



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

U.S. Dept. of Energy's Save Energy Now Program

Lake States TAPPI Event
February 22, 2007
Green Bay, Wisconsin

www.eere.energy.gov/industry/saveenergynow

Brian Olsen, US Department of Energy, Golden Field Office



Regional Office to Field Office Staffing Comparison for Save Energy Now

BEFORE

Regional Office (RO) staff supporting ITP Technology Delivery/SEN – April, 2006

Stephen Costa, Northeast RO
David Godfrey, Southeast RO
Brian Olsen, Midwest RO
Chris Cockrill, Western RO
Jamey Evans, Central RO
Sandy Glatt, Central RO
Bill Orthwein, Mid Atlantic RO

AFTER

Field Office staff supporting ITP Technology Delivery and SEN– October, 2006

Brian Olsen, Golden FO
Jamey Evans, Golden FO
Sandy Glatt, Golden FO
Christine Carter, Golden FO
Bill Orthwein, NETL, Pittsburgh

-2 Staff



Geographic Points of Contact





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

Energy Savings Assessment for 2007

U.S. Dept. of Energy

***Application On-Line
Opened Oct. 2, 2006
(until 250 assessments assigned)***

www.eere.energy.gov/industry/saveenergynow



Why Are Energy Assessments a Focus? Pressing Energy Supply and Cost Issues

“Our Energy Saving Teams will work with on-site managers on ways to conserve energy and use it more efficiently.”



**Secretary of Energy Bodman
National Press Club
October 3, 2005**



Secretary Bodman
at the Caterpillar
Tractor Assessment



Assessments Build on Existing Resources

Energy analysis software tools

- **Process Heating Assessment & Survey Tool**
 - Calculate potential savings & evaluate equipment
- **Steam System Tool Suite** (Three tools)
 - Profile system, assess improvement options, insulation
- **Air Master+**
 - compressed air systems
- **Plant Energy Profiler Tool**
 - Screening tool quickly shows plant energy use and IDs savings & areas of improvement
- **Fan System Assessment Tool**
- **Pumping System Assessment Tool**
- **More Tools at www.eere.energy.gov/industry/**





Assessments Build on Existing Resources

- Established training programs on software tools
- Cadre of Qualified Specialists in various assessment tools/systems
- Network of university-based Industrial Assessment Centers (IACs)
- In-depth experience in conducting plant energy assessments using DOE tools.
- Internet Info Resources
- Clearinghouse 877-337-3463





What's New?

Plant Energy Profiler (PEP) Tool

INPUTS

- Plant description
- Utility supply data – electricity, fuel & steam
- Energy consuming system information
- Scorecard responses



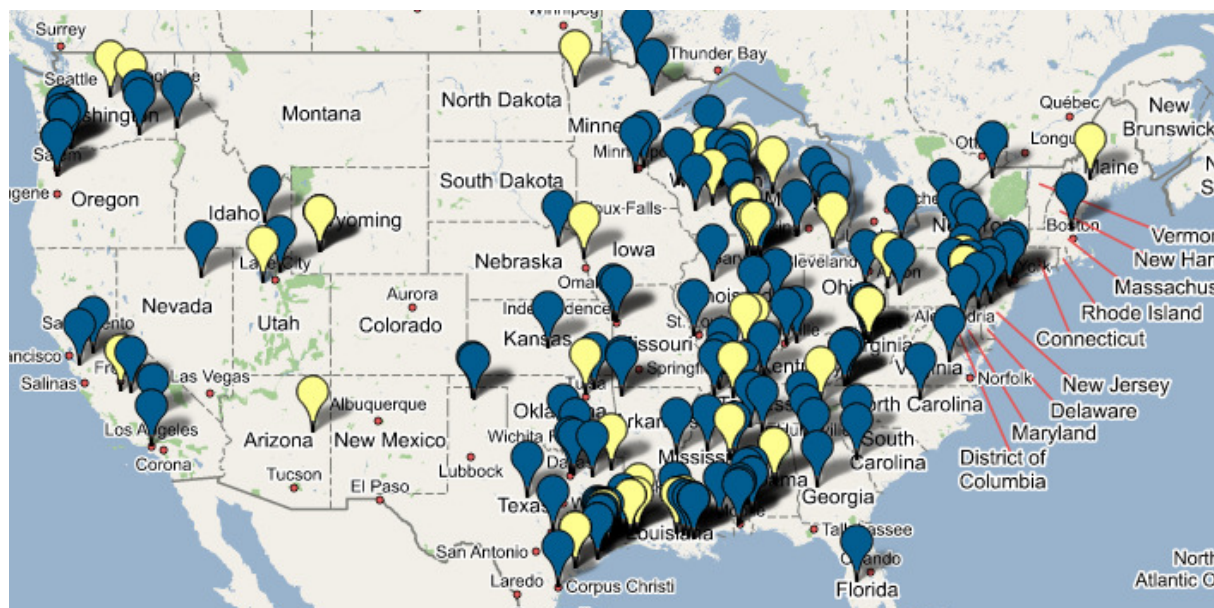
OUTPUTS

- Overall picture of plant energy use
- Summary of energy cost distributions
- Preliminary assessment & comparison
- Areas or energy efficiency improvement
- Energy cost reduction potential



Energy Savings Assessment Status (February 2007)

- 204 Energy Savings Assessments completed
- With 200 assessments reporting:
 - Total potential natural gas savings of **52 trillion Btu per year** – equal to 725,000 U.S. homes, a reduction of 0.9 Million tons of carbon emissions
 - Total cost savings potential identified = over \$485 million per year



“While [Dow] has been a leader in energy efficiency, with DOE’s help, we found yet more cost-effective opportunities to save precious energy.”

John Dearborn,
Global Business VP, Energy, Dow

Completed Assessments
Scheduled Assessments



Total Energy Savings

By 2008, the Assessments of 2006 will annually save the energy carried by 10 Liquid Natural Gas tankers.

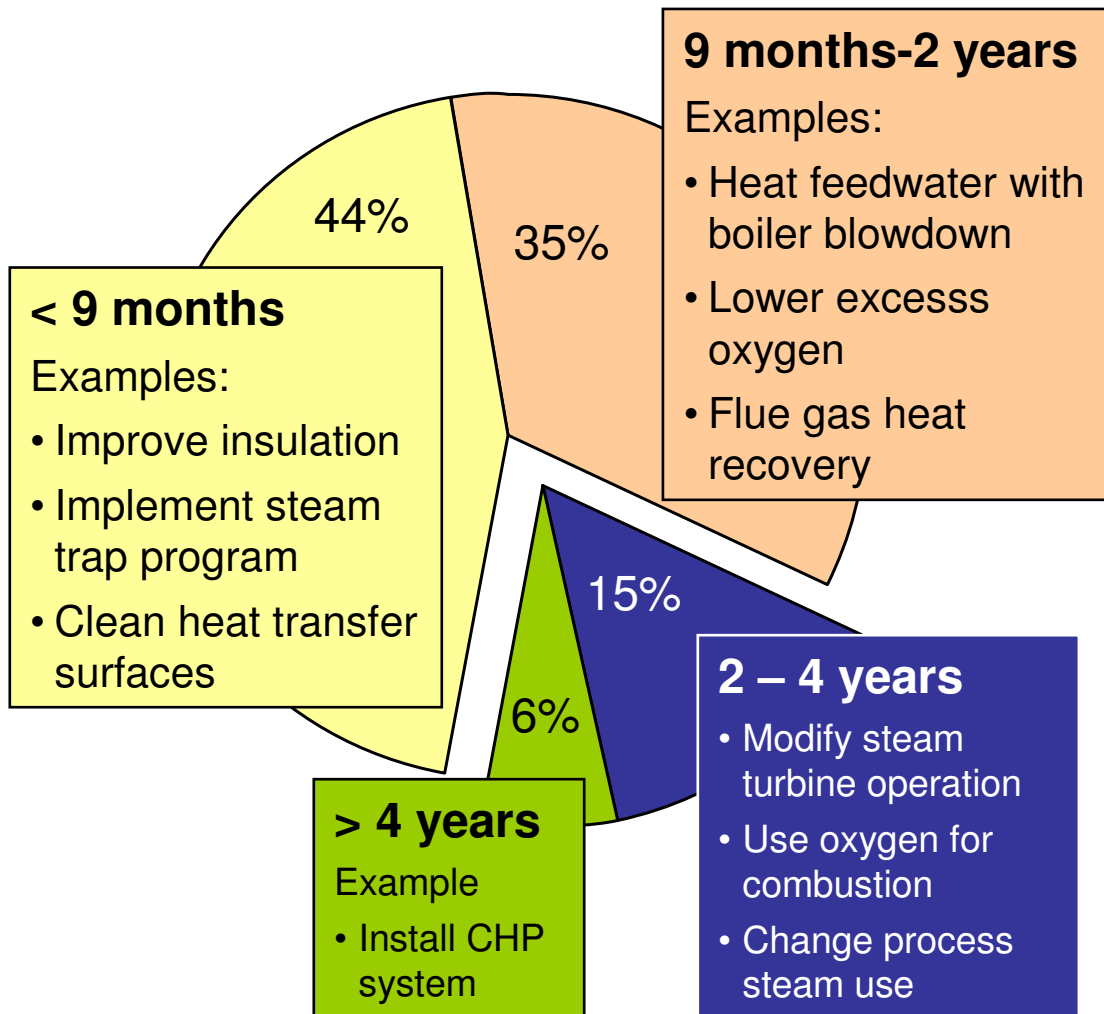




Many Opportunities Found

**After nearly 6 months,
energy savings
implementation (1/10/06):**

- 71 plants have implemented projects that will save \$10.5 million, out of \$130MM of efforts in progress/planned.
- Initial 119 assessments are identifying average of \$2.5 Million energy savings per plant
- 6 Plants report replicating ESA results at other facilities, saving another \$2.9M and .30 trillion Btu/yr





Give a man a fish
and he will eat for
a day

Teach a man to
fish
and he will eat for
a lifetime





Energy Savings Assessment Process



- Teams are DOE Energy Experts and plant personnel
- Teams focus on fans, pumps compressors, steam or process heating systems.
- Plant personnel trained on DOE software tools





Analyzing Steam Systems

- Boiler & Combustion System
 - Combustion analyzers
- Boiler Blowdown
- Individual End Use Equipment
- Turbines
- Condensate System & Deaerator





Analyzing Process Heating

- Melting Furnaces
 - Metal and non-metal
 - Aluminum or non-alum.
 - Glass or non-metal
 - Metal heat-treating
- Drying Ovens
- Thermal Oxidizers





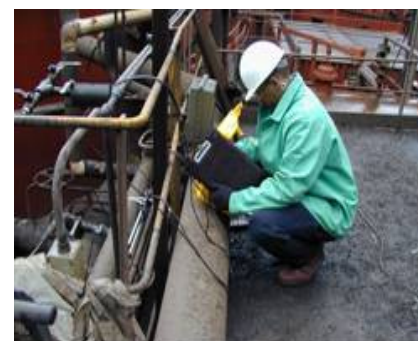
Assessment Expert spends 3 days on site

- **Day 1**

- Safety briefing, tour plant
- Overview of DOE tool to plant personnel
- Agree on potential energy efficiency opportunities to investigate
- Initiate data collection for potential opportunities

- **Day 2**

- Continue data collection
- Apply DOE tool to quantify potential opportunities
- Plant lead & expert agree on opportunity results



- **Day 3**

- Wrap up tool analyses
- Plant lead & expert discuss how to gain management support
- Closeout meeting in p.m. to review results



Save Energy Now –2007

- ✓ **250 Assessments in 2007 (200 in 06)**
- ✓ **On-Line application again**
- ✓ **More energy system types**
 - ✓ Add compressed air, pump, and fan systems to existing process heating and steam systems
- ✓ **Publicity & Case Studies for replication**
- ✓ **Recognition program being developed**



Save Energy Now – 2007

- **Multiple Ways for Plants to Qualify**
 - **Single Plants using >1 Trillion Btu annually (not involved in 06)**
 - **2006 Assessment Plants can participate again**
 - **must do different energy system & cost share 50%**
 - **Plants <1T Btu can aggregate with other plants to meet 1T Btu threshold**
 - **Can get one free assessment at one of the plants-all must participate; or**
 - **More than one or all plants can get an assessment (10 max.), but must cost share 50%**
 - **3rd Parties can apply on behalf of plants**
 - **50% Cost share required**
 - **utility, state energy office, non-profit consortium, etc .**



What If My Facility Doesn't Qualify?

- **Industrial Assessments from Industrial Assessment Centers (IACs)**
- **Technical Assistance from Clearinghouse**
- **Training and Partnership Opportunities with Local Stakeholders**



ITP Collaboration Opportunities

- **Encourage applicants to ESA Process**
- **Encourage 3rd Party Cost Share for ESAs**
 - utility, energy professionals, businesses, non-profit consortium, etc.
- **Promote training opportunities among partners**
 - Use of available software
 - Training ties to upcoming events.



ITP Collaboration Opportunities, cont.

- **Program outreach work to disseminate ITP BestPractices resources in coordination with IACs and Manufacturing Extension Partnership (MEP) centers.**
- **Help with implementation financing for small-to-medium sized plants (loans, ESCOs, etc.)**
- **Participate in Save Energy Now recognition program**
- **Help ITP educate public utility commissioners on how assessments can be leveraged to assist state meet energy efficiency goals.**



The Future?

- **Funding uncertainty and policy changes**
- **Congressional reaction to SEN program**
- **Interest level of partnerships**



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Energy Savings Assessments 2007

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