Industrial Technologies Program Technology Delivery

ORNL's technology delivery activities focus on improving the energy performance of industrial plant utility systems such as motor-driven equipment (pumps, fans, etc.), compressed air systems, process heating, and steam systems. The ORNL program evaluation and metrics activities support the Industrial technologies Program (ITP) through measurement, documentation, evaluation and analysis of the impacts of technology delivery activities towards the goal of reducing energy intensity in the U.S. industrial sector, reducing carbon emissions and improving industrial competitiveness.

Save Energy Now Assessment Locations Nationwide

Save Energy Now Assessment Support

ORNL provides significant support to the ITP Save Energy Now (SEN) Program. ORNL authored the report on the 2006 SEN, "Results from the U.S. DOE 2006 Save Energy Now Assessment Initiative." The 2006 SEN assessments have resulted in the adoption of energy saving technologies that are expected to save $86M annually. The SEN team conducts 6, 12, and 24 month implementation follow-ups to track the level at which assessment recommendations are enacted. In addition, the ORNL group provides a technical review of energy assessments, and provides scheduling assistance and support for Expert Training Workshops.

Evaluating ITP Technology Delivery Impacts

ORNL leads metrics support for Industrial Assessment Centers (IAC) and BestPractices. ITP's current technology delivery impacts model was developed by ORNL and includes recordkeeping (databases): structure, content, user input/output interfaces, integration issues. Metrics support provides monitoring and analysis of impacts: database monitoring, customized queries and analysis, and standard analyses. Metrics enables planning by the study effects of modifications to Technology Delivery activities, establishing reasonable performance goals and metrics structure for new activities (e.g. EPACT, SEN Assessments, MEP partnership). Metrics also completes reporting for annual Technology Delivery impacts, GPRA, ITP-Impacts, and ad hoc reports.

Save Energy Now Assessments Reduce Industrial Energy Use

Plant Certification Support

ORNL is active in ITP Industrial Plant Certification efforts. ORNL has provided guidance on the development of system-assessment protocols for the certification standard as well as guidelines for the application of the standard. The group has also tested assessment protocols for four system types and supports validation and training activities.

Software Tool Development

ORNL is active in the development of software tools to support the BestPractices Program. The laboratory guided the initial development of steam, process heating, pump, and fan system tools used to help identify and analyze energy system savings opportunities in industrial plants. ORNL is also managing efforts to improve and enhance the Process Heating Assessment and Survey Tool (PHAST), which calculates the potential savings that a plant can achieve by applying various energy-saving measures with fired heater model upgrades, steam process heating model additions, and electro-technology model additions.

Save Energy Now Assessments Target America's Largest Industrial Sites

ORNL leverages its expertise in buildings technologies to reduce buildings-related energy consumption in industry. ORNL has complete a score card for buildings for use in Quick Plant Energy Profiler (PEP), which is an online software tool that helps industrial plant personnel quickly understand how energy is used. ORNL also developed the Building Measures Tool for lighting, space conditioning, and ventilation measures.

Training Material Development

ORNL plays a major role in BestPractices Training Development efforts. ORNL lead the development of End User, Qualified Specialist training for steam, process heating, pump, and fan systems. The program is directing new efforts to update steam, process heating, and compressed air training materials, and also directly supports pump Qualified Specialist, End User training.

Industrial Assessment Centers

Industrial Assessment Centers (IAC)) work with U.S. manufacturers to identify opportunities for saving energy through assessments and follow-up, and to train the next generation of energy-savvy engineers using teams from 26 U.S. Universities. ORNL supports the IAC on performance metrics, and on student and alumni activities.

ORNL Supports Industrial Assessment Center Student and Alumni Activities

Other Activities

ORNL also provides Process Design and Optimization Technologies (PDOT) verification and validation testing for new Flame Image Analysis and Distillation Column Flooding Predictor technologies.

ORNL also supports an industrial efficiency MOU signed in 2007 by the U.S. and China to improve energy efficiency in Chinese buildings and industry. This effort will conduct energy assessments in Chinese industrial plants and train plant engineers on energy efficiency.

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