



Better Plants

U.S. DEPARTMENT OF ENERGY



EXPANDED IMPACT: ENERGY EFFICIENCY RESOURCES FOR SUPPLIERS

Presenters today:

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U.S. Department of Energy

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Technical Account Manager

RJR Associates

Webinar Agenda

- Welcome & Introductions

- DOE's Better Plants Program & Supply Chain Initiative
 - Benefits of Better Plants
 - Technical assistance: account manager, trainings, webinars
 - Recognition
 - Peer-based networking
 - Advanced technology partnerships
 - Other AMO programs
 - Supply Chain
 - Resources
 - TAM Support
 - Success stories (LeGrand, UTC)

- Next Steps
- Q&A

Better Buildings, Better Plants

- Better Plants is a voluntary, public-private partnership program for manufacturers and industrial organizations
- Through Better Plants:
 - Partners set long-term efficiency goals (25% energy intensity over 10 years)
 - Receive technical assistance and national recognition for their leadership
- Partners can sponsor a supply chain cohort of participating suppliers
 - Join the Better Plants program
 - Set energy saving goals
 - Develop energy management plans
 - Track and report progress



Productivity. Cost Savings. Competitiveness.

Why Join Better Plants?

Technical Assistance

- Assigned **Technical Account Manager**, to help navigate the program and tap into energy-saving resources
- **In-Plant Trainings:** system-specific workshops led by Better Plants experts that train participants on how to identify, implement, and replicate energy-saving projects.
- **Access** to Industrial Assessment Centers/CHP TAPs/Water Efficiency Tools
- **Supply Chain Engagement:** help partners leverage resources and collectively set, track, and meet energy savings goals.



Process heating INPLT at an ArcelorMittal plant in Nov. 2013.

National Recognition

- **Awards** for Goal Achievers
- **Better Buildings Solution Center**



Peer-to-Peer Networking Opportunities

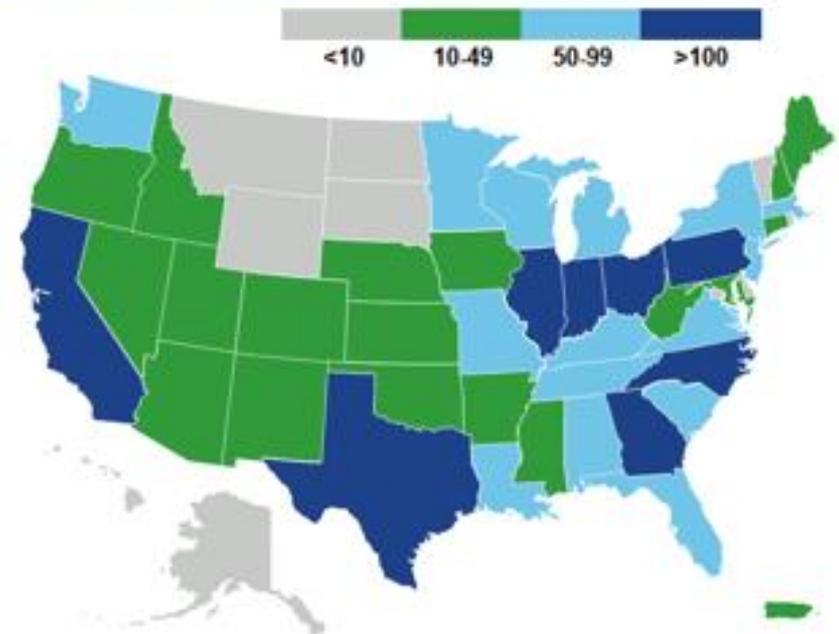
Better Plants Overview

Energy savings and program footprint continue to grow

Better Plants Snapshot

Accomplishments	Total
Number of Partners	191
Approximate Number of Plants	2,600
Percent of U.S. Manufacturing Energy Footprint	11.5%
Reported Savings	
Cumulative Energy Savings (TBtu)	600
Cumulative Cost Savings (Billions)	\$3.1
Cumulative Avoided CO ₂ Emissions (Million Metric Ton)	34.7
Average Annual Energy Intensity Improvement Rate	3.0%

Regional Distribution of Better Plants Facilities



33 new partners, 10 goal achievers in 2016.

What do Suppliers Commit to?

- Set a long-term efficiency goals (25% energy intensity over 10 years)
- Report facility-level energy use to DOE on an annual basis
- Share best practices with DOE.



Process heating INPLT at an ArcelorMittal plant in Nov. 2013.



National Recognition

NOVEMBER 4, 2014

W. Hartford firm's marathon reduces energy use 15%



West Hartford manufacturing firm Legrand reduced its total North American energy use 15.4 percent over a 26.2 day competition in October called the Energy Marathon.

Legrand held the competition at its 22 North American locations as a fun way to have employees find creative ways to reduce the company's energy usage, including installing sensors and changing personal habits. Daily updates and communications

Energizing the Supply Chain

by 3p Contributor on Tuesday, Dec 9th, 2014

153 Shares and Likes



By Andre de Fontaine

Many companies know the value of managing and saving energy within their own walls. The company and its employees benefit from lower utility bills, better comfort and more efficient working spaces.

This is especially true for manufacturers. These companies view energy as integral to global competitiveness, increased productivity and profitability; as a result, the U.S. manufacturing



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ORGANIZATION TYPE

Diversified product manufacturer in the building, energy storage and automotive industries

BARRIER

Ability to scale up efforts to help small- and medium-sized (SME) suppliers improve the energy efficiency of their plants

SOLUTION

Development of a standard, scalable program that provides SME suppliers with energy management tools, training and on-site technical assistance

OUTCOME

Energy savings across the supply chain by increasing the number of SME suppliers trained to identify and implement low-cost/no-cost energy efficiency improvements in their plants

Implementation Model: Supplier Efficiency Program

OVERVIEW

Johnson Controls, a global multi-industrial company with established core businesses in the automotive and building industries, launched a pilot supplier efficiency program which includes energy management experts visiting the plants of SME suppliers and training their in-house teams on low-cost/no-cost energy efficiency best practices. Johnson Controls' experts visit supplier sites to lead on-site assessments, share efficiency checklists and tools, and provide guidance on developing business cases for capital improvements. The on-site assessments follow an industry practice known as "energy hunts" which Johnson Controls has used successfully for years to engage facility staff across its plants in identifying and implementing low-cost/no-cost energy savings measures. Energy hunts at supplier facilities have resulted in average savings estimates in the range of 5-10%.



Share



Technical Support: Technical Account Manager (TAM)

- Help with energy baselines and data tracking/reporting
 - **Corporate-Level** Approach
 - **Facility-Level** Approach
 - **Regression-Based** Approach
- TAMs facilitate access to all other DOE resources
- **TAMs help suppliers develop a roadmap for achieving their goal(s)**



Technical Assistance: In Plant Trainings

Existing Training Topics:

- Compressed Air
- Pumping
- Steam
- Process heating
- Fans
- Energy Treasure Hunt Exchanges
- Water/Wastewater Treatment
- Industrial Refrigeration
- Strategic Energy Management



- Teach participants how to conduct assessments, use DOE tools, and implement projects
- Open to employees from host plant, peer companies, suppliers
- ~70 INPLTs, 1,000 participants since 2011
- Identified > 3 TBTU and \$14 million in energy savings between 2011 and 2015
- Pre-INPLT webinars available on program website

Advanced Technology Partnerships

Better Plants hosts events at National Laboratories to:

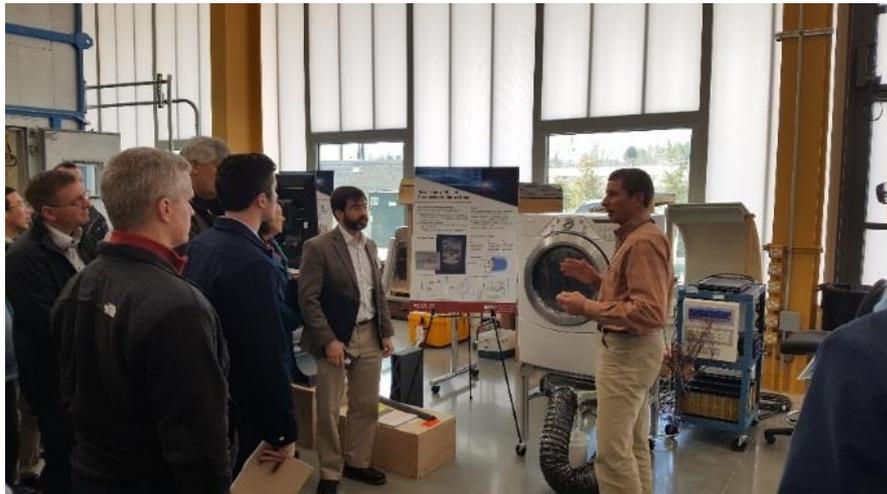
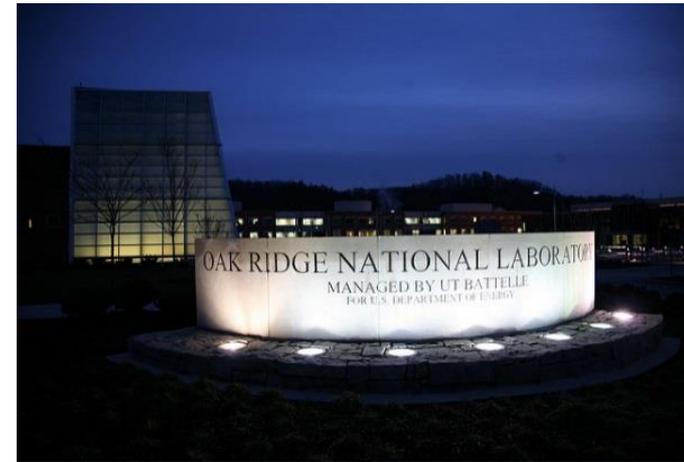
Tour World-Class Lab Facilities

View Demonstrations of innovative Technologies

Hear from Experts from the Lab and Industry

Learn how to easily partner and leverage technology

Network with BP partners and lab technologists



Diagnostic Equipment Program

Helping Better Plants Partners measure operating data to evaluate equipment performance and quantify energy performance improvement



- Free of charge, including shipping
- Use equipment for one day, or up to four weeks
- Some technical assistance with selection and usage
- First come, first serve application

Priority Access to Other Programs:

Industrial Assessment Centers:

- Partners have priority access to no-cost energy assessments from DOE's Industrial Assessment Centers.
- To date IACs have provided more than 134,000 recommendations, resulting in more than 17,600 manufacturers benefiting from the program.
- The average IAC assessment leads to 5-7% implemented energy savings and productivity improvement.

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Industrial Assessment Centers 2017-2021
HTTPS://IAC.UNIVERSITY

U.S. DEPARTMENT OF ENERGY
Energy Efficiency & Renewable Energy

Logos on map include: OSU, BOISE STATE UNIVERSITY, UNIVERSITY OF NEBRASKA LINCOLN, UIC, UWM, UNIVERSITY OF MILWAUKEE, DAYTON, LEHIGH UNIVERSITY, FIELD MANAGERS THE PAUCE UNIVERSITY OF NEW JERSEY, RUTGERS, THE UNIVERSITY OF UTAH, WEST VIRGINIA UNIVERSITY, UK KENTUCKY, TU, NC STATE UNIVERSITY, CLEMSON UNIVERSITY, Georgia Tech, UNIVERSITY OF FLORIDA, MIAAMI, TURABO, LSU, The University of Texas Rio Grande Valley, SDSU, and others.

Combined Heat and Power Technical Assistance Partnerships

- Identify CHP market opportunities through vendor, fuel, and technology neutral assessments of CHP viability.
- Technical assistance to end-users and stakeholders considering CHP

What is 50001 Ready?

Three Steps to Becoming 50001 Ready

Step One: Self-declared implementation of ISO 50001

50001 Ready Navigator Application

- ✓ The Navigator walks you through the process of implementing an energy management system and prepares you to be 50001 Ready.

Step Two: Analysis of energy and emissions reductions

Valid Tool to Present Energy Performance

- ✓ DOE EnPI Lite Tool is a regression-based calculator for single or all fuels to determine energy savings
- ✓ Energy Star Portfolio Manager
- ✓ Many utility or energy databasing companies

Step Three: Submit to DOE for 50001 Ready recognition

Recognition Program

- ✓ Self-attestation of completion of Navigator, executed by leader and executive
- ✓ Submit energy performance data



OPTIONAL
STEP 4 (non-DOE program)
Pursue an ISO 50001 Certification
Move to achieve ISO 50001
Certification or DOE's Superior Energy
Performance (SEP)

Peer-to-Peer Networking

- DOE provides forums for partners to learn from each other
- Better Buildings Summit, IETC, WEEC, ACEEE Summer Study
- In Plant Trainings – open to outside participants
- REEO & NGO events (EE Global)
- Webinars with partner presentations



Better Plants Supply Chain Initiative

- Better Plants partners can extend the benefits of energy efficiency to their suppliers
- Through this initiative, Better Plants partners sponsor a supply chain cohort with participating suppliers to:
 - Join the Better Plants Program
 - Set energy saving goals
 - Develop energy management plans
 - Track and report progress

Supply Chain Initiative

- 4 Better Plants partners are working with 30 suppliers to set energy-saving goals and track progress
- Suppliers receive DOE technical support, including priority access to free energy audits

Legrand	UTC	Lockheed Martin	Honda NA
Chapco	GKN Aerospace	Cascade Engineering Technologies, Inc.	KYB Americas
Coilplus	Hitchiner	Clearwater Engineering, Inc.	Newman Technologies
Complete Design & Packaging	MB Aerospace	Cooperative Industries Aerospace & Defense	Asama Coldwater Manufacturing
Durex	RTI International Metals, Inc.	The Harva Company, Inc.	American Mitsuba
Lynam	Selmet, Inc.	Research Electro-Optics	NSK Americas
Magnetic Metals	Weber Metals, Inc.	Savage Precision Fabrication	Mahle Engine Components
Rowley Spring & Stamping	Jedco, Inc.	Vanguard Space Technologies	Cardington Yutaka
Stanley Spring & Stamping		Tri-State Plastics, Inc.	

Benefits of Participating

Benefits to customers

- National recognition for your leadership
- Stronger, more energy efficient suppliers
- Year-end DOE reports that allow you to track progress of your suppliers

Benefits to suppliers

- Recognition
- Access to DOE resources and expert assistance
- Priority access to free energy audits
- Opportunity to network and learn from peers

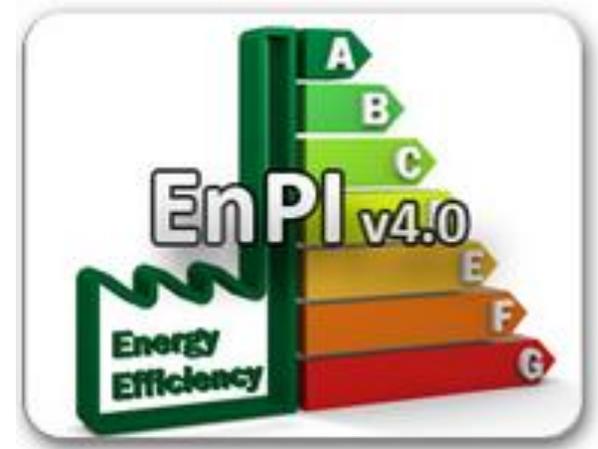
DOE Resources & Expert Assistance

- DOE will conduct a series of energy management webinars for participating suppliers. Topics include:
 - Overview of energy management systems and guidelines
 - Measuring and tracking energy efficiency improvement
 - Helpful tools, resources, and best practices
- Additionally, a DOE technical account manager (TAM) will be available for individualized coaching.



Benefits of Regression Analysis

- Accurate, “apples-to-apples” comparisons, holding for critical variables:
 - Weather
 - Production factors
- Validates energy savings
- Facilitates energy manager’s efforts to report EE impacts
- Improves comparative analyses for benchmarking
- Helps strategic planning



First Year Highlights: UTC Cohort

- All 7 UTC suppliers set 10-year, 25% energy intensity improvement targets
- 4 energy management webinars conducted
- Good response to IAC assessments:
 - 4 of 5 suppliers received IAC audits
 - One supplier received two IAC audits
 - \$995,000 total energy cost-saving opportunities found
- 5 of 5 suppliers completed annual data reports

First Year Highlights: Legrand Cohort

- 8 Legrand suppliers set 10-year, 25% energy intensity improvement targets
- 4 energy management webinars conducted
- Good experiences with IAC assessments:
 - 7 of 8 suppliers received IAC audits
 - \$200,000 in energy cost-saving opportunities from 5 audits
- 5 of 8 suppliers completed annual data reports

Results of Supplier IAC Assessments

2015 Supply Chain Initiative IAC Assessments

Summary of Assessments	Results
Number of Assessments	12
Number of Recommendations	56
Average Percent Savings Per Plant	13%
Average Cost Savings Potential	\$119,000
Average Simple Payback	0.9 years
Total Potential Savings	\$1.1 million

Next Steps

1. DOE will send webinar link and then partnership agreement to all companies on this call
2. Review agreement and sign by _____; contact DOE with any questions in the interim
3. Get recognized for your leadership! With DOE help, build a web profile, send out a press release, communicate internally, etc.
4. TAM will do introductory calls with each participating supplier within a month of signing up
5. Energy management & other webinars will be available after joining
6. TAM will help suppliers schedule IAC assessments within 3 months
7. Suppliers provide energy performance data to DOE about 12 months after signing on

Joining is Easy!

- Simple 2-page agreement lists Partner and DOE roles; explains voluntary nature of agreement
- Should be signed by CEO or a senior executive
- Email scanned copy back to: robert.lung@ee.doe.gov



Partnership Agreement

Form

The Better Buildings, Better Plants Program is a national initiative to significantly improve energy efficiency across U.S. industry. Leading manufacturers in the program work to reduce the energy intensity of their business operations by 25% over ten years. The Energy Department helps these industrial partners develop energy management plans and performance metrics, evaluate energy-saving opportunities, train the workforce, and assess annual progress.

Better Plants Partners agree to:

- ▶ Adopt a goal to significantly reduce energy intensity over a 10-year period
- ▶ Report energy intensity, energy use data, and achievements annually to DOE.

Additionally, within 12 months partners agree to:

- ▶ Establish an energy use and energy intensity baseline
- ▶ Develop an energy management plan
- ▶ Designate an energy leader or energy manager

DOE agrees to provide:

- ▶ National recognition including a feature on DOE's website, recognition letters from DOE leadership, and invitations to special events.
- ▶ Technical support to assist the company in developing energy management plans, identifying energy-saving opportunities, tracking energy performance metrics and reaching its energy goal.
- ▶ Additional resources, including access to DOE energy analysis software tools, training webinars, technical guidance documents, and peer-to-peer networking opportunities

Agreement:

My organization is committed to continuous improvement in energy efficiency and agrees to the General Terms of the Better Buildings, Better Plants Program.

Senior Executive Officer (Signature)

Date

Printed Name

Title

Company

Address

Note: DOE will send an official Better Plants Welcome letter to the contact and address listed above.

Learn more at http://www1.eere.energy.gov/manufacturing/tech_assistance/betterplants/partners.html



For more Information

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Thanks!

Questions/Discussion