
DTE Energy®



Energy Partnership & Services Overview
Partnering and Planning for the Future

March 25, 2009



Agenda

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 - Small to Medium Commercial & Industrial Customers
 - Large Industrial Customers
- Large Industrial Customers Activities
- Best Practices
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Overview

- DTE Energy's Energy Partnership & Services Group was formed in 1994 by the "Special Manufacturing Contract" (SMC) agreement to support the "Big Three" automotive companies manufacturing facilities in the Detroit Edison service area. The staff consists of 47 experienced engineers & professionals. They possess some of the best talent in the industry. They are Certified Energy Managers, or registered Professional Engineers. We are currently working on energy consuming systems at manufacturing, assembly, powertrain, research and engineering, administrative offices, heat treating, parts storage and handling and various other types of facilities for some of our largest customers.
- Our goal is to identify and implement energy savings projects and processes for our customers. We create and use best practices to develop energy efficient strategies consistent with our client's objectives



Overview

Energy Partnership and Services Credentials

- One of the largest and most qualified energy efficiency consultants in the world
- Customers include GM, Ford, Chrysler, American Axle, University of Michigan, small and mid-size business commercial and industrial customers
- Staff Consists of Electrical, Mechanical & Chemical Engineers, MBAs, and PhDs
- Certified Energy Managers (CEMs) & Professional Engineers (PEs)
- Has been developing and managing customers' energy programs and strategies for more than 15 years
- We've helped many customers reduce their energy costs



Products & Services

- **On-Site Energy Consulting** - Currently EP&S has on-site energy managers working with Ford Motor, General Motors, University of Michigan, American Axle, DTE Facilities. We provide Quality Managers for DTE's Warren Service Center. DTE's non regulated business, Energy Services, provides on-site services to Chrysler and General Motors.
- **Training** - We provide training to both customers and DTE employees. Presently, we conduct monthly technical seminars, customer specific workshops and one-on-one sessions with customers and account representatives.
- **Energy Audits** - Facility energy audits examine the energy used in customer facility to reduce wasted energy and increase efficiency. We inspect all energy consuming equipment (i.e., electricity, natural gas, fuel oil, or propane) and provide the customer with summarized results and project recommendations. We also help customers develop an overall energy efficiency strategy consistent with their corporate objectives and resources.



Products & Services

Customer Benefits

- Reduced energy and operating costs.
- Full understanding of energy usage, requirements, and savings.
- Improved product quality
- Increased productivity.
- Economic solutions and alternatives
- Prolonged life of equipment
- Reduced operational & maintenance expense
- Reduced consumption of natural resources
- Sustainable energy programs and strategies



Products & Services

Small to Medium Size Commercial and Industrial Customers

- In 2003, the EnergySmart team was formed within the Energy Partnership & Services department to help small to medium size commercial and industrial customers.
- The EnergySmart Team Engineers serve as subject matter experts on lighting, HVAC, building envelop and controls, motors, and other equipment. They provide educational training seminars for customers and DTE Energy account managers.



Air Power USA's Scott Van Ormer (from left) discusses compressed air systems with Paul Ozment, General Motors site utility manager, and Zack Jaafar, Detroit Edison's Energy Partnership and Services group, at a June Lunch and Learn session at our Southfield Center.



Products and Services

Typical Small to Medium Size Customers

- North & South Regions
 - Samaritan Center
 - NYX
 - West Bloomfield Schools
 - Flat Rock Metal
 - Key Accounts
 - State of Michigan
 - Federal Court
 - Federal Reserve Bank
 - John D. Dingall VA Medical Center
 - Non Profit Organizations
 - Max Fischer Theater
 - Detroit Boat Club
 - Detroit Institute of Arts
 - Detroit Opera House
 - Volunteers of America
- National Accounts
 - Macy's Department Stores
 - McDonalds
 - Sears
 - Hyatt Hotel
 - Ethnic Marketing
 - Detroit Hispanic Development Corp
 - Latino Family Services
 - Mid-Size Accounts
 - Racine Hydraulics
 - Huron Automatic Service



Products and Services

Large Industrial Customers

- On-site energy managers
- Energy Tracking and Monitoring
- Conduct Energy Efficiency Audits
- Provide Energy Conservation Training
- Project implementation
- Use “Best Practices” to replicate energy efficient strategies throughout organizations
- Benchmarked Energy Usage
- Funding and Grants assistance
- Weekend and Holiday Shutdown Programs
- Curtailment Plans
- Improved air quality and the environment
- Changed energy efficiency culture throughout organization
- Ensure maximum tax rebates and funding is attained



Large Industrial Customers Activities

DTE Energy Accomplishments

- The Energy partnership Team has helped some large commercial and industrial customers reduce their energy consumption by more than 20%. This has produced more than \$1.8 Billion in cost savings for customers.
- Detroit Edison's Energy Partnership and Services group has been helping our auto customers address the huge financial challenges they face while keeping them focused on energy conservation.
- In DTE's non-utility businesses, our Onsite Energy group saves our customers money and operating costs while helping them reduce energy consumption. We operate eight powerhouses for Chrysler under a long-term contract, resulting in savings.
- At General Motors Pontiac North complex, savings for both operations and maintenance were achieved.
- GM's Cactus Project in Mexico was constructed by DTE Energy Services Onsite Energy group with GM money, and DTE currently manages the operations there.



Large Industrial Customers Activities

Awards Customers Obtained with Assistance from DTE

- Energy Star Partner of the Year Award (2006, 2007 and 2008) in energy management from U.S EPA and DOE - Ford Motor Co.
- Association of Energy Engineers (AEE) 2007 Corporate Energy Management of the year award – General Motors
- Association of Energy Engineers (AEE) 2007 - GM
 - Energy project of the Year for Region IV
 - Energy Engineer of the Year
 - Legend of Energy
- Energy Engineer at Ford received recognition for Fumes to Fuel project to save energy and reduce VOC's from paint booths
- Won Multiple Internal DTE Awards for Customer Satisfaction
 - Alex Dow
 - Sarah Sheridan Awards (1999, 2003 & 2006)



Best Practices

Typical Energy Saving Opportunities

Boiler Systems

- Condensate Return
- Make-up systems
- Blow downs

Steam Optimization

- Steam traps
- Condensate return stations

Building Envelope

- Insulation
- Furnaces, ovens
- Steam & Condensate pipes

HVAC Controls

- Shut down equipment
- Economizer (free cooling)
- Space temperatures and exhaust

Compressed Air System Upgrades

- Controls to eliminate blow-offs
- System pressure
- Air leaks

Lighting

- T12 to T8 conversions
- Solid State Lighting (LED)
- Controls



Best Practices

Typical Simple Payback

$$\text{Simple Pay Back (years)} = \frac{\text{Total Project Cost (\$)}}{\text{Project Annual Savings } \left(\frac{\$}{\text{year}} \right)}$$

Natural Gas	
• Steam Systems	0.3 – 1.5 years
• HVAC	0.5 – 1.5 years
• Building Envelope & Insulation	0.5 – 1.5 years

Electrical	
• Compressed Air	0.2 – 1.3 years
• Lighting	1.5 – 6.0 years
• Chilled Water Systems	0.3 – 2.0 years



Best Practices

Lighting Retrofit Example

T-12 to T-8 Lighting System Conversion

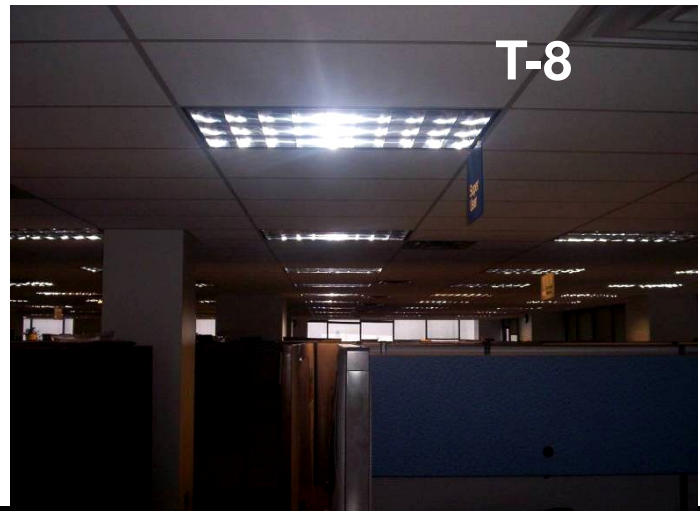
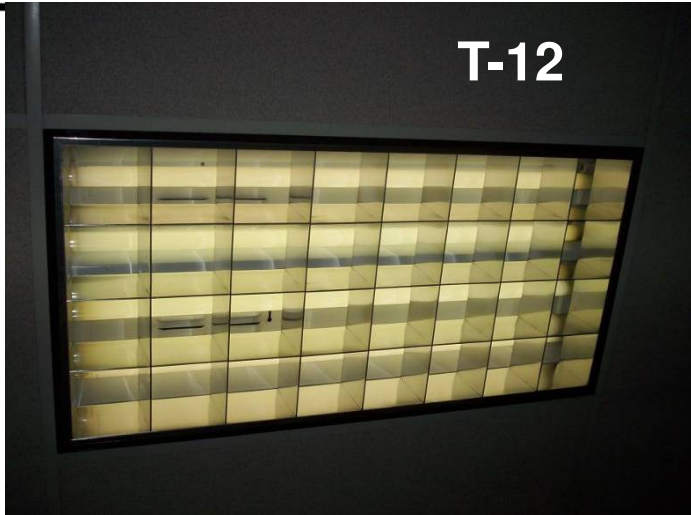
Replaced 766 existing two-foot by four-foot and 45 two-foot by two-foot T-12 lighting fixtures with energy efficient T-8 lighting fixtures.

•Installation Cost	\$118,000
•Total Annual Savings	
Energy	\$25,000
Maintenance	<u>\$2,700</u>
	\$27,700
•Simple Payback	4.3 years



Best Practices

Lighting Retrofit Example, T-12 vs. T-8 Lighting System





Best Practices

Boiler Retrofit Example, Steam to Hot Water System Conversion

- Demolished two 10 MMBTU boilers, coils, heat exchangers
- Installed three modular hot water boilers - 4.0 MMBTU Each
- Replaced steam coils with hot water coils for 6 Air Handling Units
- Installed new boiler room piping and equipment
- Installed new hot water supply and return piping throughout building
- Installed two secondary hot water pumps

• Installation Cost	\$550,000
• Total Annual Savings	\$484,000
• Energy	\$139,000
• Maintenance	\$30,000
• Boiler Operators labor	<u>\$315,000</u>
• Simple Payback	1.1 years



Best Practices

Boiler Retrofit Example , Removal of Old Steam Boiler





Best Practices

Boiler Retrofit Example, New Modulating Steam Boilers





Summary

- DTE Energy is committed to helping customers operate their businesses efficiently, presently and in the future. Customers who have utilized DTE's energy service organizations in the past have realized substantial savings. Saving energy is good for DTE and our customers and we will be there to help our customers during their time of need.

DTE Energy®



Thank You

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