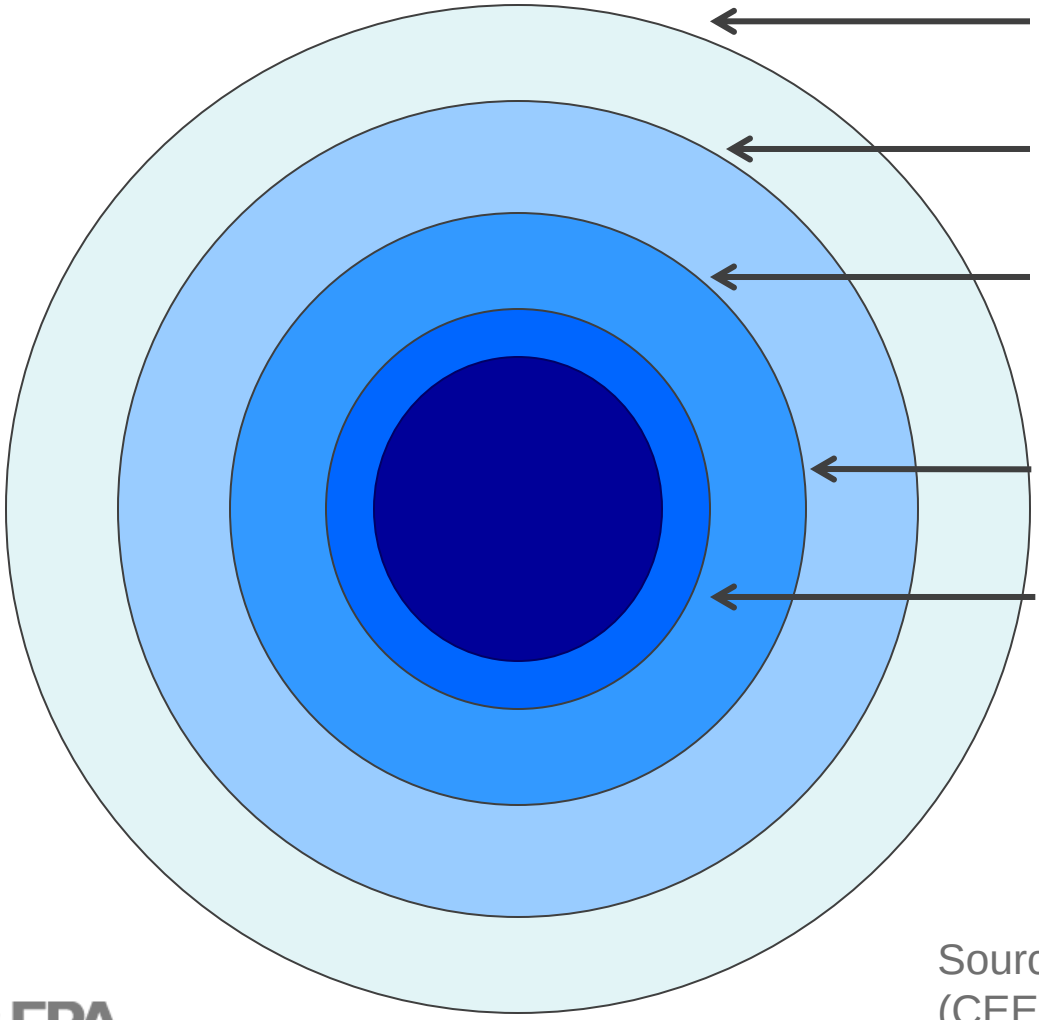
Getting the most out of ENERGY STAR® for your energy efficiency portfolio

ENERGY STAR Overview

- Voluntary, public-private partnership between EPA, DOE and nearly 20,000 partners
  - > 700 utility and state efficiency programs
  - > 2500 retailers
  - > 1700 manufacturers
  - > 5500 home builders
- Program goal is to reduce air pollution including greenhouse gas emissions by reducing energy use in homes and buildings
- Program has saved Americans ~$24 billion on utility bills and avoided 242 million metric tons of greenhouse gas

The Power of the ENERGY STAR Brand



All respondents: 100%

Aware: >80%

Purchased: >75% (44% of total population)

Influenced: >75%

Extremely likely to recommend: >30%

Source: Consortium for Energy Efficiency (CEE) Household Survey, 2011

Why ENERGY STAR Works

- **Credible** – recognized, trusted symbol – government backing provides objective, third-party information upon which businesses and homeowners can make informed decisions. Performance is verified by third parties
- **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 mercury, SO_x and NO_x

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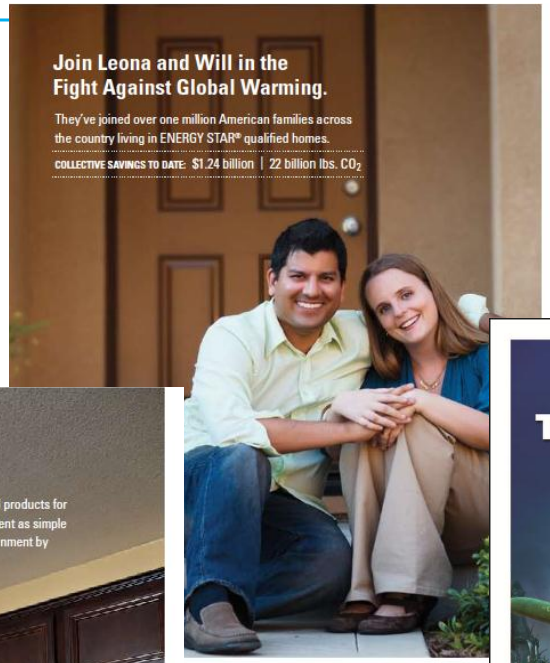
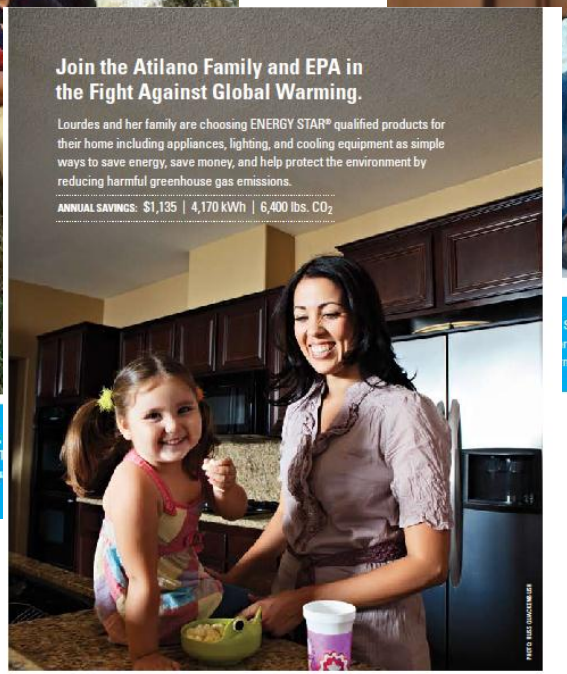
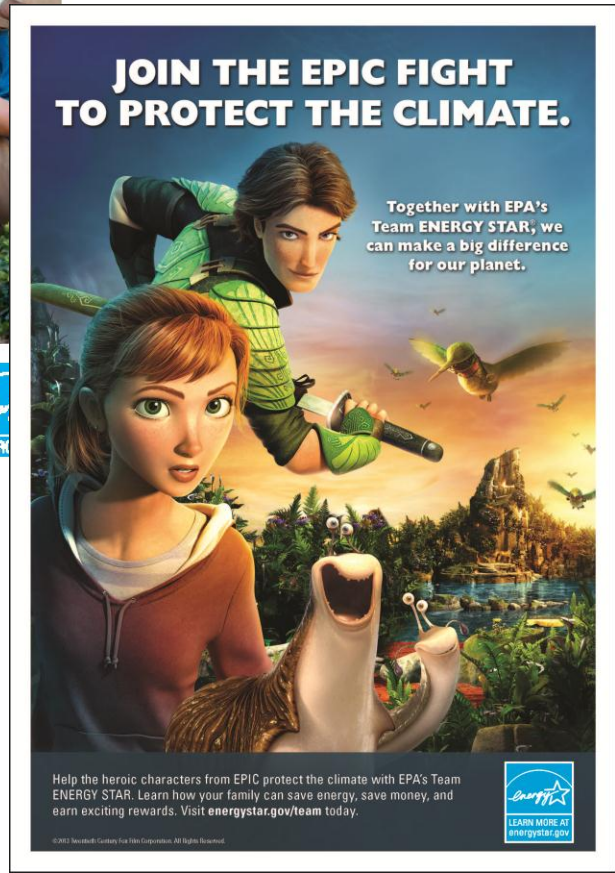
ENERGY STAR Provides Market-based Strategies . . .

Barriers (e.g.)	Strategies to reduce barriers (e.g.)
Lack of information	Consumer/end user outreach and education
Lack of demand	Education/consumer testimonials/case studies Coupling efficiency w/other benefits/features
Lack of availability of energy efficient product or service	Establish measurement standard Designate high performers as ENERGY STAR through collaborative process (as relevant) Recognize achievement Supply channel education
Higher first cost	Increase demand to drive costs lower over the long-term Consumer education on “two price tags”

. . . Tailored for Each Market







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ENERGY STAR

Portfolio of Strategic Investments

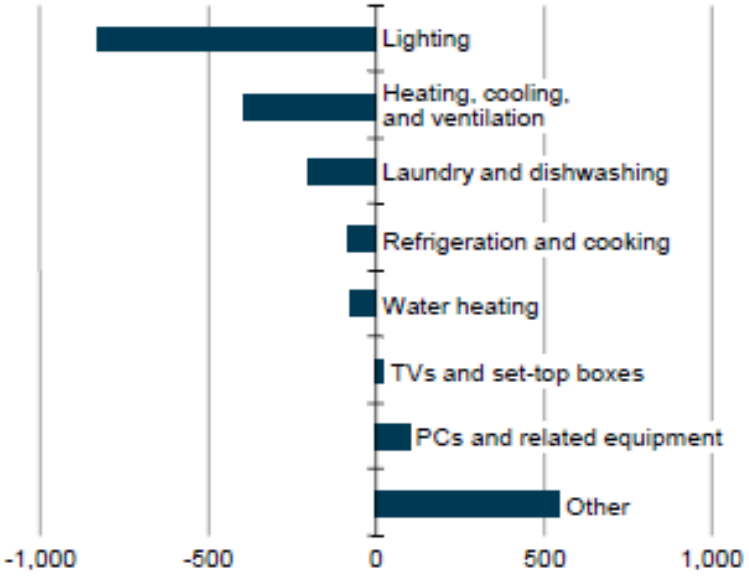
- Residential initiatives
  - Change the World Start with ENERGY STAR, National Campaign
  - ENERGY STAR Products
    - ENERGY STAR Most Efficient
  - Home Performance with ENERGY STAR
  - ENERGY STAR HVAC Quality Installation
  - ENERGY STAR Homes
- Commercial initiatives
  - ENERGY STAR Products
  - ENERGY STAR Buildings
  - Building Performance with ENERGY STAR
  - Designed to meet the ENERGY STAR
- Industrial initiatives

ENERGY STAR
Residential Opportunities

Residential Energy Use

Electricity use increases with number of households despite efficiency improvement

Figure 75. Change in residential electricity consumption for selected end uses in the Reference case, 2010-2035 (kilowatthours per household)



EIA projects that primary energy use in the residential sector grows by 0.2 percent per year.

Source EIA Annual Energy Outlook 2012

Residential Opportunities for Energy Efficiency Program Sponsors

- **Education** on the full suite of ENERGY STAR opportunities:
  - Change the World, Start with ENERGY STAR campaign
  - Online tools
- Programs to increase supply and demand for **ENERGY STAR certified products** where market/cost justified.
- **Computer Power Management**
- Existing homes - **Home Performance with ENERGY STAR** and/or **HVAC Quality Installation**
- New homes - **ENERGY STAR Certified Homes**

Change the World, Start with ENERGY STAR

- National social marketing campaign and call to action to combat global warming
- Online pledge targets lighting, electronics, appliances and water heaters, heating and cooling, sealing and insulating, and home assessment
- Community outreach by partners featured in ENERGY STARs Across America map
- Complementary youth (8-15) focus
  - Partnership with Boys & Girls Clubs of America and DoSomething.org
  - Team ENERGY STAR
- ENERGY STAR Day

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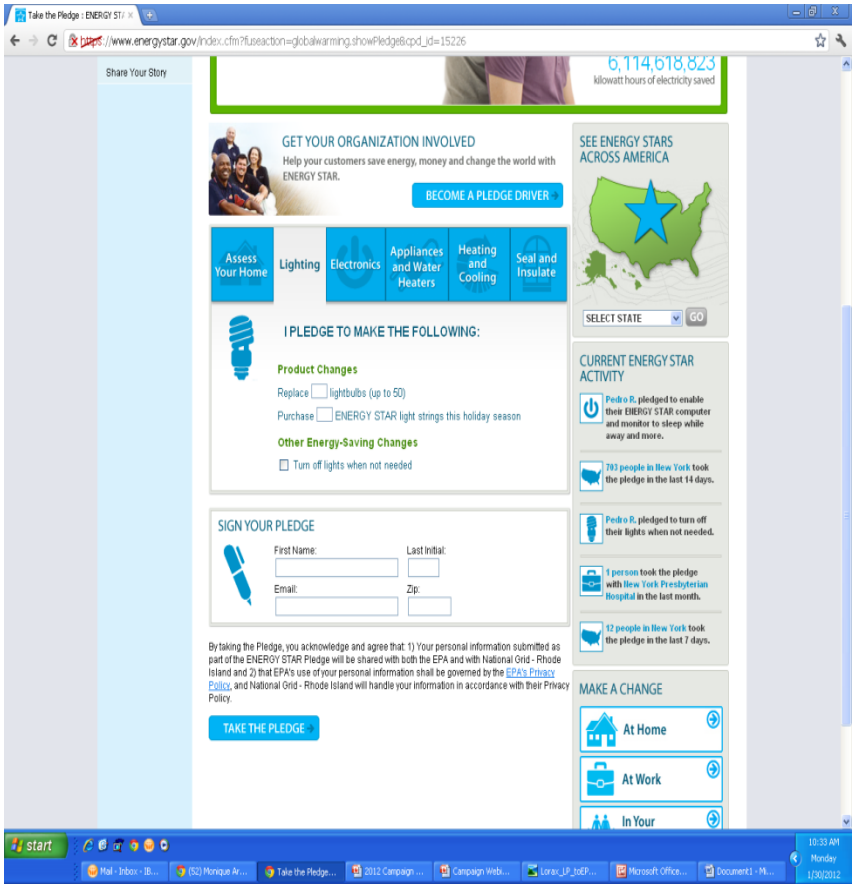
DO SOMETHING .ORG

BOYS & GIRLS CLUBS OF AMERICA

Online Pledge

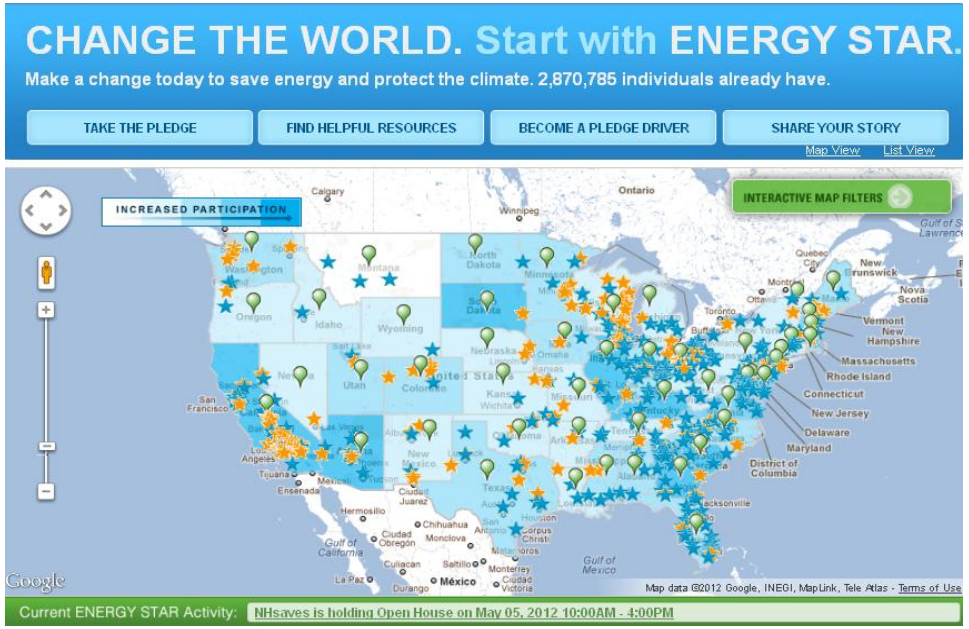


- Efficiency program sponsors that become pledge drivers receive a unique URL
- EPA collects the pledge taker's first name, last initial, email and zip code
- Pledge taker's can opt-in to receive future correspondence

2013 ENERGY STARs Across America

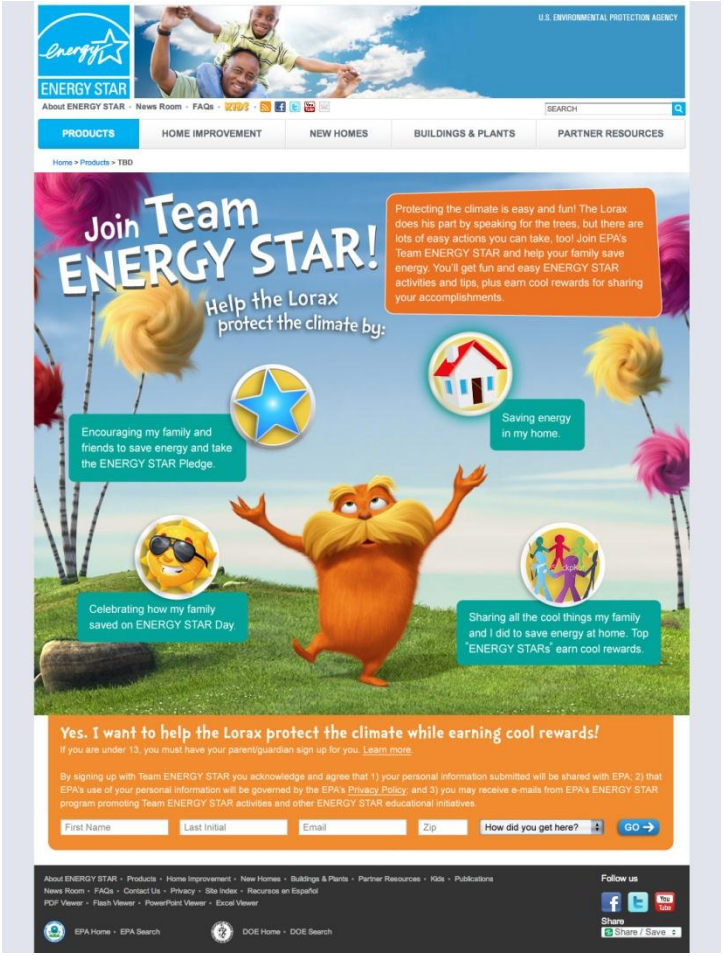
- ENERGY STARs Across America illustrates a national movement of people and organizations committed to saving energy and protecting the climate

- Available resources include event toolkit, publications, and booth



Team ENERGY STAR

- Youth engagement as influencers to encourage their parents/other adults to save energy at home
  - Invite kids to join Team ENERGY STAR to help their households save energy. Specifically to commit to:
    - ***Help to save energy in my home***
    - ***Help my family and friends save energy and encourage them to take the ENERGY STAR Pledge***
    - ***Share all the cool things my family and I did to save energy at home. Top ENERGY STARs earn cool rewards***
    - ***Celebrate how my family saved on ENERGY STAR Day***

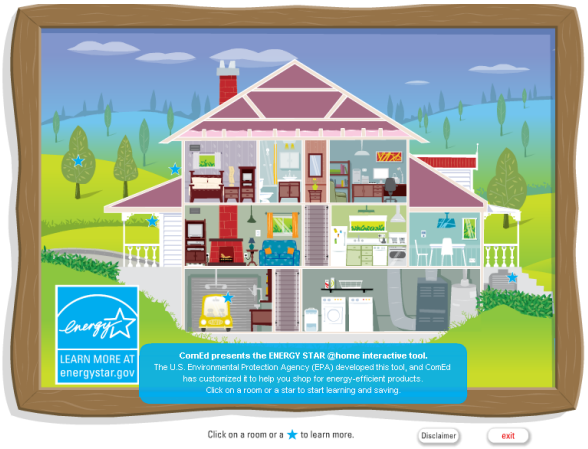


ENERGY STAR Day!

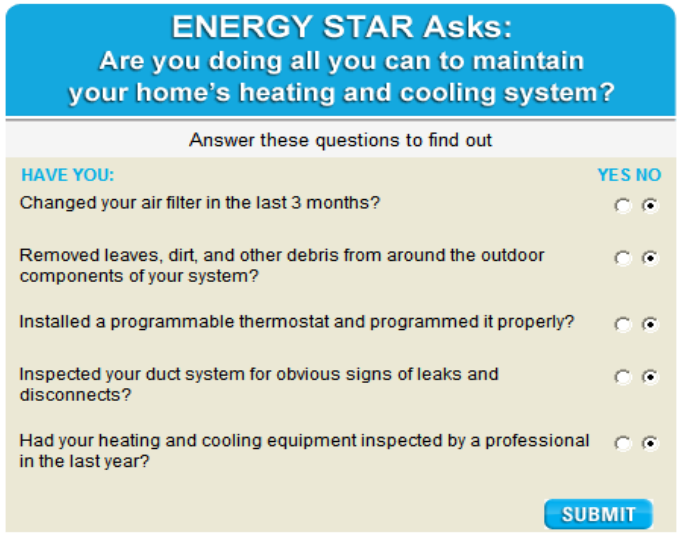
- Culmination of the campaign year
- A national final celebration of all that ENERGY STAR and its partners accomplished throughout the year
  - Held in November
  - Opportunity for youth across America to demonstrate their energy-saving accomplishments through a visible demonstration, e.g., sign on their door with savings, and share those accomplishments with EPA
  - EPA wraps up demonstrations in a national media story
- Media coverage:
  - Newsletters / Blogs / Facebook / Twitter / YouTube / Social Media pitching
  - On-line pitching
  - Local news pitching

Interactive Online Tools

- @Home Tool
- Home Energy Yardstick
- Home Advisor
- HVAC Quiz
- eMISSION



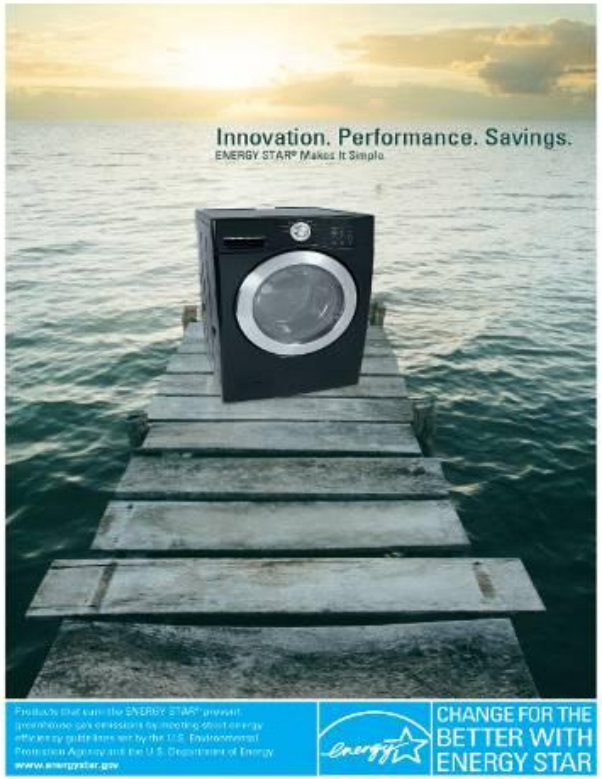
eMISSION
Powered by ENERGY STAR® and DoSomething.org



ENERGY STAR Certified Products

ENERGY STAR Certified Residential Products

- **Appliances:** Clothes Washers, Dehumidifiers, Dishwashers, Freezers, Refrigerators, Air Cleaners, Water Coolers
- **Consumer electronics:** Audio/Video, Battery Chargers, Computers, Cordless Phones, Displays, Imaging Equipment, Set-Top Boxes, Telephony, TVs, Uninterruptible Power Supplies
- **Heating and cooling:** Central AC, Boilers, Ductless Heating and Cooling, Furnaces, Heat Pumps, Room AC, Ventilating Fans
- **Home Envelope:** Home Sealing, Roof Products, Windows/Doors, Seal and Insulate
- **Lighting:** CFLs, Ceiling Fans, Decorative Light Strings, Integrated LED Lamps, Lamps, Luminaires
- **Plumbing:** Water Heaters
- **Other:** Pool pumps



Upcoming Residential Product Revisions/Additions

- Product Revisions in Progress:
  - Audio/Video
  - Battery Charging Systems
  - Boilers
  - Clothes Washers
  - Computers, Computer Servers
  - Displays
  - Imaging
  - Refrigerators and Freezers
  - Roof Products
  - Room Air Conditioners
  - Set-top Boxes
  - Telephony
  - Televisions
  - Water Coolers
  - Water Heaters
  - Windows, Doors and Skylights
- New Products in Progress:
  - Climate Controls
  - Clothes Dryers
  - Game Consoles
  - Lamps
- Potential New Products:
  - Home Storage
  - Home Energy Monitors/Controls

Visit: www.energystar.gov/specifications

Last Updated: April 2013

The Energy Independence and Security Act (EISA) and Lighting Savings

- **Still significant savings:** Today's ENERGY STAR certified lighting products provide significant energy savings above EISA standards, which phase in from 2012 to 2014.
- **Changing baselines:** Per unit energy savings decrease due to changing baselines; need to determine how to account for lifetime savings during the transition period.

Today's Standard Lamps (Baseline)	EISA Effective Dates	EISA's Intended Replacement Lamps (New Baseline)	Typical ENERGY STAR Qualified Lighting Replacement Option	Savings Over the New Baseline
40 W incandescent (approx. 490 lumens)	2014	29 W (310-749 lumens)	9 – 11 W CFL (440 – 600 lumens)	18 – 20 W
60 W incandescent (approx. 840 lumens)	2014	43 W (750 – 1049)	13 – 15 W CFL (750 – 900 lumens)	28 – 30 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
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

FTC Labeling Requirement

New Front Package Label

Brightness	Estimated Energy Cost
820 lumens	$7.23 per year

New Back Package Label

Lighting Facts Per Bulb

Brightness	**870 lumens**
Estimated Yearly Energy Cost	**$1.57**
Based on 3 hrs/day, 11¢/kWh	
Cost depends on rates and use	
Life Based on 3 hrs/day	**5.5 years**
Energy Used	**13 watts**

Light Appearance
Warm — Cool
2700 K

Contains Mercury
For more on clean up and safe disposal, visit epa.gov/cfl.

Existing FTC Label

Activating Sleep Settings at Home Computers

- Power management automatically places inactive computers into a low-power “sleep” mode
- **A few mouse clicks and residents can save up to $50 annually per desktop computer.**
- ENERGY STAR can help:
  - Outreach material
  - On-line instructions
    - www.energystar.gov/sleepinstructions
  - Savings calculations

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ENERGY STAR Most Efficient

- 2013 list of recognized products is
- Send an email to mostefficient@energystar.gov to request access to the graphic files.
- For usage guidelines go to: www.energystar.gov/mostefficient

Residential Products – Tools & Resources

- Performance specifications
  - Roughly target top 25% energy performance when setting specifications
  - No sacrifice in performance or features
  - Negotiated through public process
- Consumer-oriented resources
  - Marketing templates
  - Training center for sales associates and others
  - Consumer tips and education tools
  - Consumer assistance tools including special deals finder, store locator, qualifying product lists
- Partner assistance
  - Networking and matchmaking
  - Database to exchange marketing and incentive information
  - Program best practices and peer exchange

Visit: www.energystar.gov/index.cfm?c=pt_univ.pt_univ_eeps_trainoverview

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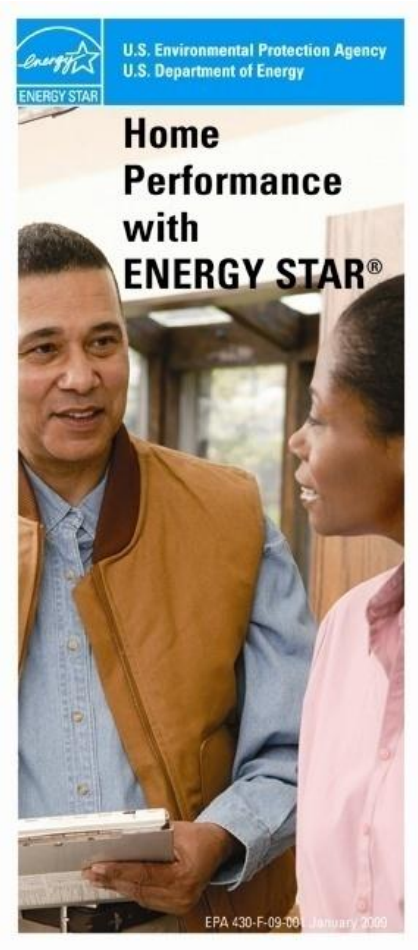
Home Performance with ENERGY STAR

Home Performance with ENERGY STAR



- A whole-house approach for existing homes
- Utility bill savings of 20% or more. Typically from
  - ✓ Sealing air leaks
  - ✓ Adding insulation
  - ✓ Upgrading heating and cooling systems
  - ✓ Replacing lighting and appliances
  - ✓ Installing high-performance windows
- Energy Efficiency Program Sponsors help
  - Increase supply of qualified auditors/assessors and contractors
  - Increase demand for whole-house upgrades through consumer outreach and financial and other incentives
  - Ensure quality through QA/QC practices
- Homeowners invest in improvements based on credible information

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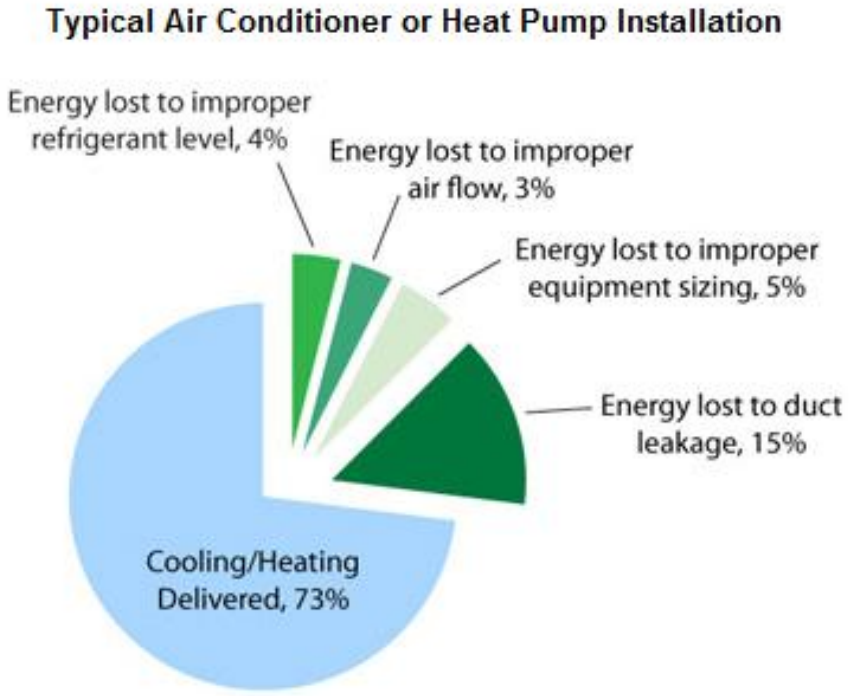
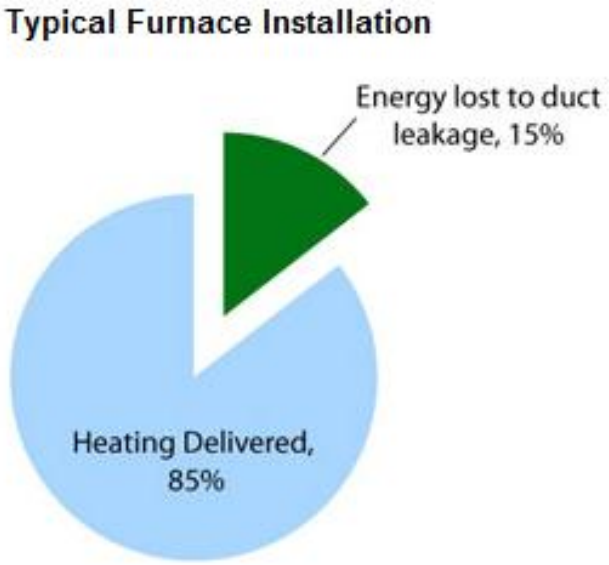
ENERGY STAR HVAC Quality Installation

HVAC System Energy Use





Quality installations help deliver the equipment's full potential.

ENERGY STAR HVAC Quality Installation Overview

- A comprehensive approach to improving the performance and energy efficiency of home heating and cooling systems
- Helps homeowners identify contractors who properly install systems
- Technical requirements
  - Correctly sized and matched equipment based on load calculations
  - Connected, well-sealed duct system (maximum leakage 20% or 50% reduction in leakage)
  - Proper refrigerant charge
  - Sufficient airflow in the system

ENERGY STAR HVAC Quality Installation Verification

- Contractor submits commissioning form and load calculations for each installation
- Program sponsor provides third-party verification
  - File review for all installations
  - In-field verification for a sampling of installations
    - Phase 1: 3 of the first 5 jobs completed by a new contractor
    - Phase 2: 20% of the next 25 jobs
    - Phase 3: 5% of the subsequent installations

Available for free at: www.energystar.gov/ia/home_improvement/home_contractors/QI_Verification_Protocols.pdf

HVAC Quality Installation – Tools & Resources

- Program design and implementation support
- Implementation Guide
- Sample program documents and forms
- Contractor training covering both technical and marketing topics
- Marketing materials
- Training and technical support

Visit: www.energystar.gov/index.cfm?c=hvac_install.hvac_install_sponsors

ENERGY STAR Certified Homes

ENERGY STAR Certified Homes Overview

Core Energy Efficiency Measures

System Inspection Checklists	
Complete Thermal Enclosure System	High-quality insulation & fenestration Proper installation & air sealing Reduced thermal bridging
Complete Heating & Cooling System	Fully-engineered design Best practice installation Fresh air & exhaust
Complete Water Management System	Water-managed site, foundation, walls, and roof

Value of ENERGY STAR Certified Homes

ENERGY STAR Homes

- Delivers approximately 20% savings on annual utility bills

Features:

- ✓ A complete thermal enclosure system
- ✓ A complete heating and cooling system
- ✓ A complete water management system
- ✓ Energy-efficient lighting and appliances
- ✓ Third-party Verification

Benefits:

- ✓ Lower Utility Bills
- ✓ Enhanced Performance
- ✓ Environmental Protection

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ENERGY STAR Certified Homes – Tools & Resources

- **Marketing tools**
  - Consumer and Builder brochures
  - Fact sheets
  - Promotional opportunities
- **Technical resources**
  - Performance and prescriptive guidelines
  - Reference codes and standards
  - Verification guidance
- **Educational resources**
  - Sponsor quarterly update emails
  - Program Design and Implementation Best Practices Guide
  - Webinars and HVAC videos
  - Builder recruitment handbook
  - Customizable presentation templates
- **EPA and account management support**

New Marketing Platform

"Better is Better"

- Peace of Mind
- Enduring Quality
- Wall to Wall Comfort
- Proven Value

ENERGY STAR Commercial Opportunities

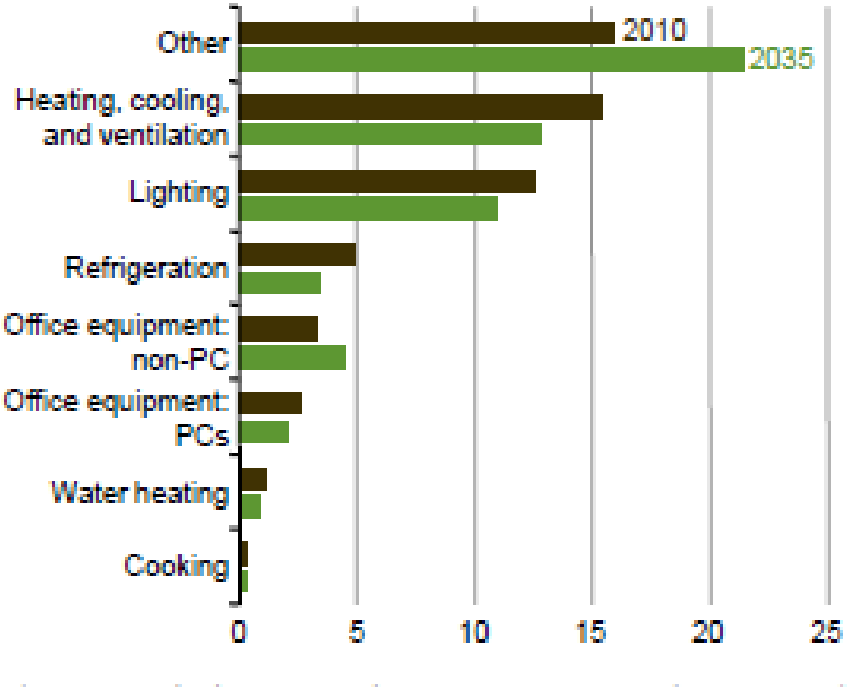
Commercial Energy Use

- EIA projects energy use in commercial buildings to be the fastest growing sector (0.7% annual growth); commercial floor space is estimated to grow by 1.0% per year.

(US EIA Annual Energy Outlook 2012)

Efficiency standards reduce electric energy intensity in commercial buildings

Figure 79. Energy intensity of selected commercial electric end uses, 2010 and 2035 (thousand Btu per square foot)



Commercial Opportunities for Program Sponsors

- **Education** on the full suite of ENERGY STAR opportunities:
  - ENERGY STAR Challenge
  - Bring Your Green to Work
- Programs to increase supply and demand for **ENERGY STAR certified products** where market/cost justified.
- **Low Carbon IT**
- **Commercial Food Service** equipment
- **Existing and new buildings**—emphasis on whole-building efficiency improvements and strategic energy management

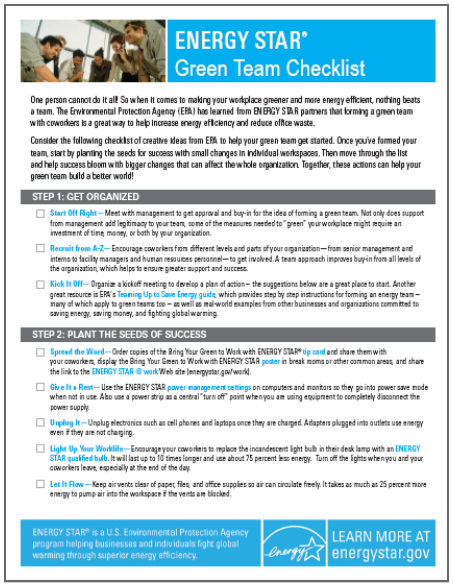
National Building Competition

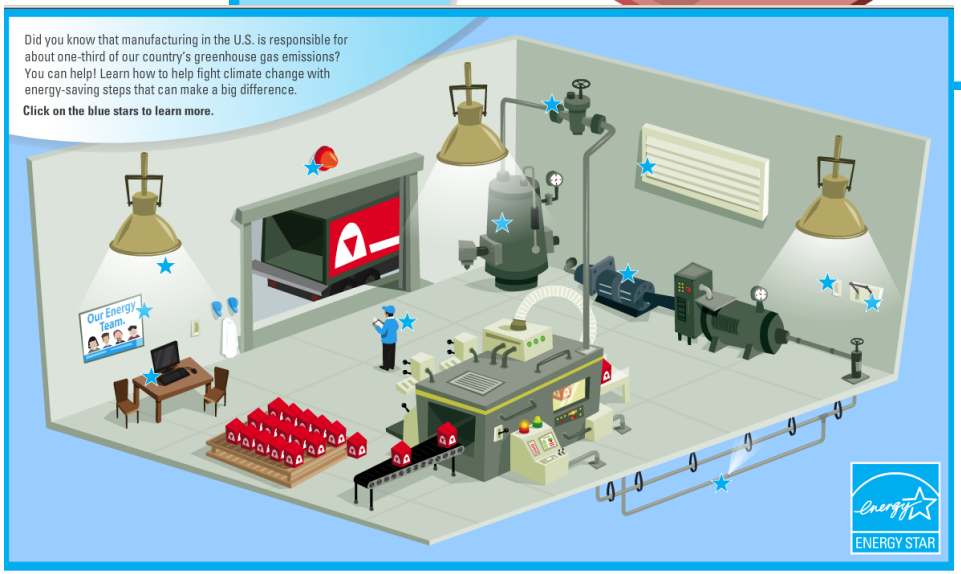
- National Call to Action
  - go head-to-head with thousands of buildings to reduce energy waste
- Benchmark Buildings
  - take improvement action
- Improve Energy Performance
  - Prioritize and implement cost-saving measures
  - Engage tenants to help save energy
- Learn from Others

Visit: www.energystar.gov/battleofthebuildings

Bring your Green to Work

- Animated web tools
- Engage customers and co-workers
- Encourage efficiency through Green Team competitions





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ENERGY STAR Certified Products

ENERGY STAR Certified Office/IT Products

- Computers
- Copiers and fax machines
- Digital duplicators
- Monitors/displays
- Printers, scanners, and all-in-ones
- Enterprise servers
- Uninterruptible Power Supplies
- Data Storage (coming soon)
- Networking Equipment (coming soon)

ENERGY STAR Low Carbon IT

- Help businesses power manage their computers
  - Network tools for organization-wide activation of sleep settings
  - Complete trouble shooting information
  - Custom outreach materials
  - No-cost technical consultation with IT experts
- Help data centers become more energy efficient
  - Guidance implementing a data center focused utility energy-efficiency program
  - Top 12 data center retrofit strategies for IT, air flow management, and HVAC
  - ENERGY STAR Building Qualification for Data Centers
  - ENERGY STAR certified data center products – servers and UPSs, (coming soon data storage and networking equipment)
- Go to www.energystar.gov/lowcarbonit

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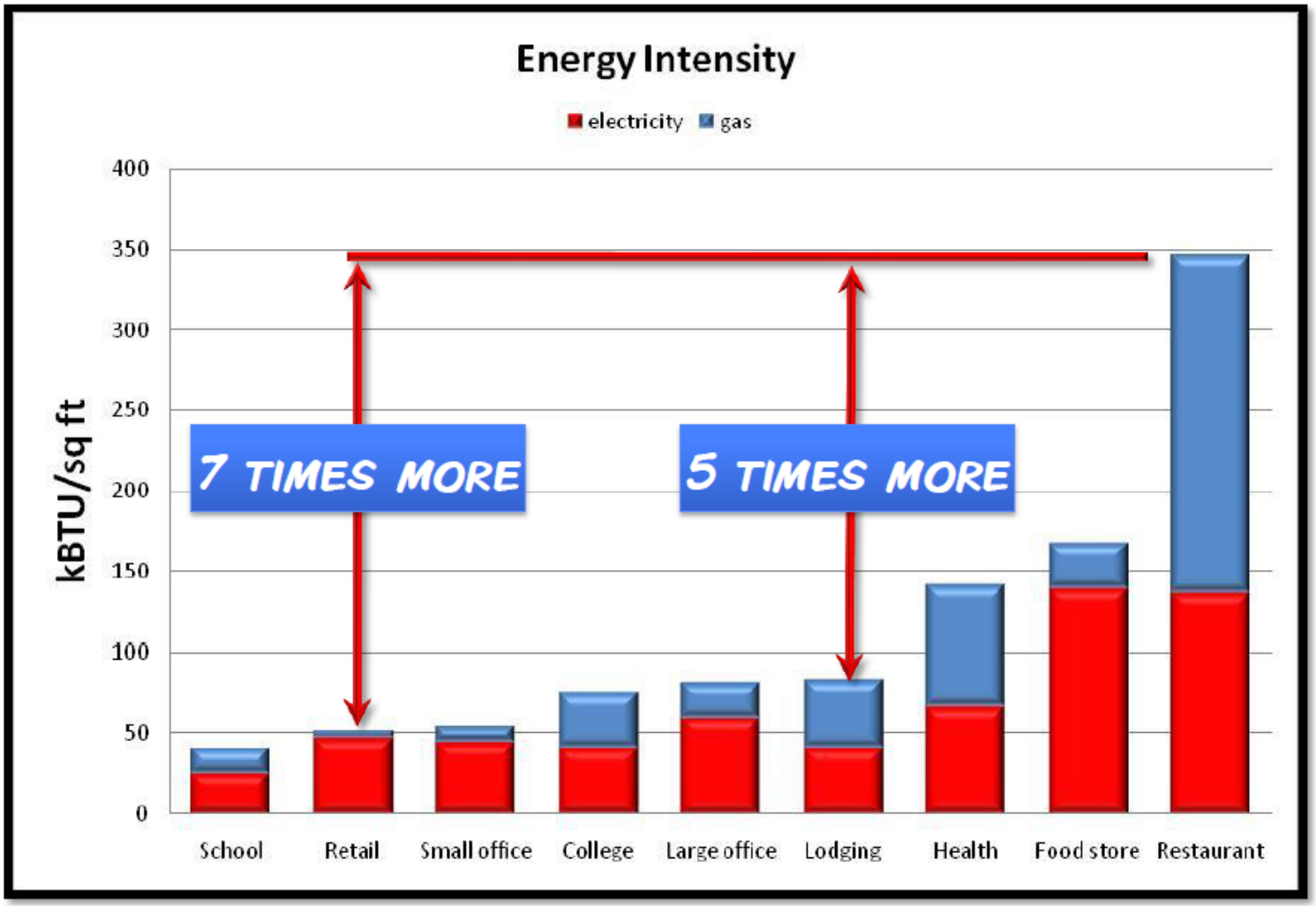
Data Centers – Energy Savings Opportunities

- ***Cooling systems*** can be improved through premium efficiency equipment such as chillers, pumps, fans, cooling towers, and ultrasonic humidifiers; use of variable speed fans; installation of air or water-side economizers; and improved air flow management.
- ***Power delivery and conditioning*** can be improved with use of premium efficiency UPS and distribution transformers, and direct current power systems.
- ***IT equipment*** can be improved by upgrading with an ENERGY STAR-qualified or other premium efficiency product, virtualizing and consolidating servers and data storage equipment

Draft Guide on rate-payer funded data center efficiency programs

- Characterizes data center market
- Highlights energy savings opportunities
- Overviews programs throughout the country
- Discusses market barriers and strategies
- Discusses program challenges and go to market strategies

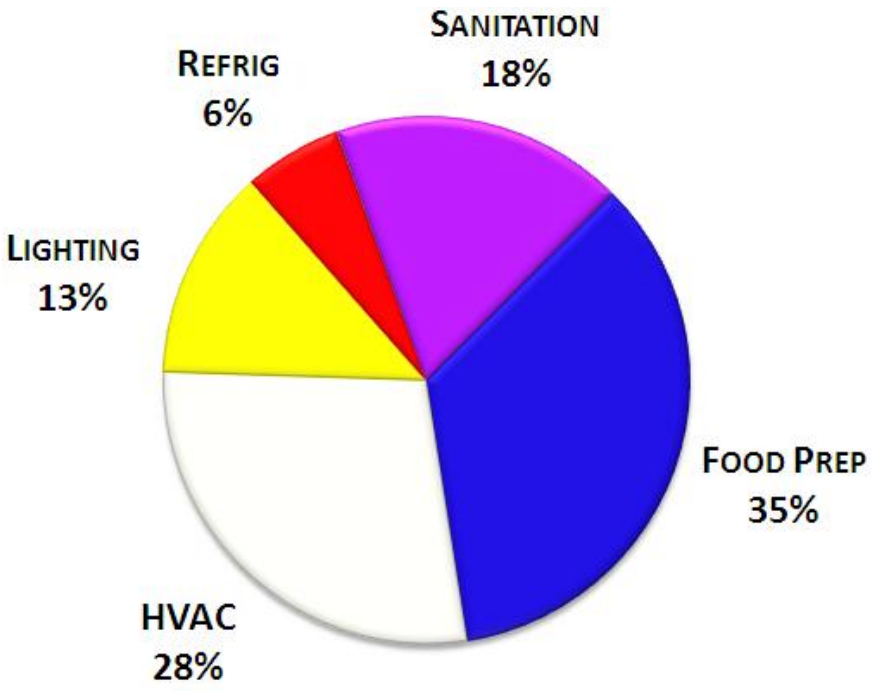
Commercial Food Service (CFS) Energy Use



Source of graph: PG&E Food Service Technology Center

Restaurant Energy Consumption

Energy use in restaurants is dominated by food preparation



An example of how energy (BTU) is consumed in a typical full service restaurant

Source: PG&E Food Service Technology Center

French Fries Have a Huge Energy Cost

- A single appliance can consume more than a home!

A typical electric deep fat fryer uses more than **18,000 kWh** annually

Conventional fryer

≥

The average U.S. household electricity use is approximately **13,000 kWh** annually

Source: PG&E Food Service Technology Center

Range of CFS Incentives Offered by Utilities

Product	Incentive Range
Dishwashers	$20 – $3,000
Fryers	$66 – $1,350
Griddles	$25 – $600
Hot food holding cabinets	$110 – $900
Ice machines	$18 – $850
Ovens	$100 – $1,000
Refrigerators and freezers	$20 – $1,975
Steam cookers	$40 – $2,000

Please note that utility programs can change. Please contact your utility to ensure the program is still in effect before purchasing your equipment.

Source: 2012 ENERGY STAR Commercial Food Service Incentive Guide

ENERGY STAR Certified CFS Equipment - Annual Savings (kWh)


590 kWh (refrigerators); 1,860 kWh (freezers)

Refrigerators and Freezers

3,200 to 9,300 kWh

Hot Food Holding Cabinets

80 MBtu + 48,000 gal. H_20

Dishwashers

30 MBtu or 1,870 kWh

Ovens

15 MBtu or 2,270 kWh

Griddles

50 MBtu or 1,100 kWh

Fryers

130 MBtu or 11,500 kWh + 160,000 gal. H_20

Steam Cookers

1,400 kWh 2,750 gal. H_20

Ice Machines

MBtu = 1 million British thermal units; kWh = kilowatt-hour

Source: U.S. Environmental Protection Agency

ENERGY STAR Certified CFS Equipment - Annual Savings ($)

$55 - $70(refrigerators); $175 - $320 (freezers)

Refrigerators and Freezers

$655

Hot Food Holding Cabinets

$720

Dishwashers

$190 (electric); $360 (gas)

Ovens

$190 (electric); $175 (gas)

Griddles

$100 (electric); $470 (gas)

Fryers

$1,100 - $1,200 (electric or gas)

Steam Cookers

$130

Ice Machines

- *Actual energy savings may vary based on equipment use and other factors.*
- *2011 EPA savings figures*

ENERGY STAR Certified CFS Equipment - Average Lifetime Cost Savings

12 year life
$500 – 650 (refrigerators);
$1,650 – $3,000 (freezers)

Refrigerators and Freezers

12 year life
$ 6,150

Hot Food Holding Cabinets

20 year life
$5,850 – $9,750

Dishwashers

12 year life
$1,800 (electric);
$3,400 (gas)

Ovens

12 year life
$1,800 (electric);
$1,650 (gas)

Griddles

12 year life
$950 (electric);
$4,400 (gas)

Fryers

12 year life
$10,350 (electric);
$11,500 (gas)

Steam Cookers

8 year life
$900

Ice Machines

- *Actual energy savings may vary based on equipment use and other factors.*
- *Lifecycle cost savings based on a 4% discount rate*

Overview of Improved Efficiency with ENERGY STAR

Product Type	% Improved Efficiency*
Dishwashers	25% (+ 25% more water efficient)
Fryers	30%
Griddles	10-25%
Hot Food Holding Cabinets	65%
Ice Machines	15% (+10% more water efficient)
Ovens	10-25%
Refrigerators and Freezers	30%
Steamers	60%

**Approximated values*

ENERGY STAR Certified CFS Equipment – Tools & Resources

- CFS Program Sponsor Guide for Utilities
  - Best practices
  - Utility experiences
  - Levelized cost of conserved energy estimates
- Marketing & Outreach Support
  - Publicity through program communications
  - Facilitated contact w/ state restaurant associations
  - Online CFS Incentive Finder (www.energystar.gov/cfs/incentives)
- Education & Training
  - ENERGY STAR Restaurant Guide and Fact Sheets
  - Case Studies
  - Quarterly Newsletter
- Technical Support
  - Savings calculators
  - Strategic support for addressing market barriers

ENERGY STAR® FOR COMMERCIAL KITCHENS: HELPING CUSTOMERS MANAGE COSTS

Buildings with restaurants and other food service operations are very energy intensive, consuming roughly 2.5 times the energy per square foot as other commercial buildings, or close to 250,000 British thermal units (Btu) of energy per square foot.[1] Energy efficiency program administrators can help these customers rein in operating costs while also reducing energy use, pesticide mains, and wastewater by promoting ENERGY STAR qualified commercial food service (CFS) equipment and other best practices. Utility cost savings of 10 to 50 percent are achievable without sacrificing service, quality, style or comfort—all while making significant contributions to a cleaner environment.[2] The U.S. Environmental Protection Agency (EPA) is working with about 50 efficiency program administrators throughout the nation to integrate ENERGY STAR qualified CFS equipment into their program offerings. EPA is providing this factsheet to introduce more program administrators to ENERGY STAR and the savings opportunities in commercial kitchens, as well as to share best practices for program design, implementation, and evaluation based on the experiences of recent CFS programs.

DELIVERING SOLUTIONS IN COMMERCIAL KITCHENS

Promoting the installation of energy efficient equipment in commercial kitchens is an important part of a comprehensive CFS program. It saves significant amounts of energy and offers meaningful financial benefits to the establishment. Utility costs are a major operating expense for the CFS industry, on the level of about one-half to almost parity with their profit margins—which for a full service restaurant is around 5 percent or less.[3] Due to rising energy costs, CFS customers may be increasingly receptive to program administrator assistance for improving energy efficiency and reducing related utility bills. And the savings opportunities are significant: as much as 60 percent of the food service sector's $50 billion annual energy bill is expended on energy that does no useful work and a substantial portion of this waste is related to equipment inefficiencies.[4]

ENERGY STAR provides a comprehensive and cost-effective platform for promoting greater equipment efficiency and related best practices to CFS customers. ENERGY STAR currently identifies efficient products in eight product categories: hot food holding cabinets, solid door refrigerators and freezers, fryers, steam cookers, ice machines, commercial ovens, griddles, and dishwashers.

These energy efficient products offer energy savings of 10 to 85 percent over standard models, depending upon the product category. Three of the product categories, commercial dishwashers, ice machines, and steam cookers, also offer water savings of up to 80 percent over standard models. Three CFS utility programs have earned ENERGY STAR awards for promoting these energy-saving products and are showing promising early returns. They include:

Outfitting an entire commercial kitchen with a suite of ENERGY STAR qualified equipment could save around $10 million Btus of energy and about $2,000 per year.

- California's four investor-owned utilities (IOUs)—Pacific Gas & Electric Company (PG&E), Southern California Edison (SCE), Southern California Gas Company (SCG), and San Diego Gas & Electric Company (SDG&E)—offer a coordinated statewide incentive program with strong early results. Achieving annual electric savings of around 20.8 million kilowatthours (kWh) and annual natural gas savings of around 82,000 therms.[5]
- The Energy Trust of Oregon's (ETO) CFS program is achieving annual savings of nearly 1.2 million kWh and over 180,000 therms by partnering with dealers that sell CFS equipment directly to restaurants.[6]
- Wisconsin's Focus on Energy offers CFS customers a bonus incentive to encourage the purchase of multiple ENERGY STAR qualified products and is achieving annual electric savings of nearly 850,000 kWh and annual natural gas savings of nearly 22,000 therms.[7]

EPA **Visit: www.energystar.gov/index.cfm?c=pt_univ.pt_univ_cfs**

Upcoming Commercial Product Revisions/Additions

- CFS Revisions in Progress:
  - Commercial Ovens
  - Commercial Refrigerators & Freezers
- CFS New Products in Progress:
  - Lab Grade Refrigerators and Freezers
  - Pre-rinse Spray Valves
- Appliance Revisions in progress:
  - Commercial Clothes Washers
- IT Revisions in progress:
  - Audio Video
  - Computers
  - Computer Servers
  - Imaging Equipment
- IT New Products in Progress:
  - Data Center Storage
  - Small Network Equipment
  - Large Network Equipment
- Heating and Cooling New Products in Progress:
  - Commercial Water Heaters

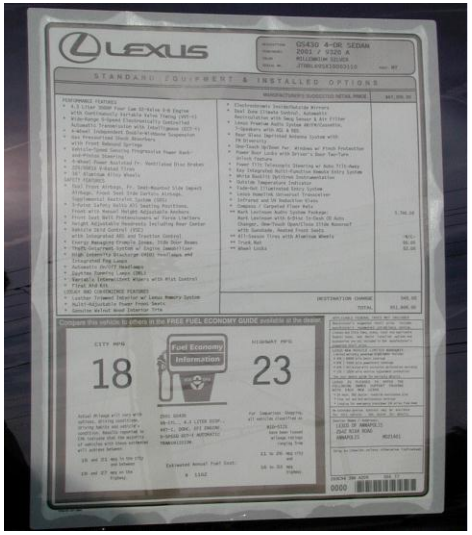
Visit: www.energystar.gov/specifications

ENERGY STAR for Buildings

Opportunities for Energy Efficiency Program Sponsors

- Educate customers about benchmarking and facilitate access to utility bill data
  - Web education and link to Portfolio Manager/Target Finder
  - Portfolio Manager Web Services (formerly known as Automated Benchmarking)
- Use targeted market sector messaging within traditional prescriptive and custom offerings
- Integrate whole building and strategic energy management approaches in your efficiency portfolio

Benchmarking



A benchmark is a point of reference from which to make comparisons

What is Portfolio Manager?

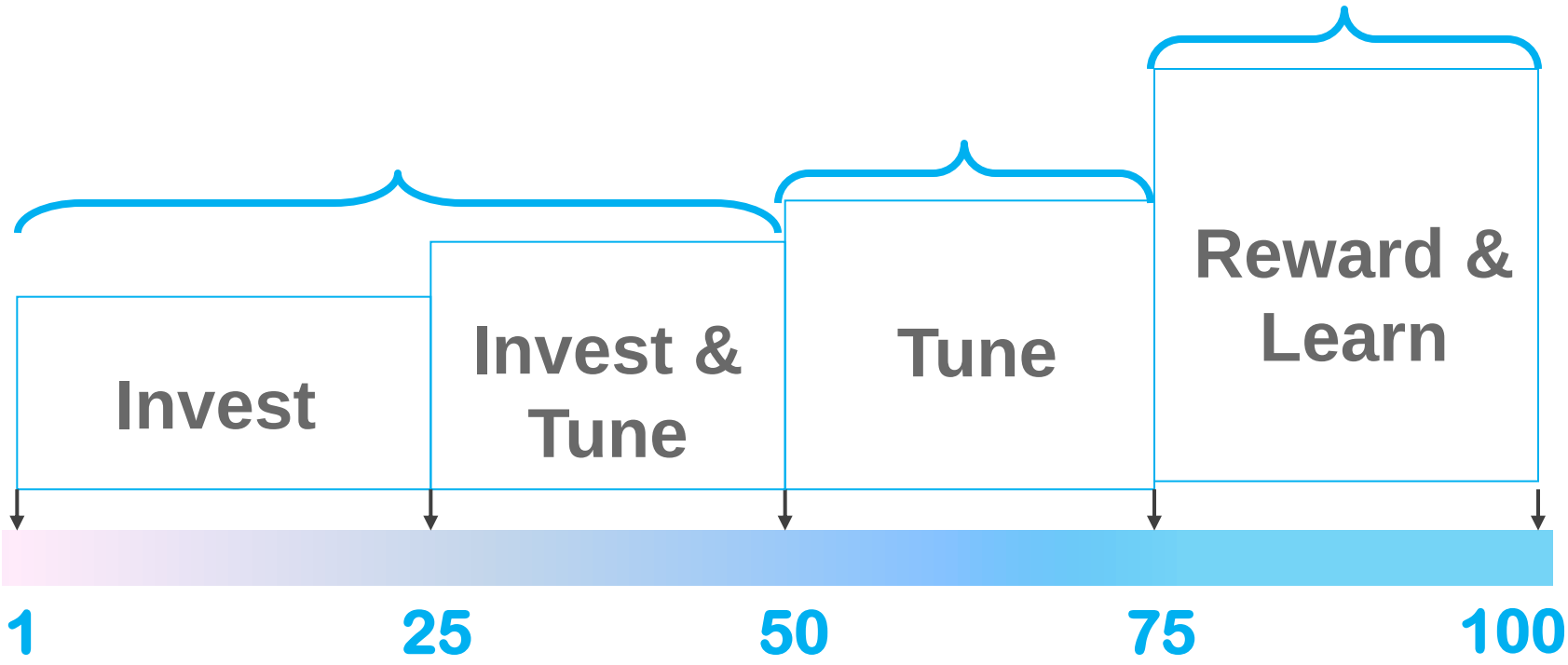
- Free, online benchmarking tool for existing buildings
- Whole-building energy performance metrics based on actual consumption data
- Measures and tracks energy intensity, energy cost, emissions, and more
- Normalizes for weather, operating hours, occupant density, plug load
- Easy to understand 1-to-100 score
- Starting point for the ENERGY STAR Certification

Comparative Metric

Best capital investment opportunities are in lower quartiles - greatest potential for improvement

RCx & O&M improvements yield savings and label candidates

High scoring plants provide lessons learned and certification candidates

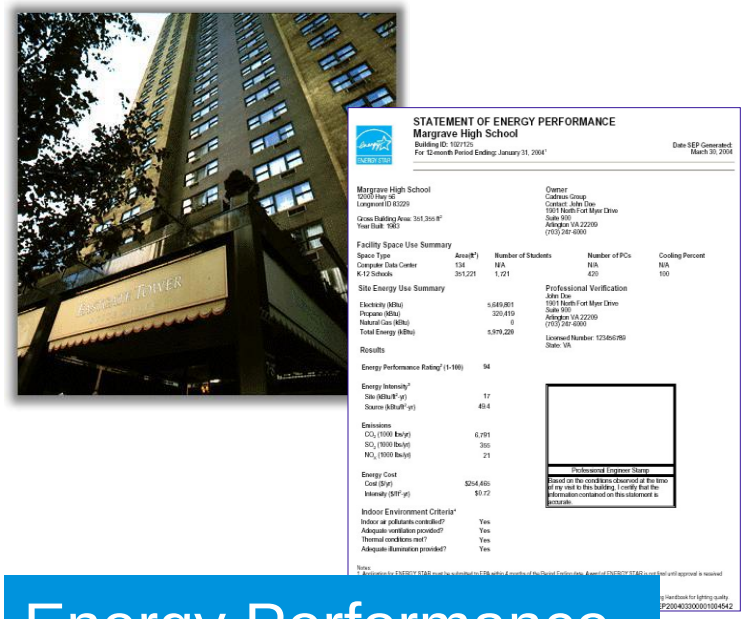


Energy Performance Rating Scale for Buildings

Is 60 MPG high or low for this automobile?

Fuel Efficiency: *MPG*

Is 90 kBtu/SF/YR high or low for this building?



Energy Performance Scale: *1 to 100*

ENERGY STAR Score: Eligible Building Types

Bank/Financial Institutions

Courthouses

Data Centers

Dormitories

Hospitals

Hotels

Houses of Worship

K-12 Schools

Medical Offices

Office Buildings

Retail Stores

Senior Care Communities

Supermarkets

Warehouses

Wastewater Treatment Plants

EPA

Analyze Your Energy Use
» Benchmarking Services
Money-Back Solutions
Partners and Trade Professionals
Rebates, Incentives & Resources
Demand Response
Time-Varying Pricing
Solar and Renewables
Self-Generation Incentives
Energy Saving Tips

Benchmarking through ENERGY STAR® Portfolio Manager

The ENERGY STAR Portfolio Manager is the Environmental Protection Agency's (EPA) interactive energy management tool that allows you to track and assess energy and water consumption of your buildings. It generates weather-normalized energy intensity (kBtu/sq. ft.) and greenhouse gas emissions metrics for all buildings, as well as a percentile energy performance score for many eligible building types. Custom reports and graphs also allow users to see time trending information and compare facilities within their portfolio.

PG&E's Automated Benchmarking Service (ABS) (PDF, 156 KB) provides ENERGY STAR Portfolio Manager with historical energy usage data and updates it monthly so you don't have to enter meter data manually for each month.

Why benchmark?

- Assess energy performance baselines for buildings and set goals for improvement.
- Track and report on energy performance, costs, and environmental impact over time, for individual buildings and entire portfolios.
- Comply with California Assembly Bill 1103, which requires disclosure of benchmarking data at the point of whole building real estate transactions.
- Comply with the new San Francisco Ordinance that requires annual benchmarking of buildings >/= 10,000 square feet beginning in 2011.
- Apply for the prestigious ENERGY STAR® label with scores above 75.
- Earn points toward LEED® certification.

How do I get started?

1. Learn about ENERGY STAR Portfolio Manager and collect basic building data using the Data Collection Worksheet.
2. Collect the Service ID numbers for each meter you wish to sign up for Automated Benchmarking. (If you are not an authorized representative of the Customer of Record for a meter or meters that are

EPA

What is Portfolio Manager Web Services?

- Portfolio Manager Web Services is a framework for exchanging data between EPA's Portfolio Manager and a third party system such as a utility customer information system (CIS)
- Portfolio Manager Web Services includes Web-based services using Extensible Markup Language (XML) to…
  - authorize data release
  - transfer energy and/or building data
  - report energy benchmarking results
- Utilities can assist their customers with benchmarking by using Portfolio Manager Web Services to process data authorizations and automate the transfer customer energy data from the utility CIS to EPA's Portfolio Manager

Benefits of Portfolio Manager Web Services

- Helps to facilitate the integration of ENERGY STAR benchmarking into customer reporting & verification requirements
- Allows regular updates to benchmarks without manual data entry
- Facilitates easy accounting and reporting of greenhouse gas emissions at both the building and portfolio level
- Allows program sponsors access to building benchmarking data for targeted marketing

Building Performance with ENERGY STAR

Building Performance with ENERGY STAR

- **Single program model** allows EEPS to leverage the proven approach of the ENERGY STAR program for commercial buildings
- Creates an **integrated** approach to program delivery
  - Power of the ENERGY STAR brand
  - Action planning builds a foundation for future activity
  - Leveraging existing incentive programs as appropriate
  - Claim savings for comprehensive, ongoing approaches to energy efficiency

Required Program Elements

Use of the Building Performance with ENERGY STAR name, logo, and tools will be licensed to EEPS for programs that meet the following criteria:

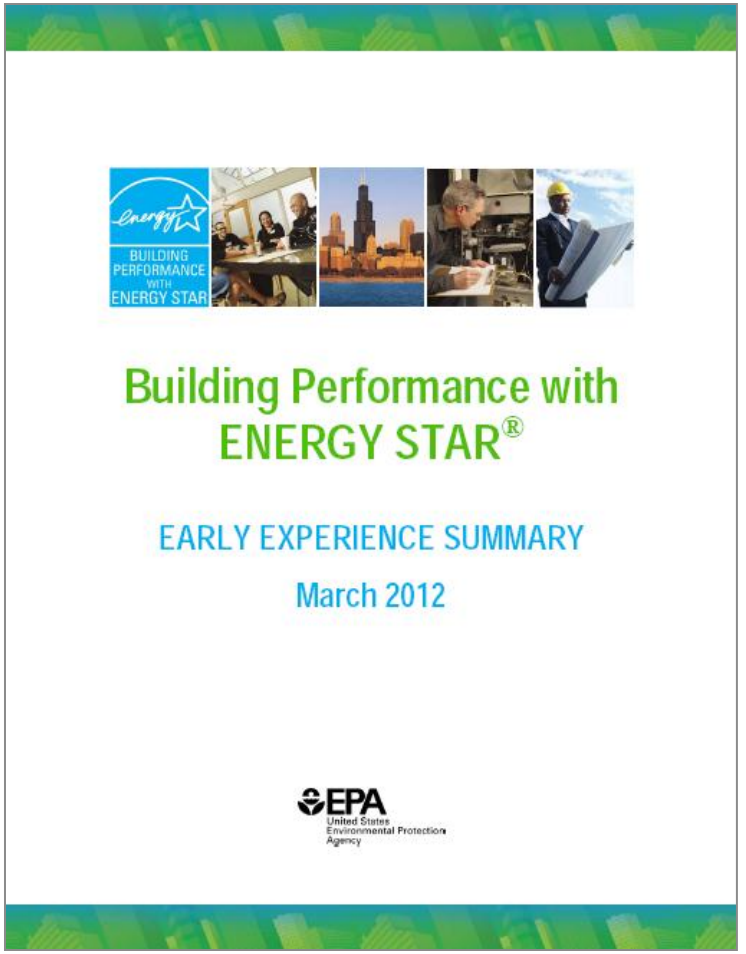
- **Target Marketing/Recruiting:** Focus on one or more specific commercial building markets (e.g., office, retail, K-12 schools)
- **Benchmarking:** Use EPA's Portfolio Manager tool to prioritize buildings for assessment and upgrade
- **Strategic Energy Management/Action Plan Development:** Help customers to develop strategic action plans that engage high-level decision makers
- **Whole-Building Performance Assessment:** Identify opportunities for improvements across all building systems
- **Whole-Building Upgrades:** Structure incentives to encourage customers to undertake whole-building improvements
- **Performance Monitoring and Verification:** Validate program impacts, support re-benchmarking, and assess customer satisfaction

Market Barriers Addressed

Barrier	Strategy to Overcome
Lack of understanding of building performance	Benchmarking helps facility managers understand building energy performance and gives them an easy way to communicate performance to others in their organization.
Lack of management commitment and strategic energy planning	Creating action plans with customers as part of their energy management strategy is an effective way to engage senior management, and secure capital for improvements. Benchmarking results can be used to direct resources toward facilities with large energy savings potential.
Lack of up-front capital	Focusing on long-term action planning helps customers see past the initial hurdle of up-front capital requirements. Savings from low and no cost improvements can be viewed as a revenue stream to fund future capital improvements.
Trade ally business model driven primarily by equipment sales	Building demand in the marketplace for whole building services helps develop a local network of service providers that understand and can deliver whole-building assessments and upgrades.

Early Experience Summary

- Spotlight on Successful strategies
  - Moving from **buildings** to **portfolios**
  - Using benchmarking as a **mechanism for discovery**
  - Serving as a **trusted advisor**
  - Helping **all customers** realize that they can do more
  - Reaching higher to **engage with senior decision-makers**
  - **Coordinating efforts** between electric and gas utilities
  - **Engaging trade allies** to provide whole-building expertise



Online at www.energystar.gov/buildingperformance

Designed to Earn the ENERGY STAR

Designing for High Energy Performance with Target Finder

- Target Finder helps building designers set aggressive energy efficiency targets and rates a design's estimated energy use.
- Use Target Finder to achieve "Designed to Earn the ENERGY STAR"
- How can utilities use it?
  - Incorporate into new construction programs
  - Provide design assistance incentives to architects
  - Provide incentives for buildings that are Designed to Earn the ENERGY STAR

ENERGY STAR for Buildings – Tools & Resources

- **Marketing and Communications Support**
  - National Campaigns (Challenge)
  - Partner testimonials
  - Partner matchmaking
  - Sample filing language
- **Tools & Resources**
  - Portfolio Manager: www.energystar.gov/benchmark
  - Automated Benchmarking
  - Building Performance with ENERGY STAR
  - Target Finder
  - Benchmarking Starter Kit
  - Energy Management Guidelines
  - Creating an Energy Management Team
  - Building Upgrade Manual
  - Calculator Tools
- **Technical Assistance**
  - Program best practice information
  - Automated benchmarking support
- **Virtual and Online Training**
  - ENERGY STAR Challenge: Getting Started
  - Portfolio Manager Training

Visit: http://www.energystar.gov/index.cfm?c=ci_program_sponsors.ci_program_sponsors

ENERGY STAR Trainings

- ENERGY STAR offers free training Webinars led by industry experts:
  - Rating Energy Performance with Portfolio Manager
  - Best Practices to Improve Energy Performance
  - Introduction to the Cash Flow Opportunity Calculator
  - Purchasing and Procuring Efficient Equipment

Calendar of all ENERGY STAR trainings

Visit:
https://esbuildings.webex.com/mw0307l/mywebex/default.do?siteurl=esbuildings

ENERGY STAR
Industrial Opportunities

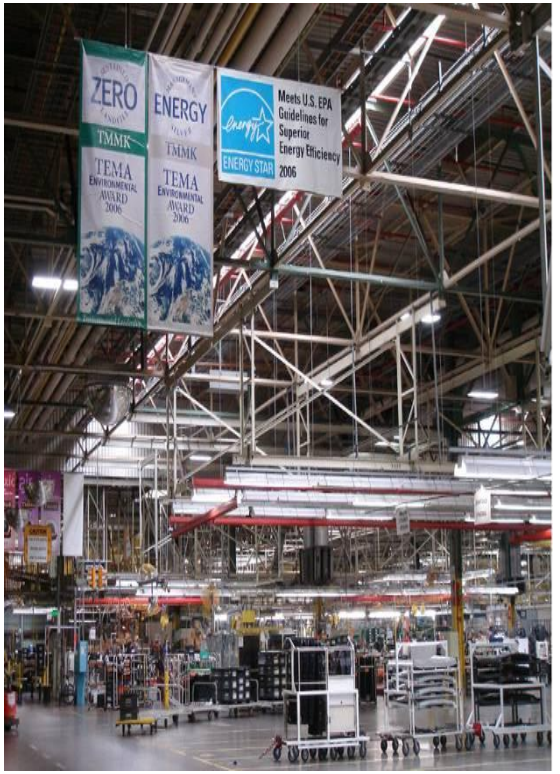
Industrial Energy Use

- Currently, a few energy intensive manufacturing industries account for a large share of total energy use (bulk chemicals, refining, paper, steel, and food = 60%; other energy intensive industries include glass, cement, and aluminum).

- Increases in energy consumption in the energy-intensive industries can be as high as 0.8 percent per year from 2010 to 2035.
  (US EIA 2012 Annual Energy Outlook)

Industrial Opportunities for Program Sponsors

- **Education** on the full suite of ENERGY STAR opportunities:
  - Promote customer participation in ENERGY STAR Challenge for Industry
- Help customers to focus on corporate **sustainable energy management**
- Leverage already high industry participation



Education - Challenge for Industry (C4I)

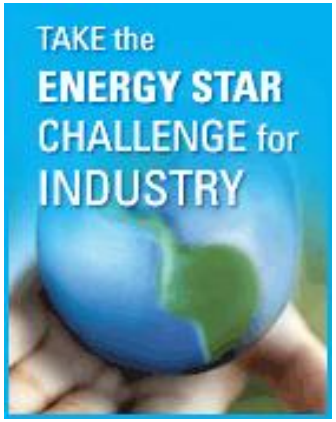
Recognition program for sites that achieve a 10% reduction in energy intensity.

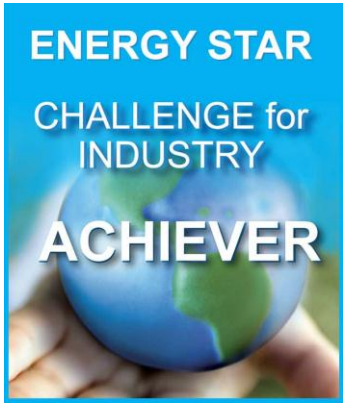
Manufacturing sites take the Challenge by:

- Selecting an **energy intensity metric**.
- Establishing a **baseline**.
- **Setting a goal** to improve by 10% within 5 years.
- **Tracking** energy performance.
- **Verifying** savings if goal is achieved.

Utilities, trade associations, and others have partnered with ENERGY STAR to promote the Challenge for Industry.

Opportunity to leverage the ENERGY STAR brand to motivate industrial sites to take action.





Learn more at: www.energystar.gov/industrychallenge

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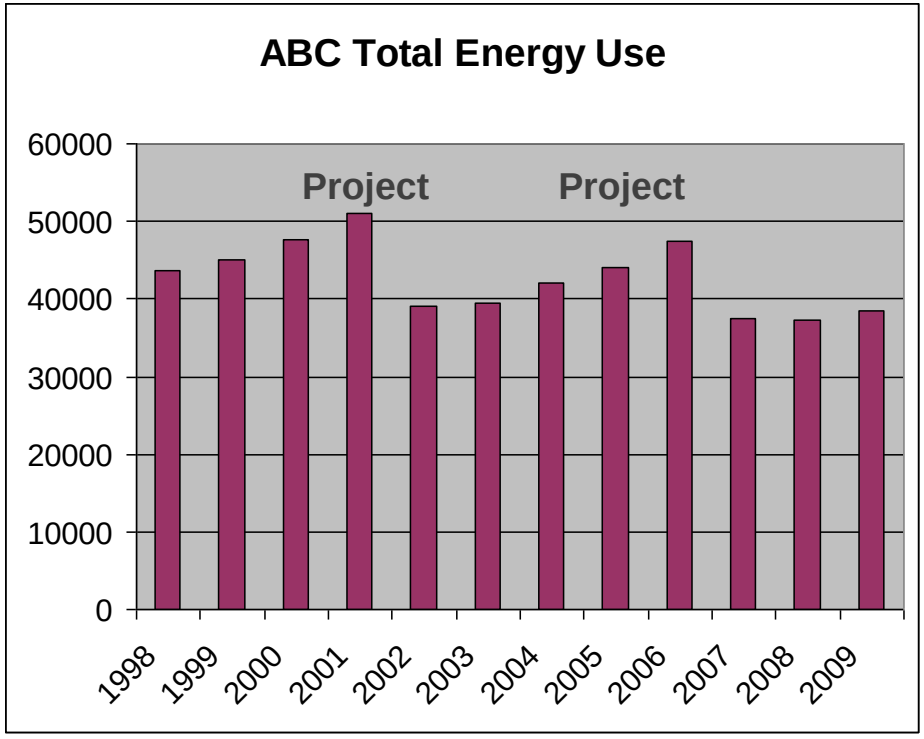
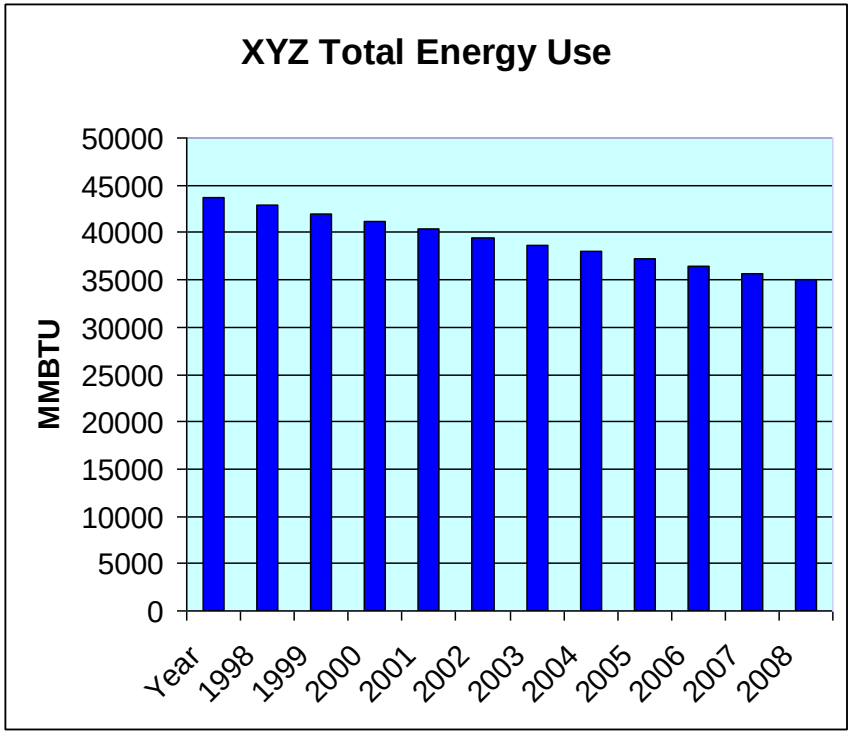
Sustaining Energy Savings

- Energy programs focus on continuous improvement
- Companies with energy programs save more energy
- Sustaining energy savings requires a programmatic approach





Energy Management Guidance

ENERGY STAR offers proven guidance for developing strong energy management programs. Key tools include:

Guidelines for Energy Management

- Provides a framework for how to implement an energy program; based on a “plan-do-act-check” approach.

Energy Program Assessment Matrix

- Evaluates energy management practices and program to identify gaps.

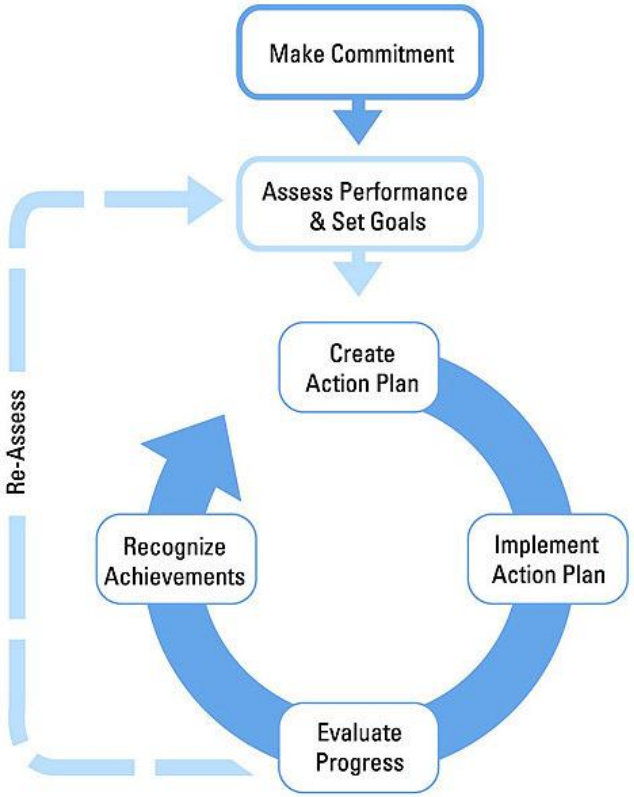
Facility Energy Assessment Matrix

- Evaluates facilities energy management practices to identify gaps.

Teaming Up to Save Energy

- Provides guidance on how to build an energy team and program across an organization.

ENERGY STAR Guidelines for Energy Management



ENERGY STAR for Industry – Tools & Resources

- Industrial Energy Management Information Center (https://www.energystar.gov/index.cfm?c=industry.bus_industry_info_center)
- Industries in Focus (includes Industrial Energy Guides) (https://www.energystar.gov/index.cfm?c=in_focus.bus_industries_focus)
- Industrial Energy Performance Indicators (http://www.energystar.gov/index.cfm?c=industry.industrybenchmarkingtools)
- Bring Your Green to Work for Industry (http://www.energystar.gov/index.cfm?c=bygtw.view_showPlant)
- Partners in Practice (http://www.energystar.gov/index.cfm?fuseaction=partners_in_practice.showHome)

Visit:
http://www.energystar.gov/index.cfm?c=industry.bus_industry

EPA

Key Takeaways

- Take advantage of ENERGY STAR resources and strategic intelligence to reduce time/expense and increase effectiveness of energy efficiency programs
- Increase customer satisfaction by aligning with a powerful “brand”
- Reinforce positive business image
- Develop strategic alliances through extensive partner network
- Contribute to a greater good!

Useful Links

- www.energystar.gov
- www.energystar.gov/nationalcampaigns
- www.energystar.gov/training
- www.energystar.gov/DIME
- www.energystar.gov/homes
- www.energystar.gov/benchmark
- www.energystar.gov/guidelines
- www.energystar.gov/newbuildingdesign
- www.energystar.gov/challenge
- www.energystar.gov/industry

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