

ENERGY STAR for Industry

Forum on Energy Efficiency in Manufacturing

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Toledo, Ohio

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Learn more at energystar.gov

What is ENERGY STAR?



- Voluntary Government Partnership Program
- Established by EPA in 1992 to help address global climate change
- Focused on the energy efficiency of:
 - Products
 - Homes
 - Buildings & Industrial Plants
 - Organizations
- National symbol for efficiency



ENERGY STAR Partnership



- Over 3000 Companies Participate in ENERGY STAR programs
- Helped Americans save over \$19 billion in utilities costs
- Help prevented over 43 MMTCE in GHG Emissions

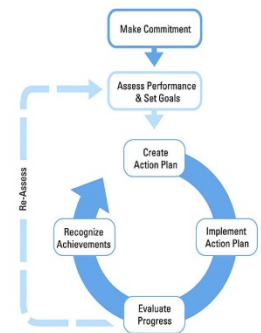


ENERGY STAR for Buildings & Plants



ENERGY STAR works with manufacturers to develop stronger energy management programs by offering:

- ✓ Energy Management Guidance
- ✓ Energy Program Resources
- ✓ Sector-specific Facility Energy Performance Ratings
- ✓ Energy Strategy Development
- ✓ Recognition Programs



Emphasis on energy management practices

Why Focus on Energy Management?



- External Factors:
 - Climate change
 - Changing energy markets
 - Changing public perceptions

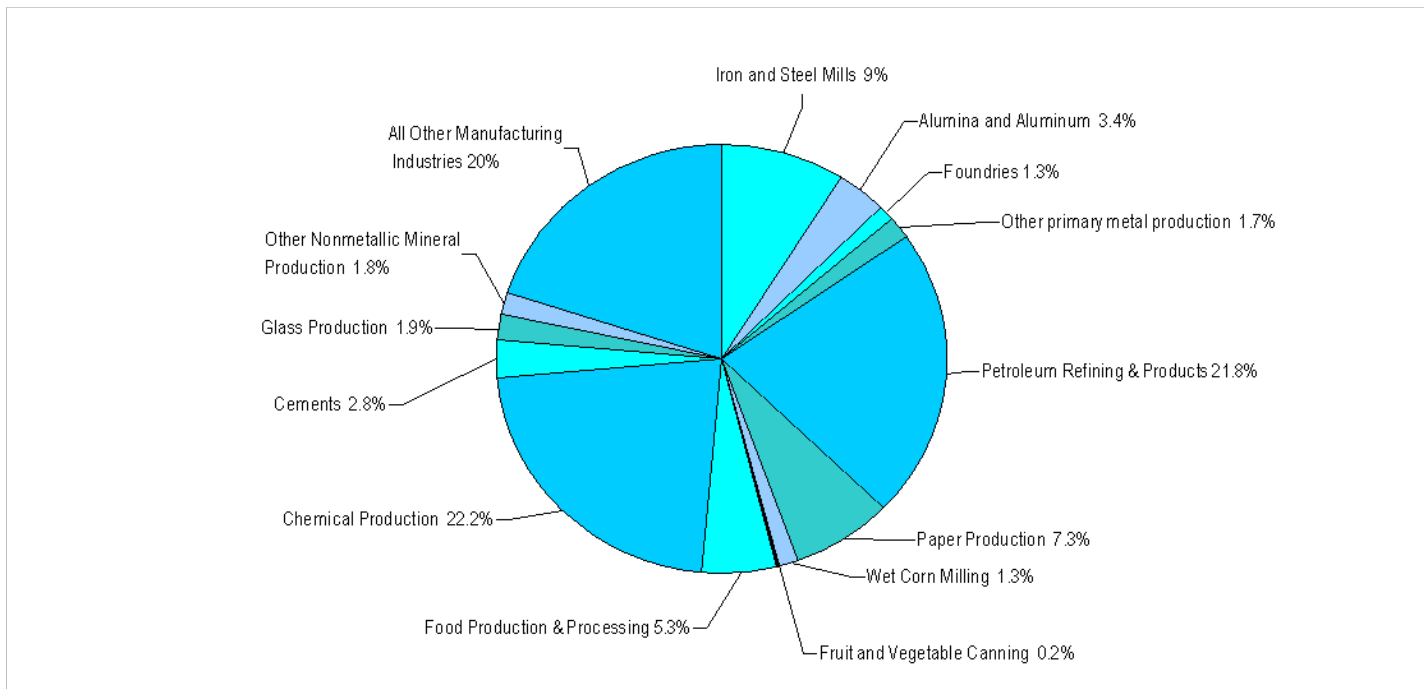
- Internal Factors:
 - Risk management
 - Cost control
 - Competitiveness

Climate and Energy



- Most company's GHG emissions are linked to energy use
- Federal GHG reporting regulations will be released in Fall 2009
- GHG accounting is largely linked to energy use

Distribution of Industrial CO2 Emissions (Direct and Indirect)

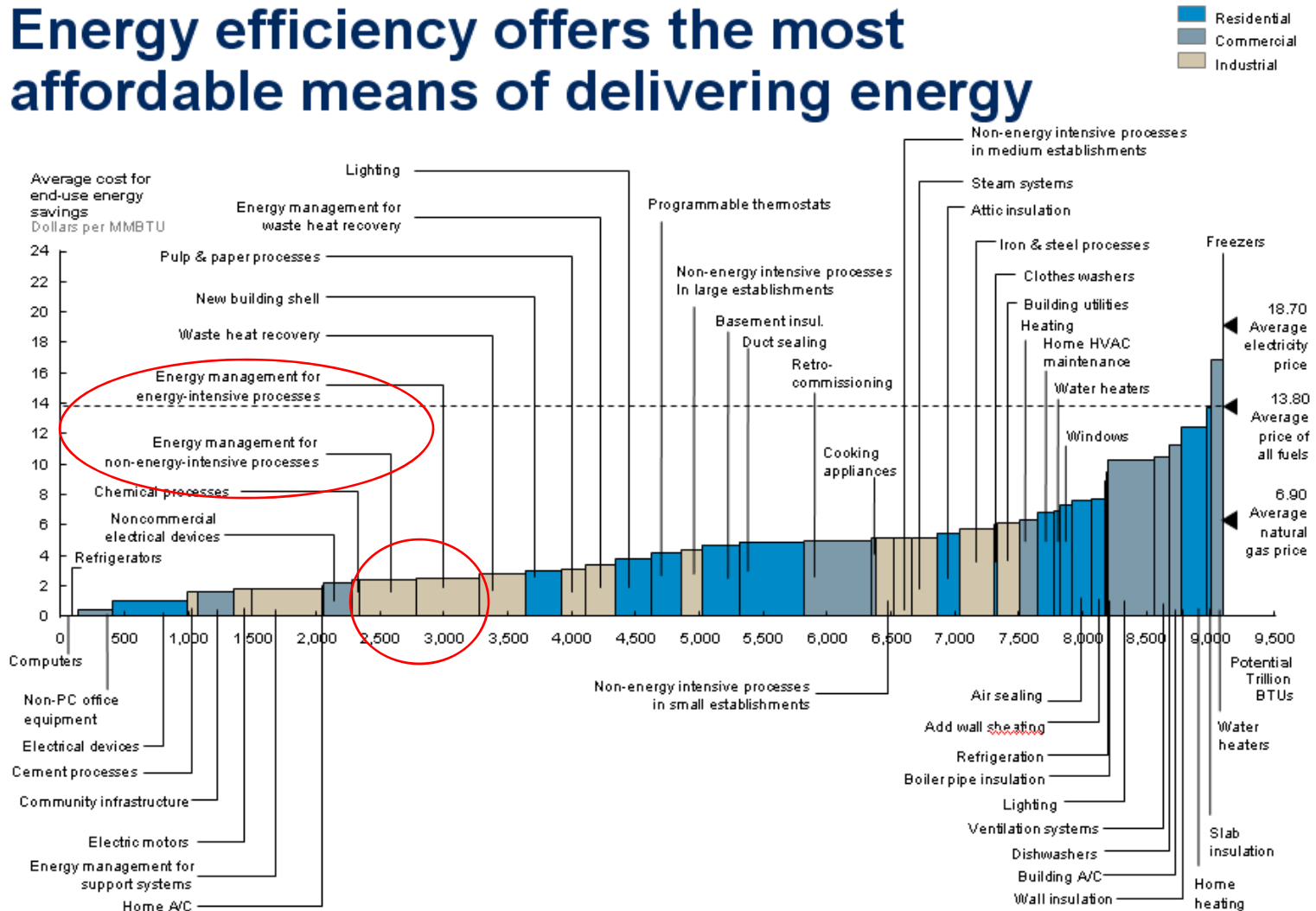


Does your company have the infrastructure to reduce climate risk?

Energy management is cost effective



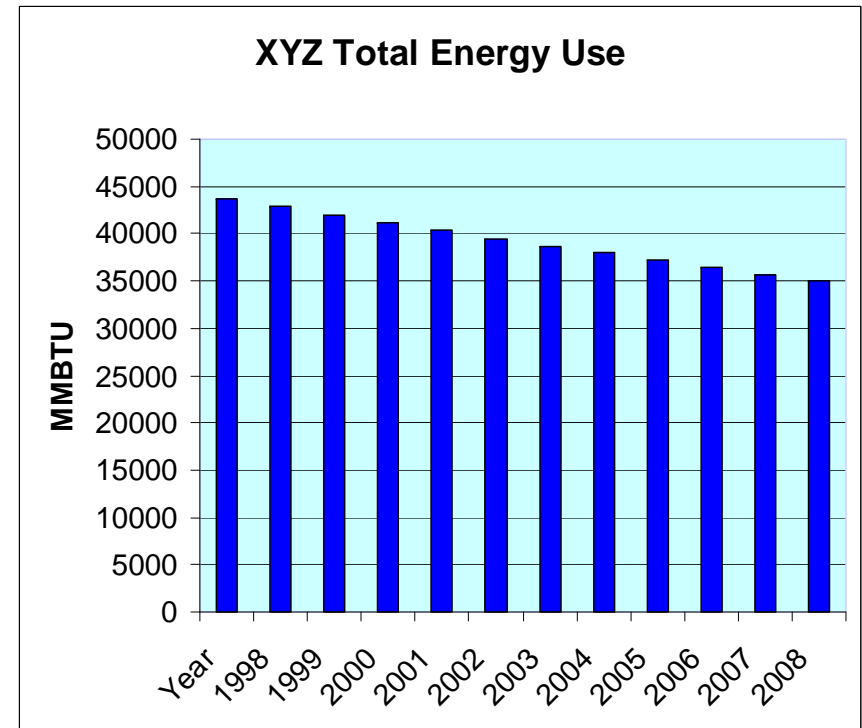
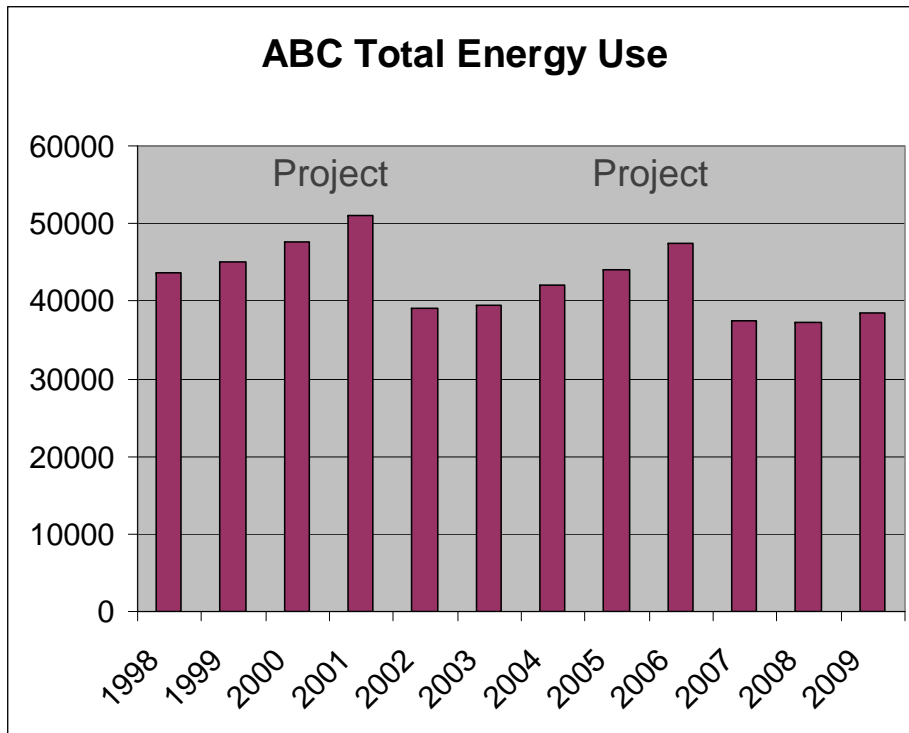
Energy efficiency offers the most affordable means of delivering energy



Project vs. Program



Energy management programs focus on continuous improvement

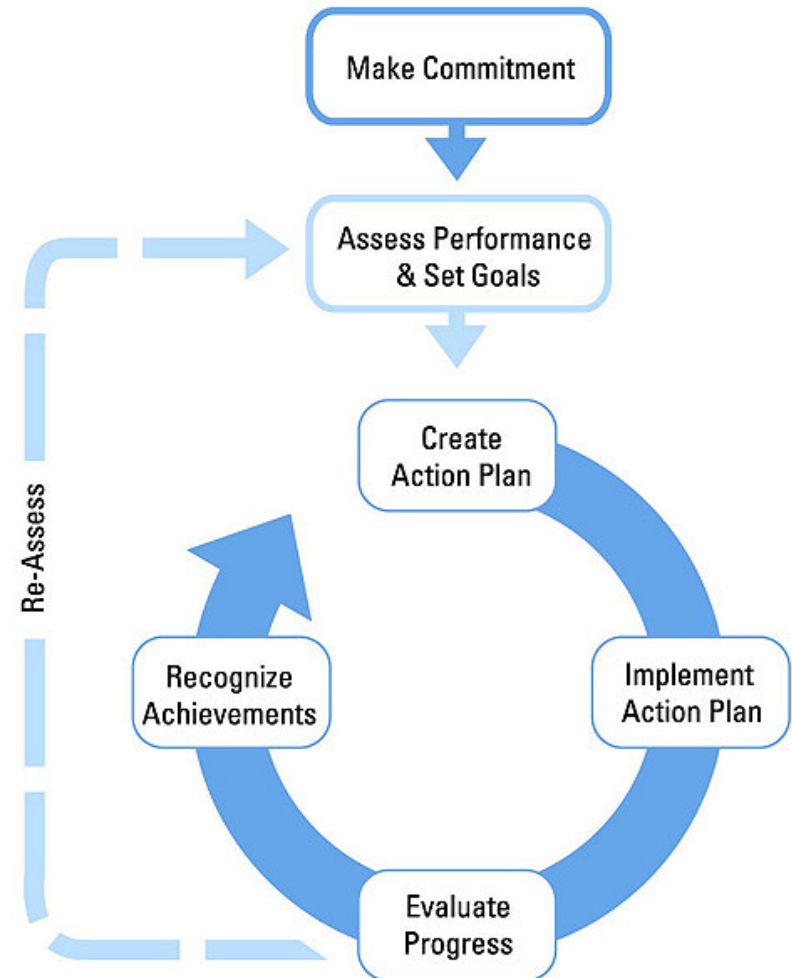


ENERGY STAR Guidelines For Energy Management



Describes the core management elements for successful energy management:

- Based on the successful practices of leading ENERGY STAR partners.
- Identifies the key components for a successful energy management program
- Used and widely recognized by hundreds of companies in the US.
- www.energystar.gov/guidelines



Building Your Team



Corporate Level

- Energy Director
- Energy program managers (demand)
- Energy procurement (supply)
- Cross functional team members:
 - Communications, financial, EHS, HR, etc
- Special Teams

Site Level

- Plant Managers
- Champions
- Shop Captains
- Partners (vendors, consultants)

Network

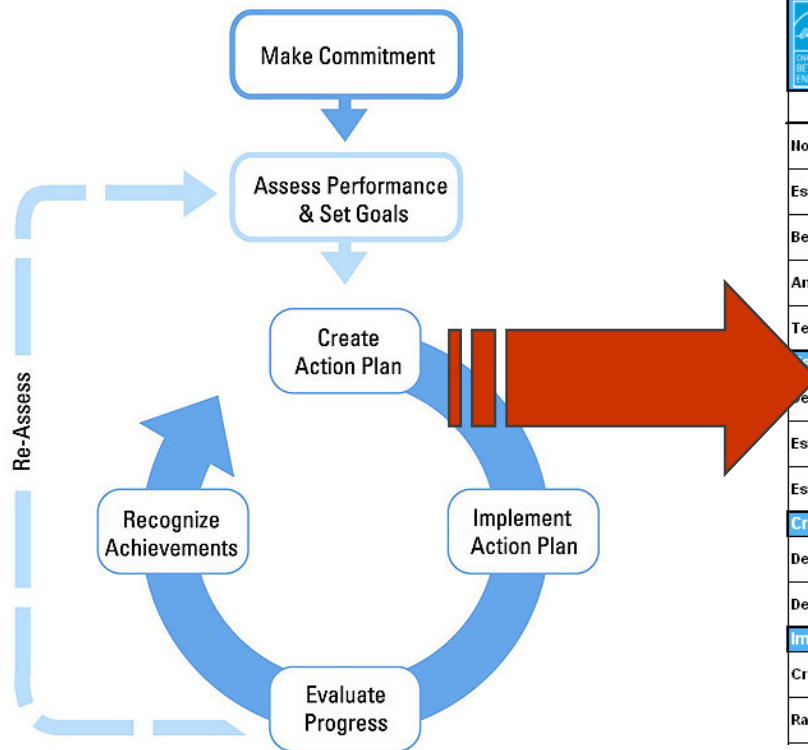
- Corporate
- Site
- Other departments and stakeholders



Assessment Matrixes



Benchmark company and facility energy programs practices



ENERGY STAR [®] Guidelines for Energy Management Matrix			
	Little or no evidence	Some elements/degree	Fully implemented
Normalize	Not addressed	Some unit measures or weather adjustments	All meaningful adjustments for corporate analysis
Establish baselines	No baselines	Various facility-established	Standardized corporate base year and metric established
Benchmark	Not addressed or only same site historical comparisons	Some internal comparisons among company sites	Regular internal & external comparisons & analyses
Analyze	Not addressed	Some attempt to identify and correct spikes	Profiles identifying trends, peaks, valleys & causes
Technical assessments and audits	Not addressed	Internal facility reviews	Reviews by multi-functional team of professionals
Set Performance Goals			
Determine scope	No quantifiable goals	Short term facility goals or nominal corporate goals	Short & long term facility and corporate goals
Estimate potential for improvement	No process in place	Specific projects based on limited vendor projections	Facility & corporate defined based on experience
Establish goals	Not addressed	Loosely defined or sporadically applied	Specific & quantifiable at various organizational levels
Create Action Plan			
Define technical steps and targets	Not addressed	Facility-level consideration as opportunities occur	Detailed multi-level targets with timelines to close gaps
Determine roles and resources	Not addressed	Informal interested person competes for funding	Internal/external roles defined & funding identified
Implement Action Plan			
Create a communication plan	Not addressed	Tools targeted for some groups used occasionally	All stakeholders are addressed on regular basis
Raise awareness	No overt effort made	Periodic references to energy initiatives	All levels of organization support energy goals

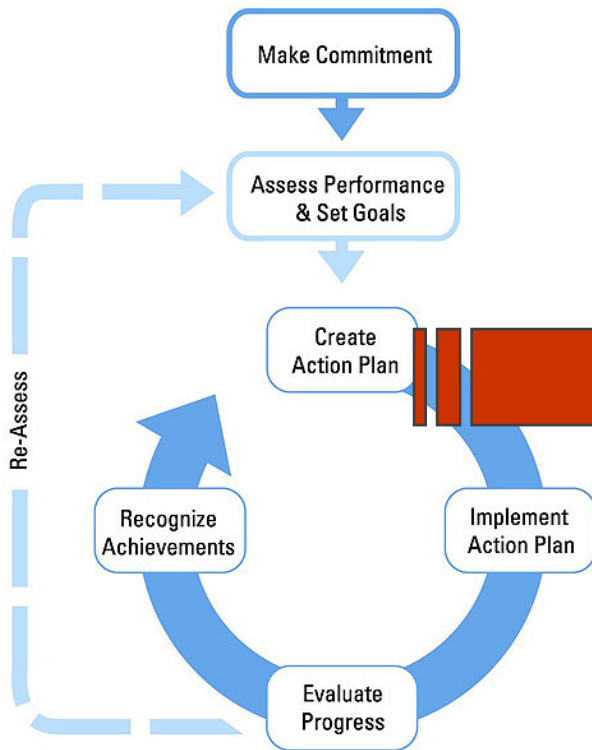
Used in hundreds of corporate programs



Steps you can take now



Benchmark your facilities energy management practices



ENERGY STAR® Facility Energy Management Assessment Matrix				
	Little or no evidence	Some elements/degree	Fully implemented	Next Steps
Commit to Continuous Improvement				
Site Energy Leader	None assigned.	Assigned responsibilities but not empowered. 20-40% of time is devoted to energy.	Recognized and empowered leader having site manager and corporate energy manager support.	
Site Energy Champion	None identified.	Senior manager implicitly supports the energy program.	Senior manager actively supports the energy program and promotes energy efficiency in all aspects of site operations.	
Site Energy Team	No site energy team.	Informal organization with sporadic activity.	Active cross-functional team guiding site energy program.	
Corporate Energy Policy	No corporate policy.	Corporate policy in place. Little awareness by site energy team and limited application of policy.	Corporate policy supported at site-level. All employees aware of goals and responsibilities.	
Site Energy Plan	No written plan.	Informal plan not widely known.	Written formal plan endorsed, distributed, and verified.	
Energy Budgeting and Accountability	No energy budgeting and accountability.	Estimates used for allocating energy budgets.	Key users are metered separately. Each entity has total accountability for their energy use.	
Reporting and External Involvement	No reporting of energy performance data or involvement in external organizations.	Some participation, sharing, mentoring, and professional memberships. Annual reporting of performance.	Participates in energy network/organizations. Shares best practices/mentors other sites. Reports usage quarterly.	
Assess Performance and Opportunities				
Analyzing Data	Limited metering or tracking. No demand analysis or billing evaluation.	Some metering, tracking, analyzing, and reporting. Energy bills verified for accuracy.	Key loads metered, tracked, analyzed, and reported. Facility peak demand analyzed. Adjusts for real-time demand.	
Documentation	No manuals, plans, designs, drawings, specs, etc. for building and equipment available.	Some documentation and records available. Some review of equipment commissioning specs conducted.	Critical building and equipment documentation available and used for load surveys/recommissioning/efficiency goals.	
Benchmarking	Energy performance of systems and facilities not benchmarked.	Limited comparisons of specific functions, or only same-site historical comparisons.	Key systems/sites benchmarked using comparison tools like Portfolio Manager/Energy Performance Indicators.	
Technical Assessments	No formal or external reviews.	Limited review by vendors, location, or corporate energy managers.	Extensive regular reviews by multi-functional team of internal and external professionals. Full assessment every 5 years.	
Best Practices	None identified.	Ad hoc or infrequent monitoring of trade journals, internal databases, and other facilities' best practices.	Regular monitoring of trade journals, internal databases, and other facilities. Best practices shared and implemented.	
Set Performance Goals				
Goals/Potential	Energy reduction goals not established.	Loosely defined. Little awareness of energy goals by	Potential defined by experience or assessments. Goals roll	

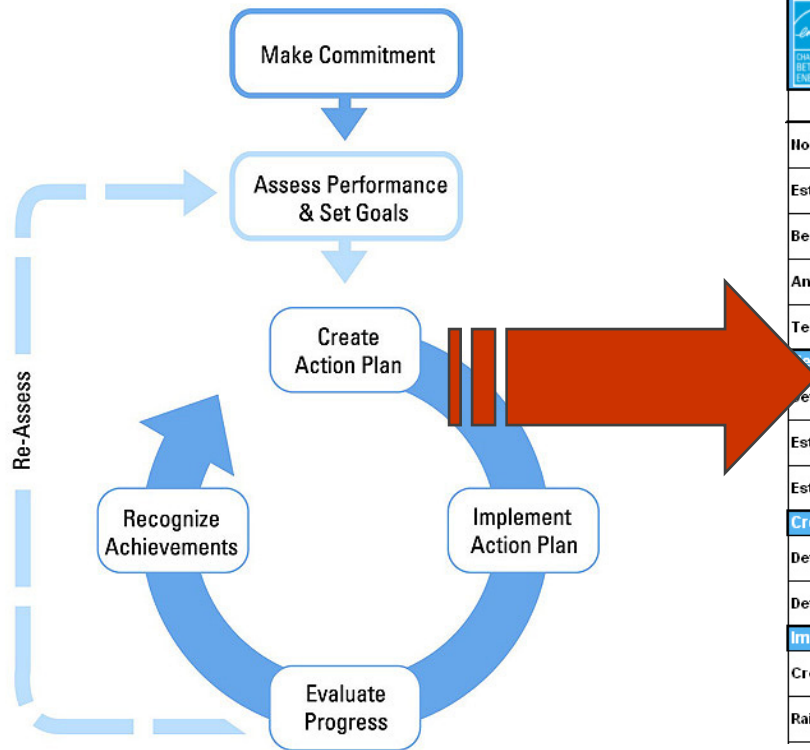
Facility Energy Management Assessment Matrix



Steps you can take now



Benchmark your energy program's practices



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Energy Program Assessment Matrix

Networking and Peer Exchanges

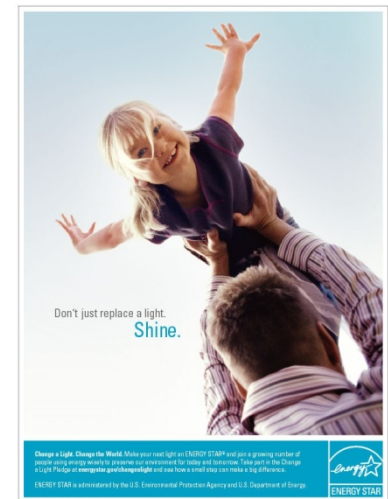


- ENERGY STAR offers partners:
 - Monthly web seminars with speakers from top energy programs
 - Annual Industrial Focus meeting
 - Benchmarking with other partners

Additional Energy Management Resources



- Energy Strategy for the Road Ahead (Booklet & PDF)
- Communication resources
- Building-up grade manuals
- Energy management resource library
- Key URLs – www.energystar.gov/industry
 - www.energystar.gov/energystrategy
 - www.energystar.gov/publications



ENERGY STAR Industry Focus



For specific, energy intensive industries, ENERGY STAR convenes “Industry Focuses.” Focuses are:

Collaborative process to develop:

- ✓ Energy Performance Indicator (EPI) to benchmark performance
- ✓ Energy Guide

And facilitates:


- ✓ Sharing of best practices
- ✓ Networking
- ✓ Development of stronger corporate energy programs

That results in:

- ✓ Sophisticated plant benchmarking tool
- ✓ Recognition for energy efficient plants with the ENERGY STAR
- ✓ Create momentum for continued improvement
- ✓ Improve efficiency within an industry sector
- ✓ Prevention of carbon emissions

ENERGY STAR Industrial Focuses

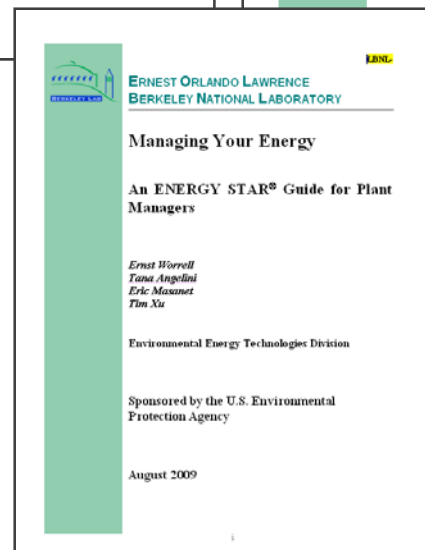
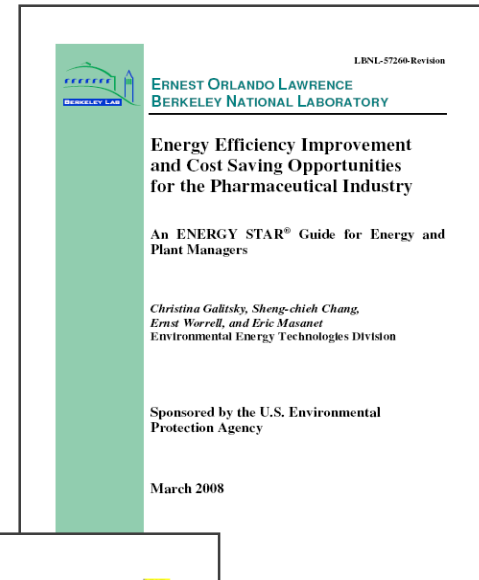
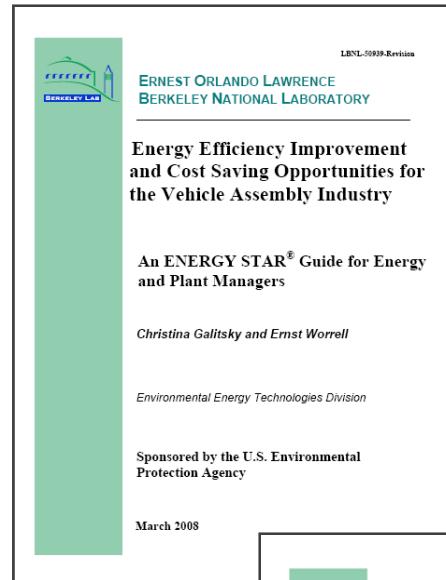


Focus	Years Active	Scope	Peer Exchange Network	Industrial Energy Guide	Energy Performance Indicator	
Cement Manufacturing	5	75% of U.S.-based clinker production	★	Published	Released	✓
Corn Refining	6	95% of U.S.-based refining capacity	★	Published	Released	✓
Food Processing <ul style="list-style-type: none"> • Cookies & Crackers • Juice • Potato Products • Tomato Products 	3	80% of U.S.-based processed fruit, vegetable, and grain sales	★	Published	Draft Fall 2009 Fall 2009 Draft	
Glass Manufacturing <ul style="list-style-type: none"> • Fiberglass • Flat glass • Container glass 	3	50 % of U.S. flat container and fiberglass sales	★	Published	Fall 2009 Fall 2009 Fall 2009	
Motor Vehicle Manufacturing	7	95% of the industry with U.S.-based production	★	Published	2 nd Version Released	✓
Petrochemical Manufacturing	2	83% of U.S.-based production capacity	★	Published	Draft	
Petroleum Industry	4	64% of U.S.-based refining capacity	★	Published	Private system recognized by EPA	✓
Pharmaceuticals	4	Over 50% of global and U.S. manufacturing capacity	★	Published	Released	✓
Pulp & Paper	2	70% of U.S.-based companies global sales	★	Draft	Draft	
Steel	1	95% of integrated production	★	In process	Exploring Options	
Metal Casting		Partnership with the American Foundry Society	★	In processes	Exploring Options	

Energy Guides



- Provide information on strategies, technology, and resources available now.
- Sector oriented – but many applications are cross cutting
- General manufacturing guide to be released this fall.



Recognition for Best in Class



- Facilities scoring 75 or higher on ENERGY STAR rating system are eligible.
- 5409 ENERGY STAR Commercial Buildings
Offices, Retail, Supermarkets, Warehouses, Hospitals, Schools, Hotels
- 50 ENERGY STAR Industrial Plants
Auto Assembly
Cement
Wet Corn Milling
Petroleum Refining
Pharmaceutical Plants



2009 ENERGY STAR QUALIFIED PLANT

This plant meets strict energy performance levels set by the U.S. EPA.

www.energystar.gov

Recognition for Corporate Leadership



Sustained Excellence – Energy Management:

- 3M
- Advantage IQ
- California Portland Cement Co.
- Food Lion
- Ford Motor Company
- Giant Eagle
- Gresham Barlow School District*
- JC Penney Company Inc.*
- Marriott International Inc.
- Merck & Co. Inc.
- PepsiCo
- Providence Health & Services*
- Raytheon Company
- Toyota MMNA
- TRANSWESTERN
- USAA Real Estate Company

Partner of Year – Energy Management:

- ArcelorMittal USA
- CB Richard Ellis, Inc.
- CEMEX Inc.
- Council Rock School District
- Kennedy Associates Real Estate Investment Advisors
- Kimberly-Clark Corporation
- Nash-Rocky Mount Public Schools
- Saint-Gobain
- Schering-Plough Corporation
- Servidyne
- Whitefish Bay School District
- TIAA-CREF



www.energystar.gov/awards



Recognition for Partners



The ENERGY STAR® Challenge:
Build a Better World 10% at a Time



Demonstrate your commitment to continuously improving energy performance by joining the ENERGY STAR Challenge.

Benefits For Manufacturers



ENERGY STAR Provides:

- Logical strategy for energy management
- Technology transfer
- Benchmarks & measures of energy performance/targets of performance
- Networking and contact with peers in a non-sell environment
- Case studies & real-world examples
- Public recognition of company achievements
- Good corporate citizenship image
- Results can be used in corporate PR and EHS Programs
- Validation of efforts (a.k.a. third party validation)