



# ENERGY STAR Coffee Brewers Stakeholder meeting

May 19, 2014

Christopher Kent, U.S. Environmental Protection Agency

ENERGY STAR Program



Learn more at [energystar.gov](http://energystar.gov)

# Meeting Information



- Meeting slides and other specification development materials will be available on the Commercial Coffee Brewers Web page:
  - [www.energystar.gov/newspeccs](http://www.energystar.gov/newspeccs)
  - Follow link to “*Version 1.0 is in Development*” under “*Commercial Coffee Brewers*”
- Audio provided via conference call in:
  - Call in:** +1-877-423-6338 (in the US, Canada)
  - Code:** 654291
- Phone lines will remain open during the presentation to allow for open discussion
- Please keep phone lines on mute (\*6) unless speaking

# Introductions

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- **Christopher Kent**  
U.S. Environmental Protection Agency
- **Adam Spitz**  
ICF International
- **Rebecca Duff**  
ICF International
- **Meredith Ledbetter**  
ICF International

# Meeting Objectives

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- Provide overview of the ENERGY STAR program
- Provide an overview of the ASTM Test Method for Coffee Brewers
- Provide a summary of data
- Provide a possible timeline of the specification development process
- Answer stakeholder questions about this process

# Agenda



- 1 ENERGY STAR Program Overview
- 2 ASTM Test Method Review /Data Reports Template
- 3 Data Review
- 4 Timeline

# What Is ENERGY STAR?



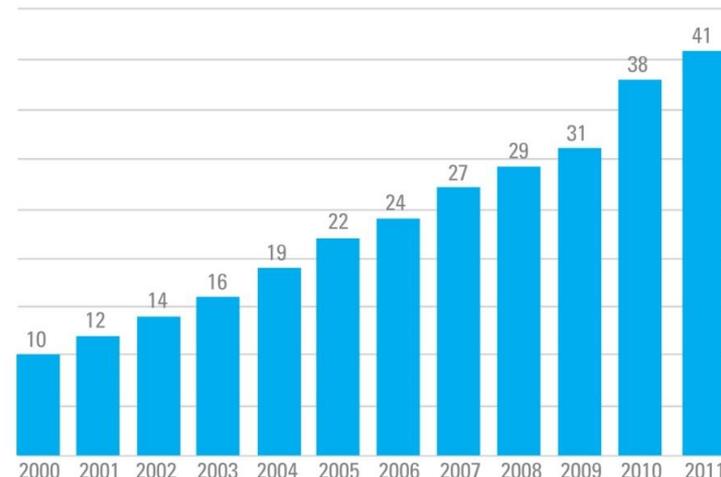
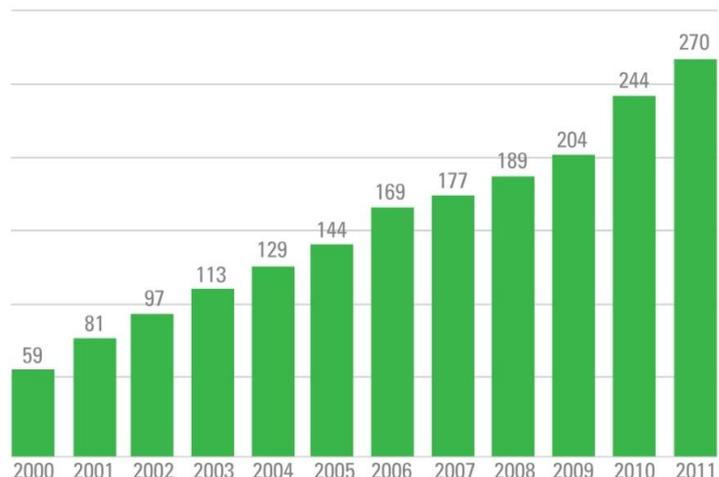
- Established in 1992
- Voluntary climate protection partnership with the U.S. Environmental Protection Agency (EPA)
- Strategic approach to energy management, promoting energy efficient products and practices
- Tools and resources to help save money and protect the environment

# Success: 2013 Accomplishments



- Americans with the help of **ENERGY STAR** prevented 277 million metric tons of GHG emissions and saved \$10 billion in benefits to society due to reducing damages of climate change.
- Over 1.5 million new homes are ENERGY STAR qualified
- 40% of the nations commercial space (350,000 buildings) have been benchmarked

Since 2000, ENERGY STAR Benefits Have More Than Tripled



Energy Savings (Billion kWh)

Emissions Avoided in Vehicle Equivalents (Millions)

# ENERGY STAR Portfolio



- Define and educate on energy performance through a single designation: ENERGY STAR
  - Product Efficiency
  - New/Existing Home Efficiency
  - Commercial Building Efficiency

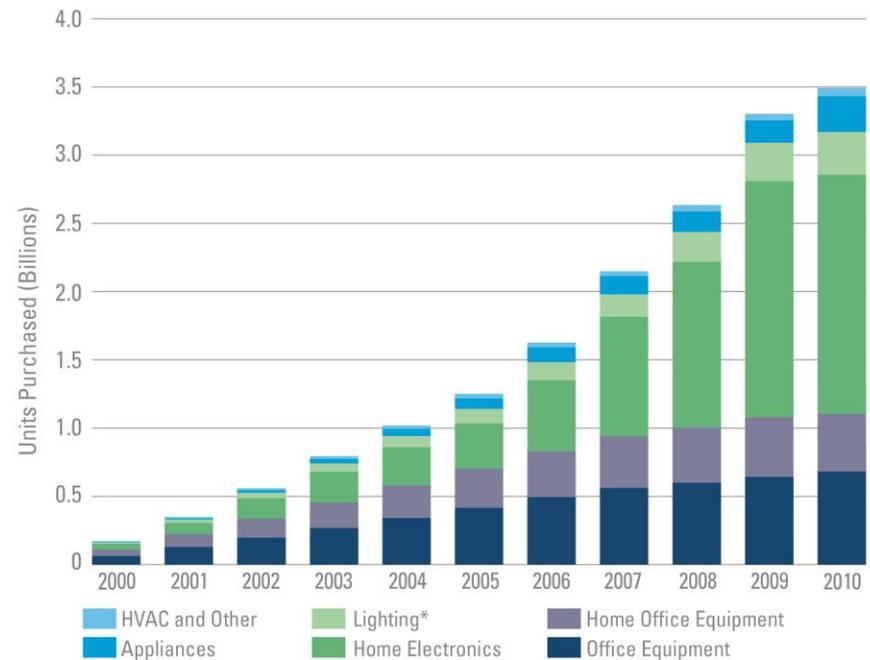


# ENERGY STAR Products



- Americans purchased about 300 Million ENERGY STAR certified products in 2013 in over 70 categories
- Cumulative total of almost 4.9 billion products since 1993
- 85% of the American public recognizes the ENERGY STAR label
- Product are 20 – 65% more efficient depending on type

**Almost 3.5 Billion ENERGY STAR Qualified Products Purchased Since 2000**



*\*Lighting category does not include purchases of compact fluorescent bulbs.*

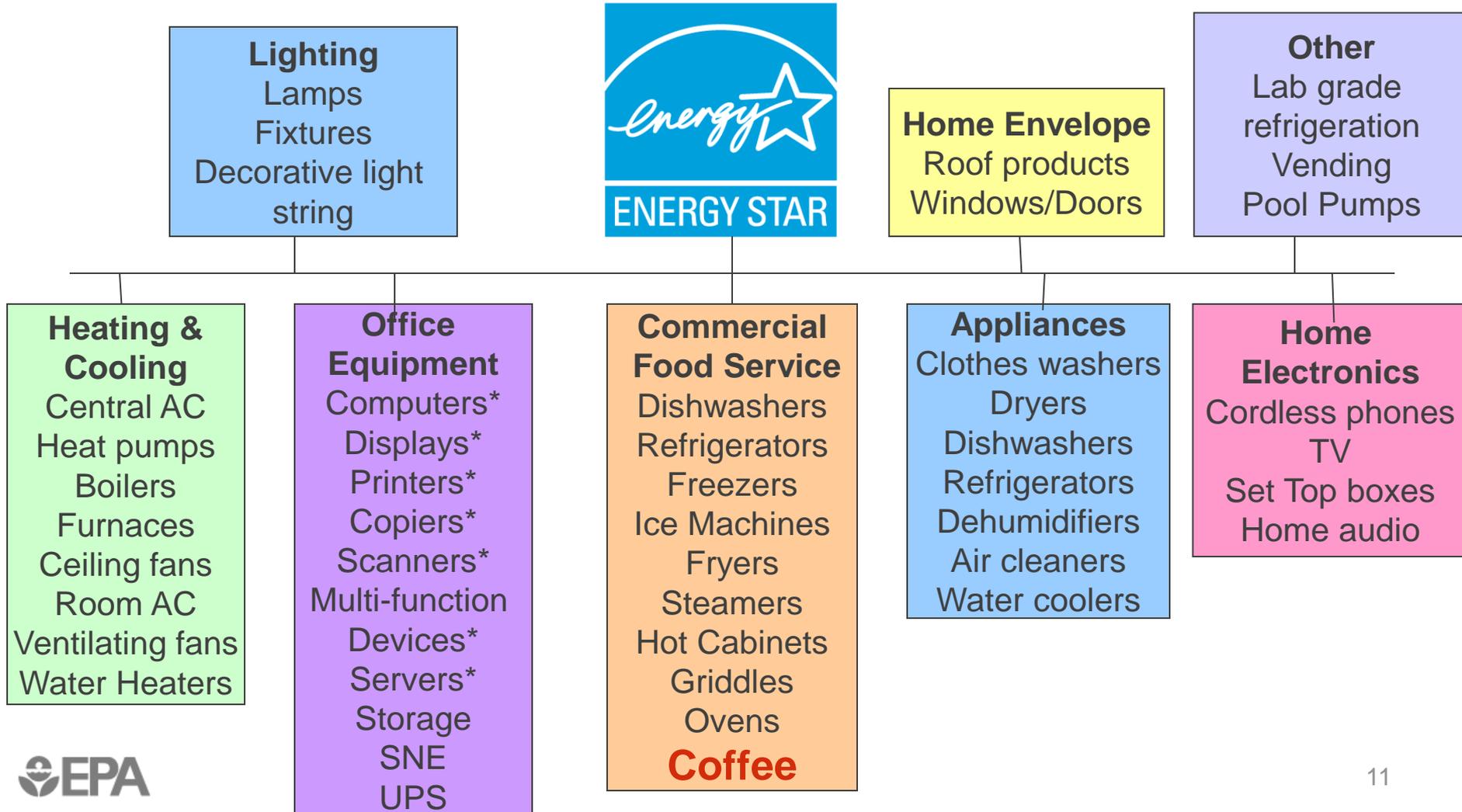
# ENERGY STAR Labeled Products Facts



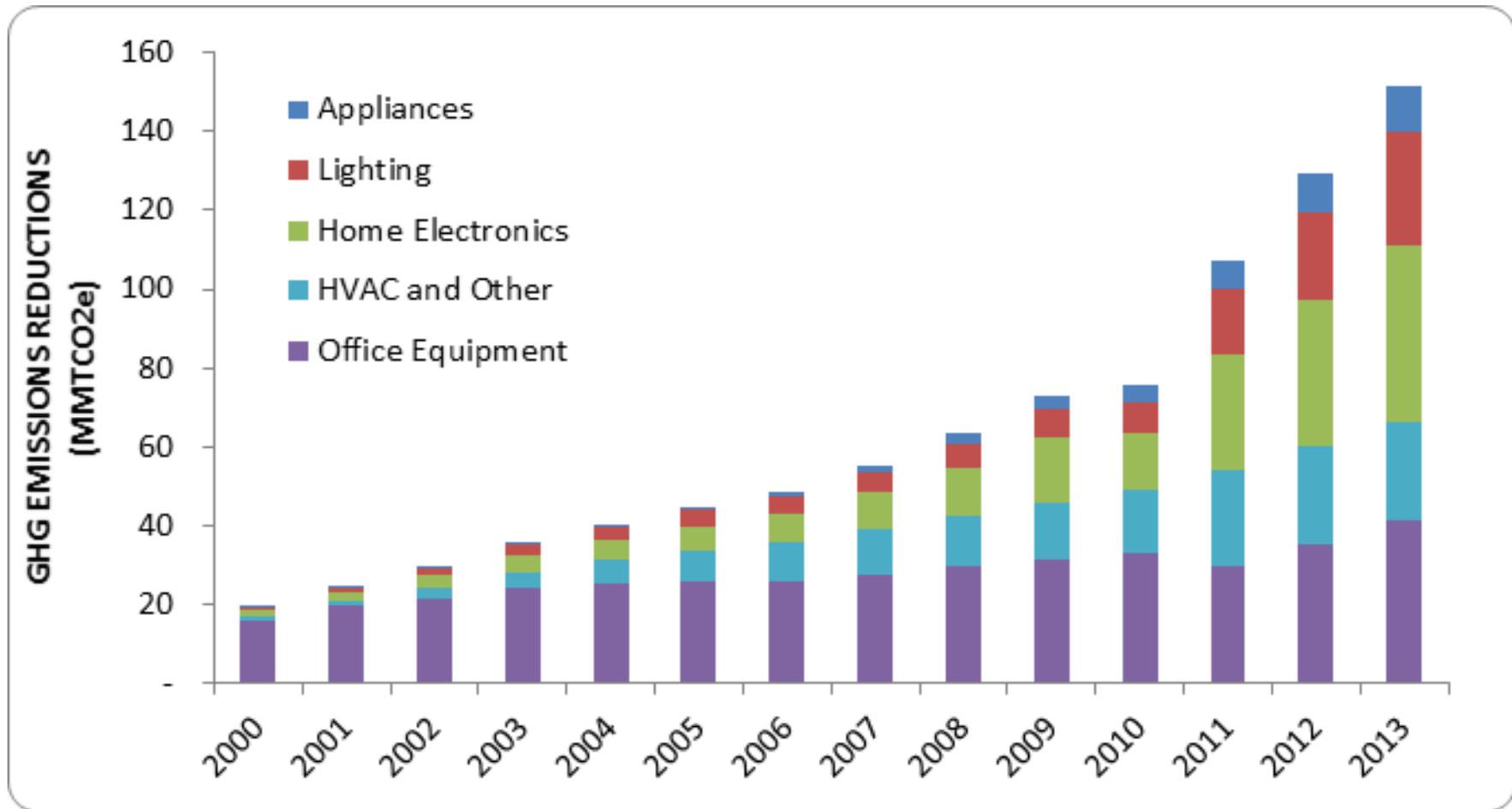
- More than 40,000 product models carry the ENERGY STAR label
- More than 65 types of products carry the ENERGY STAR label
- ENERGY STAR has over 1,800 manufacturing partners
- ENERGY STAR has more than 2,500 retail partners in the United States and Puerto Rico

*Source: ENERGY STAR Data Book 2013*

# 70 Product Categories Are Covered by ENERGY STAR in the US



# GHG Savings by Product Type



# Benefits of ENERGY STAR Qualified Products



- Consume less energy
  - Reduced kWh – reduced CO2 emissions
  - Reduced kWh – less heat – reduced A/C expenses
- Equivalent or better quality
- Annual and life cycle cost savings
  - Additional funds for programmatic uses
- Publicly demonstrate commitment to environment
- Third-party certification procedures bolster the integrity of the program and ensure energy-efficient performance

# Partnership Benefits

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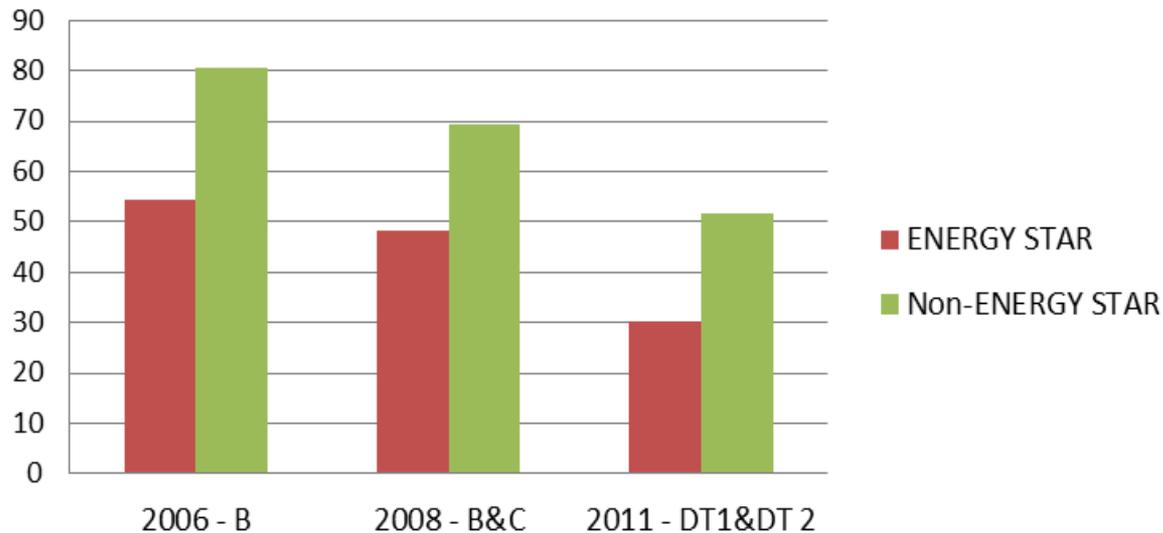


- Use of the certification mark to differentiate top energy efficient products
- Leveraging ENERGY STAR marketing resources
- Access to Utility incentive programs
- Preferential purchasing by Federal programs

# How does ENERGY STAR Drive the Market?



**Desktop Idle (W) Over Time - Based on Business Desktop in ES Data Sets**



- ENERGY STAR specifications change over time to ensure:
  - Certified products are industry leaders
  - Transforms the market to greater energy efficiency\*

\* 2011 data is draft data from a preliminary version of ENERGY STAR computer specification

# What is ENERGY STAR Purchasing?



- ENERGY STAR Purchasing helps organizations identify, specify, and purchase ENERGY STAR® qualified products as part of an overall energy management strategy.



**BUY PRODUCTS THAT MAKE  
A DIFFERENCE**

U.S. Environmental Protection Agency • U.S. Department of Energy

# ENERGY STAR Purchasing Requirements for Federal Agencies



- The Energy Policy Act of 2005
  - Purchase either ENERGY STAR products or Federal Energy Management Program (FEMP) designated
- Executive Order 13423 (2007)
  - Activation of ENERGY STAR power management features on computers and monitors
  - Purchase of EPEAT registered products
- Executive Order 13514 (2010)
  - Sets sustainability goals for Federal agencies
  - Ensure that 95 percent of new contracts include products that are energy-efficient (ENERGY STAR qualified or Federal Energy Management Program (FEMP) designated)
  - Promote electronics stewardship



# Guiding Principles Reaffirmed

- Significant energy savings on a national basis
  - Product performance maintained or enhanced with increased efficiency
  - Consumers recover investment in efficiency within a reasonable period of time
  - Efficiency can be achieved with one or more technologies – products are available from more than one manufacturer
  - Energy consumption and performance can be measured and verified with testing
  - Labeling would effectively differentiate products and be visible to purchasers
- Update May 2012

# ENERGY STAR Program Principles



- Requirements based on sound data
  - Proposed requirements are reflective of real product performance, rewarding true leadership products, and deliver of energy saving promise
- Support and adopt vetted testing metrics/standards
  - Reduced development cost, reduce partners compliance cost
- Open and transparent stakeholder process
  - Enhanced understanding of products, market, and impact of proposed requirement, Open and transparent doesn't mean consensus

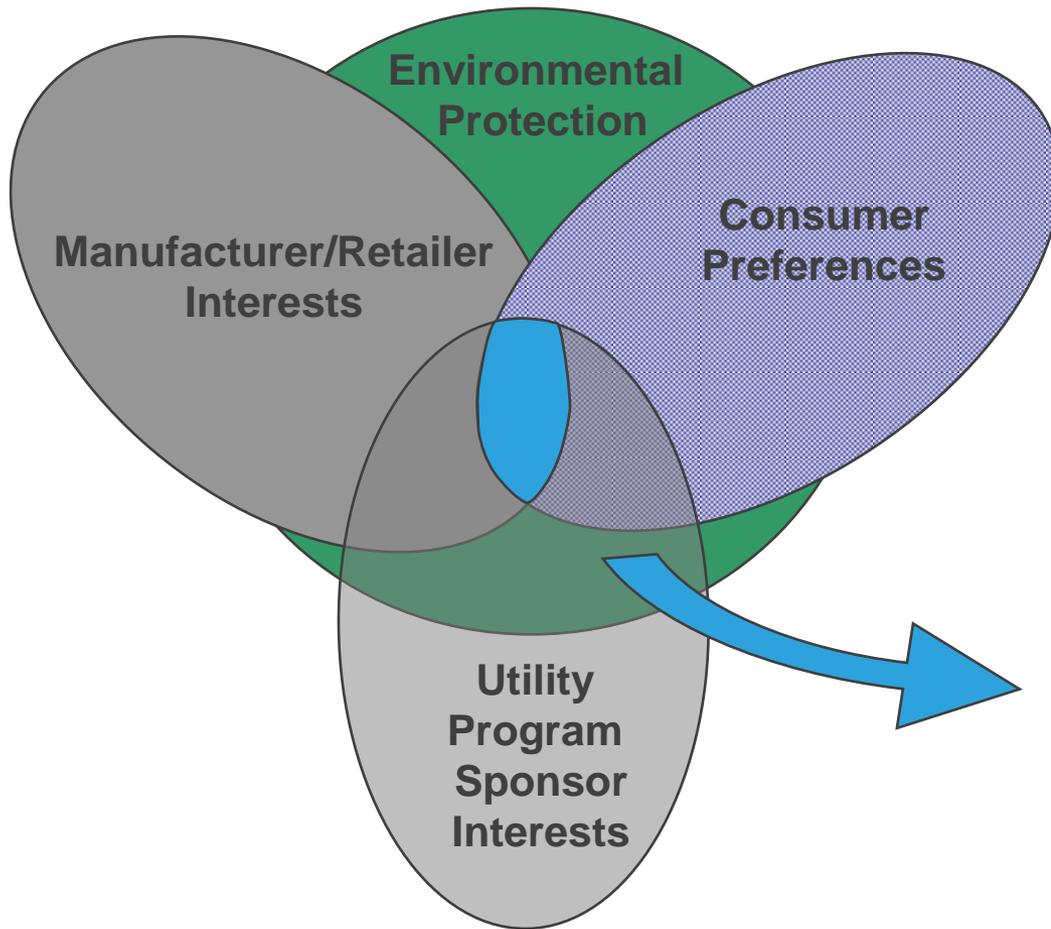
# Important Process Elements

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- Consistency
- Transparency
- Inclusiveness
- Responsiveness
- Clarity

# Builds on Intersection of Interests



- Cost-effective
- No Sacrifice in Performance

Consumer is Key

# How Does ENERGY STAR Maintain Relevancy?

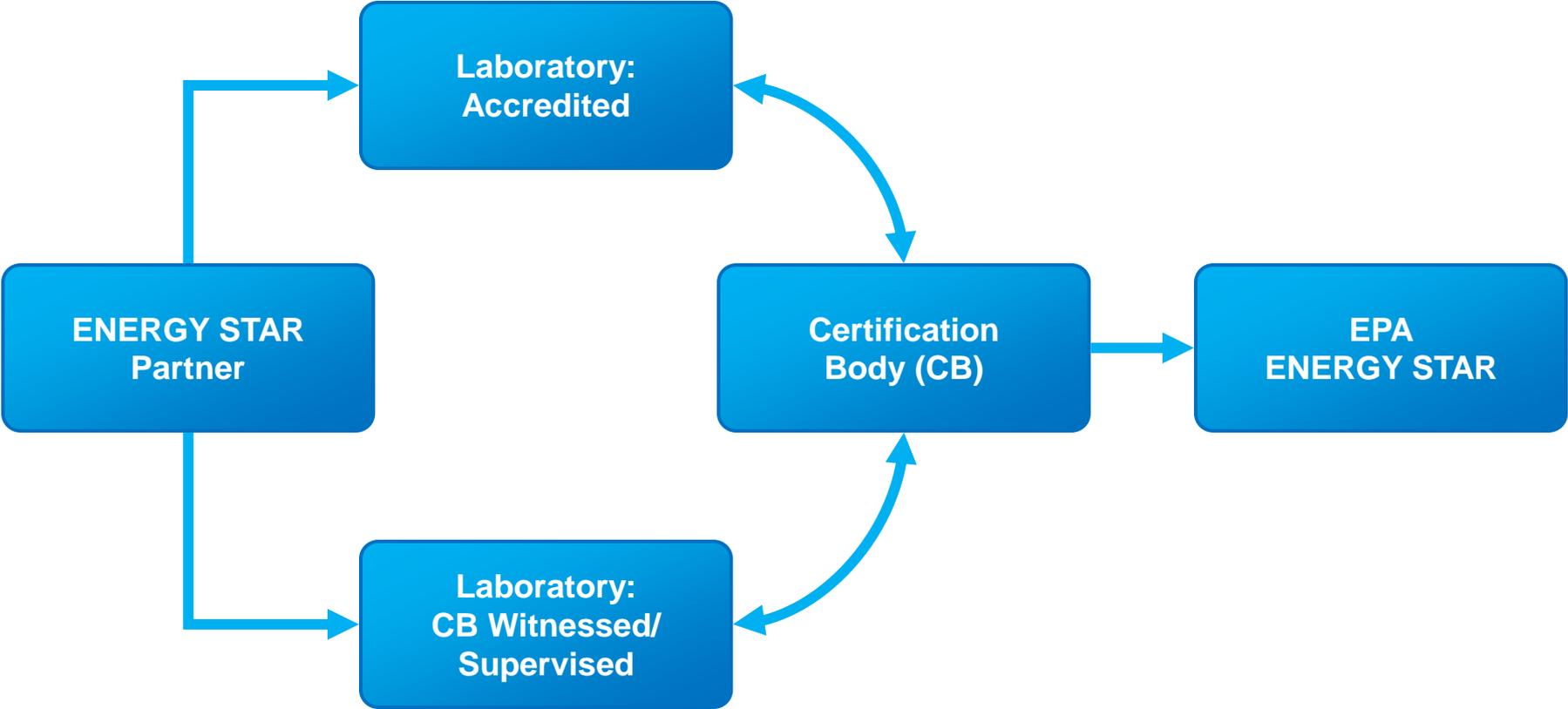


Specifications are updated in response to market changes:

- High market share
- Change in Federal minimum efficiency standards
- Availability, performance, or quality concerns
- Advancements in technology
- Changes in test procedures



# Product Qualification Process



# Integrity Highlights



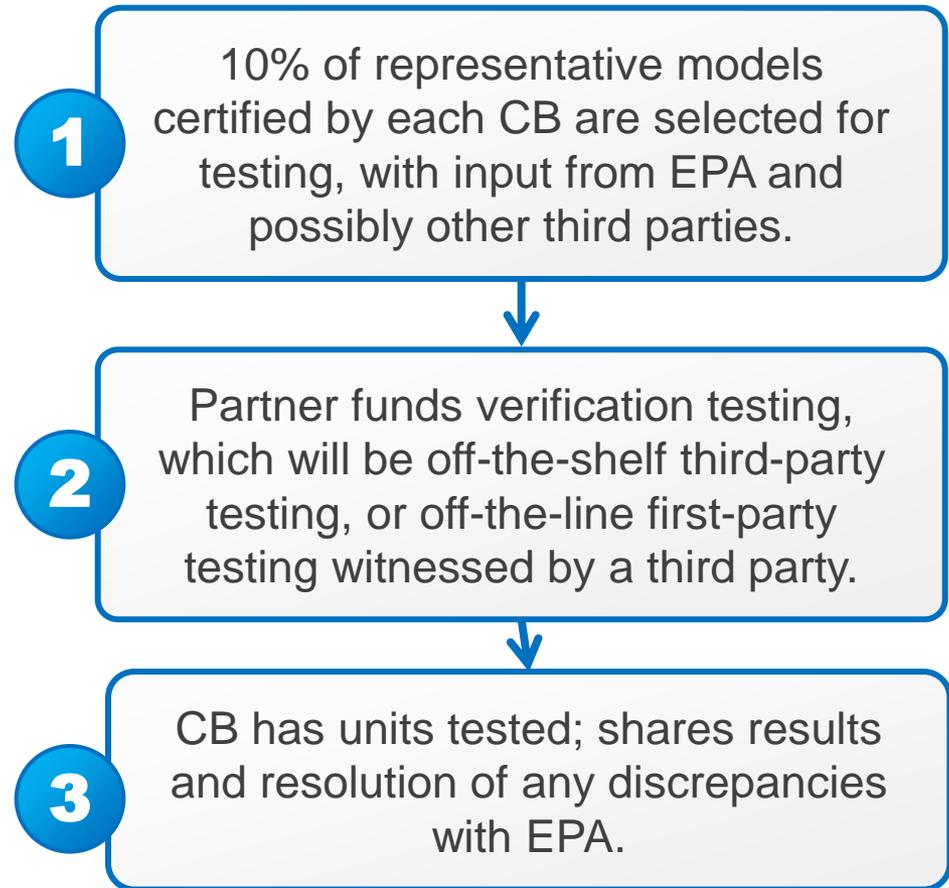
- Since the launch of the third-party certification scheme in Jan 2011, EPA has recognized:
  - 28 accreditation bodies (ABs)
  - 25 certification bodies (CBs)
  - 530 testing laboratories (Labs)
- New applications and applications to expand EPA recognition are processed on a rolling basis and a response is provided typically within one week.
- EPA updates the [online directory of CBs and Labs](#) and maintains a separate listing for [specific lighting categories](#).

[www.energystar.gov/3rdpartycert](http://www.energystar.gov/3rdpartycert)

# Verification Testing



- Verification testing ensures models meet ENERGY STAR requirements post-qualification
- U.S. Department of Energy initiated verification testing of ENERGY STAR qualified models in 2010



# Unit Shipment Data



- All ENERGY STAR manufacturing partners are required to report annual unit shipment data (USD) for certified products shipped to or within the U.S. Estimates are not accepted. Failure to submit data typically results in the interruption of partner privileges.
- USD is used to determine the market share of ENERGY STAR products and evaluate the overall performance of the program.
- At the conclusion of each annual effort, EPA publishes and posts an [Annual Unit Shipment Data Report](#). The report discusses the data collected, methodology used, response rate, and market share for each product category.

[www.energystar.gov/usd](http://www.energystar.gov/usd)

# Use of the ENERGY STAR Label



- The ENERGY STAR mark is a valuable asset, and like any asset with appreciable value, it must be properly used and protected.
- Partnering organizations agree to abide by EPA's ENERGY STAR program identity guidelines prior to using the logo.
- EPA monitors the use of the ENERGY STAR label and name in trade media, advertisements, and the internet to ensure they are applied properly and consistently in the marketplace.

# Logo Enforcement



- Over 800 incidents of possible misuse have been investigated since January 1, 2010.
  - 253 of these have been confirmed to be cases of label misuse:
    - 97 in 2010,
    - 97 in 2011,
    - 45 in 2012, and
    - 14 to date (August 2013) in 2013, showing a clear decline over time.
- In cases of misuse, EPA works with the responsible party to:
  - resolve the issue in a timely manner; and
  - provide advice and education on appropriate use of the ENERGY STAR label to help avoid future instances of misuse.

# Product Finder Tool



- Public-facing tool consumers, retailers, utilities and other stakeholders use to access product data
- [www.energystar.gov/productfinder](http://www.energystar.gov/productfinder)

## Partner Benefits:

- Provide better access to EPA product data for all stakeholders
- Improve the ability to find and reconcile product data
- Improve data quality
- Model data updated daily
- Expected product finder tools rollout for all products: Fall 2013

**ENERGY STAR Certified Residential Clothes Washers**

Access the API, Analyze and Embed Data, Create an Account and more. Switch to Advanced View »

32 Products match your search

Compare up to 4 items

Load Configuration is

- Top Load
- Front Load
- Do not filter

Brand Name is

- Amana
- Ariston
- Asko
- BRADA
- Blomberg

Model	Volume	Compare
LG - WM8000H**	5.16 cu. feet	<input type="checkbox"/>
LG - WM3550H***	4.26 cu. feet	<input type="checkbox"/>
LG - WM3150H**	4.26 cu. feet	<input type="checkbox"/>
LG - WM4070H**	4.26 cu. feet	<input type="checkbox"/>

Main search page for clothes washers product finder tool

ENERGY STAR Certified Residential Clothes...  
This list contains all currently ENERGY STAR certified residential

Find in this Dataset

PD_ID	Brand Name	Model Number
1	LG	WM8000H**
2	Kenmore	4108#21#
3	Kenmore	4107#21#
4	Samsung	WF457A*GS**
5	Samsung	WF455A*GS**
6	Frigidaire	F4FS4073**
7	LG	WM3150H**
8	Kenmore	4154#21#
9	Kenmore	4153#21#
10	LG	WM3550H***
11	Frigidaire	F4FS4174**

Filter this dataset based on contents.

Brand Name is

- Samsung

+ Add a New Filter Condition

Advanced view, which will replace Excel-based lists

# Product Specification Search Tool



## Product Specifications Search

**Category**

Check all    Uncheck all

- Lighting & Fans
- Other
- Heating & Cooling
- Commercial Food Service Equipment
- Building Products
- Electronics and Office Equipment
- Appliances

**Product**

Check all    Uncheck all

- Commercial LED Lighting
- Decorative Light Strings
- Exit Signs
- Lamps
- Fans, Ventilating
- Fans, Ceiling
- Light Bulbs (CFLs)
- Light Bulbs (Integral LED)

**Status**

- New Product Under Development
- Under Revision
- In Effect**
- Available for Early Certification
- Historical
- Sunsetted

**Narrow by Effective Dates**

Start E.g., 2013-07-09

End E.g., 2013-07-09

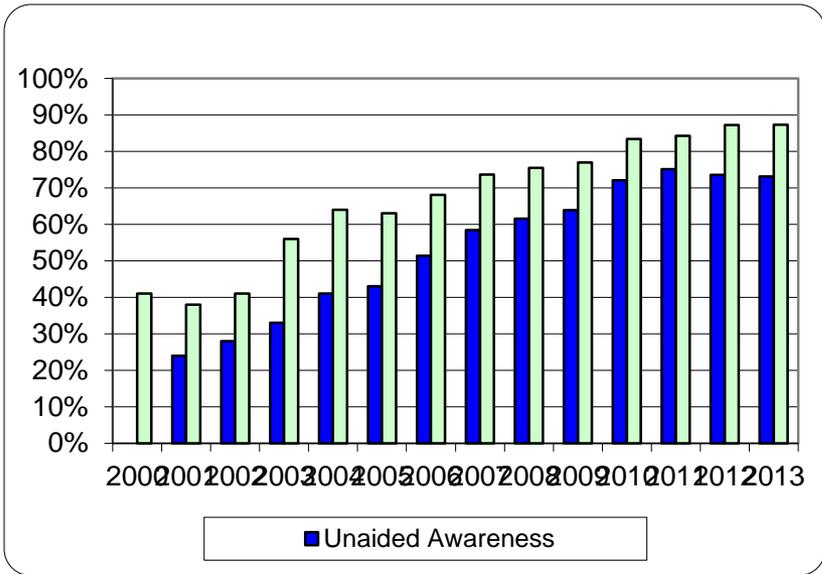
**Apply**

## Product Specification Results

Category	Product	Status	Version	Effective Dates	Notes
Appliances					
	<a href="#">Clothes Washers</a>	In Effect	6.1	02/15/2013	
	<a href="#">Commercial Clothes Washers</a>	In Effect	6.1	02/15/2013	
	<a href="#">Dishwashers</a>	In Effect	5.2	01/20/2012	

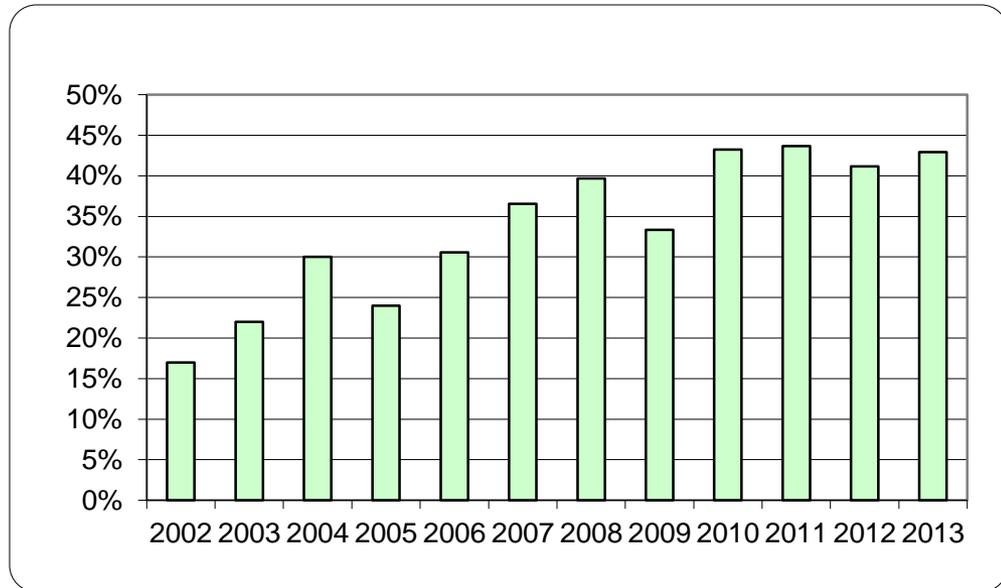
- All ENERGY STAR specifications now listed on one webpage
- [www.energystar.gov/specifications](http://www.energystar.gov/specifications)

# Consumer Awareness

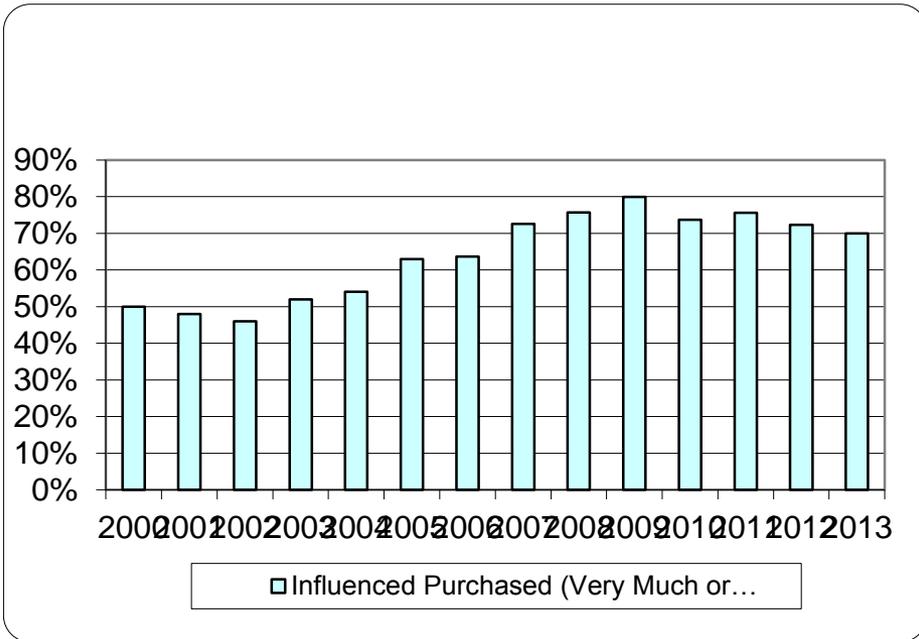


About 87% of US households recognize the ENERGY STAR label

More than 40% of US households knowingly purchased ENERGY STAR qualifying product in 2012

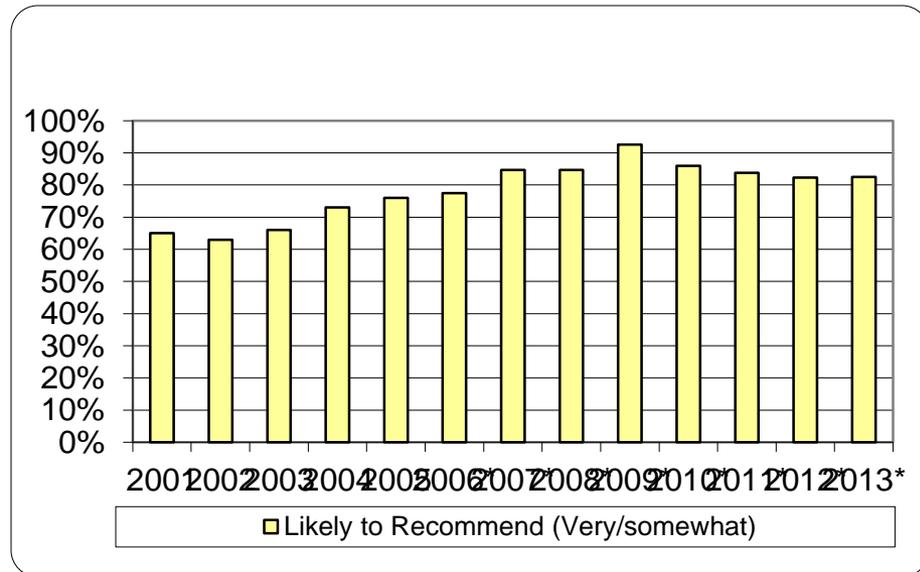


# Consumer Awareness, cont.



73% reported the ENERGY STAR label as influential to their purchasing decision

About 83% are likely to recommend ENERGY STAR products to friends



# National Campaign Updates



- The Change the World, Start with ENERGY STAR Campaign is a vehicle for individuals and organizations to get involved in protecting the environment through preventing greenhouse gas emissions.
- Some of the ways to participate include:
  - Organizations can become a pledge driver to encourage others to take the pledge and reduce their environmental impact
  - Individuals can:
    - “Share Your Story” on how they are reducing their impact on the environment
    - Take the pledge
    - Join Team ENERGY STAR



# National Campaign Updates, *cont.*



Additional opportunities to get involved in the campaign include:

- Add an event to the ENERGY STARs Across America map
- Promote ENERGY STAR on Earth Day and ENERGY STAR Day through promotional events and social media
- Encourage youth to join Team ENERGY STAR
- Provide in-kind donations to reward the efforts of Team ENERGY STAR members



# National Campaign Updates, cont.



- ENERGY STAR partners promote their events on the ENERGY STARs Across America Map located on [www.energystar.gov/changetheworld](http://www.energystar.gov/changetheworld)

**CHANGE THE WORLD. Start with ENERGY STAR.**  
Make a change today to save energy and protect the climate. 2,870,785 individuals already have.

TAKE THE PLEDGE    FIND HELPFUL RESOURCES    BECOME A PLEDGE DRIVER    SHARE YOUR STORY

Map View    List View

INTERACTIVE MAP FILTERS

United States

Current ENERGY STAR Activity: **Baltimore Gas & Electric Company is holding BGE Lighting Promotion - Walmart on Apr 19, 2013**

The screenshot shows a web interface for the ENERGY STAR 'Change the World' campaign. At the top, there's a blue header with the campaign slogan and a sub-header stating that 2,870,785 individuals have already made a change. Below this are four light blue buttons: 'TAKE THE PLEDGE', 'FIND HELPFUL RESOURCES', 'BECOME A PLEDGE DRIVER', and 'SHARE YOUR STORY'. To the right of these buttons are links for 'Map View' and 'List View'. The main content area is a map of the United States with various colored pins (green, orange, blue) indicating ENERGY STAR activity. A green 'INTERACTIVE MAP FILTERS' button is in the top right of the map area. The map is powered by Google, with copyright information for 2013. At the bottom, a green banner displays the current activity: 'Baltimore Gas & Electric Company is holding BGE Lighting Promotion - Walmart on Apr 19, 2013'.

# Retailer Highlights



- Retailers partner with EPA to promote ENERGY STAR in several ways, including:
  - Labeling certified products in-store and online
  - Integrating ENERGY STAR into promotions across all vehicles, such online, in-store, and direct mail
  - Holding employee- and customer-focused events to promote ENERGY STAR
  - Promoting Team ENERGY STAR and the ENERGY STAR Campaign through in-store events, such as children's workshops
  - Creating innovative ways to educate customers on ENERGY STAR product features and energy and financial savings

# Partner of the Year



- Each year, the US EPA ENERGY STAR program honors organizations that have made outstanding contributions to protecting the environment through energy efficiency.
- The [ENERGY STAR Awards](#) are extremely competitive and the criteria are rigorous.
- All organizations participating in the ENERGY STAR program are encouraged to apply for the award.
- To be considered, an organization must meet the specific eligibility requirements in the award application and submit a complete online application package by set date.

# ENERGY STAR is International



- U.S. EPA has arrangements with agencies in other countries regarding **ENERGY STAR** for office equipment
  - Japan
  - Taiwan
  - Switzerland
  - Australia: also includes home electronics and others
  - New Zealand: also includes home electronics and others
  - Canada: also includes most other product categories
- U.S. Government has a formal agreement with the European Union on **ENERGY STAR** for office equipment

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- 1 ENERGY STAR Program Overview
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# ASTM Test Method



- American Society for Testing and Materials (ASTM) F2990-12 Standard Test Method for Commercial Coffee Brewers
  - Finalized and approved in 2012
  - Applicable for single-cup (Type I) and batch (Type II) brewers
    - Excludes residential, urns and satellite coffee brewers; espresso and other specialty coffee brewers
  - Evaluates energy consumption along with brewing and holding temperatures
    - Preheat energy consumption and time
    - Heavy use brewing energy test
    - Stand-by (Ready to brew) energy test
    - Energy saving mode energy test (if applicable)

# ASTM Test Method, *cont.*



- Heavy-Use Brew Test
  - Type I: Requires one stabilization brew event and **ten** consecutive brew events (includes recovery energy)
  - Type II: Requires one stabilization brew event and **three** consecutive brew events (includes recovery energy)
  - Test results' reported values include:
    - Energy rate (kW)
    - Production capacity (gall of coffee brewed/hour)

# ASTM Test Method, *cont.*



- Stand-by (Ready to brew) Test
  - Type I and II: Requires one hour of stabilization in stand-by and **two** consecutive hours in stand-by
  - All accessories (i.e., lights/warming plates, etc.) shall remain “ON”
    - Subsequent idle tests shall be performed with each accessory in the “OFF” mode
- Energy Saving Mode Test
  - Same as the stand-by test but operating in a reduced energy mode (if applicable)

# Test Report Measurement



## ENERGY STAR® Coffee Brewer Test Reporting Template - Test Measurements

Test Setup Description		
Input Voltage		V
Average ambient temperature		Degrees Fahrenheit
Maximum Energy Input Rate		
Manufacturer nameplate input rate		kW
Measured energy input rate		kW
Preheat Energy Consumption and Time		
Duration		Minutes
Electric energy consumption		kWh
Incoming water temperature		Degrees Fahrenheit
Pre-heat rate		Degrees Fahrenheit/Min
Water consumed during preheat test		Gal
Heavy Use Brewing Energy Test		
Total elapsed time during Heavy Use		Minutes
Total energy consumed during Heavy Use		kWh
Average incoming water temperature		Degrees Fahrenheit
Maximum brew volume temperature		Degrees Fahrenheit
Calculated average energy rate		kW
Calculated production capacity		Gal/hr
Energy Save Mode Energy Rate		
Average total energy consumed during Energy Save Mode		kWh
Average tank temperature (if applicable) during Energy Save Mode		Degrees Fahrenheit
Ready-To-Brew (Standby) Energy Rate		
Average total energy consumed during Standby		kWh
Calculated Standby Energy Rate		kW
Average tank temperature during Standby		Degrees Fahrenheit
Number of warmers activated during Standby		

# Additional Test Methods



- ASTM F2990-12 is the only existing test method for commercial coffee brewers
- EPA is interested in learning more about the energy performances of other types of coffee brewers (i.e., espresso, bean-to-cup, etc.)
- Strong interest in the development of espresso machines test method

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# Performance Data



- Data Overview:
  - Type I: **0** data points
  - Type II: **4** data points
- More performance test data is needed for both Type I and Type II brewers before proposing any draft levels
- Performance test data may originate from OEM labs and others but data for certification must be done in an EPA recognized CB/lab

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# Efficiency Criteria Timeline



Topic	Timeframe
Draft 1 Version 1.0 Efficiency specification to stakeholders *	August 2014
Draft 1 Version 1.0 Efficiency specification comments due	September 2014
Draft 2 Version 1.0 Efficiency specification to stakeholders *	November 2014
Draft 2 Version 1.0 Efficiency specification comments due	December 2014
Final Draft Version 1.0 Efficiency specification to stakeholders *	January 2015
Final Draft Version 1.0 Efficiency specification comments due	February 2015
Final Version 1.0 Efficiency specification *	February 2015

\* Dependent on data and stakeholder involvement

# Contact Information



Please send any additional comments to [coffeebrewers@energystar.gov](mailto:coffeebrewers@energystar.gov) or contact:

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Thank you for participating!