Assessing Energy Use in Your Plant

All around the country, assessments conducted at energy-intensive manufacturing facilities are helping U.S. companies uncover ways to save energy and money, enhance their competitiveness in global markets, and improve their bottom line. The U.S. Department of Energy's (DOE) Industrial Technologies Program (ITP) offers several options for energy- and cost-saving plant assessments.

Facts & Figures

- About one-third of the nation's total energy use is consumed in U.S. industries.
- Even plants with energy management programs can often save 10% to 15% more using best practices to increase their energy efficiency.

Benefits

- Energy efficiency improvements can reduce utility bills and improve your plant's bottom line.
- Many improvements require little or no extra investment, are easy to implement, and have payback times of less than a year.
- Strategies that increase energy efficiency can reduce operating and maintenance costs, minimize waste, and enhance production.
- Energy efficiency helps to reduce negative impacts on the environment and may also improve product quality, productivity, and reliability.

Resources

For more information on plant energy assessments, and to learn more about ITP tools, training, Qualified Specialists and other resources, visit the BestPractices Web site, www.eere.energy.gov/industry/bestpractices.

Additionally, you can contact the EERE Information Center at 1-877-EERE-INF (1-877-337-3463), or via the Web at www.eere.energy.gov/informationcenter.

Why conduct an energy assessment?

Before you can make a business decision to invest in energy efficiency and productivity improvements, you have to know exactly how your facility is using energy. An energy assessment can give you valuable information about opportunities to improve your bottom line by reducing energy use.

An assessment targets both near and longer term opportunities to save energy and money in your plant. It looks at your plant's annual energy consumption and identifies any potential areas for operational improvements and equipment upgrades. Plants of all sizes can benefit from assessments; and ITP's resources can help you incorporate a plant assessment into your energy management strategy.

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Energy Savings Assessments identify many opportunities for saving energy and money in your plant.

How can my plant assess its energy use?

Begin an assessment by gathering essential data about your energy-using equipment and its performance. ITP BestPractices' free assessment software tools provide reliable, timely, and accurate plant energy flow information. Use this powerful suite of tools to collect and analyze data about steam, process heating, pumps, compressed air, and other motor-driven systems. Engineers in chemical manufacturing plants can use ITP's Chemical Plant Energy Profiler software tool to evaluate energy consumption and costs as well as opportunities for savings.

ITP also offers training to help you get the most of the software tools and learn how to make them part of an integrated energy management approach. In addition, Qualified Specialists—industry professionals with advanced training in one or more of the tools—can provide valuable expertise in conducting assessments. Other resources for your assessment tool kit include ITP BestPractices technical materials, such as system-specific sourcebooks, tips sheets, and technical briefs.

What kinds of assessments are conducted by ITP?

As part of ITP's Save Energy Now campaign, large energy-consuming plants (or groups of smaller plants) can apply to receive no-cost Energy Savings Assessments. These focus on opportunities in compressed air, fans, pumping, process heating, and steam systems. ITP has also held competitive solicitations for cost-shared, plant-wide assessments. The results of these assessments not only reveal opportunities for the specific plants involved but also provide recommendations, methodologies, and techniques that may be replicated throughout industry—perhaps in your plant.

Small- to medium-sized plants could also be eligible for a no-cost energy assessment conducted by a university-based DOE Industrial Assessment Center (IAC) team. These are typically plants with gross annual sales of less than $75 million and fewer than 500 employees. The faculty-led teams of university engineering students look at all energy systems, examining fuel types, base plant energy consumption, potential upgrades, projected energy savings, implementation costs, and paybacks, and they recommend energy efficiency improvements. Projects implemented from IAC recommendations are saving manufacturers an average of $55,000 annually.

What is the potential for savings?

Even plants with vigorous energy management programs can often save as much as 10% to 15% more using the best practices identified in plant assessments. Because the potential for savings is significant, ITP has worked with many companies in major industries to conduct assessments. Some assessments and subsequent projects are summarized in ITP BestPractices case studies. Although assessment results vary for each plant, in 2003 industry as a whole saved about $3 billion by collaborating with ITP.

In one example, a Qualified Specialist in the use of ITP's Process Heating Assessment and Survey Tool (PHAST) worked with staff at Progressive Powder Coating in Mentor, Ohio, to identify efficiency improvements. Staff then installed an infrared oven that increased the conveyor line speed and plant production by 50%. Because it uses less natural gas, the plant began saving nearly $54,000 in energy costs annually.

ITP provides U.S. industries with software assessment tools, training, technical information, and assistance. These resources and energy management practices help plants improve the energy efficiency of their process heating, steam, pumps, compressed air, and other systems; reduce operating costs; and improve their bottom line.

BestPractices is part of the Industrial Technologies Program, and supports DOE's strategy to help the country's most energy-intensive industries improve their competitiveness. BestPractices brings together emerging technologies and energy-management best practices to help companies begin improving energy efficiency, environmental performance, and productivity right now.

BestPractices emphasizes plant systems, where significant efficiency improvements and savings can be achieved. Industry gains easy access to near-term and long-term solutions for improving the performance of process heating, steam, pumps, compressed air and other motor-driven systems. In addition, the Industrial Assessment Centers provide comprehensive industrial energy evaluations to small- and medium-size manufacturers.

A Strong Energy Portfolio for a Strong America

Energy efficiency and clean, renewable energy will mean a stronger economy, a cleaner environment, and greater energy independence for America. Working with a wide array of state, community, industry, and university partners, the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy invests in a diverse portfolio of energy technologies.

For More Information, Contact:

EERE Information Center
1-877-EERE-INF
(1-877-337-3463)
www.eere.energy.gov

Or visit these Web sites:

Industrial Technologies Program (ITP)
www.eere.energy.gov/industry

ITP BestPractices
www.eere.energy.gov/industry/bestpractices

Save Energy Now
www.eere.energy.gov/industry/saveenergynow

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