ENERGY STAR
20th Anniversary Update

Clean Air Act Advisory Committee

April 25, 2012 Meeting

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Climate Protection Partnerships Division

EPA

Learn more at **energystar.gov**

1992 Year in Review

- George H.W. Bush is president of the US
- Hurricane "Andrew" becomes the most costly in US history
- Arkansas Governor Bill Clinton is elected President of the United States
- Jay Leno replaces Johnny Carson as host of the Tonight Show on NBC
- Washington Redskins win Superbowl XXVI
- Aladdin is the top grossing film
- CDs surpass cassette tapes, and . . .

. . . a Star is born

Program Strategy—Market Transformation

- Identify barriers to efficiency and develop strategies to overcome them with the goal of changing behavior for the long run.
- Common barriers to efficiency:
  - Lack of a measurement standard
  - Lack of an easy identifier
  - Lack of supply
  - Lack of demand
  - Inconvenience
  - Quality or performance concerns
  - Higher purchase price
- Identify and work with partners to bring ENERGY STAR to market

Evolving partnership

- 1992: Computers/Monitors —initial partnership focus was manufacturers
- 1995: ENERGY STAR Buildings---initial partnership focus was businesses looking to self improve
- 1995: ENERGY STAR Homes—initial partnership focus was builders
- 1997: Clothes washers and Fixtures added—*increasing engagement by Utilities/Efficiency Program Administrators and national retailers*

Case Study: Clotheswashers

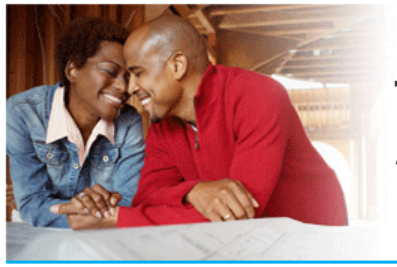
ENERGY STAR Specification Introduced 1997

Key market barriers:

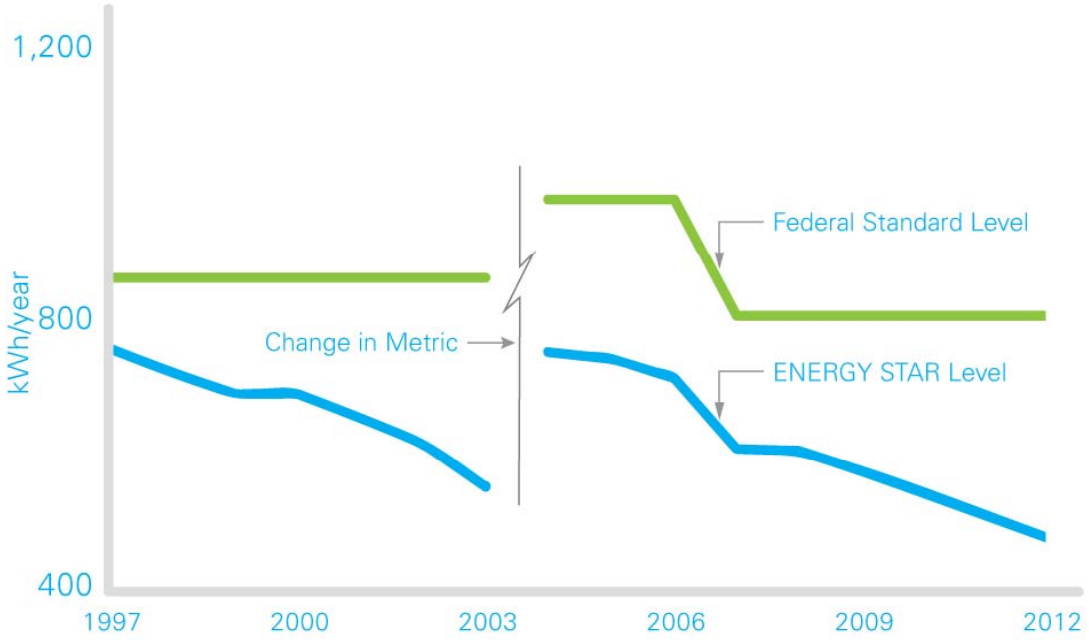
- Lack of an easy way to identify efficient models
- Lack of demand/lack of supply (though in EU market)
- ***Performance concerns***
- ***Higher purchase price***

Clotheswashers (cont.)

- Bern Kansas town demo
  - Quantified water and energy savings
  - Demonstrated cleaning satisfaction
- Partnership with utility-funded energy efficiency programs
  - United around a common criteria and symbol
  - Reduced first-cost barrier through financial incentives
  - Engaged retailers in stocking and promoting
- Advocates leveraged ENERGY STAR to increase efficiency criteria and add water factor to Federal standard



The ENERGY STAR Difference: A Typical Clothes Washer* - Energy Consumption



Today, an ENERGY STAR clothes washer uses about 70 percent less energy and 75 percent less water than a standard washer used 20 years ago.

**3.46 cu ft., electric water heating, not including dryer energy.*

The ENERGY STAR Difference:
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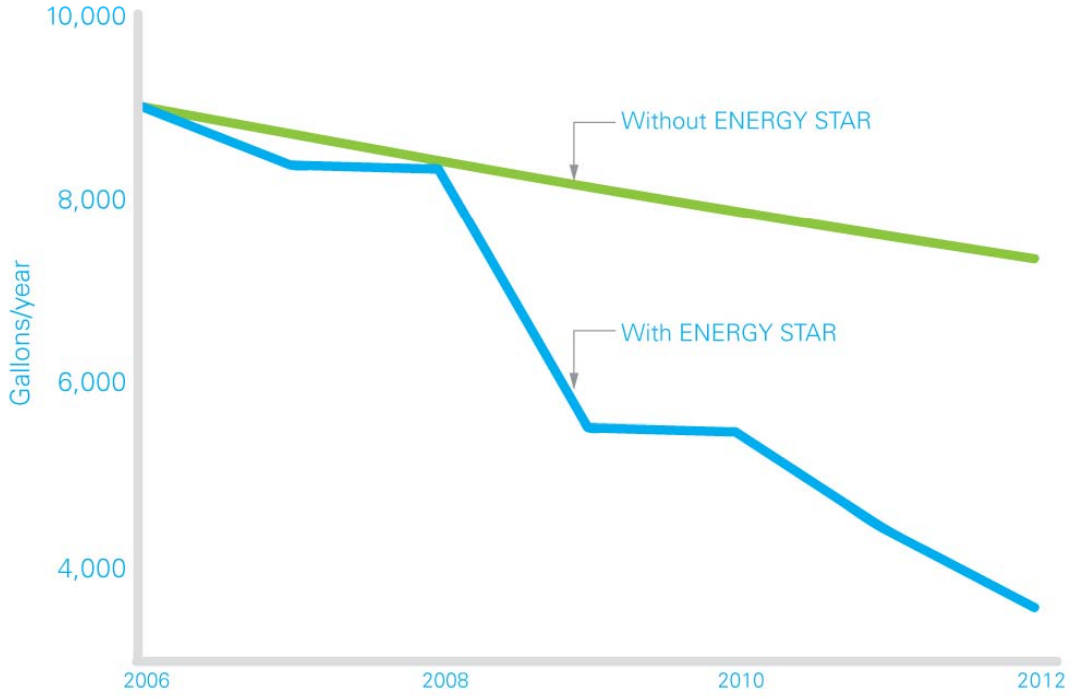

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Case Study: Residential Lighting

- ENERGY STAR Fixtures specification introduced 1997; Bulbs introduced 1999
- Perspective:
  - 75 yrs ago when Edison commercialized incandescents, issues were $ and longevity
  - CFL Technology showcased in the 1939 World's fair
  - 1980s utility promotions
  - Early 90's low market share (<1%); $19 CFLs
- Key barriers: Lighting quality, performance, and price

Residential Lighting (cont.)

- Energy Star specification first introduced for fixtures in 1997
  - Enabled programs to address lighting as a system
  - Early success with torchieres (addressed fire hazard) -- 1 million sold by 1999
- Bulb specification introduced by DOE in 1999
  - Strong support from utilities, retailers, and manufacturers

Residential Lighting (cont)

- Specifications importantly addressed full range of performance issues
  - Start up time & noise
  - Light quality: warm to full brightness, longevity before dimming; appearance of illuminated objects same as standard light
  - Minimum 2 year warranty
- Third-party testing first by advocates, later by EPA/DOE
- Extensive promotion and incentives by efficiency programs
- Today, ENERGY STAR qualified CFLs represent about a quarter of all U.S. light bulb shipments.

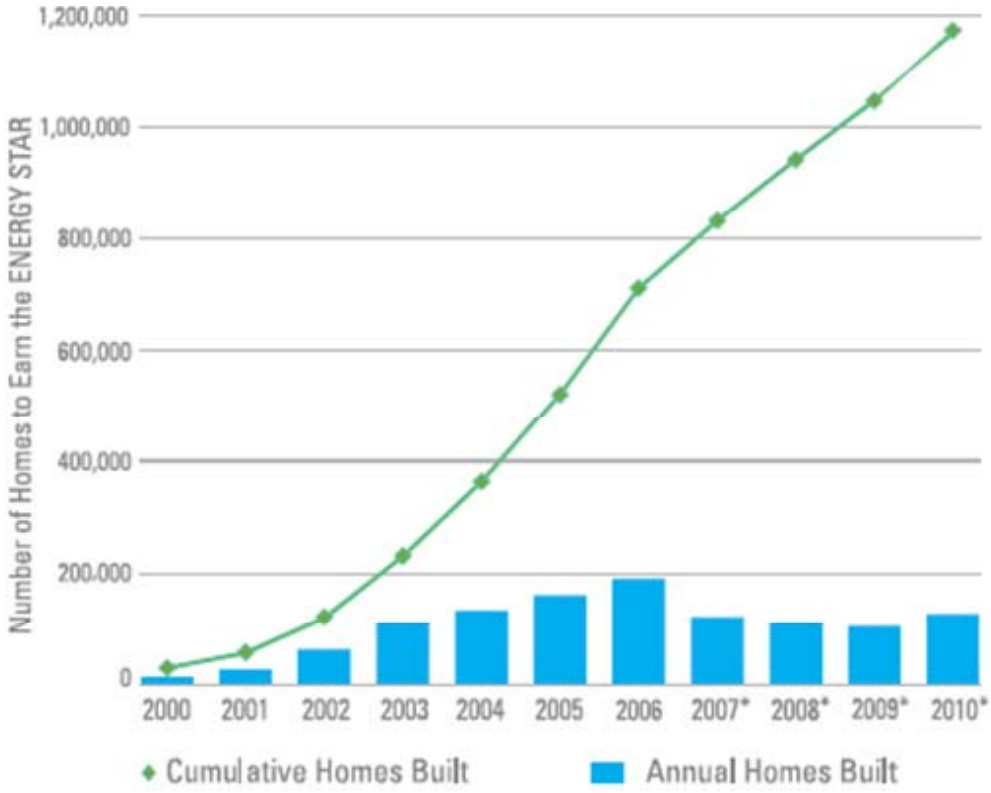
Significant remaining potential above federal standards

EPA Resource: Next Generation Lighting Programs: Opportunities to Advance Efficient Lighting for a Cleaner Environment

Standard Lamp Prior to EISA (Baseline)	EISA Effective Dates	EISA's Intended Replacement Lamps (New Baseline)	Typical ENERGY STAR Qualified Lighting Replacement Option	Savings Over New Baseline
100 W incandescent (approx. 1,690 lumens)	2012	72 W (1490 – 2,600)	23 – 26 W CFL (1,600 – 1,800 lumens)	**46 – 49 W**
75 W incandescent (approx. 1,190 lumens)	2013	53 W (1050 – 1489)	18 – 20 W CFL (1,100 – 1,300 lumens)	**33 – 35 W**
60 W incandescent (approx. 840 lumens)	2014	43 W (750 – 1049)	13 – 15 W CFL (750 – 900 lumens)	**28 – 30 W**
40 W incandescent (approx. 490 lumens)	2014	29 W (310-749 lumens)	9 – 11 W CFL (440 – 600 lumens)	**18 – 20 W**

ENERGY STAR Certified Homes Program

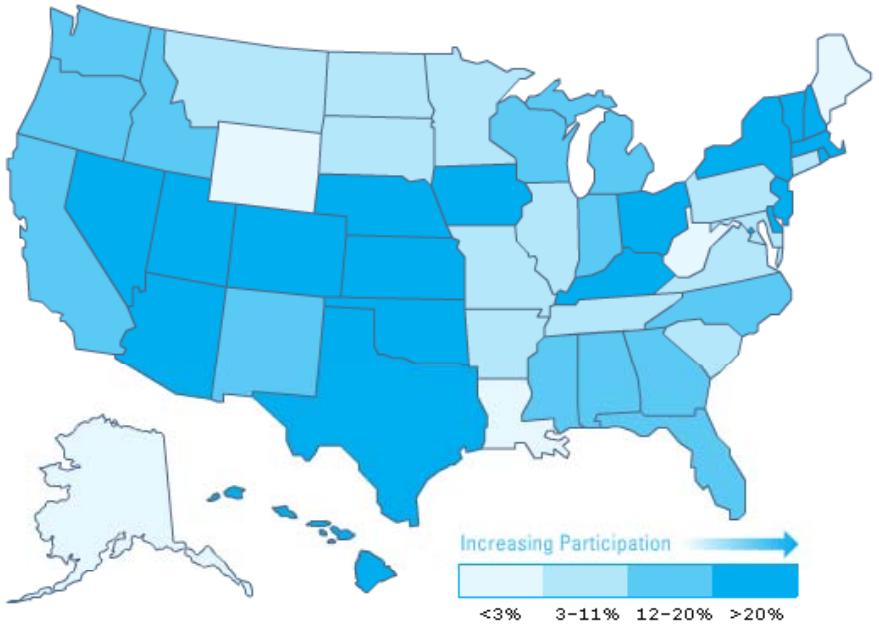
- ENERGY STAR began labeling new homes in 1995
- 1.3 million ENERGY STAR certified homes built to-date
  - ~127,000 in 2011 alone
- New ‘Version 3’ program requirements became effective on January 1, 2012



ENERGY STAR Certified Homes Program

- New Version 3 requirements are responsive to market conditions
  - Increasing stringency in national model energy codes.
  - Current ENERGY STAR performance levels becoming standard for many builders.
  - Market share for ENERGY STAR Certified Homes continues to rise.
  - Importance of incorporating key building science principles.

2010 Market Share for ENERGY STAR Certified Homes by State



- Many leading builders have committed to building to Version 3
- Many states have adopted ENERGY STAR as a platform for their residential energy efficiency programs.

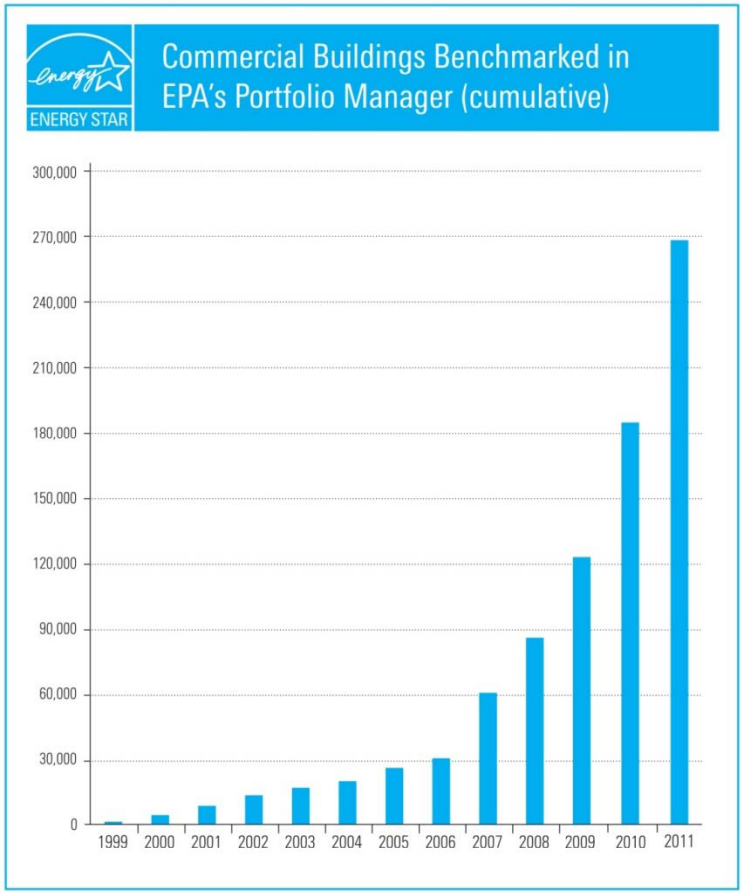
ENERGY STAR Catalyzed the Focus on Building Performance

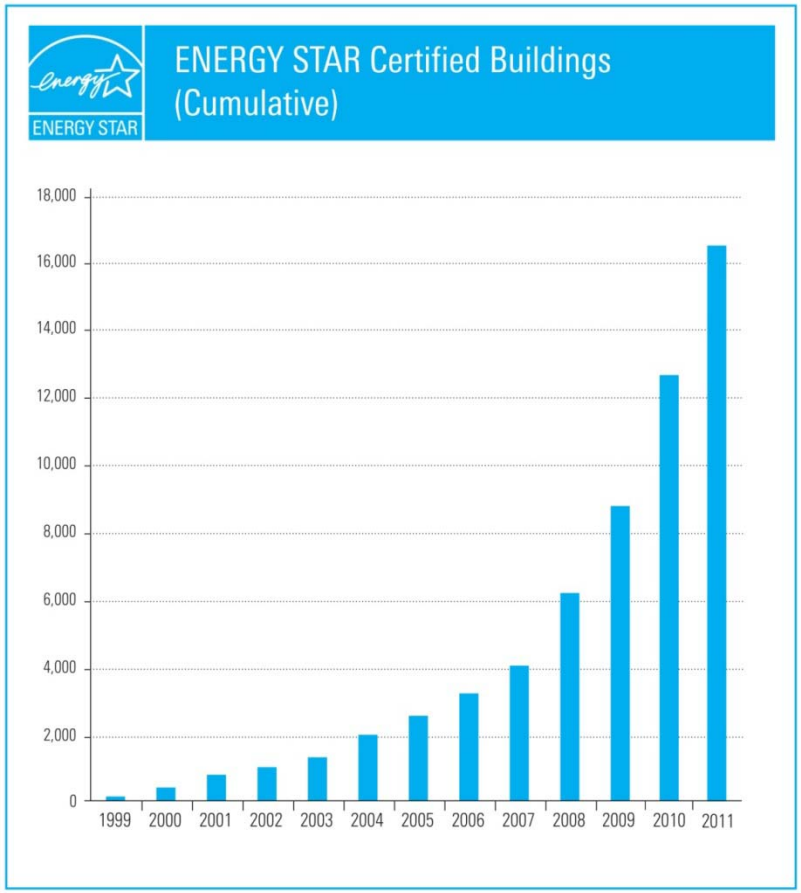
- Measured building performance is transforming the market:
  - ENERGY STAR experience
  - Federal leadership
  - Voluntary energy efficiency campaigns
  - Benchmarking and disclosure mandates
  - Everyone plays a role in reducing energy use and making a difference
- ENERGY STAR Portfolio Manager
  - Delivers key whole building energy performance based on utility data
  - Provides an accessible, consistent measurement platform
  - Many data sharing options available

ENERGY STAR® Portfolio Manager™

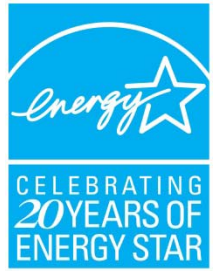
Tremendous Growth in Performance Measurement

Close to 40% of Commercial Building Floorspace





Voluntary Programs Advance Energy Efficiency to Target Markets



"We all know that energy efficiency makes good business sense as well as good environmental sense, but a contest like this is a great way to help companies get started."

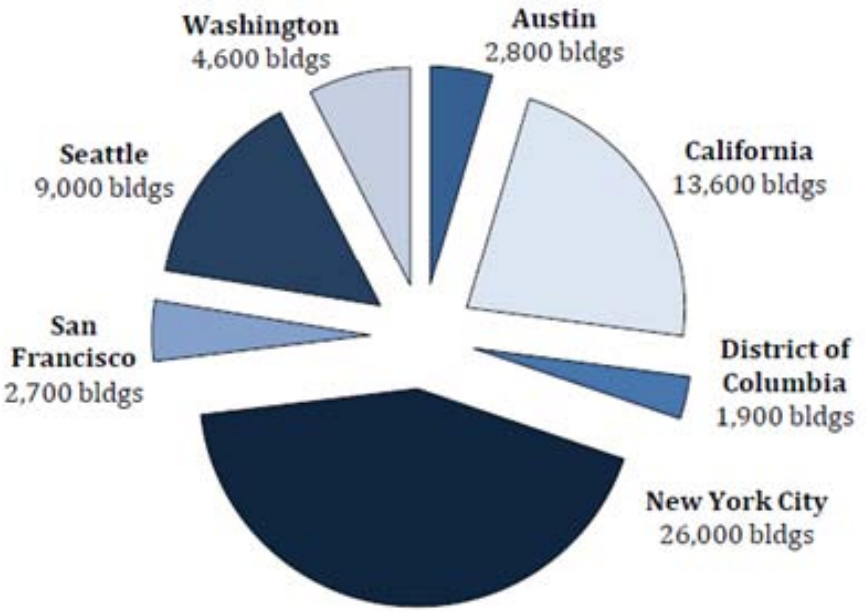
- Judy Poferl, president and CEO of Northern States Power Co.-Minnesota, an Xcel Energy company (March 2012)

Benchmarking and Disclosure Policies Moving into Implementation

- **Seven U.S. jurisdictions have enacted policies**
  - All require EPA's Portfolio Manager
  - Affect 60,000+ buildings, ~4 B SF
  - Policies phase in 2011- 2012

- **State and local governments orders for benchmarking owned facilities:**
  - San Joaquin and States of Alabama, Ohio, CT, Hawaii
  - Required to use Portfolio Manager and meet reduction goals

- **State programs work with school districts to improve performance**
  - Kentucky, Wyoming



Policy Impact Projection on Number of Buildings by Jurisdiction. Graphic credit: Institute for Market Transformation

New York City Seeing Results

Requirements

- All buildings over 50,000 square feet
- Annually submit energy and water consumption using EPA's Portfolio Manager

Compliance Rates are High

- First annual results reported to City in 2011
- Compliance rate of over 70%

Aggregated Energy Data

- Available now from Con Edison and National Grid – delivered to over 7,000 buildings in 2011

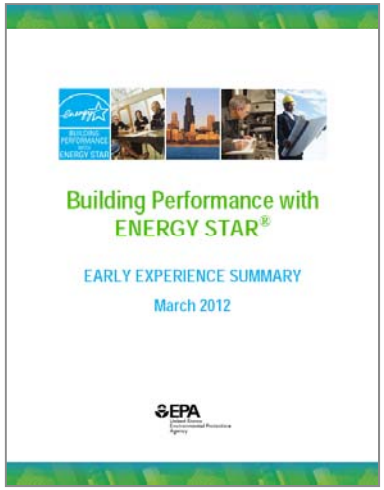
Growing Demand for Energy Services

- Example: NYC energy service provider, Ecological, has doubled staff and added 400 clients in past 12 months.

"When clients get their benchmarking results, they start asking questions – 'Why did my building get this score and what can I do to improve it?'"
– Lindsay Napor McLean, Exec. VP and COO, Ecological

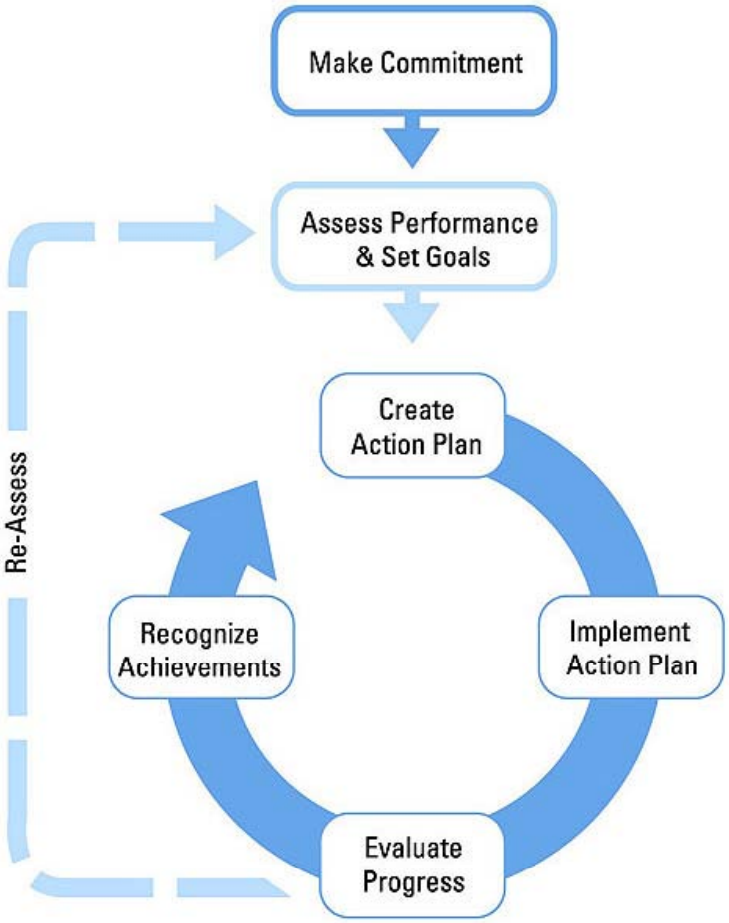
Building Performance with ENERGY STAR

- A program model:
  - Target marketing / recruiting
  - Benchmarking
  - Strategic energy management / action plan development
  - Whole-building performance assessments
  - Whole-building upgrades
  - Performance monitoring and verification
- Allowing program administrators to:
  - Penetrate commercial building sectors
  - Deliver greater savings through a whole building approach
  - Reach senior decision makers to expedite decisions
  - Work on building portfolios
  - Tap into the broader power of the ENERGY STAR brand



ENERGY STAR & Industry

- 700+ manufacturing corporations
  - Dozens of sectors, small to large enterprises
  - Thousands of manufacturing plants
- ENERGY STAR offers manufacturers:
  - Technical assistance and guidance
  - Recognition: corporate & site-specific
  - Tools: energy management & benchmarking
  - Networking
- ENERGY STAR Guidelines for Energy Management
  - Informed development of ISO 50001
  - Used by thousands of U.S. companies



Strategic sector work – 24 industries

- Cement & concrete
- Food processing
- Glass
- Metalcasting
- Motor vehicles
- Petrochemicals
- Pharmaceuticals
- Petroleum refining
- Printing
- Pulp & paper
- Steel

- Subsectors therein

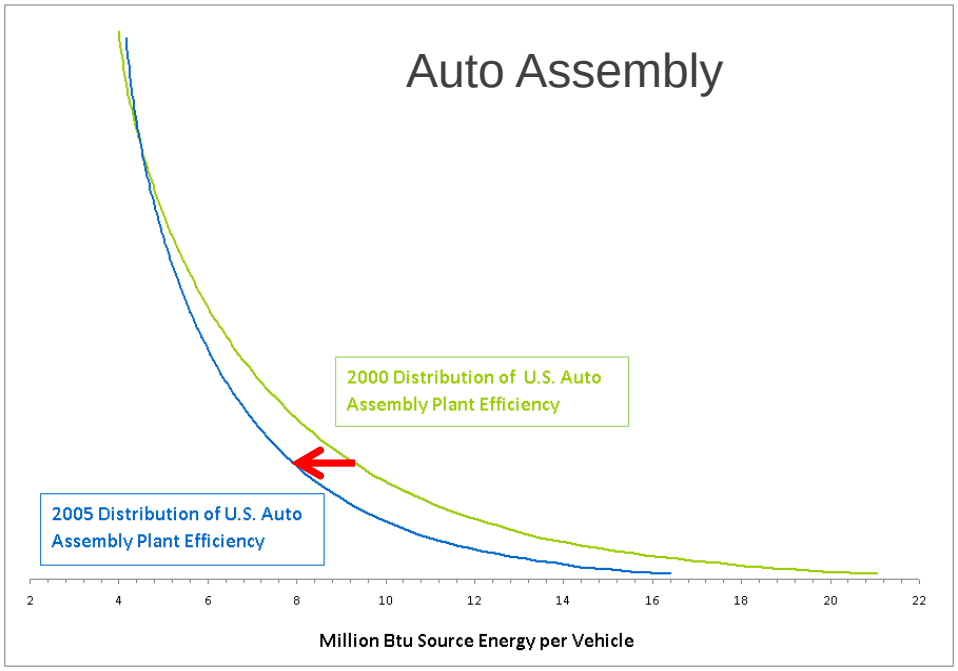
- National plant energy benchmark (1-100)
  - ENERGY STAR certification of plants
- Industry-specific energy guides
- Supportive network for energy management

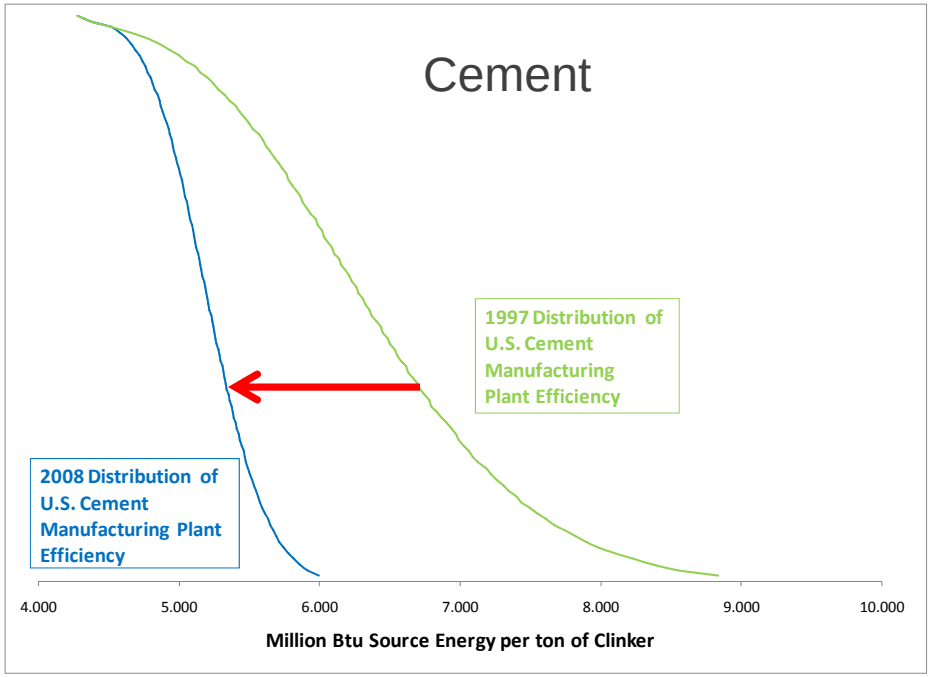
2011 ENERGY STAR CERTIFIED FACILITY

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

www.energystar.gov

Results





RESULTS:
1)Shifted industry performance curve; low performers improved the most!
2) 61 trillion Btu saved
3) 13% reduction

Why ENERGY STAR Works

- **Credible** – recognized, trusted symbol – government backing provides objective, third-party information upon which businesses and homeowners can make informed decisions
- **Market-based** – program works to identify market barriers to broader adoption of energy efficiency and develop strategies and related tools for overcoming barriers to alter decision making for the long-term
- **Financially smart** – consumers can save money on utility bills and businesses can make money selling efficient products and services.
- **Environmentally beneficial** – reducing energy consumption helps individuals reduce their carbon footprint, organizations meet corporate sustainability goals, and states and utilities meet local mandates to reduce greenhouse gas emissions and control air pollutants such as SO_x and NO_x

What's on the Horizon for ENERGY STAR?

- Make saving energy an automatic feature of rapidly evolving new technologies and building systems
- Preserve high quality performance—critical for both consumer and environmental benefits
- Increasingly be a credible source for energy savings information for homes and businesses
- Capture new products and more buildings types, exploring international coordination across products and buildings
- Provide energy efficiency expertise to broader EPA efforts
- Support state and local policies and programs