

Supporting Texas Manufacturing to “Save Energy Now”

The industrial sector in Texas is very energy intensive, with approximately 53% of all energy consumed in the state occurring in industrial plants. Texas industrial companies, therefore, have a great opportunity to reduce their energy intensity and related carbon emissions.

The Texas team, led by Texas Industries of the Future, has devised an innovative approach to lowering industrial energy intensity in the state by 7.5% during the period of performance. The approach will incorporate energy assessments and project implementation assistance for SME manufacturers, training, and execution of an American National Standards Institute-accredited (ANSI) plant certification program. This program will deliver tools and resources from the largest energy-intensive plants to the small- and medium-sized facilities.

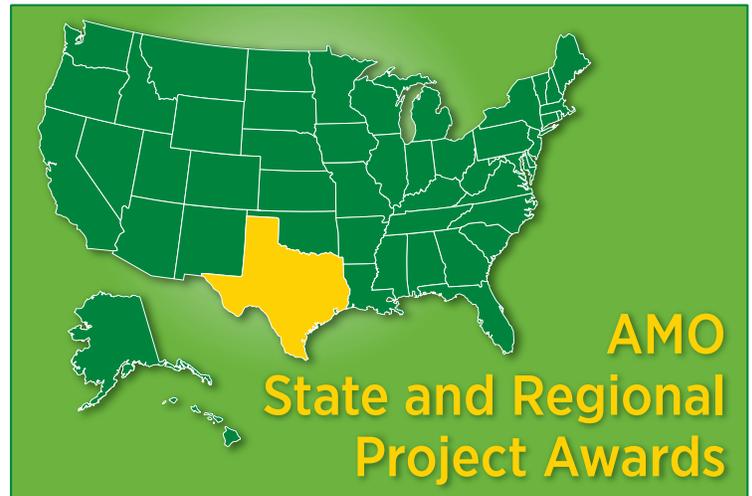
The Texas team’s main objective in its industrial energy savings program is to reduce industrial energy intensity in the state by 2.5% annually, in accordance with the Energy Policy Act of 2005. As a result of the efforts of this three year project, the team estimates that they will influence energy savings of 6,276 billion Btu per year. The team is implementing activities to achieve the following goals within the scope of the project:

- Develop a partnership among existing service delivery parties so they have the correct tools and knowledge to continue delivery of energy efficiency related services after the end of this contract.
- Deliver a variety of programs tailored to the needs of all facilities, from the largest energy intensive manufacturers to the small and medium sized facilities.
- Foster project implementation at facilities of all sizes.

Progress and Milestones

Activity Description	Goal	Completed to Date
Assessments	30	20
Identified Energy Savings (Trillion Btu)	-	1.4
Implemented Energy Savings (Trillion Btu)	-	.3
Trainings	23	15
Individuals Trained	-	754
Pilots / Demonstrations	1	0
Plants Impacted	-	141

(As of June 2011)



Project Description

Funding Amount: \$899,418

Funding Source: U.S. Department of Energy, Advanced Manufacturing Office

Program Period: 7/1/2009 to 6/30/2012

Project Success Highlights

- The number of Texas sites in DOE’s DC Pro benchmarking database increased by 44% due to workshops held by the team.
- Total implemented annual savings for the eight small/medium sized plants receiving assessments in years one and two were 3.6 million kWhrs and \$379,600.
- Total potential savings as a result of all trainings, forums, and assessments is estimated at 1.4 trillion Btu, \$14.8 million in cost savings, and a reduction of 66,000 metric tons of carbon dioxide. Implemented savings are estimated at 0.3 trillion Btu, \$4 million saved, and a reduction of 19,700 Metric Tons of emissions of carbon dioxide (as of August 2011).
- The team has benefited from having an engaged Industry Advisory Board, as well as longstanding partnerships with a diverse array of regional training organizations interested in including energy efficiency in their programming.

Primary Investigators

Texas State Energy Conservation Office, Austin, TX

Texas Industries of the Future, University of Texas, Austin, TX

Project Partners

American Institute of Chemical Engineers, South Texas Section, Houston, TX

Clean Energy Regional Application Center at HARC, The Woodlands, TX
CPS Energy, San Antonio, TX

Georgia Institute of Technology, Atlanta, GA

Houston Business Roundtable, Houston, TX

Hudson Technologies, Pearl River, NY

Southwest Research Institute, San Antonio, TX

Texas A&M, College Station, TX

Texas Manufacturing Assistance Center at the University of Texas–Arlington, Arlington, TX

Industrial members of the program advisory committee representing leading chemical and refining companies

The Texas team has planned a two-phase project consisting of six tasks conducted over the three-year period. The first task involved increased benchmarking of data centers in Texas by conducting two 1.5-day workshops to train engineers and data center facility managers on how to collect and input data into the U.S. Department of Energy (DOE) Advanced Manufacturing Office (AMO) Data Center Energy Profiler Software Tool Suite (DC Pro). The team has successfully benchmarked sessions with eight data centers using the DC Pro software.

An analysis of DC Pro data shows that the number of Texas sites in the DOE/AMO benchmarking database increased by 44% from March 2010 (before the first workshop) to February 2011 (after the second workshop). Ninety participants received training on data center energy efficiency during these workshops.

The Texas team is conducting training and outreach through BestPractices workshops, forums, training events, and recognition events. Progress toward those goals is shown in the table below. Through these activities 1.9 trillion Btu in primary energy savings potential per year has been identified and in addition to a corresponding annual energy cost savings of \$19 million.

Trainings, Outreach and Recognition

Target	Achieved
12 Best Practices workshops	7
6 Forums	4
2 full-day training	2
2 recognition event	2

An “Energy-Efficiency Assessment Tool” was developed for Chemical Plants and Refineries Running at Low Rates. In addition, two Process Cooling, Chiller and Refrigeration (PCC&R) assessments at large energy-intensive industrial plants will be conducted.

The EE at Low Rates tool has been developed and posted to the Texas IOF website at <http://texasiof.ces.utexas.edu/tools.htm>. As of August 2011, there already had been 38 downloads of the tool by chemical companies, refineries, engineering firms, educators, and other service providers.

The Energy Efficiency Opportunity Assessment Calculator for Small and Medium-sized Manufacturers was revised and the first training on the tool occurred April 2011 via webinar. It has been downloaded 142 times from May to August 2011.

A key component of this project is conducting energy assessments and providing project implementation assistance for small and medium sized manufacturing plants as part of the Texas Economy, Energy and Environment (E3) Initiative. This initiative is a

Benefits

- Contributes to reaching the national goal of reducing industrial energy intensity by 2.5% each year of the project period, or 7.5% overall.
- Forges a regional collaboration to improve industrial energy efficiency practices and technologies throughout the state.
- Supports the development and implementation of the national energy efficiency plant certification program and builds local implementation capacity.
- Trains engineers, managers, and service providers to identify energy saving opportunities.
- Provides assessments to identify energy savings opportunities for Texas manufacturers in new areas.
- Delivers cost savings for sites implementing improvements; projected energy savings of 1.8 trillion Btu over the life of the project.
- Provides energy efficiency implementation support for small and medium manufacturers.

Applications in Our Nation’s Industry

This project will establish a partnership among energy service providers, providing them with the correct tools and knowledge so they can continue to help reduce the energy intensity of Texas manufacturers. In addition, this project will provide Texas manufacturers with energy efficiency project implementation support.

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.

collaborative effort between federal, state, and local agencies and companies to help manufacturers adapt and succeed in a new business era focused on sustainability. As a result of this collaboration in Texas, total implemented annual savings for the eight plants receiving assessments in years one and two were 3.6 million kWhrs and \$379,600.

The team plans to build state capacity on the Management System for Energy Standard (ISO 50001) in support of the national energy efficiency plant certification program. It will recruit five plants to participate in the demonstration project and have scheduled trainings for the plants and coaches on the ISO 50001 standard and Superior Energy Performance. The training is scheduled to kick-off in the late fall of 2011.

For Additional Information:

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