



Leading Energy Management Programs

2006 ENERGY STAR Partner of Year Award Winners

April 19, 2006

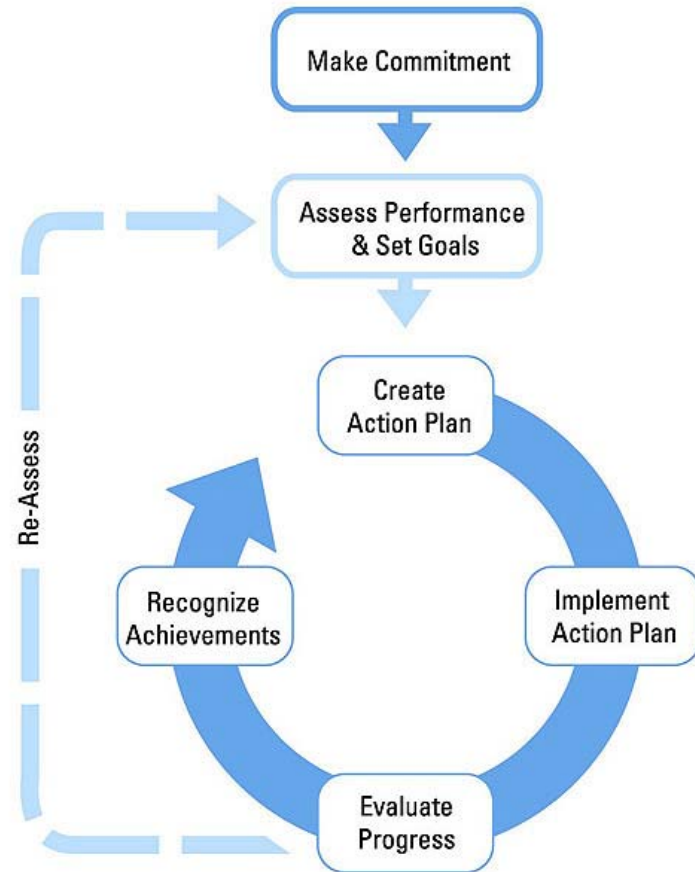
Call-in Number: 1-866-299-3188

Conference Code: 202 343 9965

About The Web Conferences



- **Monthly**
- **Topics are structured on a strategic approach to energy management**
- **Opportunity to share ideas with others**
- **Slides are a starting point for discussion**
- **Open & Interactive**



Web Conference Tips



- Mute phone when listening! Improves sound quality for everyone.
Use * 6 – to mute and # 6 to un-mute
- Hold & Music – If your phone system has music-on-hold, please don't put the web conference on hold!
- Presentation slides will be sent by email to all participants following the web conference.

Today's Web Conference



- Welcome
- Background
- Robert Colucci - Merck & Co.
- William Allemon - Ford Motor Co.
- Announcements

Recognizing Performance



- Facility Level – ENERGY STAR Label
- Portfolio-Wide Improvement – ENERGY STAR Leader
- Organizational Management & Leadership – ES Award



ENERGY STAR Awards



- Across all partnership categories
- Large and small organizations
- Public Institutions and corporations



Awards

- Energy Management
- Service & Product Providers
- Energy Efficiency Program Delivery

Award Categories

- Partner of the Year
- Corporate Commitment
- Sustained Excellence



Energy Management Award



Recognizes:

- Significant energy improvements in 2005
- Demonstration of continuous energy improvement
- Strong organization commitment to energy management and efficiency
- Well designed and managed energy programs that are integrated across the organization
- Active participation and leadership within the ENERGY STAR Partnership

2006 Award Winners



Sustained Excellence – Energy Management:

- 3M
- Food Lion
- Giant Eagle
- Toyota MMNA
- Transwestern Commercial Services
- USAA Real Estate Company

Partner of Year – Energy Management:

- California Portland Cement Co.
- Ford Motor Company
- Frito-Lay
- Gresham-Barlow School District 10Jt.
- Marriott International Inc.
- Merck & Co. Inc.
- New York-Presbyterian Hospital



ENERGY STAR

Monthly Web Conference
April 19, 2006

Merck & Co., Inc.



GLOBAL ENERGY TEAM

About Merck & Co., Inc.



Merck & Co., Inc. is a global research-driven pharmaceutical company dedicated to putting patients first.

Established in 1891, Merck currently discovers, develops, manufactures and markets vaccines and medicines to address unmet medical needs. The Company devotes extensive efforts to increase access to medicines through far-reaching programs that not only donate Merck medicines but help deliver them to the people who need them. Merck also publishes unbiased health information as a not-for-profit service. For more information, visit www.merck.com.



- Merck follows the ENERGY STAR Guidelines for Energy Management
 - Make Commitment
 - Assess Performance & Set Goals
 - Create Action plan
 - Implement Action plan
 - Evaluate Progress
 - Recognize Achievements

Commitment



- Became an ENERGY STAR Partner in 2004; earned the ENERGY STAR 2006 Partner of the Year Award
- Executive Level Sponsorship and reporting structure
- Global, Cross-Divisional Participation with designated Energy Managers at sites in: Manufacturing (29); Research (11); Human Health (3 and growing); and Distribution Centers 4 (US), 2 (Asia), and 10 (Latin America and Mexico)
- Established a new Corporate Energy Goal of 25% reduction in consumption through 2008
- Core Global Energy Team (GET) driving the program

Global Energy Team (GET)



Energy Managers



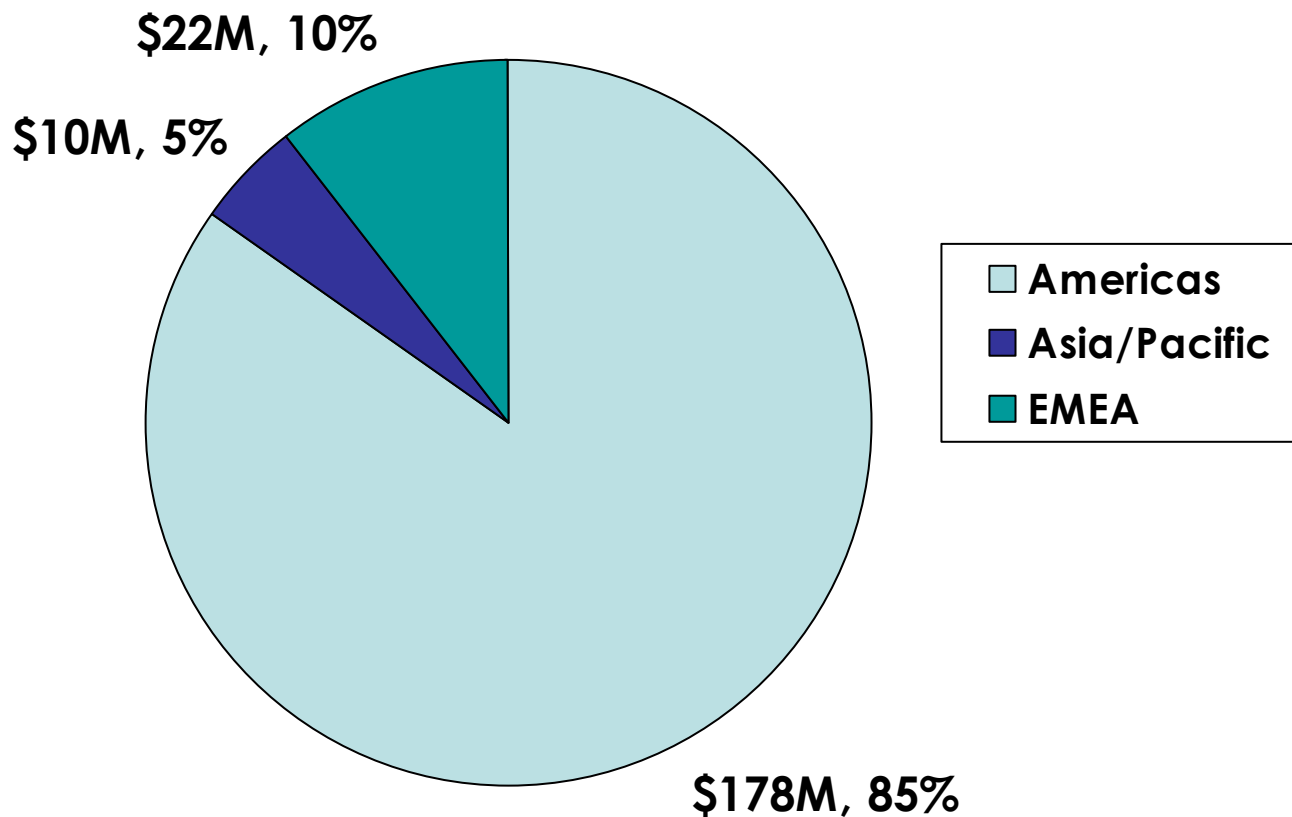
GET Core Team

Employees

Assess Performance (2004 baseline)



2004 Total Utility Spend: \$210M



▶ **85% of Energy Spend is concentrated in Americas Region**

Assess Performance (continued) – Requests for Information and Utility Invoice Management



Merck Facility Data - RFI # 1 (Request for Information)

1. Please update fields 1-14 with appropriate energy information.
2. Click SAVE!



Facility Square Footage

8.0 Facility Gross Square footage (s) (excluding Parking)	2000	-	2003	
	2001	495,000	2004	
	2002		2005 (est.)	

8.1 Administrative Square footage	64	% -or- sqft	Laboratory Square footage	7
Manufacturing Square footage	22		Parking Square footage	0
Common Utility Areas	7			

Note 1 : Provide square footage for overall Administrative, Laboratory and Manufacturing Space. This can be an estimate. (e.g. If a building is 80 % lab space and 20 % office space we are considering the entire building to be lab. Same measure applies to offices and manufacturing buildings. **Note 2** : Common Utility areas include powerhouse and shared chiller buildings.

Peak Shaving & Generation Opportunities

9.0 Avg. Annual Steam Demand	186,696 MMBTU	Avg. Annual Electrical Demand	66,000 kW
Total Steam Capacity	83,697,500 BTU/hr	Connected Electrical Capacity	21,000 kVA

10.0 On-site Electrical Generation If yes, Click here to enter generator information.

11.0 Additional Peak Shaving Capability If yes, Click here to enter peak shaving opportunities.

(gas turbine, steam turbine, micro turbine, etc)

(back-up generators, fuel cells, solar panels)

Assess Performance & Set Goals



- Former Global Program began in 2000 with the goal of:
 - Minimizing Capital Investment on Utility Infrastructure
 - Implementing Energy Best Practices on all new projects
 - Reducing energy consumption by 25% over 6 years

 - Result: 29.7% by the end of 2004

- Revised Global Program aligning Supply & Demand began in 2005, utilizing 2004 as the baseline for a new goal:
 - 25% demand reduction by the end of 2008
 - 5% cost reduction by the end of 2008

Create/Implement Action Plan



Energy Managers



GET Core Team

Employees

- Global Projects –Unilateral implementation
- Discovery – Assessments
- Low Cost – actions with minimal capital investment
- Supply – Utility bill analysis and risk management activities
- Communications – Internal/External
 - Employee Engagement Events
 - Website/Newsletters/Videos/Posters
- LCC – training/education
- Environmental – water use reduction/ GHGs / efficient buildings
- Data & Metrics – measure/assess performance
- Management Systems – resource allocation and reporting
- Best Practices/ New Technology – BPET and “Projects in a box”

Implement Action Plan – Best Practices Evaluation Tool



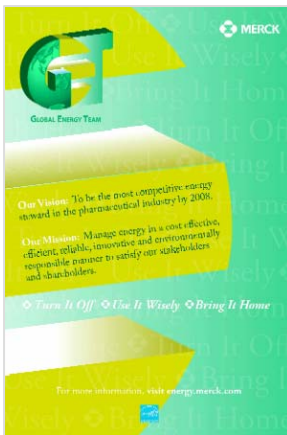
Site: **Rahway**
 Score: **89%**

Energy Management Area		Area Points	% of Total	Applicable Points	Site Points by Area	Site Scores by Area
I.	Administration	86	6%	86	83.4	97%
II.	Building Envelope	80	6%	80	65	81%
III.	HVAC	227	16%	227	181.3	80%
IV.	Lighting	110	8%	110	88.8	81%
V.	Boilers	155	11%	155	155	100%
VI.	Steam Distribution	110	8%	110	96	87%
VII.	Process Cooling	112	8%	112	100.8	90%
VIII.	Compressed Air	135	10%	135	118.6	88%
IX.	Process Applications	235	17%	235	235	100%
X.	Water	50	4%	50	28.2	56%
XI.	Meters	100	7%	100	89.5	90%
TOTAL		1400		1400	1241.6	89%

Implement Action Plan - Communications



- Website revision
- Program posters





The Daily

EPA Names Merck an ENERGY STAR 2006 Partner of the Year

Company Aims to Reduce Its Energy Usage by 25 Percent Through 2008

The U.S. Environmental Protection Agency (EPA) has named Merck an ENERGY STAR 2006 Partner of the Year for the Company's outstanding contribution to reducing greenhouse gas emissions through effective energy management. Merck's accomplishments will be recognized at an awards ceremony on March 21 in Washington, D.C.

Merck, an ENERGY STAR partner for the past two years, was awarded this honor for its impressive results achieved through its strong commitment to corporate energy management. Merck's Global Energy Team (GET) seeks to reduce the total cost of energy ownership in an environmentally responsible manner and has initiatives targeting both demand reduction and procurement savings. For example, energy usage at Merck offices, laboratory sites and manufacturing facilities throughout North America was reduced by 8.6 percent in 2005 over the previous year. GET has adopted an aggressive, Company-wide goal of reducing energy usage by 25 percent by the end of 2008.

"Partnering with ENERGY STAR is an ideal way for Merck to promote environmental stewardship and the wise use of energy, which are essential components of corporate responsibility in today's world," said Dick Clark, CEO and president. "By encouraging the use of energy efficient practices in our global operations, ENERGY STAR is helping Merck meet its environmental commitments while producing significant savings for our Company."

For more information, see the full press release at
www.merck.com/newsroom/press_releases/corporate/2006_0314.html.



- Senior Management Video



Implement Action Plan - Communications



- Inspector Craig Program
 - Energy Star & Energy Thief



PLAY VIDEO

Evaluate Progress



- Metrics for each initiative have been established and will be assessed throughout the year
- Sites will see energy savings directly affecting their individual profit plans
- Visibility to energy savings success will be increased through utilization of a dashboard approach and increased communications to employees

Recognize Success



PARTNER OF THE YEAR

ENERGY STAR Partner of the Year

Thank you for...



Shutting off that light



Teleconferencing instead of driving



Powering down that computer



Closing that fume hood



For more information, visit energy.merck.com



- Program success is dependent upon
 - Creating and following a plan
 - Senior management endorsement
 - Employee engagement
 - Celebrating successes

Ford Motor Company

Energy Program Overview



Bill Allemon, Energy Program Manager, Ford Land





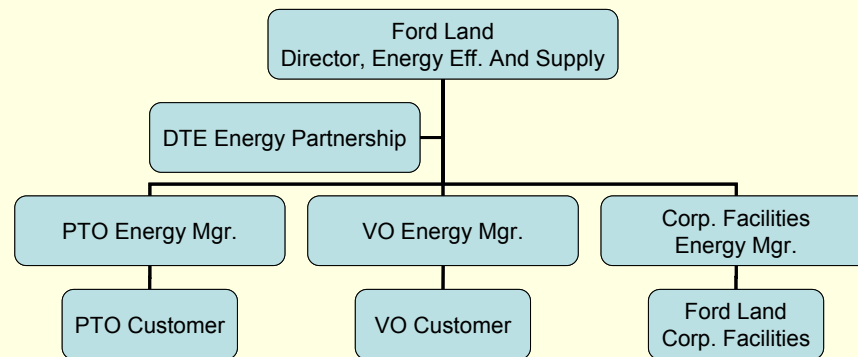
Background & History

- Prior to 1992
 - Small, Supply Side Focused Team
 - Efficiency Programs Managed by Division
 - Consumption Data Collected, but Not Normalized/Published
- 1992
 - Expansion of Ford Land
 - Consolidation of Key Facilities Groups
- 1994
 - 10 Year DTE Energy Contract
 - Onsite CEMs Identify and Facilitate Efficiency Actions
 - Analysis/Normalization of Historical Data
- 2001
 - Five Year Efficiency Program Begins



Current Structure

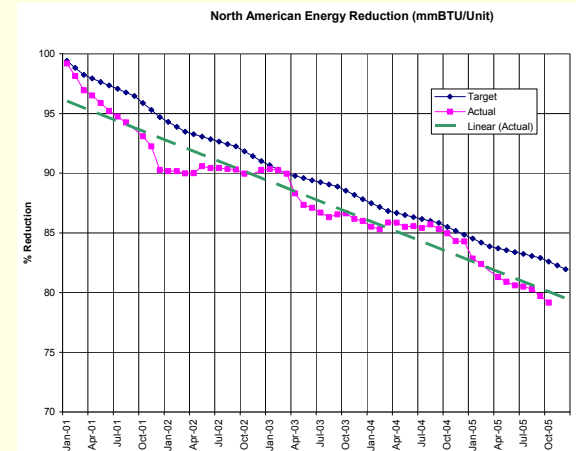
- 40 North American Manufacturing Facilities
- 52 bilBTU load
- \$420M Energy Budget
- Efficiency & Supply Side Management Teams
- Extension of DTE Energy Partnership





mmBTU/Unit Reduction

- 2000-2005 Goal:
 - 18% reduction across N.A.
- Normalized for weather and vehicle production variances.
- Monthly performance report.
- Performance reported through scorecard system.
- 2006-2011 Goal:
 - 5% reduction across N.A.



Element	Line Code	Metrics	2003 Actual	2004 Actual	2005 Business Plan	2006 Forecast 3+9	1Q05
S Sales							
Q Quality							
D Delivery							
C Cost							
M Manufacturing							
E Environment							



Identifying Savings Opportunities

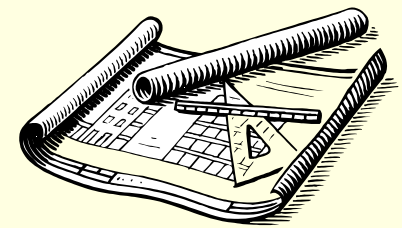
- Low Hanging Fruit
 - Centralized Steam Generation
 - Lighting Upgrades
 - Compressed Air Controls
- Data-Driven Decisions
 - Monthly mmBTU/Unit Report
 - Energy Use Profiles
 - Plant Demand Profiles
- Internal/External Benchmarking
- Innovation
 - Fumes to Fuel
 - BigFoot HVAC System
- Application of Existing Technologies
 - Green Roof, Thermal Storage, Photovoltaics, Solar Collector, etc.





Savings Enablers/Inhibitors

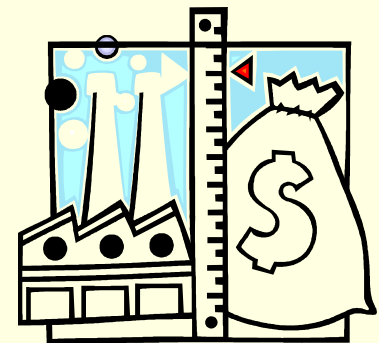
- Capital Projects
 - Hurdle Rate (IRR)
 - Limited Funds
 - Priorities
- Performance Contracting
 - Contract Durations
 - Borrowing Rates
 - Maintenance
- Efficiency Programs
 - Overcoming Inertia
 - Quantifying Opportunities
 - Identifying Inhibitors
 - Maintaining Cadence





Team Value Management Energy Program

- Launched in 2003
- Five Key Low-Cost/No-Cost Actions
 - Weekend Non-Production Shutdown
 - C/A Non-Prod. Volume Reduction
 - C/A Non-Prod. Pressure Reduction
 - General Building Exhaust Fans
 - Paint Booth Humidity Reduction
- Standardized Measures
- Performance Reporting to Senior Leadership





TVM Energy Program Single Point Lesson

Single Point Lesson

Key Elements

- Core Values (vision)
Energy management
- Customer Focus
Set SQDCME energy objectives by department.
- Involvement of Everybody
Are all departments represented on the plant energy team?
- Problem Solving by Everyone
Is an equipment shutdown list used by all departments? Adjust energy control systems per weekly production schedules.
- Leaders for Continuous Improvement as teachers, catalysts, mentors and sponsors.
Is there an active energy awareness program? Provide performance feedback to all departments.
- Management Support System
Does the plant OCM review energy consumption weekly?

**TVM Energy Management – SPL #1
Non-Production Electrical Shutdown**

Definition
Reduction of plant electrical energy consumption during non-production periods (weekends, holidays, production down weeks). Target is 25% of average production electrical usage.

Rationale
Effective shutdowns are a proven way to successfully save energy, eliminate waste, support environmental initiatives and reduce plant operating costs.

Measure
Percent shutdown is defined as the ratio of kWh summed during a minimum four hour non-production period, divided by production kWh summed during the preceding production week. Note that when using kWh, the non-production and production measurement periods must use identical time durations. The Production time interval should attempt to capture consumption during vehicle/component production and not during break or meal downtimes. The Non-Production time interval should similarly capture consumption during the period of lowest usage for that week.

Alternatively, plants that cannot measure kWh during short durations may use kW (demand) readings. Using this measure, percent shutdown is defined as the ratio of lowest average kW during a non-production period, divided by an average kW reading taken during the preceding production week.

Down Weeks & Holiday Weeks – Plants should use actual non-production readings during extended non-production periods, and a typical production value that represents the plant's electrical consumption during normal production periods.

Process
Data is measured by the plant energy coordinator, using the above definitions, and delivered to the TVM Energy Team via an email macro embedded in the TVM Energy Datasheet. Data is due weekly by 1400EST each Tuesday for the preceding week's performance.

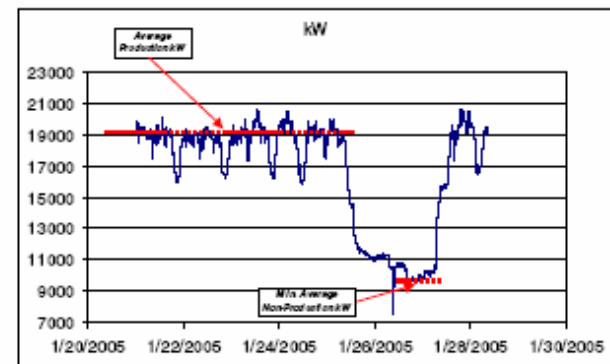
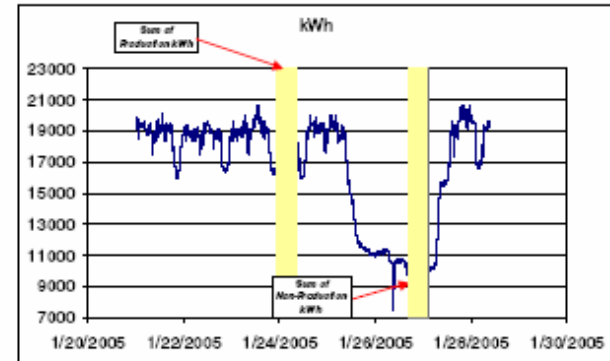
Process Champion: George Andros (gandros)
SME: William Allmon-VO (wllmon)
 George Blends – VO/SBU (gblend)
 Ken Hames – Corporate Properties (hames)
 Tony Kabanicki – PTO (akaback)

Address:
 Energy ePort: <https://tvm2.ford.com/foem/energy/215/FordAndrosGandrosEnergy>
 Energy News Page: http://www.fordand.ford.com/foem/Request_a_service/energy.htm

TVM Energy Management – SPL #1 Non-Production Electrical Shutdown

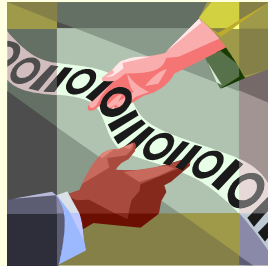
Examples:

All values (averages, minimums, time durations) are identified by the plant, following the minimum requirements outlined in this SPL.

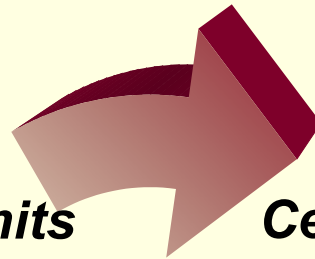




TVM Energy Program Weekly Process Flow

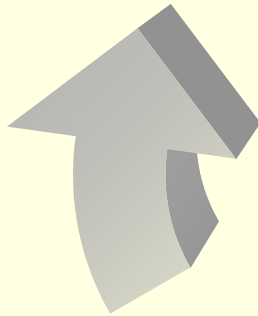


**Plant Submits
Datasheet**

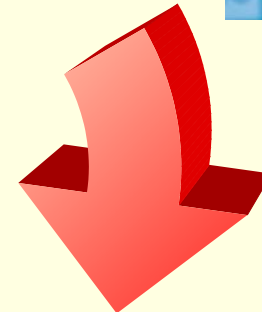


**Centralized
Database**

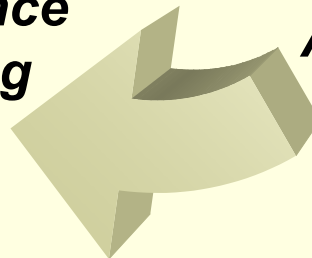
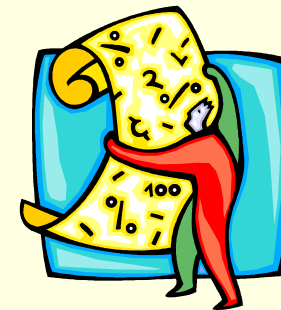
	+2.688
0	+5.000
1	+1.500
0	+1.125
0	+1.062



**Performance
Reporting**

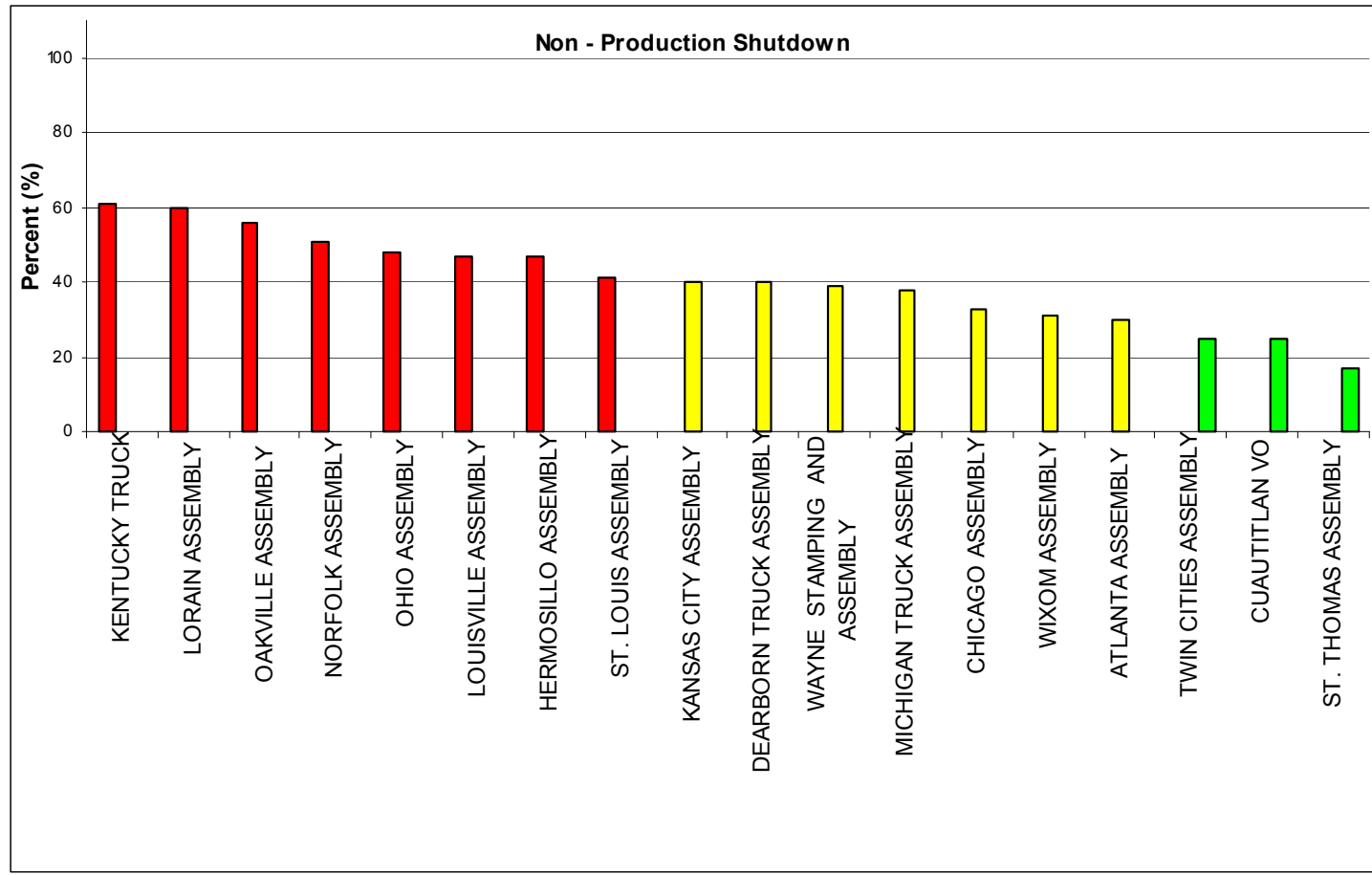


Analysis





TVM Energy Program Weekly Performance Reporting





edit Ford Land Mfg. Services - Energy an eRoom created on 14 Nov 02

nd Mfg. Services -

create

- 5 Utility Metering
- Monitoring
- ject
- hived TVM
- asheets
- ate Change Work
- up
- mpressor Controls
- ject
- liership Energy
- areness
- oom Reports
- SA File Sharing
- SA File Sharing
- d Land Energy
- ply & Efficiency
- b Site
- es to Fuel Team
- Folder (Secure)

Internal Use Only (Secure)	Ford Land Energy Supply & Efficiency Web Site	Reference Files, Web Links and Tools	Monthly mmBTU Reports	Southeast Asia Benchmarking	Archived TVM Datasheets
2005 Utility Metering and Monitoring Project	Compressor Controls Project	Fumes to Fuel Team Folder (Secure)	FAP SA File Sharing	South Africa - Benchmarking	eRoom Reports
SAVEnergy 2005 Program	Climate Change Work Group	FL SA File Sharing	Dealership Energy Awareness	Paint Energy Team (Secure)	

create add file mark read commands

Announcements add an announcement

Energy Star (William Allemon, Construction Svcs & Strat, 29 Jun 05 9:28am)

Ford Motor Company is a registered Energy Star Partner. Energy Star is a partnership between industry and the U.S. Government (EPA, DOE) helping businesses and individuals protect the environment through superior energy efficiency. For more information regarding Energy Star and it's tools, visit www.energystar.gov, or contact Bill Allemon, Energy Program Manager, Ford Land, 313-323-7910.



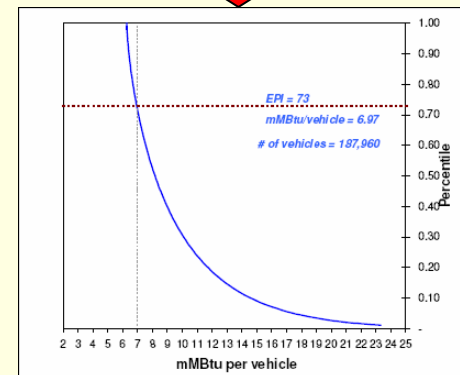
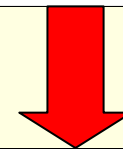
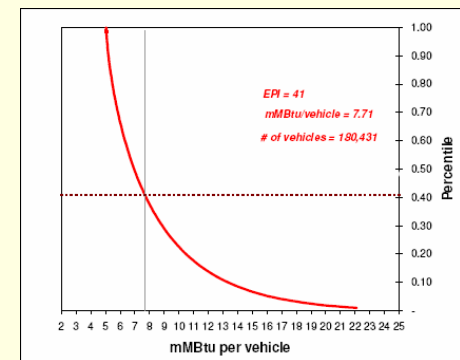
- Internal Use Only (Secure)
- Monthly mmBTU Reports
- Paint Energy Team (Secure)
- Reference Files, Web Links and Tools
- SAVEnergy 2005 Program



Energy Auditing

- Yearly Ford Production System Audits
- Energy Team Visits
 - Review:
 - Energy Management Tools
 - Department Level Metrics
 - Management Reviews
 - mmBTU/Unit Performance
 - ENERGY STAR Automotive EPI Performance

Auto EPI



Automotive EPI Findings



- Energy Star brand and industry focus group review increased credibility.
- Surprised by some 75%+ plants, confirmed performance of others.
- Identified specific opportunities through fuel break-out analysis.
- Baseline data update.
- Plant labeling program will drive change.





Best Practices Replication System



Facilitating the replication of proven practices

Best Practice Replication

ADD. EDIT. DEL

FEEDBACK

SEARCH

REPORTS

OVERVIEW

Gatekeeper

- [BPR Communities](#)
- [Maintain Focal Points](#)
- [Maintain Custom Fld.](#)
- [Maintain Locations](#)
- [Maintain Benefits](#)
- [Maintain Areas of Impact](#)
- [Review Draft Practices](#)

Search

- [BPR Communities](#)
- [Focal Point Lists](#)
- [Advanced Search](#)
- [Simple Search](#)
- [View Notification Profile](#)

BPR Communication

- [BPR Email](#)
- [Contact List](#)
- [Collaboration How To](#)

- [Help](#)
- [HOME](#)

SIMPLE SEARCH

Communities:

Practice Number:

Priority Practices:

VPOS:

Customer Driven 6-Sigma:

Keyword Text:

Practice Status:

- All Status
- Approved
- Archived
- Tip and Technique
- Draft



SAVEnergy Campaign

- Energy Awareness and Cost Saving Competition
- Dearborn Commercial and Research & Engineering Facilities
- Objective:
 - 5% Reduction in KWh
During Cooling Season (May-Sept)
- Training Sessions Promote Energy Saving Ideas for Work and Home
- Reward & Recognition Program
- 2005 Results
 - 9.6M KWh
 - 7,900 Tons CO₂ Emissions





Integrating Energy Management Into Environmental Sustainability

- Facility Projects
 - Detroit Lions Training Facility
 - Ford Rouge Center
 - Dearborn Truck Plant
 - Rouge Visitor Center
 - Premier Automotive Group Headquarters
- Cross-Functional Teams
 - Ford Land Sustainability Steering Committee
 - Climate Change Steering Committee
- Organizations
 - LEED, ASHRAE, etc.





Q&A



Questions & Discussion

Upcoming Web Conferences



May 17 – High Performance HVAC

June 21 – Day lighting

July 26* – Using Energy Information
Services Strategically

August 16 – State-of-the-art Sub Metering

Download past web conference presentations at:
www.energystar.gov/networking



Thank You!