

**Engine Test Cells**

This manufacturing customer is a global power leader that designs and manufactures power generation systems and gasoline engines. This customer is an EPA Climate Leader and a member of the Pew Center on Global Climate Change. This customer set long term goals with these programs to reduce global greenhouse gas (GHG) emissions from its facilities by 25% per dollar revenue from 2005 to 2010. To help achieve this reduction in GHG emissions, this customer teamed with Duke Energy and ThermalTech for technical assistance.

So far, ThermalTech completed energy assessments at 20 separate facilities totaling 8 million square feet of manufacturing and office space. Through these energy assessments, over 500 energy efficiency initiatives were identified, totaling \$10 million in annual energy cost savings and a reduction in CO2 emissions by 135,000 tons per year. According to ThermalTech calculations, the GHG emission reduction goals will be achieved through energy conservation efforts alone.

With capital projects focused on integration and linearization, ThermalTech projected a 15-20% reduction in GHG emissions at large facilities, a 10-15% reduction

at smaller facilities, and a 5-10% reduction through process and procedural changes on a near-neutral annual cash flow basis. The capital investment projects would additionally result in an improved infrastructure, more reliable systems, an improved employee environment, and a high commercial value.

ThermalTech assisted with the development of a complete energy efficiency program to train Energy Champions at each of this customer's facilities. Energy Champions will then appoint Energy Leaders to each system within the plant to help achieve their GHG reduction goals through process and procedural changes.

As tools for the Energy Champions, ThermalTech provided O&M Checklists, Capital Project Idea Lists, and a Best Practices document that encourages corporate leadership to establish facility design and equipment standards. As a result, this customer has started their own Facilities Improvement Team program to maintain a database of energy efficiency projects at each facility, hold a weekly conference call to discuss projects that are being implemented, and to share energy saving ideas throughout the corporation.

**Project Owner**

Power Generation and  
Engine Manufacturer

**ThermalTech's Responsibility**

MEP Systems Assessment  
MEP Engineering Design  
Commissioning  
On-Site Construction Management  
Energy Training

**Total Square Footage, to date**

8,000,000

**Total GHG Reduction, to date**

135,000 tons CO2/year

**Total Energy Savings, to date**

\$10,000,000/year

**Typical Boiler Room****Typical Office Space**