



# **ENERGY STAR DOE Residential Products Program Update**

## **CEE Program Meeting**

Long Beach, CA

January 15, 2008

**Bryan Berringer**  
U.S. Department of Energy

# Agenda



- ENERGY STAR Products – Lighting
  - Overview
  - Tools & Resources
  - Solid State Lighting Criteria Update
- ENERGY STAR Products – Appliances
  - Overview
  - Tools & Resources
  - Appliance Criteria Update



# Lighting

# ENERGY STAR Products – Lighting



## Overview:

- Growing lighting market
  - Lighting: Approx **20% of average home electric bill** <sup>[1]</sup>
  - Escalating number of light sources per home-average:  
**~45 light bulbs in ~30 fixtures** <sup>[2]</sup>
  - Increasing average square footage of households
    - 1975: 1,645 square feet
    - 2004: 2,349 square feet
    - Today: 2,434 square feet
    - Newly built homes with 4+ bedrooms has risen steadily from 21% three decades ago to 40% in 2005 <sup>[3]</sup>
- Savings opportunities with ENERGY STAR lighting
  - **Northeast:** estimate that lighting represents more than 75% of remaining potential energy savings
  - **Northwest & California:** estimate that lighting represents the single largest potential for energy savings

## Sources

[1] EIA, Annual Energy Outlook, 2006.

[2] # Fixtures: LBNL Lighting Market Sourcebook for the US; # Bulbs: DOE's U.S. Lighting Market Characterization Volume I: National Lighting Inventory and Energy Consumption Estimate.

[3] National Association of Home Builders

# ENERGY STAR Products – Lighting



## Tools and Resources:

- ENERGY STAR online consumer education material
  - Energy savings tips for renters and homeowners
  - Online rebate finder
  - Publications
  - Brochures
  - Online product lists
  - Online manufacturer lists
  - Interactive tools
- ENERGY STAR online partner resources
  - Partner resource guides
  - Point of sale templates
  - Sales training templates and presentations
  - ENERGY STAR Online Training Center
  - Information for leveraging national campaigns
  - Quantity Quotes



# Partner Resources Page



**BE A LEADER—CHANGE OUR ENVIRONMENT FOR THE BETTER**  
U.S. Environmental Protection Agency • U.S. Department of Energy

About ENERGY STAR • News Room • FAQs

Search  **Go**

**Products** Home Improvement New Homes Buildings & Plants **Partner Resources**

## Partner Resources

Home > Partner Resources > Utility & EEPS Resources

- Manufacturers
- Retailers
- Builders, Lenders, Raters & Sponsors of New Homes
- Utilities/EEPS
- Service & Product Providers
- Buildings & Plants
- Small Businesses
- Congregations
- For Contractors
- For Federal Agencies

## Utility and Regional Energy Efficiency Program Sponsors (EEPS) Resources

ENERGY STAR provides a powerful platform for utilities, state agencies, and other organizations implementing energy efficiency programs to make a bigger difference in their communities. Using ENERGY STAR tools and strategies, organizations can reduce program costs and implementation timelines while increasing the efficacy of their programs.

### Become a Partner

If you are not already an ENERGY STAR Partner, feel free to browse this section. Please note, to use the ENERGY STAR logo and take advantage of these great resources, you will need to [sign a partnership agreement](#) with EPA and DOE.

These resources that will help you get the most from your partnership with EPA:

### Home Improvement

Promote improved energy performance in **existing** homes.

- [Home Improvement](#)
- [Heating & Cooling Systems](#)
- [Home Envelope/Home Sealing](#)
- [Whole House Improvement/Home Performance with ENERGY STAR](#)

### Residential Products/Retail Initiatives

Work with retailers to promote ENERGY STAR products.

- [Lighting, Appliances, Electronics, Office Equipment & Windows](#)
- [Heating & Cooling Systems](#)
- [Utilities/EEPS Training Overview](#)

[Partner Activity Search](#) — find all manufacturer and retailer promotional activities

[Database for Incentives and Joint Marketing Exchange](#) — announce your promotional opportunities to manufacturers and retailers

### News

[U.S. Schools Top EPA's List of ENERGY STAR Leaders](#)

[First Retail Buildings Awarded the ENERGY STAR](#)

[Measuring Marketing Impacts: ENERGY STAR CFL Study](#) (547KB)

[Room Air Conditioners 2007 Product Snapshot](#) (2.14MB)

### Residential Products

- [Appliances](#)
- [Ceiling Fans](#)
- [Home Electronics](#)
- [Dehumidifiers](#)
- [Heating & Cooling](#)
- [Ventilating Fans](#)
- [Home Office](#)
- [Lighting](#)
- [Windows](#)
- [Water Coolers](#)
- [Home Improvement](#)
- [New Homes](#)

### Commercial Products

Links to many tools and resources can be found on the Program Sponsor Partner Resources page

# Consumer Brochures



## Save with ENERGY STAR Qualified Light Bulbs...

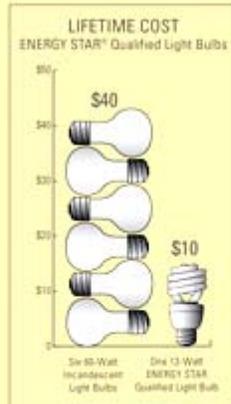
[www.energystar.gov/changealight](http://www.energystar.gov/changealight)

**Save Time and Effort.** ENERGY STAR qualified light bulbs last 6 to 10 times longer than incandescent bulbs.

**Save Energy and Money.** Each ENERGY STAR qualified light bulb saves about \$30 or more over its lifetime.

**Stay Cool.** ENERGY STAR light bulbs give off less heat, keeping you cooler and reducing fire hazards in fixtures with delicate or paper shades.

**Help the Environment.** By using less energy, ENERGY STAR qualified light bulbs help reduce air pollution and greenhouse gas emissions from power plants.



### Switch & Save

Changing to ENERGY STAR qualified Compact Fluorescent Lamps (CFLs) is one of the simplest ways to trim electricity costs. Maximize savings by using CFLs in fixtures you use the most. Certain CFLs work best in specific applications. Use the chart to the right to help match the CFL to the appropriate fixture.

### Closing the Loop

Compact fluorescent light bulbs contain a small amount of mercury, so they should be disposed of properly. Locate and use local recycling options by visiting [www.lamprecycle.org](http://www.lamprecycle.org) or [www.energystar.gov/CFLsandMercury](http://www.energystar.gov/CFLsandMercury).

Savings figures based on 1,000-hour CFL lifetime, 1,000-hour incandescent and 10,000-hour CFL lifetime, 1 fixture of each per day, an electric rate of 10.0¢ per kWh, a CFL price of \$1.00 and an incandescent price of \$0.20.

Learn more about ENERGY STAR qualified lighting at [www.energystar.gov/cfls](http://www.energystar.gov/cfls)

## HOW TO CHOOSE THE RIGHT ENERGY STAR<sup>®</sup> QUALIFIED LIGHT BULB

	SPHAL	COVERED & SHADE	GLOBE	TUBED	CANDLE	INDOOR REFLECTOR	OUTDOOR REFLECTOR
TABLE/FLOOR LAMPS	✓	✓		✓			
PENDANT FIXTURES		✓	✓				
CEILING FIXTURES	✓						
CEILING FANS							
WALL SCONES		✓					
RECESSED CANES							
TRACK LIGHTING							
OUTDOOR COVERED							✓
OUTDOOR UNCOVERED							

**AVOID EARLY BURNOUT:**

- Only bulbs marked "dimmer friendly switches"
- Most photocells and timers

**More than Just a Bright Idea.**

ENERGY STAR<sup>®</sup> Qualified Light Bulbs:  
An Easy Way to Save

U.S. Department of Energy  
**Energy Efficiency and Renewable Energy**  
Energy and a sustainable future starts here.  
At home, at work, and wherever.

For more information visit:  
[www.energystar.gov](http://www.energystar.gov)  
1.888.STAR.YES (1.888.782.7337)

For all energy efficiency and renewable energy information please contact:  
1-877-ENER-INFO (1-877-337-3463)  
[www.energystar.gov](http://www.energystar.gov)

August 2007



ENERGY STAR<sup>®</sup> Qualified Light Bulbs:  
An Easy Way to Save

Innovation. Performance. Savings.

# ENERGY STAR Info Graphics



## How to Choose Info Graphic

### HOW TO CHOOSE THE RIGHT ENERGY STAR® QUALIFIED LIGHT BULB

	TABLE/FLOOR LAMPS	PENDANT FIXTURES	CEILING FIXTURES	CEILING FANS	WALL SCONCES	RECESSED CANS	TRACK LIGHTING	OUTDOOR COVERED	OUTDOOR EXPOSED
<b>BUBBLE</b>	✓		✓		✓			✓	
<b>COMPACT FLUORESCENT</b>	✓	✓		✓				✓	
<b>GLOBE</b>		✓		✓					
<b>TUBED</b>	✓		✓				✓		
<b>CANDLE</b>					✓			✓	
<b>RECESSED REFLECTOR</b>						✓	✓		
<b>OUTDOOR REFLECTOR</b>									✓

**AVOID EARLY BURN OUT:**

- Only bulbs marked "dimmable" or "three-way" will work on dimmers or three-way switches.
- Most photocells and timers are not designed to work with CFLs.

**LEARN MORE AT [energystar.gov](http://energystar.gov)**

## Hispanic Outreach Flyer

¡Los CFLs calificados ENERGY STAR usan tecnología innovadora que es **4 VECES MÁS EFICIENTE** que los bombillos regulares!

Los bombillos fluorescentes compactos calificados ENERGY STAR (CFLs) son una **GRAN INVERSIÓN** para su hogar.

- Pueden durar **SIETE AÑOS** – comparado con un bombillo regular que solamente dura 11 meses.\*
- ¡Substituya cinco bombillos regulares por CFLs y **AHORRE MÁS DE \$150** durante el curso de la vida del bombillo!

Para máximo ahorro, instálelos dondequiera que tenga las luces prendidas más frecuentemente, como en el cuarto de familia, la cocina, el comedor, el dormitorio, el lavadero, y el portico.

\* Se asume el uso de 3 horas por día.

**ENERGY STAR®**  
El sello nacional para el uso eficaz de energía.  
¡Trayendo valor, comodidad, y ahorros a su hogar!

U.S. Department of Energy  
**Energy Efficiency and Renewable Energy**  
Bringing you a prosperous future where energy is clean, abundant, reliable, and affordable.

Para más información visite  
[www.energystar.gov](http://www.energystar.gov)  
1.888.STAR.YES (1.888.782.7937)

**Bombillos Fluorescentes Compactos Calificados (CFLs)**

# Where to Use Info Graphic



# Quantity Quotes



A Web site created by the U.S. Department of Energy to connect large-quantity buyers with suppliers of energy-efficient products.



## Benefits to Consumers

- **Save time.** Stop searching for suppliers of ENERGY STAR qualified products. Let them come to you.
- **Save money.** Suppliers compete against one another for your business.
- **Get the right product.** Customized forms guide you through formulating your purchase request.
- **Keep your contact information private.** Communicate anonymously with suppliers and choose when and to whom to reveal your identity.

## Benefits to Suppliers

- **Increase contract rates.** Qualified prospects who buy in bulk will come to you.
- **Access institutional markets.** Respond to bid requests from affordable and multifamily housing providers, colleges and universities, governments and aging services providers.
- **Expand your customer base.** Potential to convert new customers you meet at [energystar.gov/quantityquotes](http://energystar.gov/quantityquotes) into repeat customers.



# ENERGY STAR® Quantity Quotes

CONNECTING BUYERS WITH SUPPLIERS OF ENERGY-EFFICIENT PRODUCTS

[HOME](#)

[About](#)

[Help](#)

[Contact Us](#)

## Welcome to ENERGY STAR Quantity Quotes!

This Web site links institutional and corporate purchasers to ENERGY STAR partners offering bulk procurement arrangements. You can register as a supplier or purchaser.

- **Suppliers** can [register to receive information requests from purchasers](#). After corresponding with purchasers and providing requested information, a purchaser can contact a supplier in order to negotiate a contract.
- **Purchasers** can [register to instantly contact suppliers of ENERGY STAR qualified products](#). Guidance is provided to assist purchasers in the Request for Information (RFI) process. After corresponding with a supplier and receiving requested information, the purchaser can choose to contact a supplier in order to negotiate a contract. View a [list of participating suppliers](#).

### Existing Users Login

Username

Password

Login

I forgot my password. Please [send my username and password via email](#).

## These ENERGY STAR qualified products are available through this Web site:



- Light bulbs
- Light fixtures
- Clothes washers
- Dehumidifiers
- Dishwashers
- Refrigerators
- Room air conditioners



[DOE Home](#)  
[DOE Search](#)

[DOE Weatherization Assistance Program Home](#)  
[ENERGY STAR Home](#)      [Privacy](#)

# ENERGY STAR Solid State Lighting (SSL) Criteria Update



## Solid State Lighting Criteria Update:

- Final criteria was released on September 2007 and will be effective September 30, 2008 assuming test procedures are finalized.
- DOE ENERGY STAR strategy for SSL general illumination products establishes a transitional two-category approach:
  - Category A - addresses near-term applications, where SSL technology can be appropriately applied.
  - Category B - establishes efficacy targets for a wider range of future applications, which will take effect as solid-state lighting technology gains maturity.
- Eventually, Category A will be dropped, and category B will become the sole basis for the ENERGY STAR criteria.

# ENERGY STAR Solid State Lighting (SSL) Criteria Update (con't)



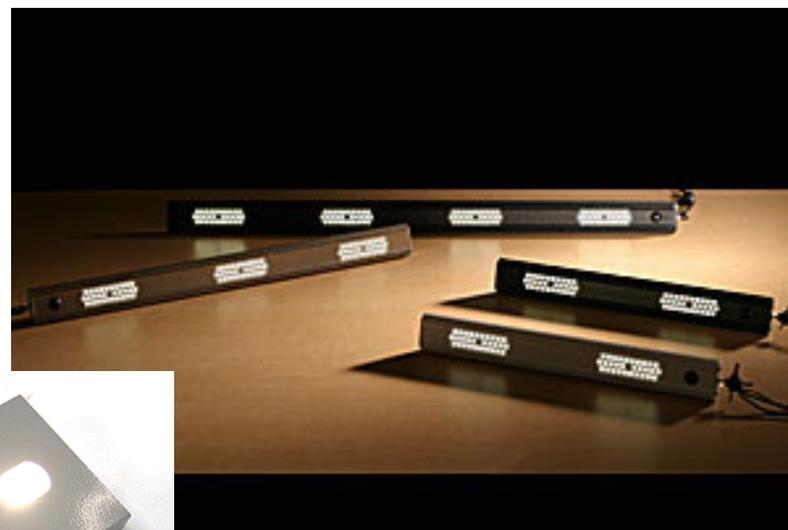
- Criteria covers the requirements for SSL products used for general illumination, including those with significant decorative function.
- Criteria applies to both residential and commercial products.
- Criteria applies only to products designed to be connected to the electric power grid.
- Does not apply to:
  - SSL products made for indication (such as traffic lights and exit signs)
  - Products exclusively intended for decoration (such as holiday lights)
  - SSL products intended for retrofit into existing fixtures

# ENERGY STAR SSL – Category A



- Under cabinet kitchen
- Under cabinet shelf-mounted task lighting
- Portable desk task
- Recessed down lights
- Outdoor wall-mounted porch
- Outdoor step
- Outdoor pathway

# Category A: Under-cabinet Lighting



Albeo Talea



EnbrytenLED ENBU

# Category A: Portable Desk/Task Lighting



6 Watt LED Desk Lamp



Halley LED Desk Lamp

# Category A: Recessed Downlights



LED Light Fixtures



Prescolite



Gallium

# Category A: Outdoor



# ENERGY STAR SSL – Category B



- Applies to all other applications.
- Scheduled to be implemented Sept. 2011 pending state of the technology.
- Future performance of luminaire efficacy of  $\geq 70$  lm/W.



# APPLIANCES

# ENERGY STAR Products – Appliances



## Overview:

- **Clothes Washers:**
  - 2006 ENERGY STAR Market Penetration : 38%
  
- **Dishwashers:**
  - 2006 ENERGY STAR Market Penetration : 92%
  - 2007 estimated ENERGY STAR Market penetration: 50%
  
- **Refrigerators:**
  - 2006 ENERGY STAR Market Penetration : 31%
  
- **Room Air Conditioners:**
  - 2006 ENERGY STAR Market Penetration : 36%

\*Source: D&R International 2006

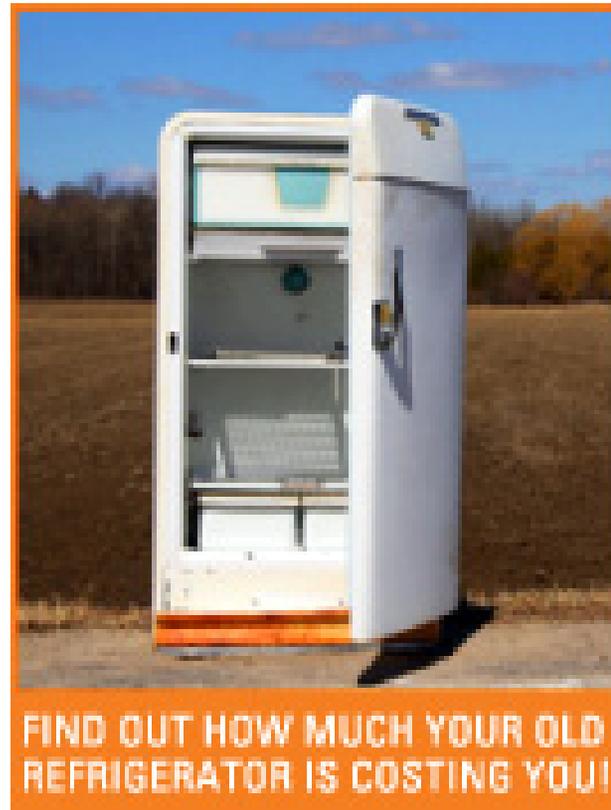
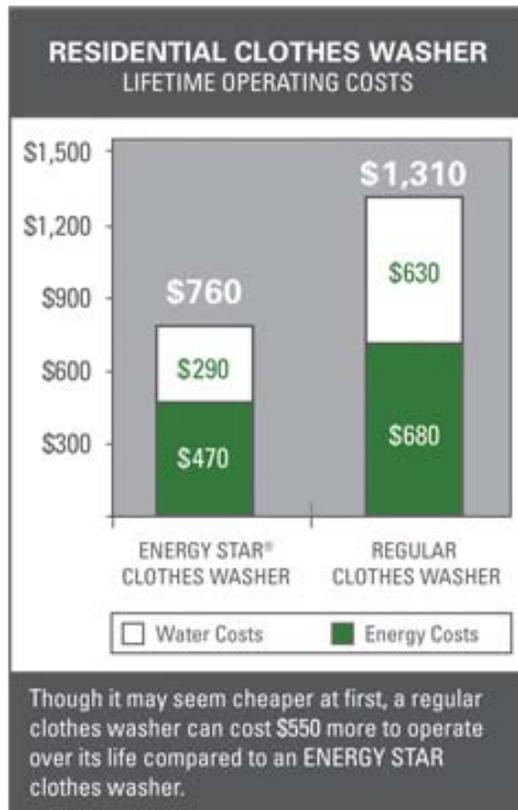
[http://energystar.gov/ia/partners/manuf\\_res/2006FullYear.xls](http://energystar.gov/ia/partners/manuf_res/2006FullYear.xls)

# ENERGY STAR Products – Appliances



## Tools and Resources:

- Partner matchmaking with retailers and manufacturer
- Online tools, including Refrigerator Savings Calculator Tool
- POP and bill stuffer templates
- Partner Resource Guides and Consumer Brochures
- Online training tools
- National promotions
- Quantity Quotes



# ENERGY STAR Products – Appliances



- **Promotional Strategies**

- Provide financial incentives in partnership with retailers and manufactures. What works depends on the retailer.
- Educate consumers about “two price tags.”
- Develop strong relationships with local retail partners.
- Cooperative marketing and promotions.



# DOE ENERGY STAR Appliance Criteria Update



## Appliance Criteria Update:

<b>Product</b>	<b>Criteria Revision Finalized</b>	<b>Effective Date</b>
Refrigerators	August 2007	April 2008
Clothes Washers (proposed)	January 2008	July 2009
Dishwashers (estimated)	September 2008	July 2009
Packaged Terminal Air Conditioners (PTACs) and Room Air Conditioners (RACs) (estimated)	October 2011	October 2013
Residential Water Heaters	Early 2008	Late 2008

# Refrigerators



- Revised criterion to 20% more efficient than the Federal Standard effective April 28, 2008.
- Change only applies to full-size refrigerators. The criteria for compacts (20% better) and freezers (10% better) remain the same.
- Added anti-circumvention language to testing requirements solely for ENERGY STAR.
- The Energy Policy Act of 2007 (EPACT 2007) requires an updated Federal Standard by January 1, 2011 with effective date of January 1, 2014.

# Clothes Washers



- New criteria took effect January 1, 2007. Currently, no 2007 sales data is available to analyze the effects.
- The Energy Independence and Security Act of 2007 amended EPCACT 2005 to mandate DOE to release updated criteria by January 1, 2008, effective July 1, 2009.
- On January 9<sup>th</sup> DOE released a proposed two stage criteria revision:
  - Effective July 1, 2009 – Minimum MEF of 1.8 and maximum WF of 7.5
  - Effective January 1, 2011 – Minimum MEF of 2.0 and maximum WF of 6.0
- Comment period ends January 23<sup>rd</sup>.

# Dishwashers



- New criteria took effect January 1, 2007.
- Preliminary indications show the market share for ENERGY STAR models may be higher than desired at around 50%.
- Once clothes washers is finalized, DOE will begin working on dishwashers to determine if another criteria revision is warranted by reviewing:
  - 2007 Federal Trade Commission (FTC) Annual Submissions
  - 2007 ENERGY STAR retailer sales data
- A group of efficiency advocates and AHAM reached an agreement and recommended new criteria to DOE of 324 kWh/yr, 5.8 gal/cycle with an effective January 1, 2009. DOE will take this under consideration and seek stakeholder comment.

# Packaged Terminal Air Conditioners (PTACs) & Room Air Conditioners (RACs)



- For PTACs, DOE completed analysis paper and draft criteria and met with industry in May 2007.
- Industry indicated it would rather wait due to the forthcoming Federal standard covering both PTACs and RACs, to be finalized in September 2008, and for engineering analyses of the 2009 mandated change in refrigerant to R-410a to be done.
- Due to uncertainty over how models will perform with the new Federal Standard and refrigerant, it was determined that ENERGY STAR criteria changes should be delayed.
- Room Air Conditioners 2007 Product Snapshot is available online under Partner Resources, Utility & EEPS Resources.

# Residential Water Heaters



- DOE distributed draft criteria and collected comments on potential ENERGY STAR criteria for the following water heater technologies:
  - Solar
  - Heat pump
  - Gas condensing
  - High Performance Gas Storage
  - Gas tankless
- The second draft criteria was released in October and the comment period ended on November 26<sup>th</sup>.
- Final criteria expected in early 2008 with an effective date of late 2008.

# What's Happening in 2008



## Meetings:

- Lighting Partner Meeting – February 25 -27 in Phoenix Arizona
- Appliance Partner Meeting – Tentative for Mid-September in California

## Campaigns:

- Refrigerator Recycling Campaign – May to September 2008

# Current DOE Program Snapshot



## DOE Product Portfolio

### Current Products

Clothes Washers  
Refrigerators  
Dishwashers  
Room AC  
Windows/Doors  
CFLs

### Recently Launched

SSL Luminaires

### Under Development

Water Heaters  
PV Systems  
Small Wind  
Clean Power:  
stationary fuel cells  
&  
micro combined  
heat and  
cogeneration power  
(CHP) units

# Contacts



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