



Energy Management with ENERGY STAR

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ENERGY STAR Industrial Partnership
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Learn more at energystar.gov

Overview



- Value of energy management
- The best practices of energy management
- ENERGY STAR's resources

ENERGY STAR & Industry



- EPA's goals for industrial energy performance
 - “Shift the curve” of energy performance for manufacturing industries
 - Identify the transformative practices to achieve top energy performance
 - Help companies succeed in achieving top performance

Energy management



*A system of procedures,
checks and balances focused on continuous
improvement of energy performance
within an organization*

- EPA promotes corporate wide energy management to achieve the best performance

Why focus on energy management?



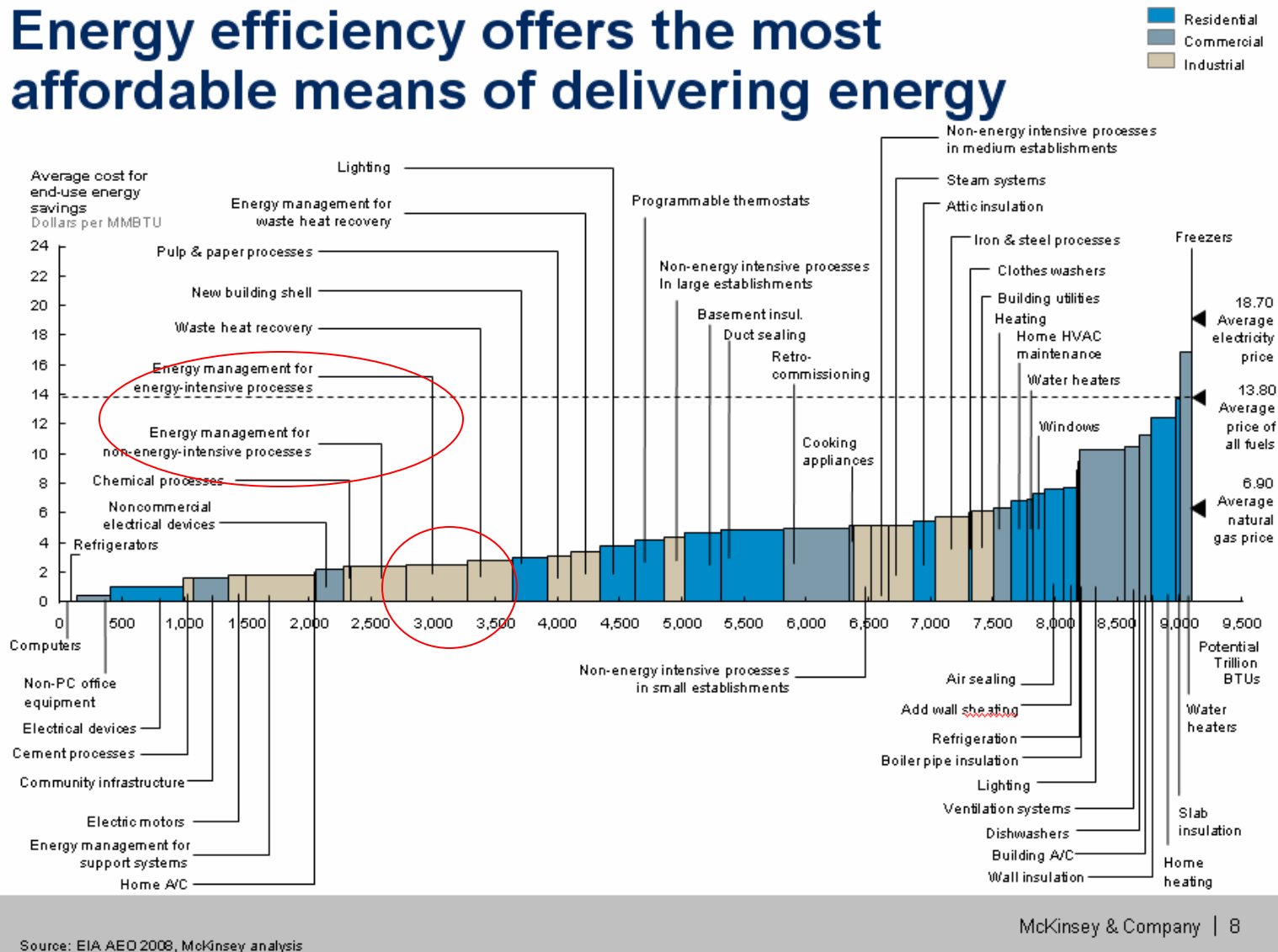
- External Factors:
 - Climate change
 - Changing energy markets
 - Changing public perceptions

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

Energy management is cost effective



Energy efficiency offers the most affordable means of delivering energy



Barriers to energy efficiency prevent progress



- Scarce information on how to improve
- Lack of objective measurement methods
- Short-term framework, reactive not proactive
- Decentralized
- Project-focused - not continuous improvement
- Little accountability for energy use
- Poor organizational support for using existing technology

Strategic energy management helps resolve barriers



- EPA, through ENERGY STAR, emphasizes strategic corporate energy management
 - Cost-effective, simple approach
 - Necessary for continual energy improvement
 - High-level energy management strategies

Change the view of energy



- ENERGY STAR helps businesses:
 - plan for the “energy future”
 - establish formal energy programs
 - motivate continuous improvement
 - make energy management an integral part of business strategy
 - identify best management practices and existing improvement opportunities
 - understand the new impacts, risks and opportunities

ENERGY STAR



- Voluntary government partnership
 - Established by EPA in 1992
 - Enables companies to achieve their best in energy efficiency
- The national symbol of energy efficiency and environmental protection
 - Awareness exceeds 70% of U.S. households
 - A brand owned and managed solely by the government
- Focused on the energy efficiency of:
 - Products
 - Homes
 - Organizations, including Buildings & Industrial Plants
- Helps manufacturers improve strategic energy management.



ENERGY STAR Programs



✓ Products

Product energy efficiency standards
Consumer awareness



✓ Homes

Residential E.E. scoring
Residential home improvement

✓ Plants & Buildings

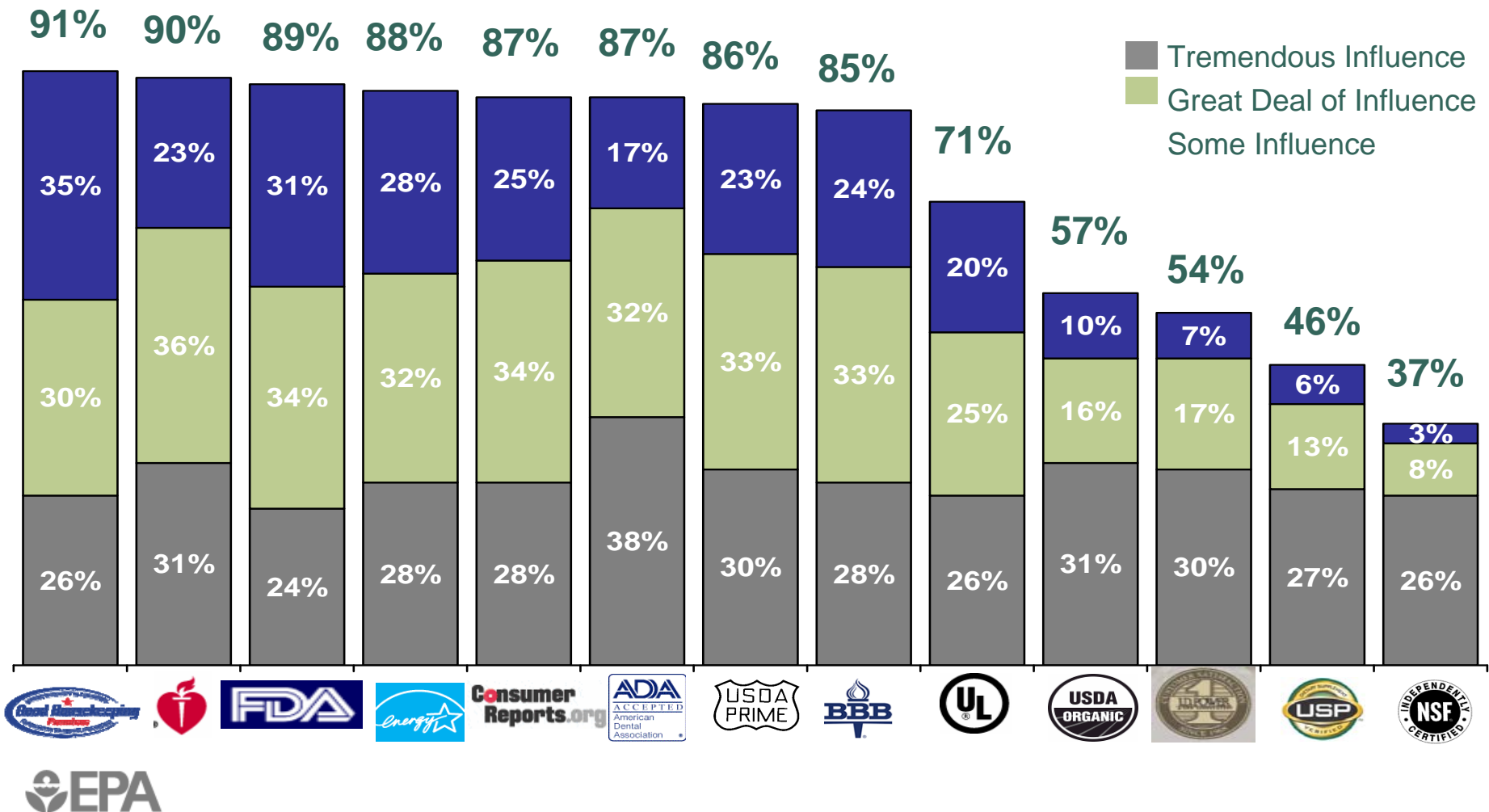
Facility energy efficiency scoring systems
Organizational energy management guidance



National symbol of energy efficiency



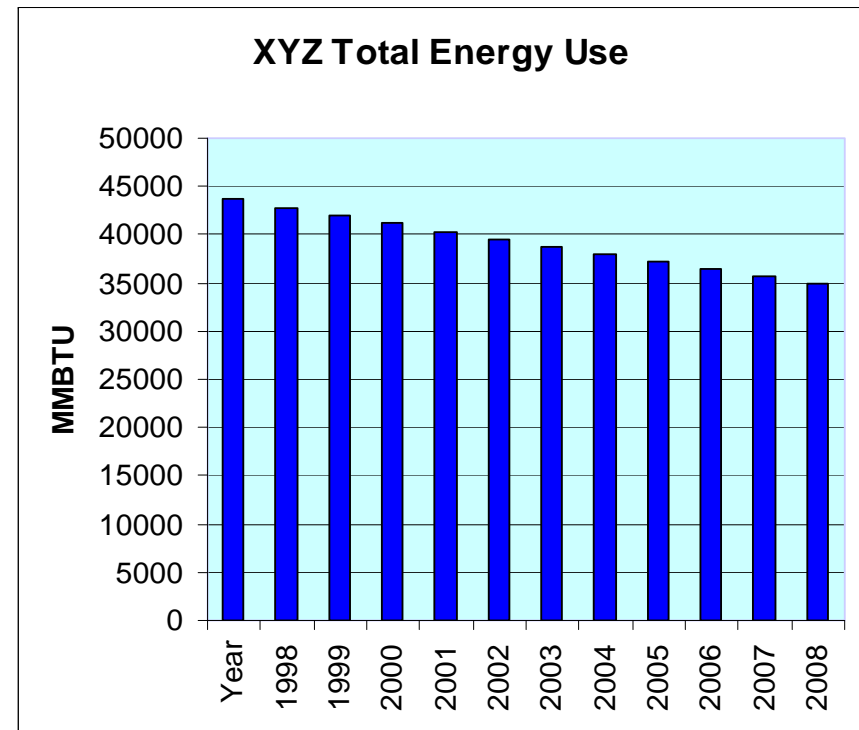
Comparative Brand Recognition Rates



Corporate energy management



- Drives continuous improvement across the company
- Manages and quantifies ALL energy use
- Maximizes savings so all facilities learn together



Leaders in energy management



Partner of Year – Energy Management:

- CB Richard Ellis, Inc.
- **CEMEX**
- Council Rock School District
- **FetterGroup**
- **Hanesbrands**
- Kennedy Associates Real Estate Investment Advisors
- **Kimberly-Clark Corporation**
- Nash-Rocky Mount Public Schools
- **Nissan**
- **Saint-Gobain**
- Servidyne
- **Sunoco**
- Whitefish Bay School District
- TIAA-CREF

Sustained Excellence – Energy Management:

- **3M**
- Advantage IQ
- **ArcelorMittal USA**
- **CalPortland Company**
- 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



www.energystar.gov/awards



What distinguishes the leaders?



- Energy management is a priority!
 - Senior leadership support
 - Energy policies and goals
- Responsibility for energy is assigned
 - Corporate energy manager
 - Site energy coordinators
 - Corporate energy network
 - Employees aware of their important roles
- Energy management systems in place
 - Procedures and process established
 - Tracking, benchmarking, reporting
 - Mechanisms for regular assessments
- Capital projects and no/low cost behavioral projects pursued
- Strong communication components in the program

Pathway for success



1. Evaluate risks, prepare energy strategy including senior management
2. Company-wide energy program based on ENERGY STAR guidelines
3. Look up and down the Energy Value Chain

Step 1 - energy strategy



Energy Strategy for the Road Ahead



Scenario Thinking for Business Executives
and Corporate Boards

2007

GBN Global Business Network
a member of the Monitor Group

Energy Strategy for the Road Ahead

- used by leading companies to establish long-term energy strategy
- developed with 20 leading companies and their senior managers

•Report at:

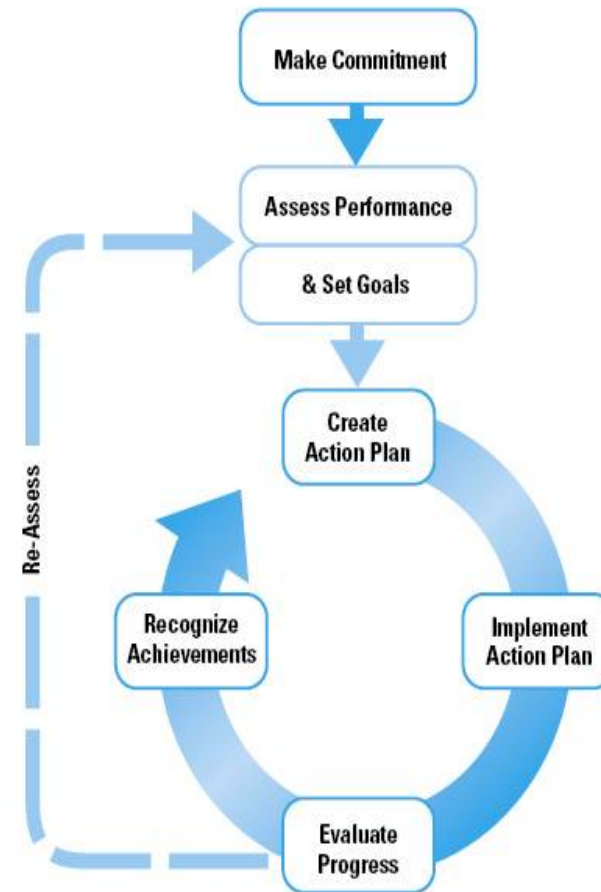
www.energystar.gov/energystategy

Step 2 - manage energy



ENERGY STAR Guidelines for Energy Management

- leading corporations use these guidelines to evaluate their energy programs
- help to put in place a strong energy management program
- helps to benchmark energy use and practices
- www.energystar.gov/guidelines

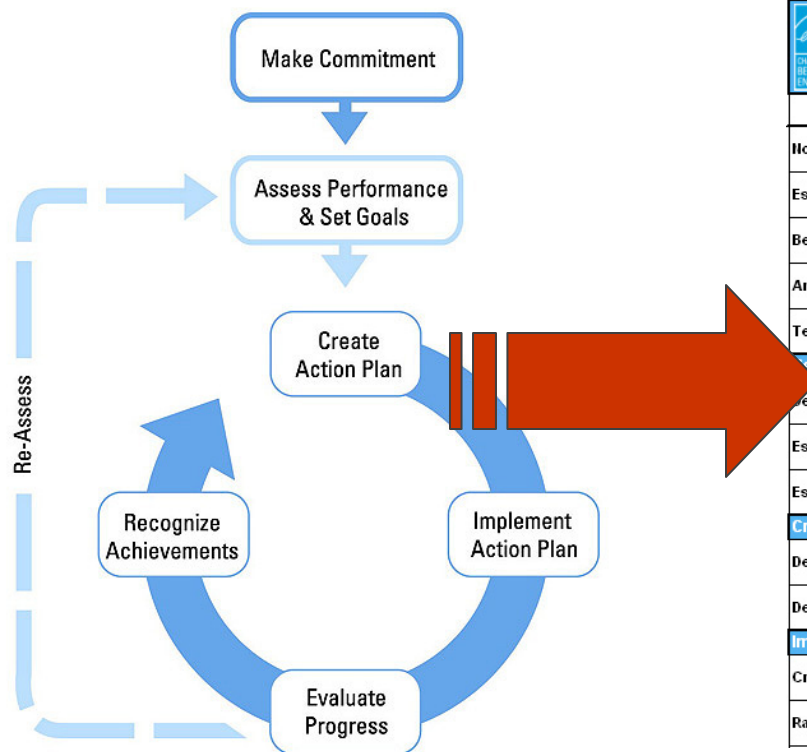


Assess your energy program

– how does it compare?



Benchmark company and facility energy management 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

Hundreds of corporations use these to gauge progress



More **ENERGY STAR** resources



- **Basics for building an energy program**
 - ENERGY STAR Guidelines for Energy Management
 - How to benchmark energy in a plant
- **Advanced energy strategy**
 - *Energy Strategy for the Road Ahead*
- **Energy program and facility assessment matrices**
 - corporate program
 - manufacturing plant
- ***Teaming Up to Save Energy***
 - Guide for strengthening an energy team
- **Communication resources**
- **Partner networking**
 - Energy management practice benchmarking
- **And lots more!**

- www.energystar.gov/industry

The efficiency equation



Where:

Energy Efficiency = Engineering + Culture Change

Then:

- If your company does not have an energy program & team – form one!
- If your company has energy program – focus together on culture change.

Building teams to save energy



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



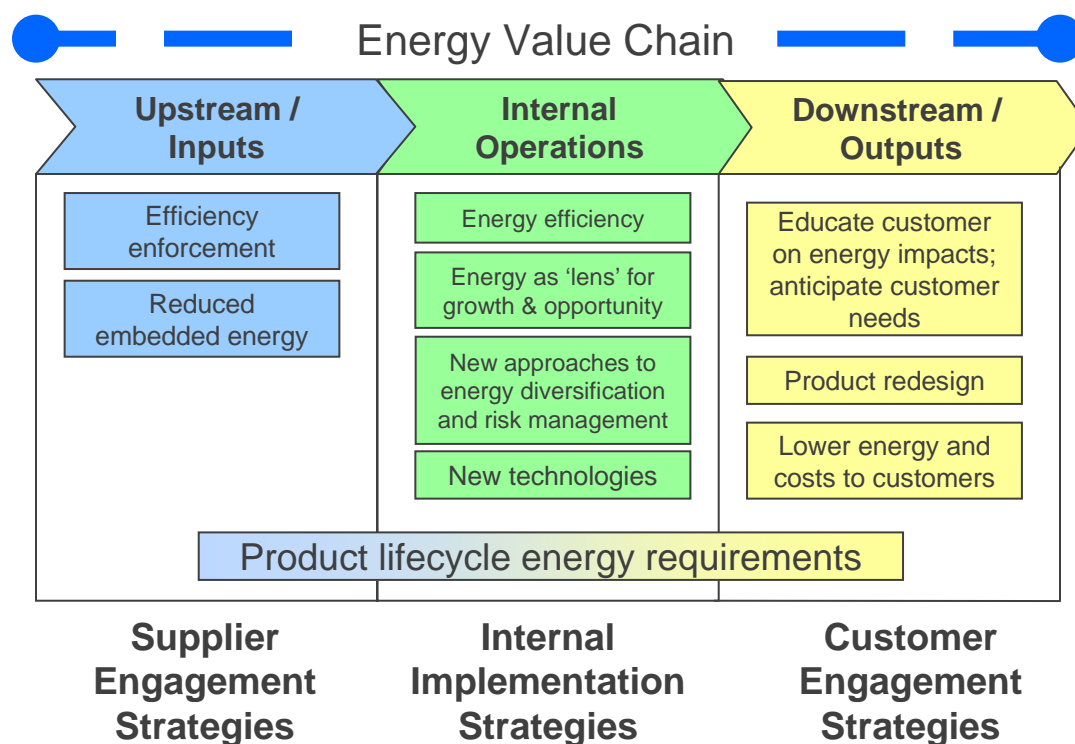
Step 3: manage energy value chain



Manage the energy value chain

Internally-driven initiatives:

- Focus on management practices of suppliers
- Strategic engagement with key suppliers to help:
 - Control energy costs
 - Prepare for CO₂ regulation
 - Ensure reliability
- Engagement with customers



Source: *Energy Strategy for the Road Ahead*

ENERGY STAR Industry Focus



Collaborative process to develop:

- ✓ Energy Performance Indicator (EPI) to benchmark plant energy performance
- ✓ Energy Guide specific for plant type

And facilitates:


- ✓ Sharing of best practices
- ✓ Networking of companies in the industry
- ✓ Development of stronger corporate energy programs

That results in:

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

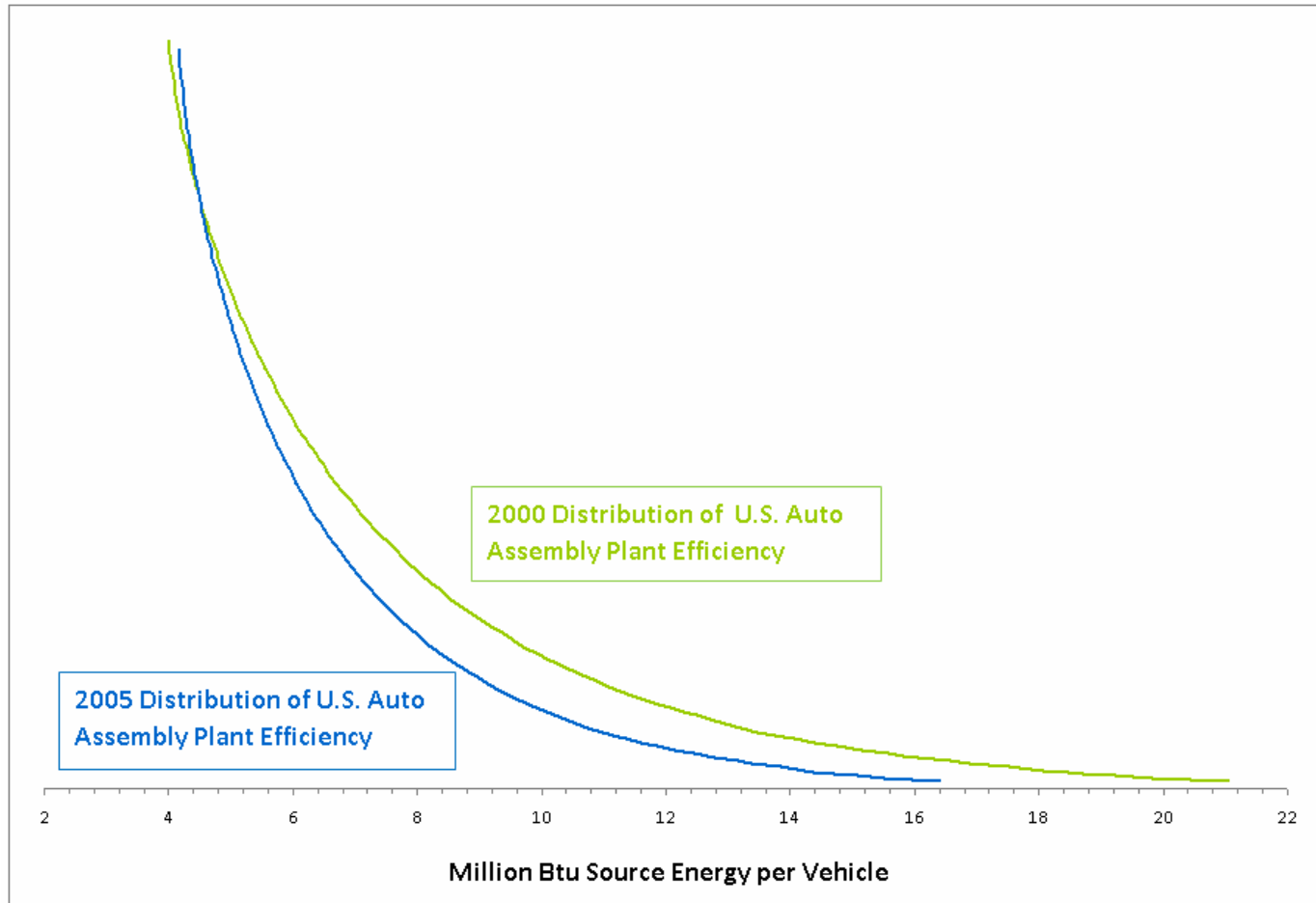
ENERGY STAR Industrial Focuses



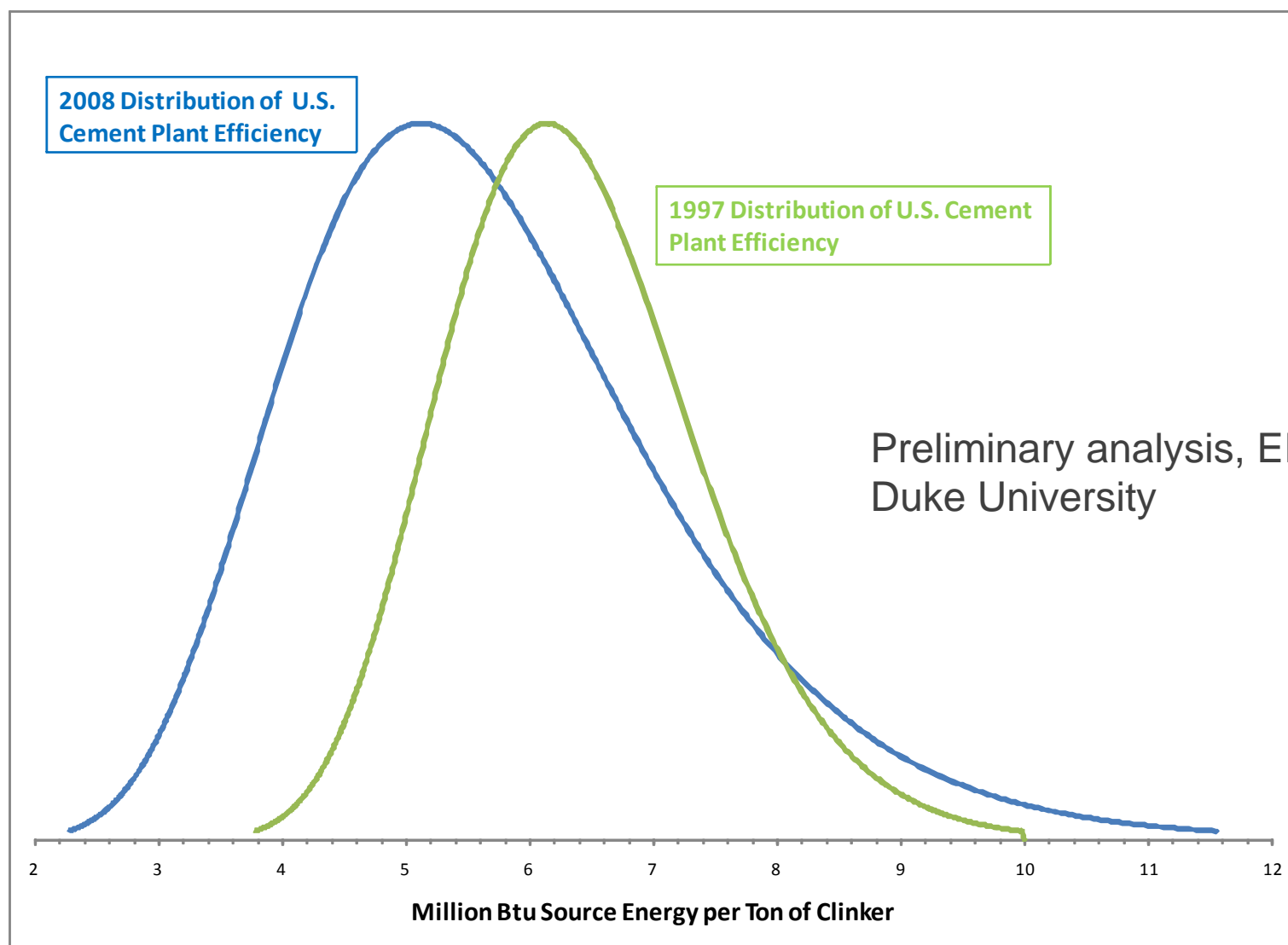
Focus	Years Active	Scope	Peer Exchange Network	Industrial Energy Guide	Energy Performance Indicator	
Cement Manufacturing	7	75% of U.S.-based clinker production	★	Published	Released	✓
Corn Refining	8	95% of U.S.-based refining capacity	★	Published	Released	✓
Food Processing <ul style="list-style-type: none"> • Cookies & Crackers • Juice • Potato Products • Tomato Products 	5	80% of U.S.-based processed fruit, vegetable, and grain sales	★	Published	Draft Released Released Draft	✓
Glass Manufacturing <ul style="list-style-type: none"> • Fiberglass • Flat glass • Container glass 	5	50 % of U.S. flat container and fiberglass sales	★	Published	Draft Released Released	✓
Motor Vehicle Manufacturing	9	95% of the industry with U.S.-based production	★	Published	2 nd Version Released	✓
Petrochemical Manufacturing	4	83% of U.S.-based production capacity	★	Published	Draft	
Petroleum Industry	6	64% of U.S.-based refining capacity	★	Published	Private system recognized by EPA	✓
Pharmaceuticals	6	Over 50% of global and U.S. manufacturing capacity	★	Published	Released	✓
Pulp & Paper	4	70% of U.S.-based companies global sales	★	Draft	Draft	
Steel	3	95% of integrated production	★	In process	Exploring Options	
Metal Casting	2	Partnership with the American Foundry Society	★	In processes	Exploring Options	

R

Progress in Energy Performance – Auto Assembly 2000-2005



Progress in Energy Performance – Cement Plants, 1997 - 2008



Preliminary analysis, EPA,
Duke University



Rewarding energy performance: ENERGY STAR



- Facilities scoring 75 or higher in EPA's ENERGY STAR scoring system are eligible
- Must meet environmental compliance screen
- Earn plaque, flag/banner template from EPA



Partner Benefit

Recognition for achievements



**ENERGY STAR Partner CalPortland Company
receives
Partner of the Year Award**



Benefits of applying ENERGY STAR energy management approach



- 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)

Additional benefits of partnering with ENERGY STAR



- Network with and learn from over 1,600 ENERGY STAR Partners

- Monthly energy management webcasts

Get ahead; partner with ENERGY STAR!



- Easy – download letter and print it on your letterhead
 - http://www.energystar.gov/index.cfm?c=business.bus_commit
- Have CEO sign letter and mail it in



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Key URLs:

www.energystar.gov

www.energystar.gov/industry