



*System Efficiency Training...practical, flexible, measurable, cost-effective, recognized*

## End-User Training



In today's operating environment, plants are expected to operate at optimal efficiency with increased reliability. Staying current with technological advances and ever-more-powerful tools can help you achieve this goal. Take part in the U.S. Department of Energy's (DOE) Industrial Technologies Program (ITP) training sessions and keep pace with these improvements.

More than 10,000 people have participated in ITP training sessions, which are offered year-round and throughout the country. In certain cases, in-plant training can be conducted to address specific aspects of your plant and its operation.

You can participate in extensive industrial systems training. End-user training is the right choice if you are involved in system or plant operations, engineering, or management of these industrial systems.

Take part in end-user training workshops to:

- Increase your knowledge of energy management and industrial system capabilities
- Identify opportunities to improve energy efficiency in your plant that can lead to significant cost savings
- Find ways to help decrease maintenance and downtime, as well as improve your systems' performance
- Apply ITP BestPractices tools to your energy management strategy

End-user workshops are available in these system areas:

### Compressed Air

#### Fundamentals of Compressed Air Systems

DOE and the Compressed Air Challenge® offer this 1-day workshop that introduces the mechanics of a compressed air system and the benefits of optimal compressed air system performance. Learn how to compute the current cost of your plant's compressed air systems, how to measure and create a baseline of system performance, and how to determine the impact of different compressor control types. Participants also learn basic approaches to cut costs, identify steps for proper system operation, and develop a compressed air system management action plan.

#### Advanced Management of Compressed Air Systems

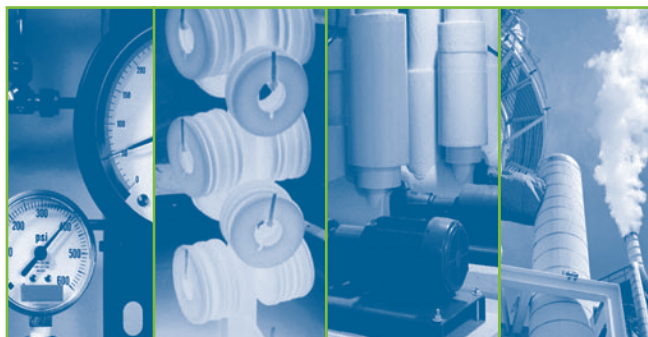
DOE and the Compressed Air Challenge® offer this 2-day workshop, which builds on Fundamentals of Compressed Air Systems. Learn to measure and assess the efficiency and cost-effectiveness of a compressed air system. Also, develop a system profile and address point-of-use issues, including determining actual air quality requirements, investigating and reducing highest point-of-use pressure requirements, and addressing high-volume intermittent applications. In addition, learn to implement a compressed air system maintenance program, determine different compressor control strategies, align the supply-side to demand-side operations, and understand the value of heat recovery.

### Motor Systems Assessment

*Including Use of the MotorMaster+ and MotorMaster+ International Tools*

This 1-day workshop helps you gain skills necessary to effectively manage electric motor systems—and that knowledge results in reduced energy costs and increased reliability. Maintenance staff, plant managers, and plant engineers cover technical and policy/procedure topics of motor system management. Learn to evaluate and select the optimum motor for each application, track motor inventory and maintenance actions, and develop guidelines or specifications for motor repair and rewind.

This training also introduces organizations, standards, guidebooks, and technical assistance providers that can help you manage industrial motor systems. In addition, the workshop provides an overview of DOE's MotorMaster+ and MotorMaster+ International software.



U.S. Department of Energy

**Energy Efficiency and Renewable Energy**

Bringing you a prosperous future where energy is clean, abundant, reliable, and affordable

## Improving Thermal Efficiency in Process Heating Equipment

*Including Use of the Process Heating Assessment and Survey Tool*

This 1-day workshop introduces process heating and standard process heating equipment, such as furnaces, dryers, ovens, heaters, and kilns. Consider this training if you are a process engineer, plant operator, maintenance engineer, process heating equipment designer, energy coordinator, or a consulting engineer.

The workshop reviews combustion and other heating methods, heat transfer in furnaces, waste heat recovery, commonly used process heating controls, and emissions from heating processes. Learn practical tips on process heating maintenance, how to improve energy efficiency and reduce emissions from furnaces, and how to use DOE's Process Heating Assessment and Survey Tool (PHAST) software. PHAST helps you survey furnaces and heaters, identify major energy-using equipment, prioritize improvement opportunities, and assess available methods to improve thermal efficiency in industrial plants.

## Pumping System Assessment

*Including Use of the Pumping System Assessment Tool*

The Pumping System Assessment workshop is a 1-day session to help you enhance your knowledge of pump system performance characteristics and identify performance problems encountered in everyday applications. This workshop's practical focus includes field measurements of fluid and electrical data. In addition, learn about DOE's Pumping System

Assessment Tool (PSAT) software that assesses the performance of pump systems. Learn how PSAT works, what data are required, how to use the software when measured data are not available, and how to analyze the assessment results.

## Steam System Assessment Training

*Including Use of the Steam System Tool Suite*

This 1-day workshop covers the operation of typical steam systems and discusses methods of system efficiency improvement. Designed for energy managers, steam system supervisors, engineers, and equipment operators, the course covers three key areas of potential system improvement: steam generation efficiency; resource utilization effectiveness; and steam distribution system losses.

The workshop also introduces DOE's Steam System Scoping Tool (SSST), the Steam System Assessment Tool (SSAT), and the 3E Plus® insulation appraisal software.

## Fan System Performance Assessment

This 1-day workshop introduces the Fan System Assessment Tool (FSAT), which helps you quantify potential benefits of configuring your fan system for optimal performance, calculate how much energy a fan system is using, and determine how efficiently the system is operating. Learn how the software functions, what data are required to use FSAT, and what the assessment results mean. This workshop also examines fan system performance characteristics and the practical issues involved in field measurements of fluid and electrical data.

## Specialist Qualification Training

In addition to end-user workshops, DOE offers a unique curriculum called Specialist Qualification Training. Qualified Specialists are experienced industry professionals who have completed advanced training in the use of specific DOE-developed assessment and analysis software tools. After successfully completing this rigorous training, including a written exam, Qualified Specialists are widely recognized as experts in applying DOE software tools. Qualified Specialists then apply these tools in their plant or to help industrial customers identify ways to improve industrial system efficiency, resulting in potentially significant cost savings.

## Learn More Today

Take full advantage of BestPractices training! It can help you increase your knowledge of energy management, identify cost-cutting opportunities, and streamline and increase productivity at your plant by identifying energy savings opportunities. ITP continues to expand the training curriculum to meet the needs of industrial customers like you. Be sure to visit the ITP BestPractices Web site for announcements of new or upcoming sessions.

For more information, and to locate upcoming training sessions in your area, visit the ITP BestPractices Web site at [www.eere.energy.gov/industry/bestpractices](http://www.eere.energy.gov/industry/bestpractices), where you can access other BestPractices resources. Or, contact the EERE Information Center at 877-337-3463 (877-EERE-INF), or via e-mail at [eereic@ee.doe.gov](mailto:eereic@ee.doe.gov).



### 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](http://www.eere.energy.gov)  
 DOE/GO-102004-1969  
 October 2004