *Welcoming Remarks and DOE Perspective, Implications of Carbon Legislation on Northwest Manufacturing Industries, and the Challenge of Providing Low Rates, High Reliability, and a Healthy Environment* sessions.

Exhibit 1:
Northwest Summit
Attendees by Type

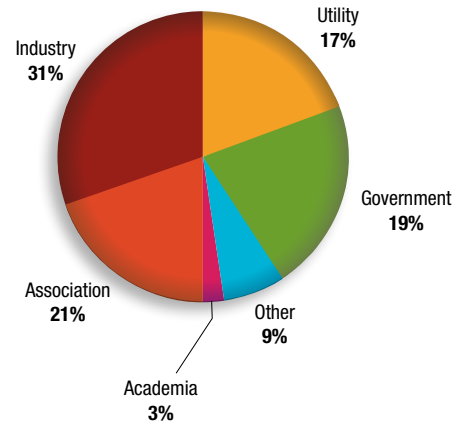
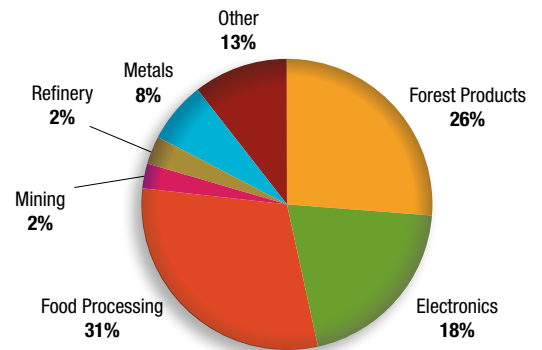


Exhibit 2:
Industrial Attendees
by Manufacturing Sector



II. Welcome and DOE Perspective

Douglas Kaempf, Program Manager for ITP, welcomed participants and provided opening remarks at the Northwest Summit. ITP is the main federal program focused on reducing the energy intensity of industry. The following section provides a summary of his presentation.

A. Industrial Challenges

The industrial manufacturing sector is a vital component of the United States economy. The sector accounts for approximately 13 million jobs¹ and 12 percent of the country's gross domestic product (GDP).² U.S. manufacturing also accounts for approximately 60 percent of the nation's total exports. However, industry's significant presence in the U.S. has contributed to the consumption of 32,195.8 trillion Btu of energy, or one third of the total energy consumption for the United States.³ Moreover, this energy consumption has caused the release of approximately 1,670 million metric tons of carbon (MMTCO₂) annually.⁴

However, industry is facing increasing challenges that are impacting overall profitability. Common challenges have typically included:

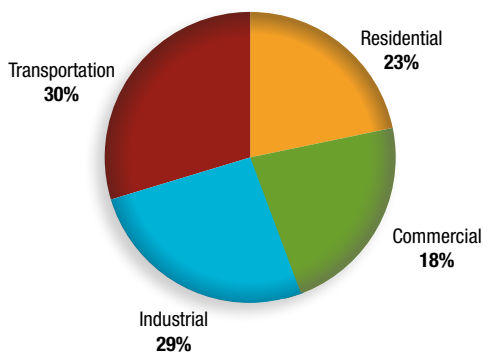
- Increased global competitiveness
- Volatile energy prices
- Limited access to capital
- Uncertainty of market demand and
- Impending carbon legislation

B. Importance of Northwest Region

In addition to playing a pivotal role in sustaining the U.S. economy, industry also has a profound impact in the Northwest region. For example, the top five industrial manufacturers in the Northwest are the computer and electronics, transportation equipment, food processing, petroleum and coal, and wood product manufacturing industries. Manufacturing accounts for 12.3 percent of the region's GDP, of which 65.4 percent is accounted for by these industries.⁵

In addition, industry consumed 29.2 percent of all energy in the region (see Exhibit 3)⁶ and 18.7 percent of all carbon emissions in the Northwest in 2006.⁷ Energy efficiency can substantially lower these amounts and operating expenses because it uses energy more effectively. The best way to do this is to incorporate energy efficiency into plant practices because it uses a lower amount of energy to complete the same task.

Exhibit 3:
Northwest Energy
Consumption, 2006



C. Energy Efficiency is the Answer: the Federal Role

Mr. Kaempf then supplemented the regional industrial overview with information on how the federal government can assist plants in their energy efficiency efforts.

1. President's New Energy of America and Economic Recovery Goals

President Obama has set forth an ambitious agenda to create energy-related jobs and reduce national greenhouse gas emissions. Specifically, he plans to create 5 million jobs over the next decade and reduce carbon emissions 80 percent by 2050.⁸

To help reach this goal, he bolstered the development of the *American Recovery and Reinvestment Act of 2009 (Recovery Act)*.

The *Recovery Act* sets aside funding exclusively for energy efficiency improvements, and research and development among other energy-focused projects.

2. DOE's Industrial Technologies Program

ITP has the overarching objective to reduce energy intensity in industrial plants. The program has adopted the *Energy Policy Act of 2005* goal of reducing industrial energy intensity by 25 percent over the next 10 years (*25 in 10*).

Research and Development

The program works toward the *25 in 10* objective through a multi-pronged approach consisting of research, development, demonstration, and deployment; strategic partnerships; and technology delivery. Research and development (R&D) efforts are categorized as either “energy-intensive” or “crosscutting” technologies. The deployment of these technologies and other resources is technology delivery.

- ▶ **Energy-intensive Industries:** ITP has traditionally funded research efforts for the following energy-intensive industries: aluminum, chemicals, forest products, glass, metal casting, mining, petroleum refining, and steel. However, ITP plans to expand its industry-specific R&D outreach to a greater industrial base. R&D efforts typically work to identify process improvements and to develop, test, and deploy energy-efficient technologies throughout the aforementioned energy-intensive industries.
- ▶ **Crosscutting Technologies:** ITP also supports R&D for crosscutting technologies, or non-industry specific technologies that could be applied to multiple industries. Crosscutting technologies include:
 - **Combustion:** ITP supports the development of any technologies that improve the energy efficiency of combustion, particularly in process heating or steam systems.

- Distributed Energy: This crosscutting program helps to promote the adoption of combined heat and power (CHP) applications in industrial plants. CHP is the concurrent generation of electricity and heat from a single fuel source.
- Energy-intensive Processes (EIP): EIP has four areas of focus: Industrial Reactions and Separations, High-Temperature Processing, Waste Heat Minimization and Recovery, and Sustainable Manufacturing. These areas of focus are expected to generate high energy savings throughout industry.
- Fuel and Feedstock Flexibility: Industrial manufacturing processes are heavily dependent on natural gas for operation. The Fuels and Feedstock crosscutting program works to adopt alternatives to natural gas in plants through its R&D projects.
- Industrial Materials for the Future: The efficacy of a piece of equipment is often determined by the materials it is composed of. The Industrial Materials crosscutting program has the mission of researching, developing, demonstrating, and deploying energy-efficient and durable industrial materials. This is completed through energy analyses, vision and roadmap documents, and the development of tools and other resources.
- Nanomanufacturing: When implemented, nanotechnologies can enhance the performance of a piece of equipment, improve production, produce more durable materials, and reduce equipment wear and friction.⁹ ITP is currently funding 20 active nanomanufacturing R&D projects designed to develop or deploy nanotechnologies.

Save Energy Now Initiative

Energy efficiency can alleviate some of the industrial challenges. For example, ITP's *Save Energy Now* (SEN) initiative aspires to reduce national industrial energy intensity by 25 percent in 10 years (*25 in 10*). SEN provides several no-cost tools and resources to help industrials lower their energy intensity. These resources include energy assessments, training, energy efficiency tip sheets, Webcasts, and technology demonstrations among other activities. These resources are deployed through ITP's various technology delivery channels.

Energy assessments are the largest facet of SEN. The energy assessments are system-specific and can be used to analyze and identify ways to improve the energy efficiency of compressed air systems, process heating systems, pumps, and steam systems. The following table, Exhibit 4, displays results from SEN sponsored plant assessments in the Northwest since 2006.

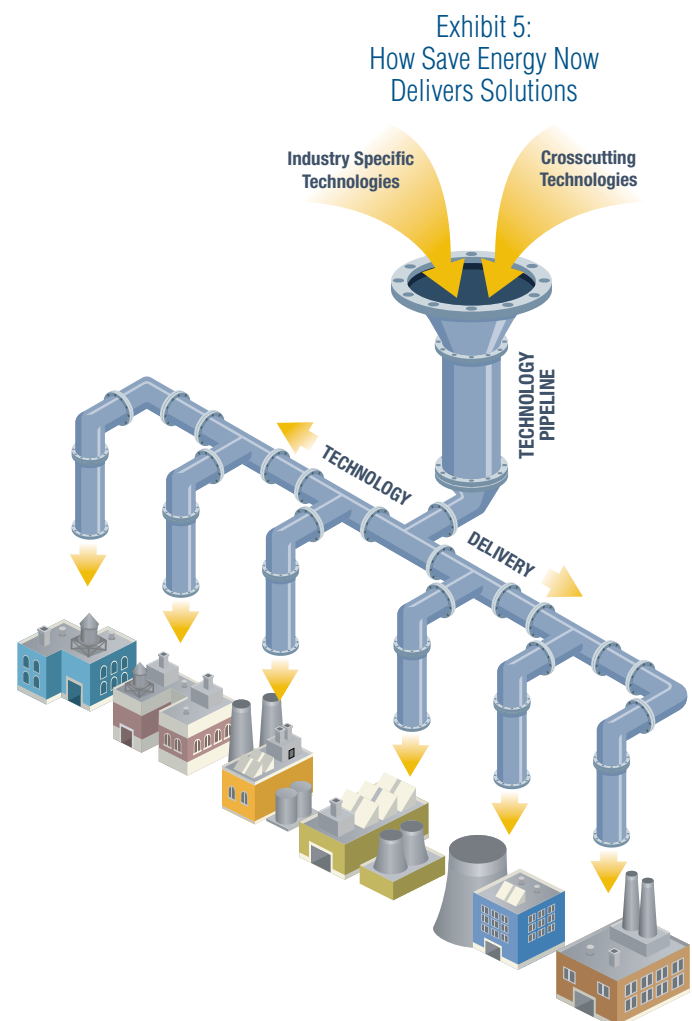
Exhibit 4: SEN Plant Assessment Results in the Northwest from January 1, 2006 to January 31, 2009

	Northwest
Number of Completed Assessments	158
Identified Cost Savings	\$91 Million
Implemented Cost Savings	\$16 Million

Finally, a critical component of SEN is partnerships. ITP has developed strategic partnerships to help with technology delivery efforts and partners with other federal agencies, states, utilities, regional organizations, academia, trade groups, and private companies. ITP partners receive expanded access to its resources and technical assistance for these partners to provide training, assessments, deployment of energy-efficient technologies, and coordinated outreach to industry at a local level. These partnerships help ITP expand its communications efforts by reaching more industrials through leveraged resources and commercialized technology. Exhibit 5 shows how SEN delivers solutions to industrial manufacturers.

D. Call to Action

Mr. Kaempf reinforced that the Northwest Summit was a *Call to Action* for regional collaboration to lower energy intensity of industry in the Northwest. Industry, which is a sizeable component of the economy, can remain profitable through energy efficiency. This can be achieved through different sectors in the region leveraging resources and sharing expertise and finding innovative means of getting the information out of the national laboratories and federal agencies and into the plants.



Comments by Representative Tobias Read

Oregon State Representative Tobias Read (D – District 27) was unable to attend the Northwest Summit, but provided brief remarks over the phone. Representative Read was encouraged by the diverse group of attendees. He felt that energy efficiency was the focal point of the region's energy strategy because it was the right thing to do and was good for business. He indicated that the Oregon Legislature will soon cultivate a plan to amass capital for energy efficiency projects in the state. He closed by inviting Northwest Summit participants to join in discussion with the legislative planners to provide industrial input into the plan.

III. Signing Event: Northwest Food Processors Association

In 2006, the food processing sector employed more than 65,000 workers in the Northwest, making it the third largest industrial manufacturing sector in the region.¹⁰ A highlight of the Northwest Summit was the signing of a Memorandum of Understanding (MOU) between the Northwest Food Processors Association (NWFPA), DOE, Bonneville Power Administration (BPA), Idaho National Laboratory (INL), and Pacific Northwest National Laboratory (PNNL). The MOU establishes a partnership to help NWFPA's members reach their energy intensity goal of reducing energy intensity by 25 percent over the next 10 years. This goal demonstrates the continued leadership of the region, NWFPA, and the possibilities for reduced energy use and related carbon emissions. These actions will help improve the global competitiveness of NWFPA members, save if not create jobs, and strengthen the food processing sector. The MOU creates a framework to pursue a diverse range of opportunities for energy efficiency for all manufacturing sectors in the United States. Please see Appendix C for the text of the MOU.



The main document signers included:

David Zepponi President NWFPA	Douglas Kaempf Program Manager ITP	Steven Wright Administrator BPA	Michael Kluse Director PNNL	David Hill Deputy Laboratory Director for Science and Technology INL
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The following table, Exhibit 6, lists NWFPA members who signed the MOU:

Exhibit 6: NWFPA Member Signers

Name	Company
Scott Butler	Del Monte Foods
Des Doucette	McCain Foods USA, Inc.
Mike Henderson	Con Agra Foods - Lamb Weston
Jerry Kobes	Tree Top, Inc.
Terry Oftedal	YoCream International, Inc.
Jim Root	Jim Root Company
Don Sturtevant	J.R. Simplot Company
Jim Wegner	Darigold, Inc.



These entities and the Northwest Energy Efficiency Alliance will help NWFPA members meet their goal by working together to deliver energy-efficient technologies and sustainable practices to the food processing industry. This objective supports ITP's SEN initiative by promoting and supporting reductions in industrial energy intensity and carbon emissions throughout the United States.

“It is through innovation and productivity that we will succeed in a global environment. Those two principles are what have driven the goals incorporated into our energy vision... Neither goal will be achieved without a regional commitment to innovation and the transfer of innovative concepts to the food processing industry, suppliers, and workforce. It is in developing our innovative capacity that we will find knowledge to outcompete other regions of the world and find jobs for the citizens of the Northwest.”

-David Zepponi, Northwest Food Processors Association



IV. Implications of Carbon Legislation on Northwest Manufacturing Industries

Don Sturtevant, Corporate Energy Manager for food processor J.R. Simplot Company, provided information on how carbon legislation will directly affect regional industry. Industry is confronted with several challenges including the increase of energy costs and consumer pricing. Other challenges include remaining globally competitive during a recession and finding ways to comply with the climate legislation. Mr. Sturtevant recommended opportunities for industry to mitigate those challenges, citing energy efficiency as the “perfect storm” for compliance. He referenced specific examples of how J.R. Simplot has taken progressive action toward improving the company’s overall energy efficiency such as becoming an Energy Star® partner, integrating a sustainable culture, formulating strategic partnerships, and signing a non-binding DOE 25 *in 10* pledge. Mr. Sturtevant emphasized that the best way to reduce industrial energy intensity is through regional collaboration, even with competitors.



V. Senior Executive Town Hall

Mr. Sturtevant's presentation was followed by the Senior Executive Town Hall. The session was moderated by Ralph Cavanagh, Co-Director of the Energy Program at the Natural Resources Defense Council. The panel featured leaders from regional industry, national laboratories, and ITP. The interactive session opened with each panelist providing remarks and identifying the greatest challenge facing the profitability of their organization.

A. Industry and Laboratory Successes: Panel Introductory Remarks

1. Blue Heron Paper

Mike Siebers, President and Chief Executive Officer

Blue Heron Paper is a small company located in Oregon City, Oregon that produces newsprint, printing paper, and converting paper from recycled materials. The company has been operational for 9 years and utilizes a 100-year-old mill for paper production. The paper company is a large electricity and natural gas consumer, as it uses 1.3 trillion Btu of electricity and 5.0 trillion Btu of natural gas annually. The greatest challenge facing the company is competition for raw materials in a global marketplace.

Mr. Siebers is of the opinion that local, state, and federal collaborations work. For example, Blue Heron Paper partnered with the Energy Trust of Oregon (ETO) and ITP to implement an energy efficiency project at the mill. At the time, the project was the biggest ever conducted with ETO and required a lot of innovation and creative planning for its design and implementation. As a result, the mill now realizes substantial energy savings each year. Mr. Siebers noted that the project would not have been completed if the company had to pay for the improvements up front. Instead, Blue Heron Paper was able to finance the project as it went along.

In closing, Blue Heron Paper supports reduction of greenhouse gases, but wants to be treated fairly because it sells paper globally. The company is willing to do its share for compliance.

2. Grays Harbor Paper

Bill Quigg, President

Energy efficiency is very important to Grays Harbor Paper, a white paper producer. It is a small company that actively competes against the large paper companies. When the company saves energy, it can generate energy, for example, using log waste for biomass. The plant currently has 34.1 million Btu of idle capacity because there is no demand for that excess power today.

Panelists

Craig Anneberg
Weyerhaeuser

David Hill
Idaho National
Laboratory

Douglas Kaempf
U.S. Department of Energy

Michael Kluse
Pacific Northwest
National Laboratory

Bill Quigg
Grays Harbor Paper

Jim Root
Jim Root Company

Jim Short
WaferTech

Mike Siebers
Blue Heron Paper

Rick Warren
IBM

Moderator

Ralph Cavanagh
Natural Resources
Defense Council

“My goal is to make my company as sustainable as possible by selling green products... I want to change the paper business.”

-Bill Quigg

Mr. Quigg wants to change the paper business by taking the idle green power and applying it to the development of Grays Harbor Paper's post consumer paper. Right now, the biggest challenge for the company is to find people to help develop this technology. Paper is typically 30 percent post consumer, but Mr. Quigg wants all paper to be 100 percent post consumer. To do this, the company will need additional customers who are concerned about their carbon footprint and do not mind the added cost. This has to be done because of industry's impact on the rest of the world. He closed by asserting that energy conservation is a necessity for all of industry.

Between 1990 and 2007, IBM globally saved 4.6 billion kWh and avoided 3.1 MMTCO₂ or 45 percent of IBM's 1990 emissions.

3. **IBM**

Rick Warren, Vice President of Systems and Technology Group

Mr. Warren is part of the IBM contingent in the Northwest which consists of 2,000 people out of 400,000 total employees worldwide. From a cost efficiency standpoint, IBM has always had a commitment to energy. For example, the company established its corporate environmental policy in 1971 and its energy conservation policy in 1974. This policy is embedded in all measurement systems throughout the corporation. IBM also developed the concept of "other than the traditional office workers." These are employees who can work wherever they want such as customer locations, at home, or in a standard office. One-third of the overall IBM staff is working in a non-traditional office setting including 50 percent of IBM workers in the Northwest. In 2007, IBM conserved 7.75 million gallons in fuel and 64,000 tons of carbon emissions from this commuting model alone.

IBM's outreach activity is called Smarter Planet. Smarter Planet includes interconnected technologies with the objective of changing how everything works, how energy is used, how products are distributed, and how information is exchanged. On the energy side, IBM has an organization called Energy and Utilities which participates in DOE's Smart Grid initiative. Activities include the Smart Grid Roadmap (due by December 2009), matching grants, and the Smart Grid engineering and technician development program to train students. The company is working with 7 of the 10 Smart Grid automatic metering projects. For example, IBM recently designed, implemented, and installed a traffic metering system in Stockholm, Sweden. This project achieved a 25 percent reduction in peak hour traffic and a 15 percent reduction in related carbon emissions.

4. **Idaho National Laboratory**

Dr. David Hill, Deputy Laboratory Director for Science and Technology

INL is fundamentally an engineering laboratory. Located on a 900-square-mile campus, INL is mainly a test bed for many forms of energy usage (systems engineering for all industry – controls, materials, separations, and waste heat recovery). Laboratory officials take their regional responsibilities seriously.

For example, INL supports the Pacific Northwest Economic Development Council (PNEDC). PNEDC consists of states and Canadian provinces including the four states represented at the Northwest Summit. INL provides PNEDC with technical advice and support on regional energy issues. Further, Dr. Hill believes that out of all the DOE focus areas, industrial energy efficiency is the area where partnerships can have the biggest impact.

“The Northwest Summit should be more than a planning exercise. It should be about action.”

-David Hill

5. **Jim Root Company**

Jim Root, Chief Executive Officer

Mr. Root commented that selling his food processing business, Sabroso, to Tree Top, Incorporated is emblematic of the way that Northwest food processing is consolidating. He responded to the question, “Will we be here in 10 years?” with an emphatic “yes” because he believed that the Northwest sits on some of the world’s most productive soil. Conversely, Mr. Root added that a major challenge for the food processors was the distance from the markets which adds a large energy component to the challenge. Because all of industry faces the same obstacles, Mr. Root asserted that the solution is to work cooperatively. Industry needs best practices, ways to share knowledge, and to find support for these activities.

6. **Pacific Northwest National Laboratory**

Michael Kluse, Director

Located in Richland, Washington, PNNL has 4,000 staff members working on \$1 billion annually in R&D energy projects. This work is conducted through DOE’s Office of Science. Mr. Kluse said that energy is complex and acknowledged that most attention nationally has been focused on alternative fuels, but asserted that energy efficiency merited the same amount of attention. He indicated that successful efforts for this will require the best minds, collaboration, and commitments.

“The challenge is so complex that there is no one organization that will solve it by themselves, so partnerships, particularly public/private partnerships, will be critical.”

-Michael Kluse

Regionally, PNNL has begun testing new materials and processes for reducing manufacturing energy use in the solar industry and developing new separations methods for reducing energy use in ethanol production. Nationally, PNNL is working on making data centers more efficient for the information technologies sector. Mr. Kluse reminded Northwest Summit participants that PNNL is their regional partner, understands energy challenges, and has a breadth of capabilities at industry’s disposal.

7. **U.S. Department of Energy's Industrial Technologies Program**

Doug Kaempf, Program Manager

ITP is involved in a wide range of activities – from R&D to best practice tools. ITP plans to achieve its goals of reduced industrial energy intensity by opening the door to industry through Visions and Roadmaps and having industrials focus on what they will look like in 20 years. In developing this vision, industry determines what it will need to succeed in the future.

ITP has solicitations that fund research projects, but states and regions have different processes and priorities. There is a lot that needs to be considered on a regional and state-by-state basis. The direction needs to come from the states. He closed by asking how we would finance industry and its needs in the Northwest region.

8. **WaferTech**

Jim Short, Director of Facilities

WaferTech is a semi-conductor manufacturer that produces integrated circuits on eight-inch wafers. The company is also a subsidiary of Taiwan Semiconductor Manufacturing Company – a \$9 billion company (most plants in Taiwan, though a few are located in China, Singapore, and the U.S.). WaferTech has 1,000 employees onsite in Camas, Washington (engineers, scientists, and production operators). Its facilities have a combined 135,000 square feet of clean room space. According to Mr. Short, the company's challenge is global competition. It needs capital to complete energy efficiency projects.

9. **Weyerhaeuser**

Craig Anneberg, Vice President and Mill Manager of the North Pacific Paper Corporation (NORPAC) facility

Weyerhaeuser is one of the last forest products companies in the United States that owns forests and facilities. The company owns two million acres of sustainably managed forestland and has more than 7,000 employees managing its timber plants. Headquartered in Federal Way, Washington, Weyerhaeuser manages sawmills, pulp mills, and other facilities in Idaho, Oregon, and Washington. The NORPAC facility has approximately 450 employees and contractors and produces paper products that are used worldwide. The mill is also one of the largest electricity consumers in the region.

“Our strategy has been to implement conservation projects that reduce energy costs and make our middle more competitive in the long term.”

-Craig Anneberg

There are several government policies that affect the long-term growth and strategy of Weyerhaeuser. These policies include:

- ▶ **Tax Policies:** Tax Policies have critical implications for profitability, capital investment, and future areas of growth. Weyerhaeuser wants a fair playing field for global competition.
- ▶ **Environmental Policies:** These policies affect how and where the company can grow forests and how the company operates its plants. These policies can also encourage investment and development of sustainable forests.
- ▶ **Carbon Regulations:** Finally, climate change policy also affects the company by influencing how Weyerhaeuser values its working forests and forest products that continue to sequester and store carbon.

Weyerhaeuser has reduced its carbon emissions by 16 percent since 2000 and has set a goal for a 40 percent reduction by 2020. The company supports cap and trade, but would prefer a single federal approach. The company has also embraced renewable energy, as biomass meets 67 percent of energy needs in Weyerhaeuser's plants. In addition, the company sells excess biomass fuel to the market and is a leader in high efficiency co-generation, though it still needs to meet a significant amount of energy needs through the purchase of power particularly at NORPAC. In closing, Mr. Anneberg indicated that Weyerhaeuser had a long history of investing heavily in energy efficiency projects in partnership with utilities, but the current climate is challenging and partner funding will be required for competitiveness.

B. Panel Q&A and General Discussion Points

After panelists provided an overview of the energy situation at their companies, the moderator and Northwest Summit participants asked questions on a number of topics including leveraging resources, accessing capital, job creation, and technology deployment. Discussion fell into the following categories:

1. **Recovery Act**

According to Title IV of the *Recovery Act*, \$3.1 billion has been made available to state energy offices to fund energy efficiency and renewable energy programs.¹¹ The moderator asked questions regarding how to distribute the funding and how the process will work. Panelists indicated that they would embrace the opportunity to implement more energy efficiency projects in their facilities, as they have been hesitant because of lengthy return on investment periods. Because the *Recovery Act* only provides funding for two years, funding will be allocated for “shovel-ready” projects.

2. **Partnerships and Resource Deployment**

A common theme throughout the plenary was the importance of partnerships. For example, industry and utility collaboration would benefit a region, while national laboratories could provide industry with information on technology and available resources. There was also discussion on DOE's Entrepreneur in Residence program, which brings entrepreneurs into national laboratories to identify ways to commercialize technology. DOE also provides information to venture capitalists on BestPractices projects and technologies.

3. **Job Creation**

The fundamental goal of the *Recovery Act* is to create and save U.S. jobs. Due to recent unemployment levels, many people will be available to work on energy efficiency projects as soon as they are ready for implementation. Despite the availability of workers, challenges will still remain as there is a shortage of training. However, there are some options available. For example, INL has created an energy systems technician education center while ITP has 26 Industrial Assessment Centers that train university students and prepare them for energy-related careers.

4. **Onsite Energy Managers**

Plant engineers often take on different roles within their facility to keep production going. Many of the panelists felt that having a part- or full-time energy engineer on their staff would be extremely beneficial. More plants would be involved if funding were available for an onsite energy manager. INL and DOE offer technical assistance, training, and energy audits.

5. **Other Financial Opportunities**

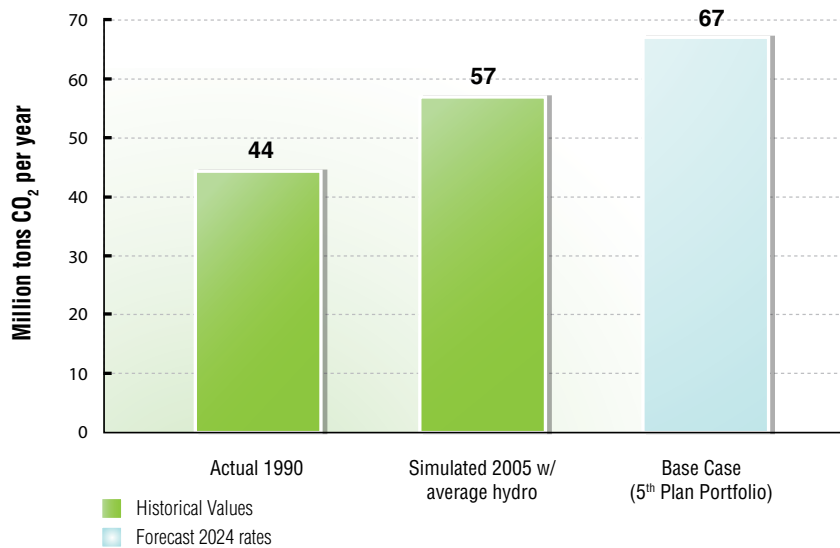
Tax incentives and rebates do not have the same value to industrial managers as upfront incentives. Options to help fund energy efficiency programs include DOE's Loan Guarantee Program and energy service companies. Mr. Kaempf suggested analyzing programs that have worked, such as Wisconsin's Focus on Energy's Clean Tech Program based in Wisconsin.

Wisconsin-based *CleanTech Partners* is a non-profit organization that provides funding and business resources for energy efficiency projects in the state.

VI. The Challenge of Providing Low Rates, High Reliability, and a Healthy Environment

Steve Wright, Administrator of BPA, was the lunch keynote speaker. Administrator Wright opened with a reminder of BPA's commitment to regional industry. Using price data from the Energy Information Administration, he explained that the cent per kWh price paid by electricity consumers in the Northwest was considerably lower than the U.S. average and the rest of the country. He also explained that the region's abundance of electricity generated from hydropower has contributed to the area having lower than average carbon emissions (see Exhibit 7).

Exhibit 7: Historical & Projected CO₂ Projection



However, load demand is increasing. The load growth will determine how many new resources need to come online to supply the required amount of electricity. Increased electricity generation and consumption will directly contribute to increased carbon emissions. The region therefore needs to find a way to produce more electricity with minimal carbon output. Wind is a viable option, but the most effective way to do this is through energy efficiency. For example, it took 20 years to construct 2,000 MW of wind power in the Northwest but there are substantially lower costs for energy efficiency that yield significantly higher returns. Energy efficiency will also help to keep electricity rates low for the region.

VII. Working Groups

Northwest Summit participants were pre-assigned to one of four working groups. Each group contained representatives from academia, a state energy office, pulp and paper manufacturer, food processor, metals, mining, electronics, utilities (investor-owned, municipal, and electric cooperatives), U.S. Department of Energy, and national laboratories. Where at all possible, only one representative from a company was assigned to a working group. Each group also contained representatives from each state to provide the full regional perspective. Common themes are outlined in this summary. Each working group contained a regional expert facilitator who led the group discussion. The facilitator was assisted by a scribe who captured bulleted notes and presented discussion highlights to all Northwest Summit participants. Each working group also had a note taker who captured discussion. Exhibit 8 lists the facilitator and scribe for each working group. There were four working groups and two working group sessions. Each of the four working groups identified barriers to industrial energy efficiency during the working group session, as discussed how to overcome those barriers during the second working group session.

Exhibit 8: Working Group Facilitators and Scribes

Facilitator: Ken Canon Scribe: Cris Love	Facilitator: Sergio Dias Scribe: Sharon Peterson
Facilitator: Michael Early Scribe: Elaine Prause	Facilitator: Stan Price Scribe: Jeff Brooks

A. Working Group Session I

Northwest Summit participants recognized the importance of energy efficiency in helping to keep industry profitable. During the first working session, participants were asked the following question:

“Industrial Energy Efficiency: In a dramatically changing economic climate, what roles do energy and energy efficiency play in maintaining long-term Northwest industrial competitiveness?”

1. Motivations for Energy Efficiency

Energy was typically dubbed a major financial expense by the working groups. However, participants who had embraced energy efficiency cited remaining globally competitive as the main factor in this decision. Non-financial reasons included buyer requirements for carbon footprints and an overall perception that an energy-efficient plant is a “green plant.”

2. Challenges

Most of the first working group session was apportioned for challenges. Main challenges shared by industrial participants include:

- ▶ **Standards:** The ability to measure energy consumption is critical. Understanding these baseline data is the first step before implementing any sort of energy efficiency project. However, there are no established metrics for measuring energy efficiency. Some programs consider a piece of equipment to be “energy efficient” if it makes a slight decrease in energy intensity, whereas other programs classify something as energy efficient if it decreases a substantial amount of energy intensity. This inconsistency is rampant throughout industry, states, and utilities who all measure energy efficiency differently. Further, some programs do not have follow up to determine if a process is working more efficiently, whereas others have more stringent results reporting.
- ▶ **Operations and Maintenance:** Some Northwest Summit participants indicated that another challenge of implementing energy efficiency projects in their plants is a lack of support for operations and maintenance. Although they are interested in making processes more energy efficient, these managers felt that a lack of funding to ensure that the systems continue to properly operate is a major reason for their reluctance.
- ▶ **Personnel Resources:** The U.S. Department of Labor’s Bureau of Labor Statistics (BLS) reported that the national unemployment rate was 7.6 percent in January 2009.¹² The U.S. has not experienced unemployment levels this high since the early 1990s. Many plants have implemented significant staffing cutbacks due to the recession and increased global competition. Many of those currently employed have had to take on additional responsibilities to keep production in motion. This leaves limited time for them to identify, design, or monitor new energy efficiency projects. The situation is further complicated by limited onsite energy expertise, which stalls momentum and enthusiasm for increased energy efficiency.

Finally, industry in the Northwest is facing the upcoming retirement of many of its long-term employees. This will negatively impact industry because a lot of the knowledge base will be lost with their departure. Fewer people seek industrial careers, as the sector is not attractive to the new workforce. This is partially attributed to the limited number of high school and community college programs designed to prepare students for a career in the industrial manufacturing sector.

According to BLS, national manufacturing employment decreased by 207,000 between December 2008 and January 2009. This is the largest single month decrease in the sector since October 1982.

- ▶ **Capital:** Many plants are focusing on business-driven projects in lieu of energy efficiency projects due to the recession. Even though industrial leaders are aware that energy efficiency improvements will eventually pay for themselves, managers have a hard time justifying the purchases because of limited upfront financial incentives. Most incentives are in the form of rebates or tax breaks which are administered after a project has been implemented.

Other deterrents have included lengthy waiting periods between requesting and processing payments. In addition, plant managers indicated that they are more inclined to implement electricity-based process improvements because there are limited financial incentives for natural gas-based process improvements.

- ▶ **Regulatory and Environmental Barriers:** Montana, Oregon, and Washington have Renewable Portfolio Standards (RPS) which require that electricity providers supply a certain percentage of their electric output from renewable sources by a specific deadline. Several Northwest Summit participants felt that too much emphasis at the state-level was spent on meeting the RPS requirements instead of considering energy efficiency alternatives.

Environmental regulations have also proved a major challenge for industry, be it through clean water acts or upcoming carbon regulations. If certain carbon requirements are passed, participants felt that they would be impacted by both new costs for internal compliance and price spikes from others that have to comply as well such as suppliers or electric utilities.

- ▶ **Emerging Technologies:** Some industrials are not flexible enough to shift electricity loads during different times of day, when electricity and natural gas rates are lower. This is part of the reason why deployment of energy-efficient technologies is critical. Nevertheless, participants felt that there simply were no incentives for innovation or early technology adoption. There is a general fear that incorporating a technology before it has been proven may be a financial blunder if the technology does not work as advertised. Another fear is that technology is always evolving, so plant managers do not want to invest in a new piece of equipment that may soon be obsolete. In other cases, there are technologies that have proven efficiency results, such as CHP applications, but there are few incentives to help finance implementing the costly measures.

State Incentives and Resources Database

ITP houses a comprehensive database of more than 2,400 incentives for industrial and commercial entities to improve their energy efficiency. Please visit the database for more information.
http://www1.eere.energy.gov/industry/about/state_activities/incentive_search.asp

B. Working Group Session II

Participants stayed with the same group during the second session, which identified ways to form or build upon strategic partnerships. Groups discussed what had been working and what was needed in order to expand the ongoing regional industrial energy efficiency efforts. They agreed that drivers for energy efficiency included a sense of urgency for action, environmental regulations, and overall business survival. The session's objective was to therefore identify and prioritize energy and energy efficiency resources and explore collaborative models for improving and sustaining long-term industry health and profitability. Participants addressed the following topic:

“Identify and prioritize energy and energy efficiency resources and explore collaborative models for improving and sustaining long-term industry health and profitability.”

1. What Works

During the first working group session, participants identified what they felt was not working and why they were not doing more to improve industrial energy efficiency. However, the second working group session addressed programs that had been successful. Specific examples included:

- ▶ **Industry Associations:** Industry associations are an excellent source of information on energy efficiency improvements. They can also be instrumental by encouraging their members to incorporate sustainable practices in their businesses. For example:
 - The Technical Association of the Pulp and Paper Industry provides its members with training, conferences, several publications, and tip sheets.
 - On a regional level, NWFPA offers similar resources through its online Energy Portal. NWFPA has set a standard for industry associations by working with its members to lower their energy intensity.
- ▶ **Oregon Business Energy Tax Credits (BETC):** Oregon's Department of Energy offers tax credits to local businesses that implement energy conservation projects and other renewable and energy conservation measures. Approved conservation projects are eligible for a 35 percent tax credit off of the overall project cost, while lighting projects garner a 25 percent tax credit.¹³

- ▶ **Energy Trust of Oregon (ETO) and Public Purchase Charge:** Three percent of every electric bill payment is collected to fund energy efficiency improvements or renewable energy generation in Oregon schools, businesses, and residences. ETO is the primary agency for funding energy efficiency or renewable projects. In addition, the fund provides an option for electricity customers to “self-direct” up to 56.7 percent of the 3 percent for energy efficiency improvements at their facility if the projects have a payback of less than 10 years.¹⁴
- ▶ **Washington Clean Energy Initiative 937 (I-937):** This initiative requires Washington’s largest electric utilities (more than 25,000 customers) to improve energy conservation measures and identify more cost-effective approaches for energy efficiency for customers in their service area. Utilities are working with industry to be in compliance with this mandate.¹⁵
- ▶ **Existing Technology:** Instead of waiting for the next breakthrough technology, some Northwest Summit participants recommended that other plant managers consider installing current technology now. Even though newer, more energy-efficient technology will inevitably be developed, the goal is to start saving energy as soon as possible.

2. Short-term and Ongoing Activities

The working groups then identified short-term and ongoing, activities to decrease industrial energy intensity in the region. Activities were then classified as internal industrial activities, collaborative activities, and how the *Recovery Act* could be utilized to attain energy-related goals. Although no specific metrics were set, short-term activities were generally considered to be actions that could be implemented immediately. The following section lists short-term and ongoing activities that were identified during the Northwest Summit:

- ▶ **Internal Opportunities:** First and foremost, plants need to receive buy-in from high-ranking staff in order to improve overall energy efficiency. Without this approval, projects do not get implemented. Second, plant managers need to incorporate energy awareness into business practices. If workers are aware that they can save substantial amounts of energy just by slightly modifying a process, they will be more cognizant of identifying ways to save energy in addition to “low hanging fruit” opportunities. Third, plants should make the most of the energy consumed in a plant. By taking a “Victory Garden” approach, they will find ways to use only what they need. Finally, all plants should participate in energy assessments. These energy audits will identify processes and areas where energy is not being consumed effectively and provide solutions for lowering its consumption and intensity.

- ▶ ***Collaborative Opportunities:*** These are activities that should be conducted in collaboration, be it industry and industry, industry and utility, or other combinations. All partnership activities should be conducted in a manner that protects each member organization's proprietary information. The partnerships will also demonstrate a joint commitment to reducing energy intensity in order to improve overall economic viability of regional industry.
 - Regional Voice for Industry: The residential and commercial sectors are always at the forefront of energy efficiency projects, often leaving industry overlooked. Together, the partnerships can form a regional voice for industry because industry accounts for one third all energy consumption and deserves to be recognized. Partners will work to make policymakers view industry as a priority.
 - Leveraging Resources: Regional industry and its partners should have an open exchange of information. For example, partnerships should share BestPractices examples and lessons learned on implementing industrial energy efficiency projects. In addition, the partnerships can share knowledge of available resources such as where to obtain a free energy assessment or steam system tip sheets. These resources could then be stored in a central clearinghouse for access by all of industry.
 - Energy Intensity Comparisons: Another suggestion would be for utilities to measure energy intensity at plants. This information would be collected in a manner that safeguards the identity of the plant. This anonymous information would be shared with other plants in the service territory to compare their energy intensity to plants of similar size.
 - Industry and Energy Efficiency Associations: Industry associations and energy efficiency organizations should also expand their reach through partnerships. For example, Northwest Energy Efficiency Alliance has partnered with NWFPA to help NWFPA's members reduce their overall energy intensity. They completed this through a Vision Workshop where industrial leaders identified energy intensity reduction goals and through a Roadmap Workshop where plant-level employees identified how to attain those goals.
 - Utility/Power Council Planning: Policy and incentive programs and opportunity analysis are often developed by inputs from utilities and may only reflect certain perspectives on industrial energy efficiency. Industry should provide more input into utility/power council planning and analysis to ensure that its needs are being represented accurately and considered.

- **Recognition Program:** A recognition program should be created to acknowledge energy efficiency innovation and leadership. This program could be standalone or in addition to ITP's Energy Saver and Energy Champion awards which are designated for plants that achieve a certain amount of energy savings after implementing recommendations from a DOE-sponsored energy assessment.

► **Recommendations for Recovery Act Funding and Additional Capital:**

Finally, Northwest Summit participants provided recommendations for short-term and ongoing activities that could potentially be funded under the *Recovery Act*. The first recommendation was to create upfront incentives for early action. This would encourage more plants to adopt new technologies instead of waiting for them to have long-term proven results. Second, funding should be set aside to create energy managers. Be it part-time or full-time, plants will benefit by having someone on staff that can monitor energy consumption and identify ways to lower it. Third, adequate funding for compliance agencies is a necessity. This will ensure that more energy efficiency results are reported. Finally, plants in the region consumed 203.9 trillion Btu of natural gas in 2006 (17.0 percent of all industrial energy consumption in the region that year),¹⁶ but implemented relatively few natural gas efficiency projects. More plants will decrease their natural gas consumption if more incentives are offered.

3. **Long-term Activities**

Finally, Northwest Summit participants identified the following long-term activities for reduced industrial energy intensity:

- **Internal Opportunities:** Northwest Summit attendees only identified one long-term action that would benefit plants regardless of industrial sector. If possible, plant managers should add onsite energy managers as staff members or share a part-time energy manager with another company. Either way, energy consumption will be monitored and more energy efficiency opportunities will be identified.

- **Collaborative Opportunities:** Next, participants came up with ideas for possible long-term partnership activities. Joint activities included:

- **One-size-fits-all Model:** To begin, industry needs to work with its partners to reinforce that a “one-size-fits-all” model does not apply to industry, as a refinery in Montana has far different needs than a cannery in Washington. Partnering organizations should work more directly with industry to develop a better understanding of each entity's needs and priorities.

- Energy Efficiency Projects: Other sectors should be incorporated when a plant decides to implement an energy efficiency project. This could involve working directly with a utility or state energy office to develop a customized incentive for the project or partnering with an Industrial Assessment Center at a local university to find out how much energy could be saved if a plant slightly modified a process or installed a new piece of equipment. This could also include working together to combine designs and specifications to advance implementation of energy efficiency projects.
 - Collaboration with Permitting Agencies: Partnership opportunities should also be extended to permitting agencies. Permitting agencies will be more aware of industry and its priorities if partnerships form between the two.
 - Creation of Northwest Industrial Coalition: To keep the momentum going, a coalition should be created by a variety of sectors to ensure that industrial energy efficiency becomes a regional priority. The coalition will be tasked with carrying out the activities identified during the Northwest Summit and potentially developing a metric for measuring energy efficiency.
- **Capital**: Ideas for capital were also shared with the group, particularly the need for more upfront incentives. In addition, agencies should consider offering match funds for energy efficiency projects. The additional capital will ensure more projects are implemented.
- **Existing and Emerging Technologies**: With the general consensus of there being no silver bullets, Northwest Summit participants identified additional technology-related activities that regional collaborations could implement. This includes funding and implementing more research. Without funding for research, energy-efficient technologies will not be developed or deployed. This also includes more technology demonstrations to help encourage additional plants to adopt emerging or existing technologies. Northwest Summit participants should utilize these partnerships to deploy more energy-efficient technologies.

VIII. Next Steps

Northwest Summit participants will exclusively be invited to provide input into the execution of the activities outlined in this report, be it through the creation of a regional industrial coalition or individual action (see Exhibit 9). The Northwest Summit sought to build upon the existing regional activity and its results will be used to continue the dialogue and work to reduce industrial energy intensity in Idaho, Montana, Oregon, and Washington.

Exhibit 9: Next Steps

Activity	Date of Completion
Member Identification: Invite participants and planning committee members from Idaho, Montana, Oregon, and Washington to join the Northwest Industrial Energy Efficiency Coalition (Coalition).	May 2009
Launch the Coalition: A preliminary meeting will be held with members to discuss the structure and objectives of the Coalition. The meeting will also serve as an opportunity to define roles and select Coalition leadership.	June 2009
Prioritize Activities: The Coalition members will prioritize activities identified during the Northwest Summit. They will identify short-term activities for immediate implementation, as well as long-term activities that are of high priority. Members will volunteer or be assigned projects. Prioritized activities will also be shared with Northwest Summit participants to gauge interest of additional volunteers.	July 2009
Timeline: A timeline for each project will be created after teams have been assigned.	July 2009
Coalition Meetings: Coalition members will hold monthly conference calls to discuss progress of existing activities and to identify new activities for increased industrial energy efficiency.	Ongoing
Web site: Updates on Coalition activities will be posted on ITP's Partnerships Web site.	Ongoing
Metrics Development: Coalition members will establish metrics to determine whether or not implemented projects are successful and to track overall project performance.	August 2009



Date: February 17, 2009
Summit Location: Portland Marriott Downtown Waterfront (Portland, Oregon)
Evening Reception: Northwest Natural Gas' Hospitality Facility (Portland, Oregon)
Sponsors: Northwest Natural Gas, Portland General Electric, and PacifiCorp

Appendix A: Northwest Summit

Event	Time
Registration and Breakfast	7:30 a.m. – 8:30 a.m.
<p>Welcoming Remarks</p> <p>Douglas E. Kaempf (confirmed) Program Manager, Industrial Technologies Program U.S. Department of Energy</p> <p>Representative Tobias Read (confirmed) Oregon House of Representatives</p>	8:30 a.m. – 9:00 a.m.
<p>Signing Event: Northwest Food Processors Association</p> <p><i>NWFPA will sign a (non-binding) agreement on behalf of the Northwest food processing industry to commit to reduce their energy intensity by 25% in 10 years and an additional 25% in 20 years through innovation. NWFPA will share the factors and motivations that went into the decision for the organization's members to set a goal of reducing its energy intensity by 50% over the next two decades. Media will be present.</i></p> <p>David Zepponi (confirmed) President Northwest Food Processors Association</p> <p>TBD Member Company Representatives</p> <p>Introductory remarks will be provided by Sergio Dias (confirmed) Senior Manager, Industrial Sector Northwest Energy Efficiency Alliance</p> <p>The agreement will be signed by Douglas Kaempf of U.S. Department of Energy, David Zepponi of Northwest Food Processors Association, Michael Kluse of Pacific Northwest National Laboratory, David Hill of Idaho National Laboratory, Steve Wright of Bonneville Power Administration, and NWFPA member representatives.</p>	9:00 a.m. – 9:30 a.m.
<p>Implications of Carbon Legislation on Northwest Manufacturing Industries</p> <p>Don Sturtevant (confirmed) Corporate Energy Manager J.R. Simplot</p>	9:30 a.m. – 10:00 a.m.
Break	10:00 a.m. – 10:15 a.m.

Senior Executive Town Hall

Congressional representatives from Idaho, Montana, Oregon, and Washington and Senior Executives (i.e., Industry CEOs and/or Senior Executives, Utility Executives, PUC Commissioners, and Laboratory Directors) will come together in a moderated setting to discuss legislative matters on energy efficiency and what industry needs in the Northwest region for achieving greater industrial energy efficiency.

Idaho, Montana, Oregon, and Washington Congressional and Business Representatives including:

Craig Anneberg (confirmed)
Vice President, Mill Manager
Weyerhaeuser

David Hill (confirmed)
Deputy Laboratory Director, S&T
Idaho National Laboratory

Douglas E. Kaempf (confirmed)
Program Manager, Industrial Technologies Program
U.S. Department of Energy

Michael Kluse (confirmed)
Director
Pacific Northwest National Laboratory

Bill Quigg (confirmed)
President
Grays Harbor Paper

Jim Root (confirmed)
CEO
Jim Root Company

Jim Short (confirmed)
Director of Facilities
WaferTech

Mike Siebers (confirmed)
President and Chief Executive Officer
Blue Heron Paper

Rick Warren (confirmed)
Vice President of Systems & Technology Group
IBM

The session will be moderated by **Ralph Cavanagh** (confirmed)
Co-Director of the Energy Program
Natural Resources Defense Council

10:15 a.m. – 11:45 a.m.

Lunch

11:45 a.m. – 1:00 p.m.

<p>Keynote Speaker</p> <p>Steve Wright (confirmed) Administrator Bonneville Power Administration</p>	12:00 p.m. – 1:00 p.m.
<p>Introduction to Working Group Session</p> <p><i>Make connection between morning signing event, CEO/Congressional Town Hall; regional context for greenhouse gas emissions, renewables, governors' initiative; regional programs, and the Northwest manufacturing industry.</i></p> <p>Sandy Glatt (confirmed) Project Officer, Industrial Technologies Program U.S. Department of Energy</p>	1:00 p.m. – 1:10 p.m.
<p>Working Group Session</p> <p><i>Industrial Energy Efficiency: In a dramatically changing economic climate, what roles do energy and energy efficiency play in maintaining long-term Northwest industrial competitiveness?</i></p> <p>Ken Canon (confirmed) Director Northwest Energy Efficiency Taskforce</p> <p>Sergio Dias (confirmed) Senior Manager, Industrial Sector Northwest Energy Efficiency Alliance</p> <p>Michael Early (confirmed) Executive Director Industrial Customers of Northwest Utilities</p> <p>Stan Price (confirmed) Executive Director Northwest Energy Efficiency Council</p> <p>A note taker and scribe will be present for each working group.</p>	1:10 p.m. – 2:15 p.m.
<p>Break</p>	2:15 p.m. – 2:30 p.m.
<p>Working Group Session Summary</p>	2:30 p.m. – 3:00 p.m.
<p>Introduction to Next Working Group Session</p> <p><i>Building on the outcomes of the morning work session, introduction of current methods for identifying and acquiring energy and energy efficiency resources in the region and possibilities for changing paradigms.</i></p> <p>Sandy Glatt (confirmed) Project Officer, Industrial Technologies Program U.S. Department of Energy</p>	3:00 p.m. – 3:05 p.m.

<p>Working Group Session</p> <p><i>Forming Strategic Partnerships and Putting Them to Work: A collective work session to identify and prioritize energy and energy efficiency resources and explore collaborative models for improving and sustaining long-term industry health and profitability.</i></p> <p>Ken Canon (confirmed) Director Northwest Energy Efficiency Taskforce</p> <p>Sergio Dias (confirmed) Senior Manager, Industrial Sector Northwest Energy Efficiency Alliance</p> <p>Michael Early (confirmed) Executive Director Industrial Customers of Northwest Utilities</p> <p>Stan Price (confirmed) Executive Director Northwest Energy Efficiency Council</p> <p><i>A note taker and scribe will be present for each working group.</i></p>	<p>3:05 p.m. – 4:10 p.m.</p>
<p>Break</p>	<p>4:10 p.m. – 4:25 p.m.</p>
<p>Working Group Session Summary</p>	<p>4:25 p.m. – 4:40 p.m.</p>
<p>Closing Remarks</p> <p>Douglas E. Kaempf (confirmed) Program Manager, Industrial Technologies Program U.S. Department of Energy</p>	<p>4:40 p.m. – 4:45 p.m.</p>
<p>Reception (The Heathman)</p>	<p>5:30 p.m. – 7:00 p.m.</p>

Appendix B: Participant List

Constance Adams

Director Strategic Planning & Initiatives,
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Office of the Provost
University of Washington

Ron Adams

Dean, College of Engineering
Oregon State University

Craig Anneberg

Vice President, Mill Manager
Weyerhaeuser

Jim Azumano

Cluster Leadership Manager
NW Food Processors Innovation
Productivity Center

Eddie Baker

Division Director
Pacific Northwest National Laboratory

Pam Barrow

Energy Director
Northwest Food Processors Association

Suresh Baskaran

Energy Efficiency Program Manager
Pacific Northwest National Laboratory

Curt Bermel

Business Development Manager, R&D
Gas Technology Institute

Lindsay Bixby

Research Analyst
BCS, Incorporated

Larry Blaufus

Senior Manager of Energy
Technologies & Services
Clark Public Utilities

Greg Booth

General Manager
Clatskanie People's Utility District

Kenneth Boras

Chief Executive Officer
BCS, Incorporated

Cliff Brady

Chief Operating Officer
Tillamook Cheese

Bob Brennand

Mill Manager
Grays Harbor Paper

Jeff Brooks

Principal Energy Specialist
Idaho Office of Energy Resources

Myron Burr

Senior Environmental Engineer
Siltronic Corporation

Scott Butler

VP, Operations and Technical Services
Del Monte Foods

Linc Cannon

Director, Forest Resources & Taxation
Oregon Forest Industries Council

Ken Canon

Director
Northwest Energy Efficiency Taskforce

Ralph Cavanagh

Co-Director of the Energy Program
Natural Resources Defense Council

Linda Chang

Major Accounts Manager
Northwest Natural

Geoffrey Craft

Refinery Manager
ExxonMobil

Todd Currier

Energy Program Manager
Washington State University Extension
Energy Program

Calli Daly

Government Affairs Director
Northwest Food Processors Association

Benjamin Deitchman

Regional Program Coordinator
National Association of State Energy
Officials

Sergio Dias

Senior Manager, Industrial Sector
Northwest Energy Efficiency Alliance

Al Dorgan

OAFI-CIO BOARD MEMBER
United Steelworkers

Des Doucette

Sr. Dr. Resource Conservation
McCain Foods USA

Michael Early

Executive Director
Industrial Customers of
Northwest Utilities

Bill Edmonds

Director Env Policy &
Sustainability
NW Natural

Rick Edwards

Director of Key Accounts
Northwestern Energy

Steve Eldrige

General Manager and CEO
Umatilla Electric Cooperative

Matthew Ellsworth

State Director
U.S. Senator James E. Risch (Idaho)

Phil Ermer

Regional Energy Manager
Hewlett-Packard

Jennifer Eskil

Industrial Sector Lead
Bonneville Power Administration

Graham Evans

Director, Research and
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Washington Technology Center

Lynn Everett

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Innovation Productivity Center

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Jim Frank

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Grant County PUD

Claire Fulenwider

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NW Energy Efficiency Alliance

Ruby Gates

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MarketShift Strategies

Dale Gehring

Director of Lean
Enterprise Development
ESCO Corp.

Sandy Glatt

Project Manager
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Stephen Goguen

Manager
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Erin Greeson

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Charlie Grist

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Rolf Hardesty

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Energy Trust of Oregon, Inc.

Robert Hart

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West Linn Paper Company

Mike Henderson

Energy and Environmental
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ConAgra Foods/Lamb-Weston

David Hill

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Seth Hooper

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Kevin Howerton

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Mike Jubinville

Purchasing Manager
ESCO Corporation

Douglas Kaempf

Program Manager
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David Kenney

President & Executive Director
Oregon BEST

Paul Kjellander

Administrator
Idaho Office of Energy Resources

Michael Kluse

Director
Pacific Northwest National Laboratory

Dick Knight

Interim Dean
PSU/Maseeh College of
Engineering & Computer Science

Gerald Kobes

V.P. Engineering and Technical Support
Tree Top Inc.

Brian Konen

Mill Manager
West Linn Paper Company

Tom Konicke

Operations Manager, F&E Oregon
McKinstry

Patrick Kuo

CEO & President
The Cascadia Project

Tim Lammers

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Columbia River PUD

Nancy Lange

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Northwest Natural

Jon Lind

Advisory Software Engineer
IBM Corporation

Christine Love

Industrial Program Manager
Washington State University Extension
Energy Program

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University of Washington

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Environmental Engineer
Blue Heron Paper

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Oregon Department of Energy

Alan Meyer

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Weyerhaeuser NR Company

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ATI Wah Chang

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Stan Price

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Northwest Energy Efficiency Council

Paula Pyron

Executive Director
Northwest Industrial Gas Users

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Kris Ransom

Manager of Industrial Markets
Avista Utilities

Michael Rinker

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Senior Mgr, Business Services
Snohomish County PUD

Anthony Wright

Program Manager, ORNL
BestPractices Support
Oak Ridge National Laboratory

Steve Wright

Administrator
Bonneville Power Administration

Dave Zeponi

President
Northwest Food Processors Association

Fred Ziari

President & CEO
EZ Wireless

Appendix C: Memorandum of Understanding

Memorandum of Understanding

The Northwest Food Processors Association (NWFPFA) and the U.S. Department of Energy enter into this memorandum of understanding to work collaboratively to reduce energy intensity by 25 percent within ten years. DOE enters into this Agreement under the authority of section 106 of the Energy Policy Act of 2005 (Pub. L. No. 109-58, 42 U.S.C. § 15811).

Save Energy Now is the U.S. Department of Energy's (DOE's) national initiative to promote and support reductions in industrial energy intensity throughout the United States. As part of the Save Energy Now program, DOE invites national associations, state and local government agencies, supply chain organizations, non-profit organizations, and other groups to work together in helping industry reduce its energy intensity. NWFPFA has agreed to work collaboratively with DOE to reduce energy intensity among its member organizations.

In support of these efforts, DOE's Office of Energy Efficiency and Renewable Energy (EERE), the Office of Science's Pacific Northwest National Laboratory (PNNL), the Office of Nuclear Energy's Idaho National Laboratory (INL), the Bonneville Power Administration (BPA), and NWFPFA hereby enter into a voluntary collaborative agreement to work toward energy intensive goals that may significantly contribute to reducing energy and carbon intensity in the northwest region.

The Bonneville Power Administration (BPA) works to deliver an adequate, efficient, economical, and reliable power supply to its customers in the Pacific Northwest. BPA's actions advance a Northwest power system that is a national leader in providing high reliability, low rates consistent with sound business principles, responsible environmental stewardship, and accountability to the region.

The Pacific Northwest National Laboratory (PNNL) and the Idaho National Laboratory (INL) are DOE - owned, contractor operated research facilities. Both PNNL and INL work to advance clean and safe energy sources and management.

EERE, PNNL, INL, and NWFPFA express their intent to develop a framework for identifying and pursuing a diverse range of opportunities for energy efficiency within the food processing industry. EERE, PNNL, INL, and NWFPFA intend to work collaboratively and the activities may include, as appropriate to each party, efforts to:

- Pursue the identification, development, and demonstration of advanced technologies and scientific insights that can lead to large energy efficiency gains;
- Recruit companies to become Save Energy Now Leaders;
- Support companies that have pledged to become a Save Energy Now LEADER, including developing energy-use baselines and energy management plans, and reporting energy data and progress;
- Publicize the financial and technical resources that are available in the region to assist companies in improving energy efficiency, including plant assessments;
- Identify near-term, cost-effective opportunities to save energy;
- Provide training on how to use software tools to analyze the energy systems commonly used in the food processing industry, as well as training on other topics such as financing and energy management; and
- Work to identify procedures and metrics to recognize progress toward achieving the goal.

This Agreement in no way restricts any of the Parties from participating in any activity with other public or private agencies, organizations, or individuals.

This Agreement is neither a fiscal nor a funds obligation document. Nothing in this Agreement authorizes or is intended to obligate the Parties to expend, exchange, or reimburse funds, services, or supplies, or transfer or receive anything of value.

This Agreement is strictly for internal management purposes of each of the Parties. It is not legally enforceable and shall not be construed to create any legal obligation on the part of either Party. This Agreement shall not be construed to provide a private right or cause of action for or by any person or entity.

All agreements herein are subject to, and will be carried out in compliance with, all applicable laws, regulations, and other legal requirements. Non-Federal signatories agree that they will not claim or imply that their participation in the Save Energy Now program constitutes Federal government approval or endorsement of anything other than its commitment to energy efficiency and will not make any statements or imply that DOE endorses the purchase or sale of products and services or the organization's view.

This compact shall become effective upon execution by representatives of DOE and NWFPFA. It shall remain in effect for two years, but may be extended by mutual agreement of the parties.

Signed this 17th day of February 2009:

U.S. Department of Energy, Office of
Energy Efficiency and Renewable Energy

Stephen Wright
Administrator
Bonneville Power Administration

David Zepponi
President
Northwest Food Processors Association

Member
Northwest Food Processors
Association

Michael Kluse
Director of Pacific Northwest National
Laboratory
Office of Science

Member
Northwest Food Processors
Association

David Hill
Deputy Laboratory Director S&T of Idaho
National Laboratory, Office of Nuclear
Energy


Member
Northwest Food Processors
Association



Appendix D: Presentations

SEN Partnership with the Northwest

Douglas E. Kaempf, Industrial Technologies Program



Save Energy Now

Save Energy Now Partnership with the Northwest

February 17, 2009
Northwest Industrial Energy Efficiency Summit

Douglas E. Kaempf
Industrial Technologies Program
U.S. Department of Energy



U.S. Department of Energy
Energy Efficiency and Renewable Energy

Challenges Facing Industry

- Global Competition
- Volatile Energy Prices
- Access to Capital
- Market Demand Uncertainties
- Strategizing Carbon Reductions




U.S. Department of Energy
Energy Efficiency and Renewable Energy

Industry: Critical to U.S. Economy

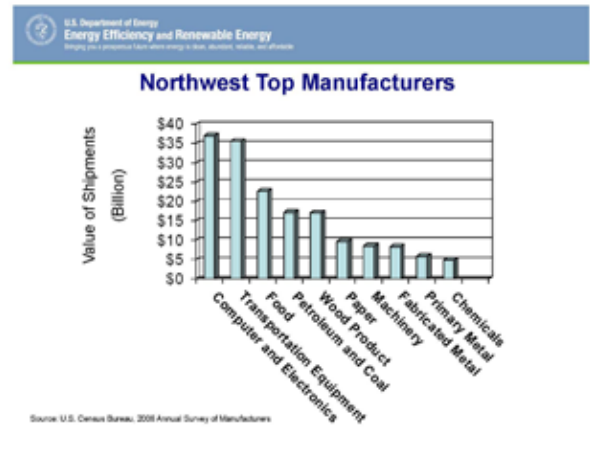
U.S. Industrial Sector accounts for 1/3 of overall energy use

The U.S. manufacturing sector

- Makes highest contribution to GDP (12%)
- Produces nearly 1/4th of world manufacturing output
- Employs nearly 13 million people
- Supplies >60% of US exports, worth \$50 billion/month
- Responsible for ~1,670 MMTCO₂/year from energy consumption
- Spurs job creation and investment in other sectors

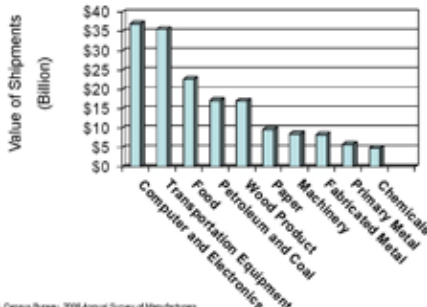


Source: DOE Energy Information Administration, 2007

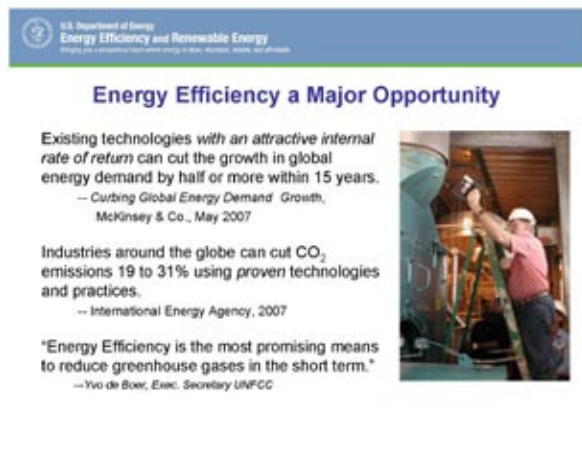


U.S. Department of Energy
Energy Efficiency and Renewable Energy

Northwest Top Manufacturers



Source: U.S. Census Bureau, 2008 Annual Survey of Manufacturers




U.S. Department of Energy
Energy Efficiency and Renewable Energy

Energy Efficiency a Major Opportunity

Existing technologies with an attractive internal rate of return can cut the growth in global energy demand by half or more within 15 years.
— Curbing Global Energy Demand Growth, McKinsey & Co., May 2007

Industries around the globe can cut CO₂ emissions 19 to 31% using proven technologies and practices.
— International Energy Agency, 2007

"Energy Efficiency is the most promising means to reduce greenhouse gases in the short term."
— Yo de Boer, Exec. Secretary UNFCCC




U.S. Department of Energy
Energy Efficiency and Renewable Energy

President Obama's New Energy for America

<http://www.whitehouse.gov/the-press-office/2009/01/27/09-01-27-energy-and-environment>

- Create 5 million new jobs by investing \$150 billion over the next ten years to catalyze private efforts to build a clean energy future.
- Within 10 years, save more oil than we currently import from the Middle East and Venezuela combined.
- Put 1 million Plug-in Hybrid cars on the road by 2015.
- Ensure 10 percent of our electricity comes from renewable sources by 2012, and 25 percent by 2025.
- Deploy the cheapest, cleanest, fastest energy source — energy efficiency
- Implement an economy-wide cap-and-trade program to reduce greenhouse gas emissions 80 percent by 2050.



Economic Recovery – Role for Efficiency

American Recovery and Reinvestment Bill of 2009 As of February 12, 2009

- Energy Efficiency and Renewable Energy R&D
- Energy Efficiency and Renewable Energy Tax Incentives
- Smart Grid
- State and Local Government Grants
- Advanced Research into Energy Sources and Energy Efficiency with Industry



DOE's Save Energy Now Initiative

Goal:
Drive a 25% reduction in industrial energy intensity in 10 years.



Voluntary Commitments by Industrial LEADERS

- Voluntarily pledge to reduce energy intensity by 25% or more over 10 years
- Gain enhanced access to enabling DOE resources: tailored technical assistance, training, assessments, and more
- Receive high-level recognition for participation and achievements



Save Energy Now: Delivering Solutions



Save Energy Now (SEN) Plant Assessments

- Completed 2000+ assessments in the U.S. since 2006
- Identified over \$1 billion in energy cost savings
- Approximately 1/3 of identified energy savings implemented to date
- Completed 158 assessments in the Northwest
- Identified over \$91 million in energy cost savings
- Implemented over \$16 million in cost savings



DOE Fosters Strong Partnerships

DOE/ITP facilitates a wide range of partnerships to accelerate technology development and deployment of energy and carbon efficiency technologies



Our Partnerships:

- ✓ Expand Reach to Customers
- ✓ Leverage Resources
- ✓ Commercialize Technologies

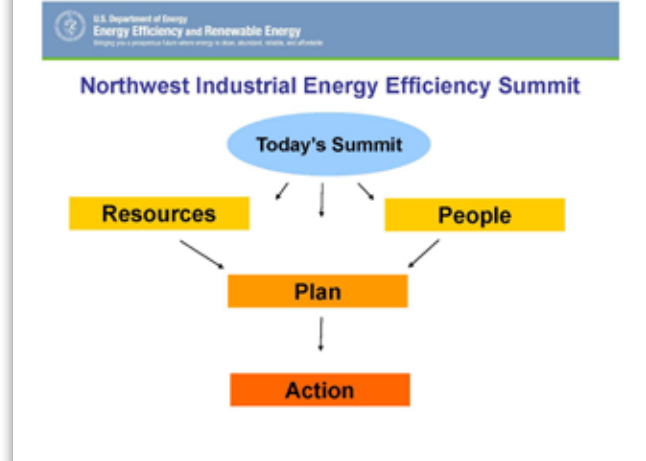
Private Companies
States & Regions
Utilities
Suppliers
Universities
Associations
Federal Agencies

U.S. Department of Energy
Energy Efficiency and Renewable Energy

Northwest Industrial Efficiency Summit

A Call to Action for industry, government, utilities, and supporting organizations in the Northwest to collaborate and overcome barriers to ensure industry's competitiveness through energy efficiency and related efforts.

Industry	States	Utilities/Power Administrations	Organizations
Blue Heron Paper	Idaho	Bonneville Power Administration	Energy Trust of Oregon
Cascade Engineering	Montana	Northwest Natural	Idaho National Laboratory
Del Monte	Oregon	Northwestern Energy	National Association of State Energy Officials
Hewlett Packard	Washington	PacifiCorp	National Resources Defense Council
IDM		Portland General Electric	NW Energy Efficiency Alliance
Vale/Harsco			Northwest Food Processors
Jiff-Simpot			Oregon State University
McKinstry Engineering			Pacific Northwest National Laboratory
Sibson			Portland State University
Tree Top, Incorporated			
ExxonMobil			
Vale Linn Paper			
Con Agra Foods			



U.S. Department of Energy
Energy Efficiency and Renewable Energy

Thank You!

Douglas E. Kaempf
U.S. Department of Energy
Industrial Technologies Program Manager

Website:
www.eere.energy.gov/industry

Climate Change Legislation

Don Sturtevant, J.R. Simplot, Co.

Climate Change Legislation and Industry

Don Sturtevant
J.R. Simplot, Co.
Corporate Energy Manager
February 17, 2009

Do you believe in Global Warming?

- Truth is:
 - "It really doesn't matter. Climate change legislation is coming regardless of whether you believe the science or not."
- The Rocket:
 - Climate change legislation is a rocket that you are strapped to. It's going, and it's going fast, question is, "Where to?"
 - "T minus 10, and counting...."

The real culprits...



So, who wants green renewable energy?

- "I do"
- Now, who wants green renewable energy at doubling your electric rate?
 - The economic dilemma
- We all want green, renewable energy to:
 - reduce our independence on foreign oil
 - build jobs here at home
 - provide clean energy for our future.
 - But at what price?

Challenges

- Upwards pressure on energy costs
- Upwards pressure on consumer pricing
- "Border bias"
 - Regional, if not federally mandated
 - Otherwise, globally
- Remaining competitive in uncertain economic times
- Carbon tax or cap and trade?
- Green jobs... who truly pays?

Opportunities

- Perfect storm for energy efficiency
 - Consumer advocacy: The "WalMart" effect
 - Utility incentives of 70% or \$0.12/kWh
 - Increasing energy costs
- "Get at the table or be on the menu"
 - Understanding and awareness
 - Be part of the solution
 - Get involved
 - Listen to all sides and then work towards a solution

Steps that Simplot has taken

- Became EPA EnergyStar partner
 - Pursuing facility certification
- Aggressive pursuit of Energy efficiency
 - Partnership with utilities, contractors, and the Northwest Energy Efficiency Alliance (NEEA)
 - Training of employees
 - Large capital investment
 - How much does it cost to achieve 2.5% a year?
- Integrating sustainable culture
 - Sustainable Simplot Task Force
 - Climate Change Task Force
 - Facility Sustainability Teams
- Will take the DOE 25x10 pledge

So what can *WE* do?

- *THIS* is a great step
 - Vertical collaboration of all parties
 - DOE
 - NWFPA
 - Utilities
 - Industry
 - Consumers
- Get involved, stay informed, and partner with just about everybody (including the competition)

The road we are on...

- **Partnership: The path forward**
 - Try to understand others views
 - Don't minimize anyone
 - Open communication
 - Leave the agenda at the door
- The J.R. Simplot Company is committed

Questions?

Thank You!

Don Sturtevant
J.R. Simplot, Co.
Corporate Energy Manager
don.sturtevant@simplot.com


Rates, Reliability, and Environment

Steve Wright, Bonneville Power Administration

BONNEVILLE POWER ADMINISTRATION

The Challenge of Providing Low Rates, High Reliability & a Healthy Environment

February 2009

BONNEVILLE POWER ADMINISTRATION

- WE WANT YOU TO BE COMPETITIVE:
 - Employment
 - Tax Base
 - More vibrant, diversified PNW economy
 - Environmental protection
- BPA COMMITMENT:
 - Long-term contracts
 - Tiering Rates
 - Process improvement/cost management

Slide 2




BONNEVILLE POWER ADMINISTRATION

PNW Rates

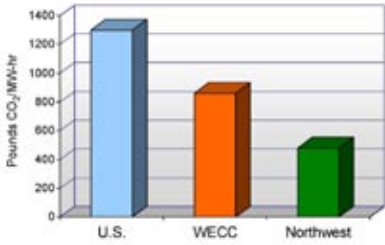
	Cents/Kwh	Rank
Idaho	5.47	2
Washington	6.62	10
Oregon	7.34	15
U.S. Average	9.36	

Slide 3




BONNEVILLE POWER ADMINISTRATION

Carbon Emission Rates for Electric Production




Slide 4




BONNEVILLE POWER ADMINISTRATION

Northwest Power & Conservation Council's 5th Power Plan Demand Forecast

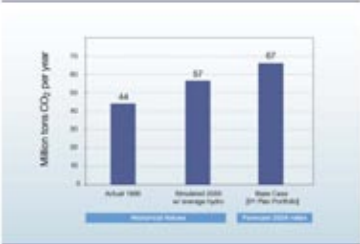


Slide 5




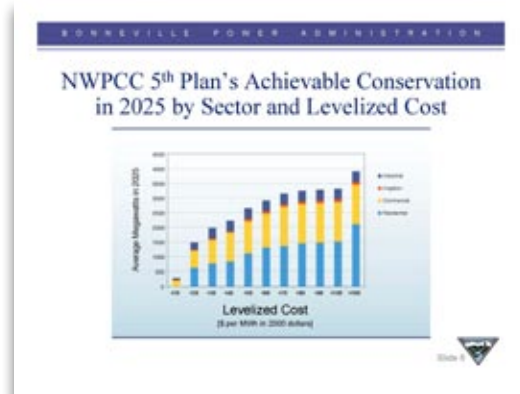
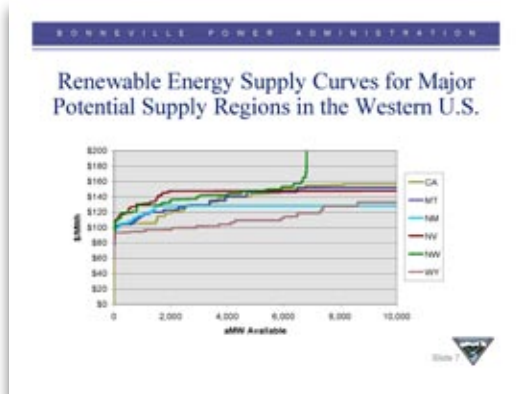
BONNEVILLE POWER ADMINISTRATION

Historical & Projected CO₂ Projection



Slide 6



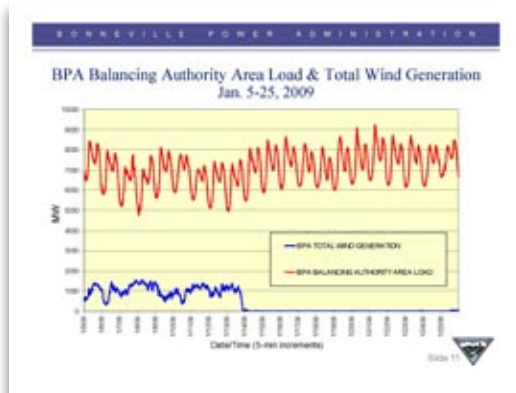


BONNEVILLE POWER ADMINISTRATION

Making Wind Work

Utility	(A) Installed Wind	(B) Peak Load	Wind Penetration (A/B)
PacifiCorp-East	856	5,688	15%
PacifiCorp-West	251	3,555	7%
PNM	204	2,500	8%
Northwestern Energy	145	1,724	8%
CASO	2,800	49,071	6%
ERCOT	5,812	82,400	8%
BPA	3,130	10,500	30%
BPA FY 2010	4,130	10,500	39%

Slide 9



- BONNEVILLE POWER ADMINISTRATION
- ### Salmon Mitigation Impacts on CO₂ Emissions:
- Reduced electricity output must be replaced
 - Spill
 - Dam breaching
 - Reduced system flexibility increases wind integration challenges
 - Hourly spill requirements
 - Reservoir elevation requirements
 - Flow targets
- Slide 12

- BONNEVILLE POWER ADMINISTRATION
- ### Conclusions
- PNW has a comparative advantage in electric rates.
 - PNW has a comparative advantage in terms of CO₂ emissions.
- How do we maintain/enhance that position?
- Invest in energy efficiency
 - Explore demand management
 - Support widespread commitment to energy efficiency
 - Invest in wind power and integration strategies
 - Preserve hydro system:
 - Integrate intermittent renewables
 - Research & Development
- Slide 13

Appendix E: Letter



Department of Energy

Washington, DC 20585

May 1, 2009

On behalf of the Industrial Technologies Program of the U.S. Department of Energy, I would like to recognize the Northwest Industrial Energy Efficiency Summit's planning committee, all of who contributed countless hours in helping plan and execute this highly successful event:

Pam Barrow

Northwest Food Processors Association

Cris Love

Washington State University
Energy Extension Program

Dave Sjoding

Northwest Combined Heat and Power

Lindsay Bixby

BCS, Incorporated

Rob Naranjo

BCS, Incorporated

Marty Stipe

Oregon Department of Energy

Ken Boras

BCS, Incorporated

Bill Nesmith

National Association of State Energy Officials

Herschel Smartt

Idaho National Laboratory

Jeff Brooks

Idaho Office of Energy Resources

Sharon Peterson

Northwest Energy Efficiency Alliance

Stephanie Swanson

MarketShift Strategies

Ben Deitchman

National Association of State Energy Officials

Elaine Prause

Energy Trust of Oregon

Roy Tiley

BCS, Incorporated

Jennifer Eskil

Bonneville Power Administration

Mike Rinker

Pacific Northwest National Laboratory

Marni Wasserman

BCS, Incorporated

Ruby Gates

MarketShift Strategies

Rachel Weaver

Sentech

Bonnie Rouse

Montana Department of Environmental Quality

Tony Wright

Oak Ridge National Laboratory



Department of Energy
Washington, DC 20585

With their help, we were able to identify the best mix of people to participate and present at the Northwest Summit, and in successfully growing regional industrial energy efficiency collaboration. Future endeavors will build off the Northwest Food Processors Association's commitment to ITP's goal for reducing energy intensity by 25 percent over the next 10 years (Save Energy Now Leader) and from the other valuable information shared during this event. We expect the Summit to spur continued progress in our collective efforts to improve industrial energy efficiency in the Northwest region through collaboration. Such regional energy efficiency initiatives will eventually help us reach the SEN Leader goal of reducing energy intensity for all of U.S. industry over the next decade and beyond.

Thank You,

A handwritten signature in cursive script, appearing to read "Sandy Glatt".

Sandy Glatt
Project Manager
Industrial Technologies Program
U.S. Department of Energy

Endnotes

- ¹ Bureau of Labor Statistics. “Employment, Unemployment, Layoffs, and Openings, Hires, and Separations.” Downloaded from <http://www.bls.gov/iag/tgs/iag31-33.htm#workforce>. Accessed on March 10, 2009.
- ² Economic Policy Institute. “The Importance of Manufacturing.” Downloaded from http://www.epi.org/economic_snapshots/entry/webfeatureessnapshots_20080212/. Accessed on March 10, 2009.
- ³ Energy Information Administration. “Table S1. Energy Consumption Estimates by Source and End-Use Sector, 2006.” Downloaded from http://www.eia.doe.gov/emeu/states/sep_sum/html/pdf/sum_btu_1.pdf. Accessed on February 26, 2009.
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- ⁶ Energy Information Administration. “Table S1. Energy Consumption Estimates by Source and End-Use Sector, 2006.” Downloaded from http://www.eia.doe.gov/emeu/states/sep_sum/html/pdf/sum_btu_1.pdf. Accessed on March 10, 2009.
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- ⁹ U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Industrial Technologies Program. “Nanomanufacturing Industry Profile.” Downloaded from <http://www1.eere.energy.gov/industry/nanomanufacturing/about.html>. Accessed on March 10, 2009.
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- ¹² Bureau of Labor Statistics. “Bureau of Labor Statistics Data.” Downloaded from www.bls.gov. Accessed on March 2, 2009.
- ¹³ Oregon Department of Energy. “Energy Efficiency – BETC Applications.” Downloaded from <http://www.oregon.gov/ENERGY/CONS/BUS/tax/BETC-Efficiency.shtml>. Accessed on March 3, 2009.
- ¹⁴ Oregon Department of Energy. “The Public Purpose Charge.” Downloaded from http://www.oregon.gov/ENERGY/CONS/SB1149/Business/FAQ.shtml#The_Public_Purpose_Charge. Accessed on March 3, 2009.
- ¹⁵ Northwest Energy Council. “I-937: the Clean Energy Initiative.” Downloaded from http://www.nwenergy.org/policy/documents/WA_937_summary_leg.pdf. Accessed on March 4, 2009.
- ¹⁶ Energy Information Administration. “Table S1. Energy Consumption Estimates by Source and End-Use Sector, 2006.” Downloaded from http://www.eia.doe.gov/emeu/states/sep_sum/html/pdf/sum_btu_1.pdf. Accessed on March 6, 2009.



U.S. DEPARTMENT OF
ENERGY

Energy Efficiency &
Renewable Energy