



ENERGY STAR® Lighting Update

**ENERGY STAR Products Partner
Meeting 2014**

Arizona

October 28, 2014



Outline

- **Housekeeping/Schedule/Meeting Overview**
- **ENERGY STAR Lighting Update**
 - Market Share & Market Trends
 - What's New for ENERGY STAR Lighting
 - Specification Update
 - Fall LED Promotion
 - Updated resources
 - Utility Programs for Lighting

Housekeeping for Today

- ❖ 4:30-5:30pm: Who Wants to be an ENERGY STAR?
- ❖ 5:30-6:30pm: Panel: From New Construction to Retrofit – Promoting and Rebating ENERGY STAR Light Fixtures

Tonight's Reception:
Jokake Inn, The Phoenician
7pm

sears®





Wednesday's Lighting Sessions

- ❖ **9:00-10:00 AM:** The Latest in Lighting Standards and Test Methods
- ❖ **9:30-11:00 AM:** Not All Efficient Lighting is Created Equal: Communicating ENERGY STAR Benefits to the Consumer
- ❖ **11:00 AM-12:00 PM:** EE Harmony: Control Freaks and Compatibility - Tips on Finding the Right Match for Quality Dimming
- ❖ **1:00-2:00 PM:** Lighting for the 21st Century Home and New Program Approaches
- ❖ **2:00-5:00 PM:** ENERGY STAR Lighting Road Mapping Workshop Update



Thursday's Lighting Workshop

❖ 9:00 AM-12:00 PM: Luminaires Specification Revision Working Session

- Join us for an in-person, half-day working session on the upcoming ENERGY STAR luminaires specification
- Discuss findings from the Luminaires V1.2 specification and provide preliminary input on various elements of the new Luminaires V2.0 specification.

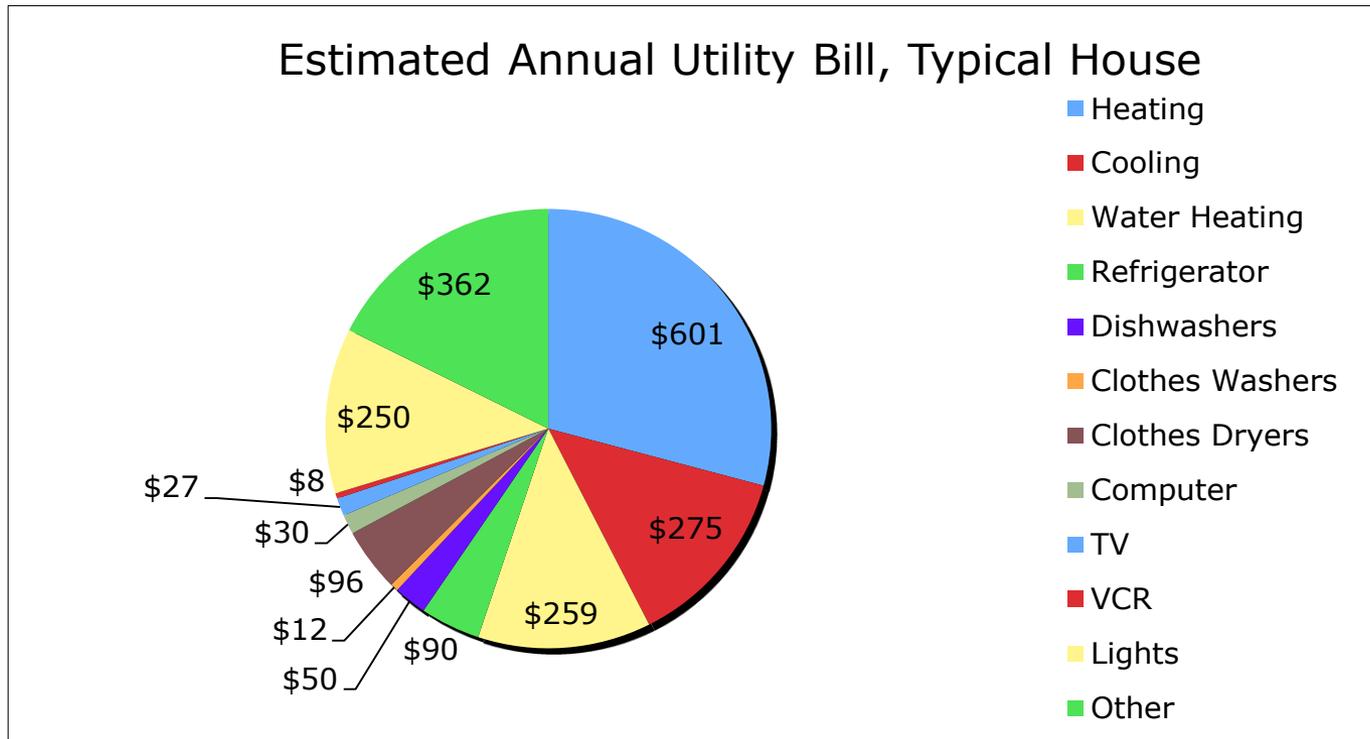


ENERGY STAR and The Lighting Market



Typical Household Energy Use

- While heating and cooling comprise the largest portion of annual household energy use, lighting accounts for approximately 12%.



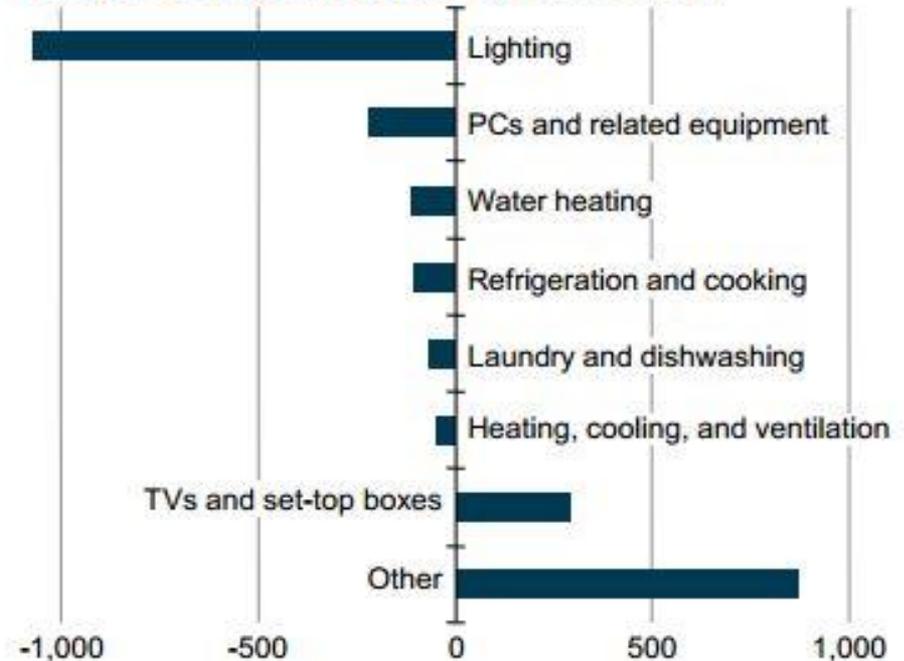


Energy Use Outlook

- Electricity demand by U.S. homes is forecast to increase 24% by 2040
- Largest reduction in residential energy use is expected to come from lighting

Electricity use per household declines from 2012 to 2040 in the Reference case

Figure MT-11. Change in residential electricity consumption for selected end uses in the Reference case, 2012-40 (kilowatthours per household)





U.S. DOE Report: 2013 Energy Savings by Lighting Application Type

Remaining potential for Indoor Lamps is HUGE:

- A-Type
 - 3 billion sockets
- Directional
 - 240 million
- MR16
 - 46 million
- Decorative
 - 1.2 billion

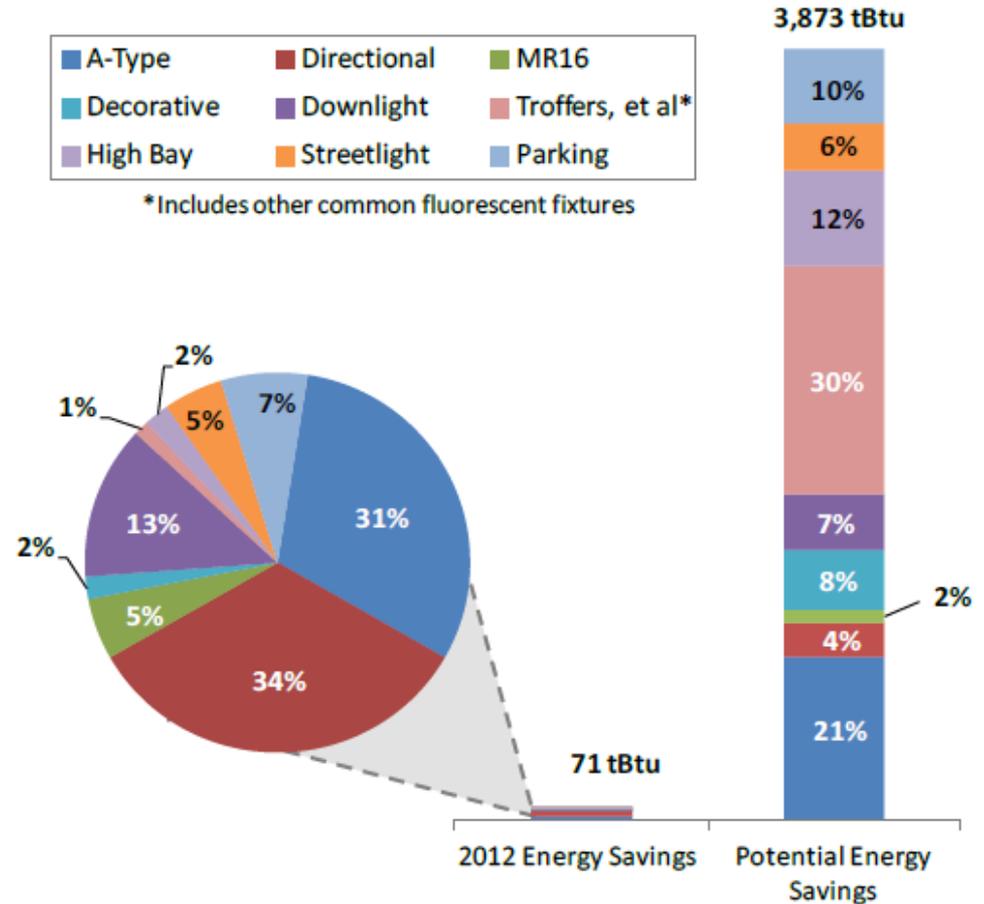
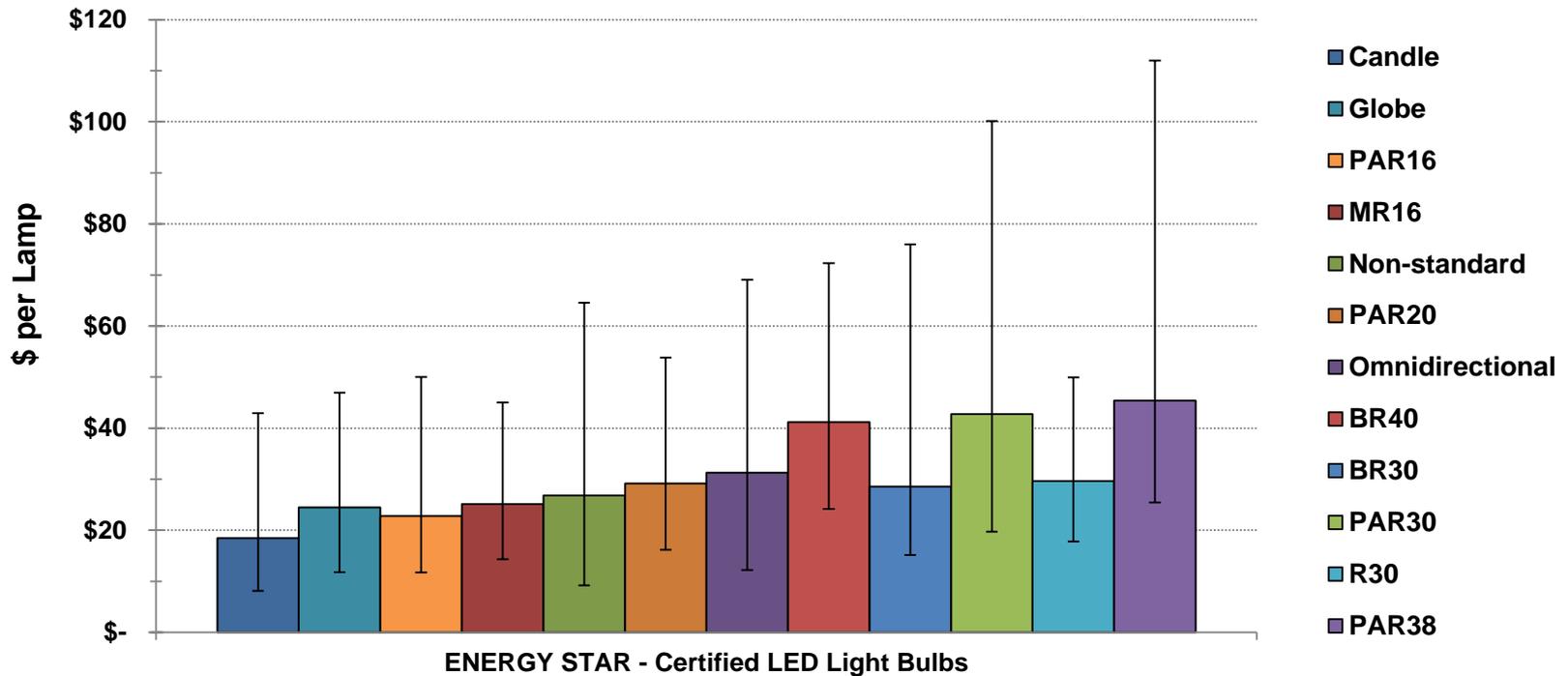


Figure ES.1 – Comparison of Current and Potential Source Energy Savings



ENERGY STAR Certified LED Light Bulb Prices

ENERGY STAR LED Light Bulb Price Summary
3rd Quarter — 2014

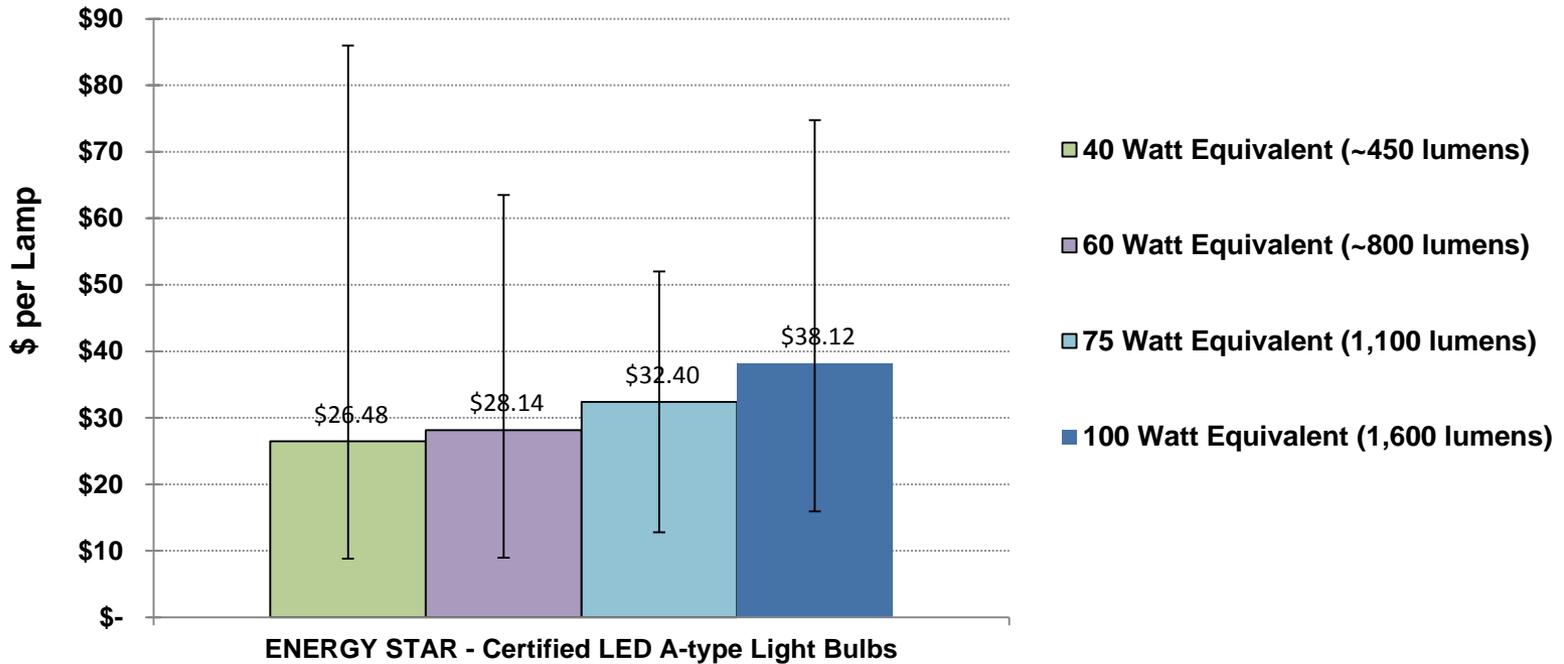


* Note: Range reflects absolute minimum and maximum prices collected per light bulb type



ENERGY STAR Omnidirectional LED Light Bulb Prices

ENERGY STAR LED Omnidirectional A-type Light Bulb Summary
3rd Quarter — 2014

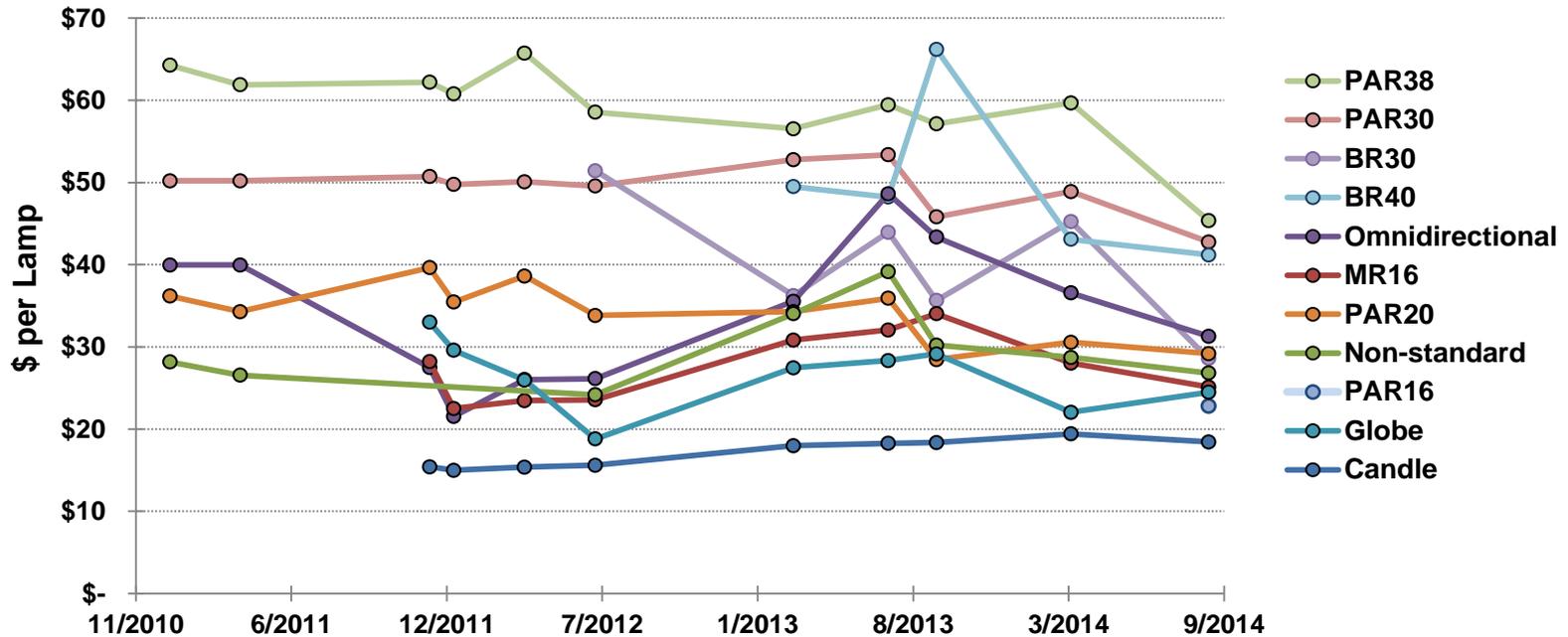


* Note: Range reflects absolute minimum and maximum prices collected per light bulb type



ENERGY STAR LED Bulb Price Trends from 2011-2014

ENERGY STAR LED Light Bulb Price Trends
2011 – 2014



* Note: Upward price swings largely due to additional products added to tracking scope

ENERGY STAR LED Bulb Challenge

- ❖ Sold **20 million ENERGY STAR certified** LED bulbs
- ❖ Educated consumers on the benefits of ENERGY STAR LED bulbs
- ❖ Increased visibility of ENERGY STAR certified LED bulbs, both in stores and online!

ENERGY STAR LED BULB CHALLENGE

Congratulations
to our partners
who met the
challenge.



Find ENERGY STAR certified LED bulbs at the following:

*Ace Hardware, Best Buy, Costco, Bulbs.com,
Lowe's & The Home Depot*



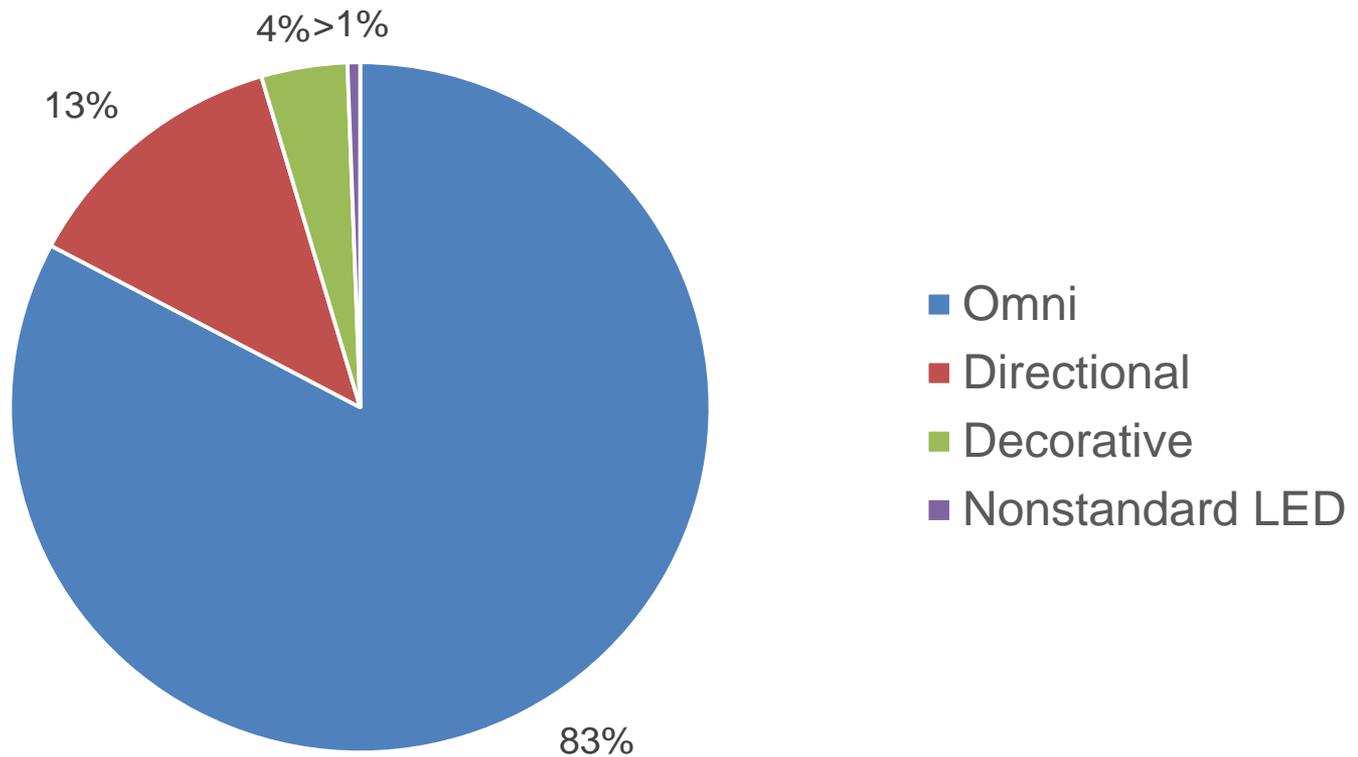
ENERGY STAR Shipments

- ❖ 18% of light bulbs shipped in 2013 were ENERGY STAR certified - more than 350,000,000 units
 - **83%** of CFLs were ENERGY STAR certified
 - **76%** of LED bulbs were ENERGY STAR certified
 - 96% increase from 2012
 - **13%** of indoor fixtures were ENERGY STAR certified
 - 23% increase from 2012
 - **4%** of outdoor fixtures were ENERGY STAR certified
 - 39% drop from 2012



Light Bulb Shipment Breakdown

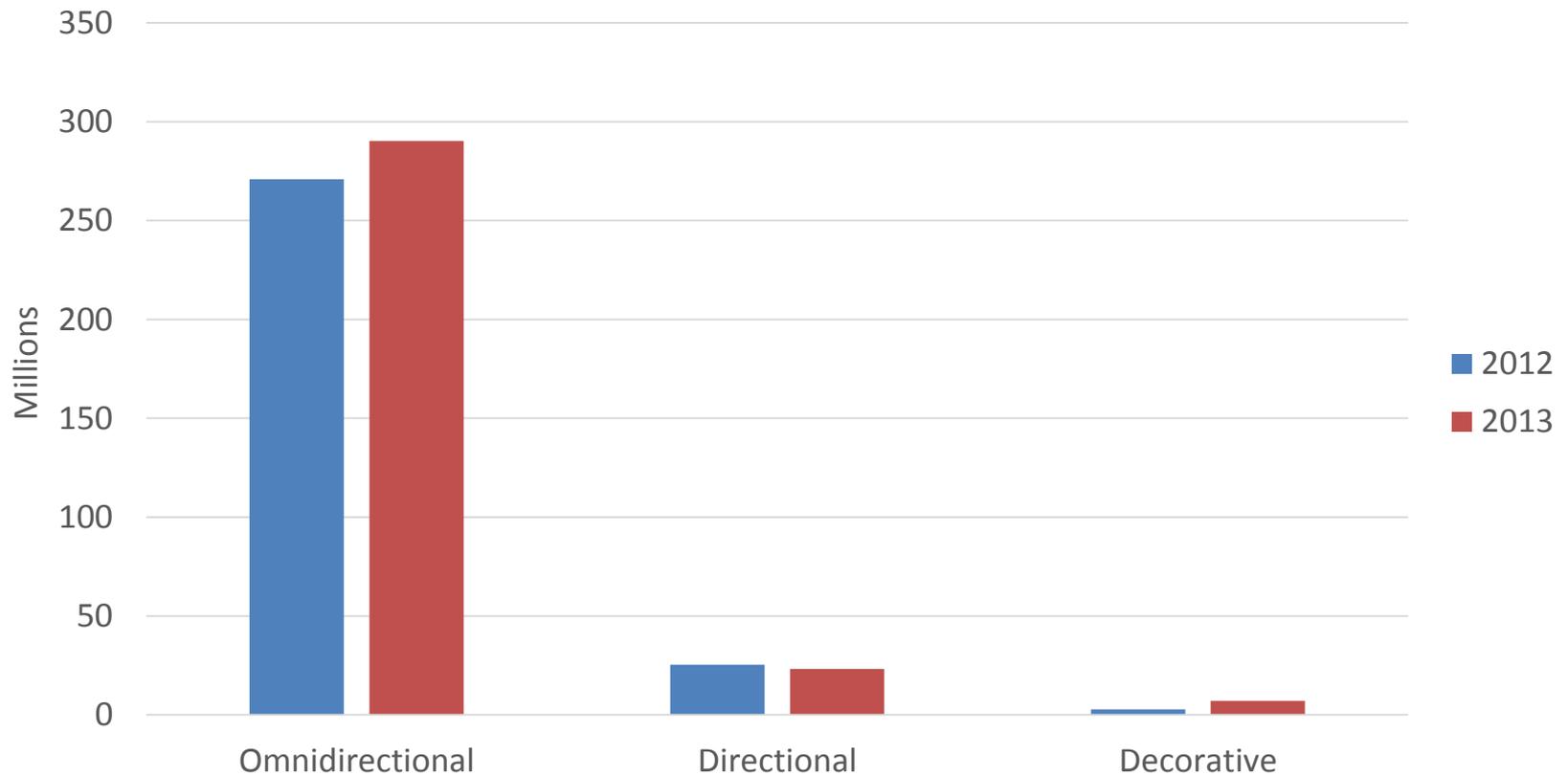
Lamps Shipped by Type in 2013





CFL Shipments

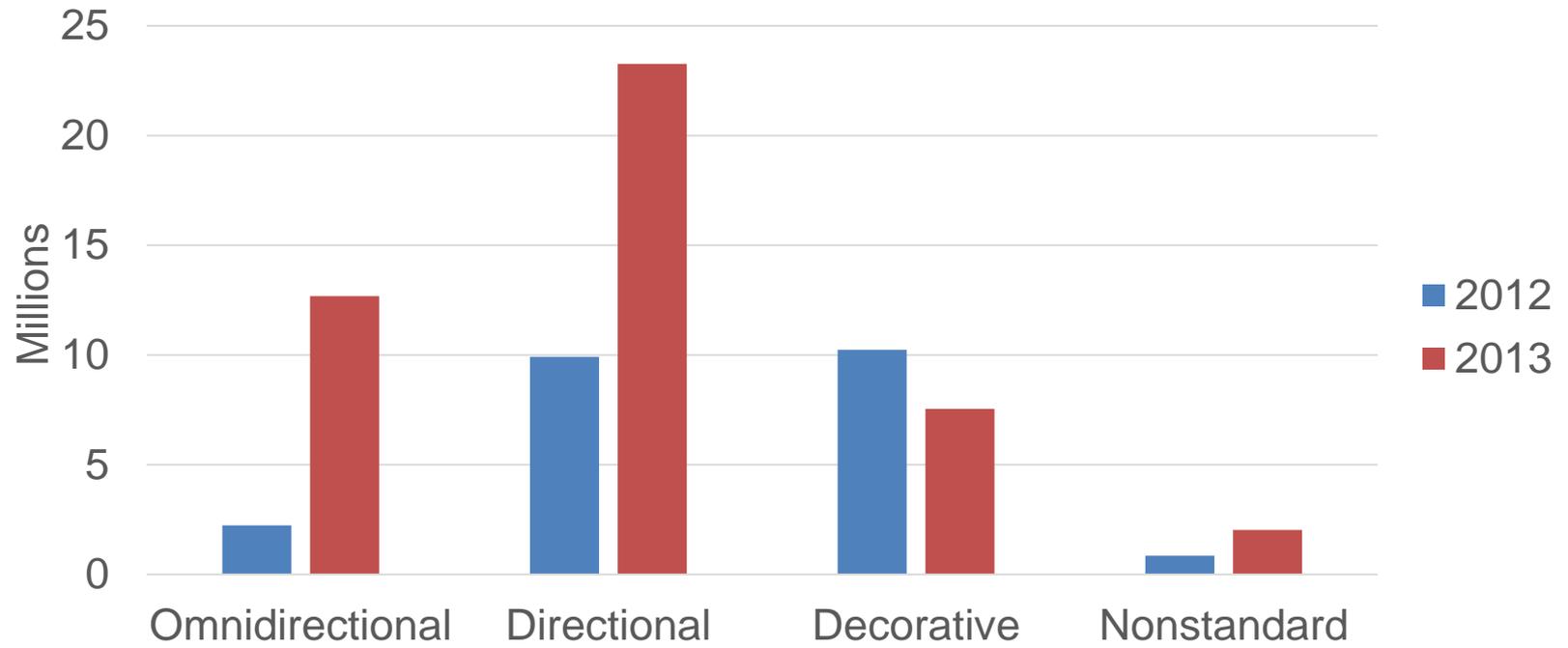
ENERGY STAR Certified CFL Shipments by Type





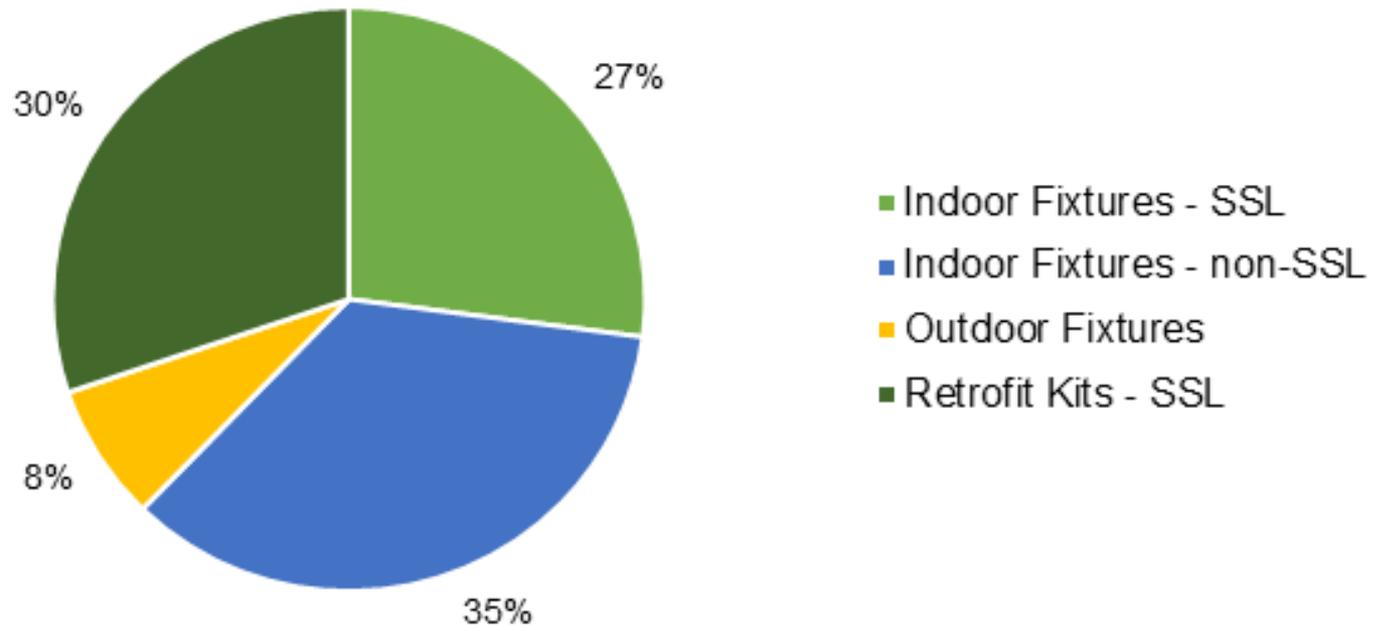
LED Bulb Shipments

ENERGY STAR Certified LED Bulb Shipments by Type



Fixture Shipments

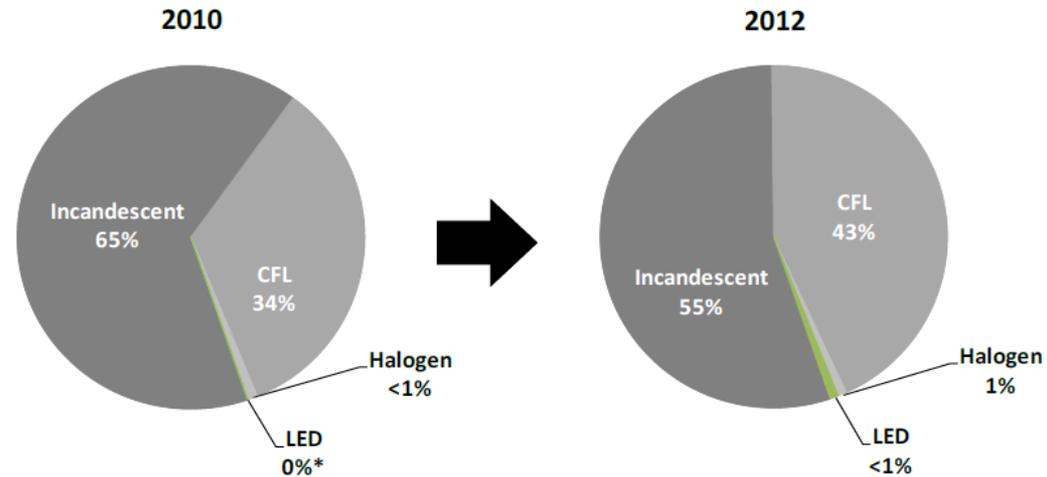
Luminaires Shipped by Type in 2013





A-Type Lamps (2013 Summary)

- 3.3 billion A-type lamps installed in the U.S.
- 97% installed in residences
- Nearly 20 million LED A-type lamps are installed in the U.S., this is <1% of the total A-type lamp installed base



*Values less than 0.1% are considered negligible

Figure 2.2 – A-Type Lamp Installed Base

Table 2.1 – Energy Consumption and Savings Potential of LED A-Type Lamps

 A-Type Lamps	LED Installed Base Units millions	Total Energy Consumption Source– tBtu (Site – TWh)	LED Energy Savings Source– tBtu (Site – TWh)	Potential LED Energy Savings Source– tBtu (Site – TWh)
2012	19.9	1,057 (101.8)	21.9 (2.1)	822 (79.1)

Directional Lamps (2013 Summary)

- 248 million directional lamps installed in the U.S.
- >80% installed in residences
- 11.4 million LED directional lamps are installed in the U.S. (4.6% of the total directional lamp installed base)

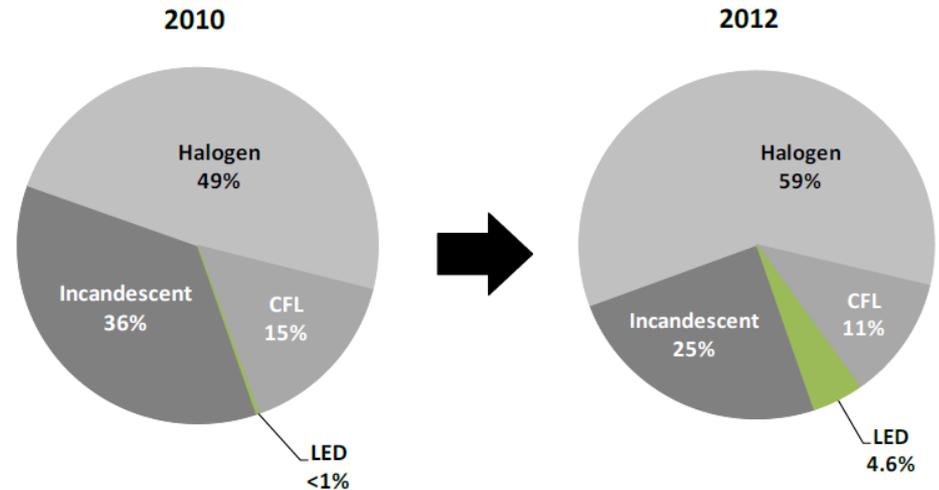


Table 2.2 – Energy Consumption and Savings Potential of LED Directional Lamps

 Directional Lamps	LED Installed Base Units millions	Total Energy Consumption Source– tBtu (Site – TWh)	LED Energy Savings Source– tBtu (Site – TWh)	Potential LED Energy Savings Source– tBtu (Site – TWh)
2012	11.4	195 (18.7)	23.7 (2.3)	174 (16.7)

Decorative Lamps (2013 Summary)

- 1.2 billion decorative lamps installed in the U.S.
- Most installed in residences
- 10% CFL <1% LED

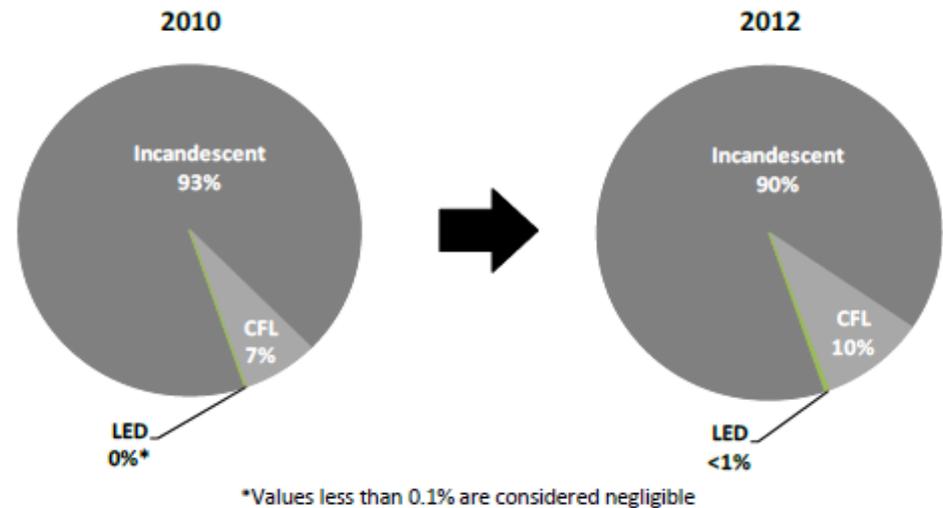


Figure 2.8 – Decorative Lamp Installed Base

Table 2.4 – Energy Consumption and Savings Potential of LED Decorative Lamps

 Decorative Lamps	LED Installed Base Units millions	Total Energy Consumption Source– tBtu (Site – TWh)	LED Energy Savings Source– tBtu (Site – TWh)	Potential LED Energy Savings Source– tBtu (Site – TWh)
2012	4.7	367 (35.4)	1.4 (0.1)	298 (28.7)

MR 16 Lamps (2013 Summary)

- 46 billion MR16 lamps
- 10% LED
- Fastest

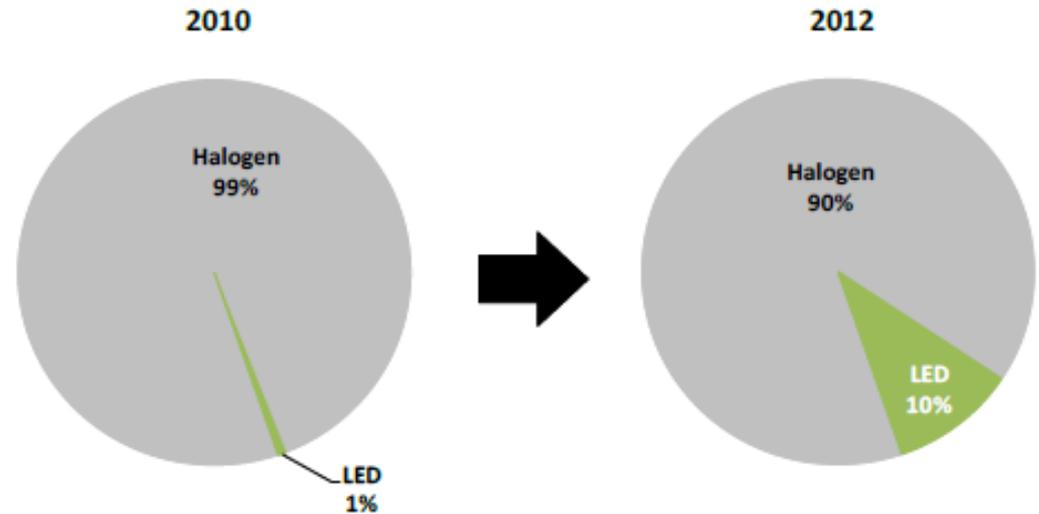


Table 2.3 – Energy Consumption and Savings Potential of LED MR16 Lamps

 MR16 Lamps	LED Installed Base Units millions	Total Energy Consumption Source– tBtu (Site – TWh)	LED Energy Savings Source– tBtu (Site – TWh)	Potential LED Energy Savings Source– tBtu (Site – TWh)
2012	4.8	70 (6.7)	3.7 (0.4)	65 (6.2)



What's New from ENERGY STAR?



New Product Finder Tools

- Allows consumers to filter based on product type, features, and technology
- Compare product feature for up to four items
- View, filter, export and more with the advanced view

The screenshot shows the Energy Star Certified Light Bulbs (NEW) product finder tool. At the top, there is a navigation bar with the Energy Star logo and links for 'ENERGY EFFICIENT products', 'ENERGY SAVINGS at home', 'ENERGY EFFICIENT new homes', and 'ENERGY STRATEGIES FOR buildings & plants'. There are also social media icons for Facebook, Twitter, and YouTube, and links for 'ABOUT ENERGY STAR' and 'PARTNER RESOURCES'. A search bar is located in the top right corner.

Below the navigation bar, the breadcrumb trail reads: 'home » Products » Product Finder Home » ENERGY STAR Certified Light Bulbs (NEW)'. The main heading is 'ENERGY STAR Certified Light Bulbs (NEW)'. A callout box on the right asks: 'Want more information? Access full product list in Excel, API, or other formats. Switch to Advanced View »'.

The main content area features a 'Compare' button and 'up to 4 items' text. A search bar and a 'Sort by:' dropdown menu (set to 'Brand Name') are also present. The product list shows 1 - 20 of 2008 Records Found, with pagination controls (1 2 3 4 5 .. ▶).

The product list includes the following items:

Bulb Type	Technology	Wattage Equivalency (watts)	Brightness (lumens)	Efficacy (lumens/watt)
ALITE - LED-PAR20-COB	LED	50	580	70.0
ALITE - LED-PAR20-COB	LED	50	580	71.3
ALITE - LED-PAR20-COB	LED	50	580	70.0
ALITE - LED-PAR20-COB	LED	50	580	70.0

On the left side, there are filter sections for 'Bulb Type', 'Technology', and 'Special Features', each with a list of options and their respective counts.



New Product Finder Tools

- Additional information for models can be displayed including:
 - Product Finder Bulb Type
 - Lamp Category
 - Efficacy (Lumens/Watts)
 - Wattage Equivalency (Watts)
 - Maximum Overall Length & Diameter
 - CBCP
 - Beam Angle
 - Life (Hrs)
 - Light Appearance (Kelvin)
 - R9
 - Min Operating Temp (C)
 - Dims Down %
 - Special Features

Specifications	Additional Model In
ENERGY STAR Partner	
Product Finder Bulb Type	
Base Type	
Lamp Category	
Technology	
Warranty (years)	
Energy Used (watts)	
Efficacy (lumens/watt)	
Wattage Equivalency (watts)	
Maximum Overall Length (mm)	
Maximum Overall Diameter (mm)	
CBCP	
Beam Angle	
Life (hrs)	
Brightness (lumens)	
Power Factor	
Light Appearance (Kelvin)	
Color Quality (CRI)	
R9	
Min Operating Temp (C)	
Dimmable	
Dims Down to %	
Three Way	
Special Features	
Date Qualified	
Date Available on Market	
Markets	



New Product Finder Tools

- Create customized lists & charts to display product information

The screenshot displays the Energy Star Product Finder interface. At the top, there is a banner with the Energy Star logo and a photo of a man and a child. Below the banner, there are navigation links for 'ABOUT ENERGY STAR' and 'PRODUCT FINDER HOME'. A search bar is present with the text 'Find and compare the energy efficiency of these products. Switch to Basic View >'. The main content area shows an 'Unsaved View' for 'Based on Upcoming ENERGY STAR Certified Light Bulbs'. A line chart displays 'Efficacy (lumens/watt)' for various bulb models. Below the chart is a table with columns for 'ENERGY STAR Partner', 'Brand Name', and 'Model Name'.

ENERGY STAR Partner	Brand Name	Model Name
1	Broada, Inc.	Broada 1800940
2	Broada, Inc.	Broada 1800941
3	Broada, Inc.	Broada 1810919
4	Broada, Inc.	Broada 1810920



ENERGY STAR Lighting Specification Update



ENERGY STAR Lamps V1.1

New Lamps Specification went into effect on
September 30, 2014!

- ❖ Technology neutral
- ❖ Wider variety of color temperatures for LED lamps (5000, 6500K)
- ❖ Dimmability requirements
- ❖ Elevated temperature testing to help ensure expected lamp performance in higher temperature scenarios, e.g. recessed can
- ❖ Higher minimum life for CFL bulbs
- ❖ New small diameter lamp types
- ❖ No more snow cones or “non-standard”



ENERGY STAR Luminaires V1.2

- Luminaires V1.1 effective since April 1, 2012
- Luminaires V1.2 effective December 12, 2012
 - Clarified inseparable SSL requirements
 - Reduced the minimum light output levels of specific decorative luminaire types, e.g. wall sconces
 - Removed 70 LPW requirement that was slated to go into effect in September 2013
 - More at www.energystar.gov/luminaires
- Luminaires V2.0
 - Framework released (October 2014)



What Happens Next?

- Monitor market compliance on key specification performance metrics focusing on:
 - Availability of lamps intended for use in recessed or enclosed fixtures
 - Selection of dimmers used for testing
- Follow development of new industry standards and relevant trends e.g. wireless-controlled, tunable lamps
- Continue work and stakeholder engagement in areas that may allow for further streamlining of the certification process
 - Lamps verification testing
 - Draft: LED upgrade guidance
- DOE SNOPR for LED lamp test method



Testing & Certification

- EPA-recognized lighting laboratories, certification bodies, and accreditation bodies:
 - 13 certification bodies
 - Georgia, Toronto, Massachusetts, California, New York, Pennsylvania, Maryland, New Jersey, Illinois, Connecticut
 - 40 laboratories worldwide
 - Arizona, California, Colorado, Georgia, Massachusetts, North Carolina, New York, Ohio, Pennsylvania, Washington
 - Canada, China, Germany, Hong Kong, Japan, Malaysia, Singapore, South Korea, Taiwan
 - 10 labs recognized to do LM82 testing (domestic and abroad)
 - Laboratory capacity expanding
 - EPA continuing to receive applications for recognition



CB Verification Testing Updates

- Luminaires – ongoing
- LED lamps – started in 2013
- 2015
 - CFLs 20%
 - LED lamps 10%



CFL Verification Testing

- Of the OEMs with products tested, pass rates ranged 15-90%, indicating that quality control and consistent performance is achievable
 - Overall pass rate of 55%
 - Covered CFLs had the lowest pass rate at 14%
- Private labelers can play an important role in addressing quality control issues by inquiring about their OEM's testing record and plans for improvement



Enhanced Oversight

- EPA has been taking targeted actions to help drive improved quality control in the production of ENERGY STAR Lamps, including:
 - Sending individual notices to OEMs providing a recap of their testing performance in the CFL Testing Program
 - Increased oversight of products associated with OEMs with high failure rates
 - Heightened quality assurance requirements for labelers using products from those sources
 - Increased verification testing of products from OEMs with low compliance rates or that significantly under tested to date

Learn more at www.energystar.gov/integrity



New from Marketing



Core Messages

- Even with all the new choices, it's still simple:
 - **ENERGY STAR** the simple choice
- ENERGY STAR means high quality and performance
 - Products with the label have undergone extensive testing to make sure they save energy and perform properly



Look for the ENERGY STAR!



LEARN MORE AT
energystar.gov

Lighting Made Easy Just Look for the ENERGY STAR®

- ★ Independently certified to meet strict energy-efficiency and performance criteria
- ★ Same brightness (lumens), 70-90% less energy (watts)
- ★ Last up to 25 times longer = up to \$80 in energy savings
- ★ Help protect the environment and prevent climate change



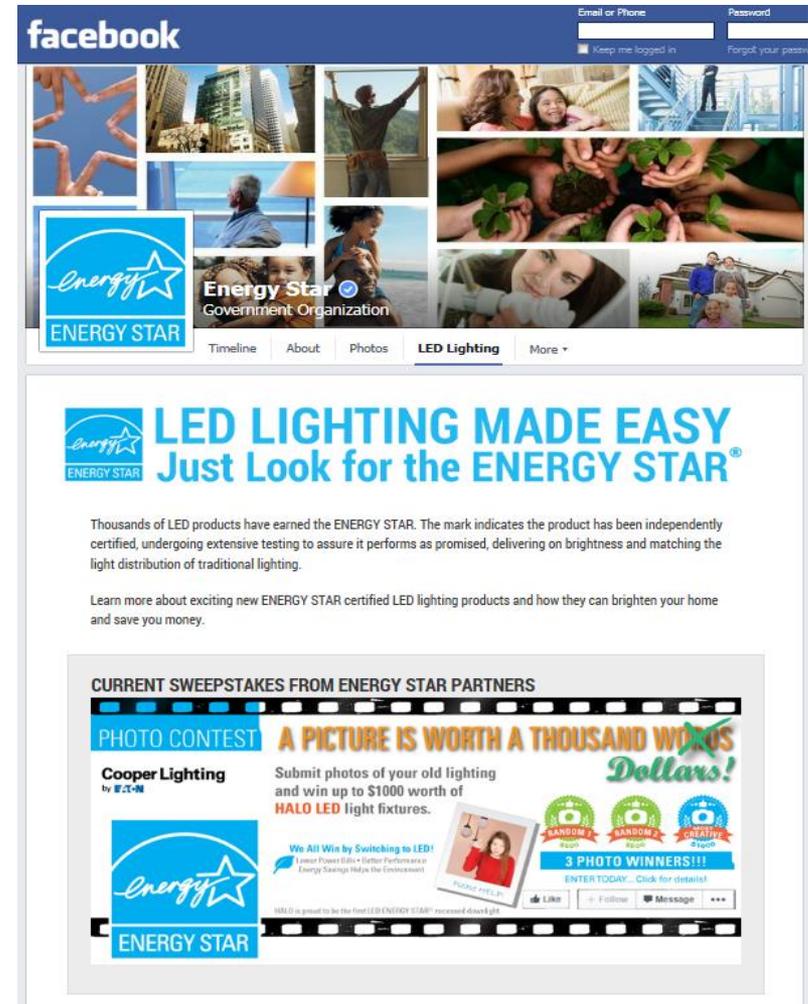
New Lighting Promotions

- This Fall, EPA launched a new promotion, featuring exciting new social media tools
 - Help engage your audience about the most innovative and energy saving products in the lighting market.
- Check out our **three quirky, irreverent new video vignettes** that highlight the benefits of ENERGY STAR certified LED bulbs.
- Facebook tab to showcase certified products, great video content, reviews and tools to help consumers
- Working with bloggers and media to educate and realize the benefits of ENERGY STAR lighting



Check us out on Facebook!

- ❖ Our new **LED Lighting** Facebook tab is live!
 - Showcasing certified products, new video content, reviews and tools to help consumers
 - Add to your Facebook page!





Two Part Lighting Podcast!

Available on iTunes and www.energystar.gov/podcasts



Taylor Jantz-Sell
ENERGY STAR



Naomi Miller
Lighting Designer
PNNL



Noah Horowitz
NRDC



Mark Voykovic
The Home Depot



Learn More!

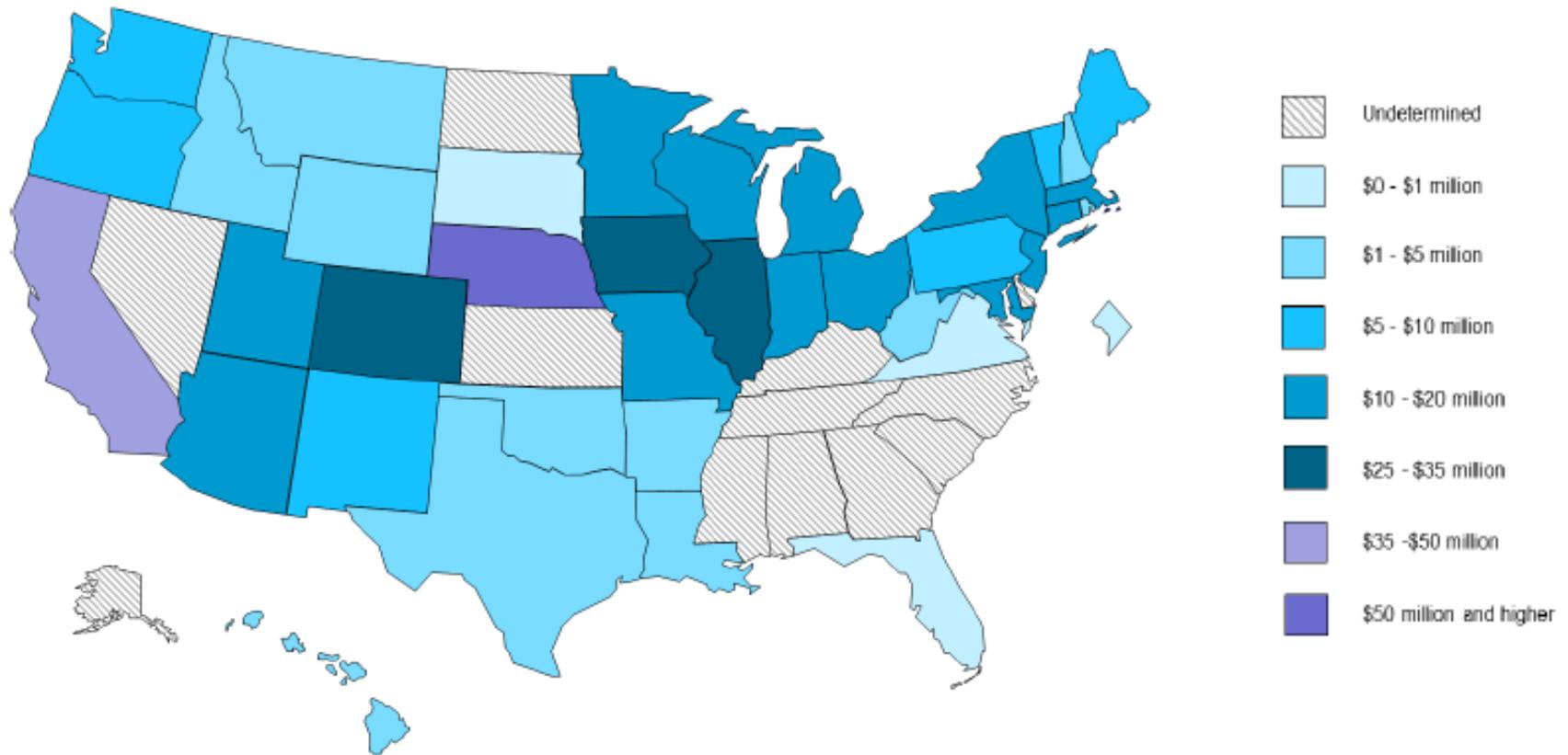
- Join us for **“Not All Efficient Lighting is Created Equal: Communicating ENERGY STAR Benefits to the Consumer”**
- Tomorrow from **9:30-11:00 AM**



Energy Efficiency Programs For Lighting **\$447 million**

Utility Promotions

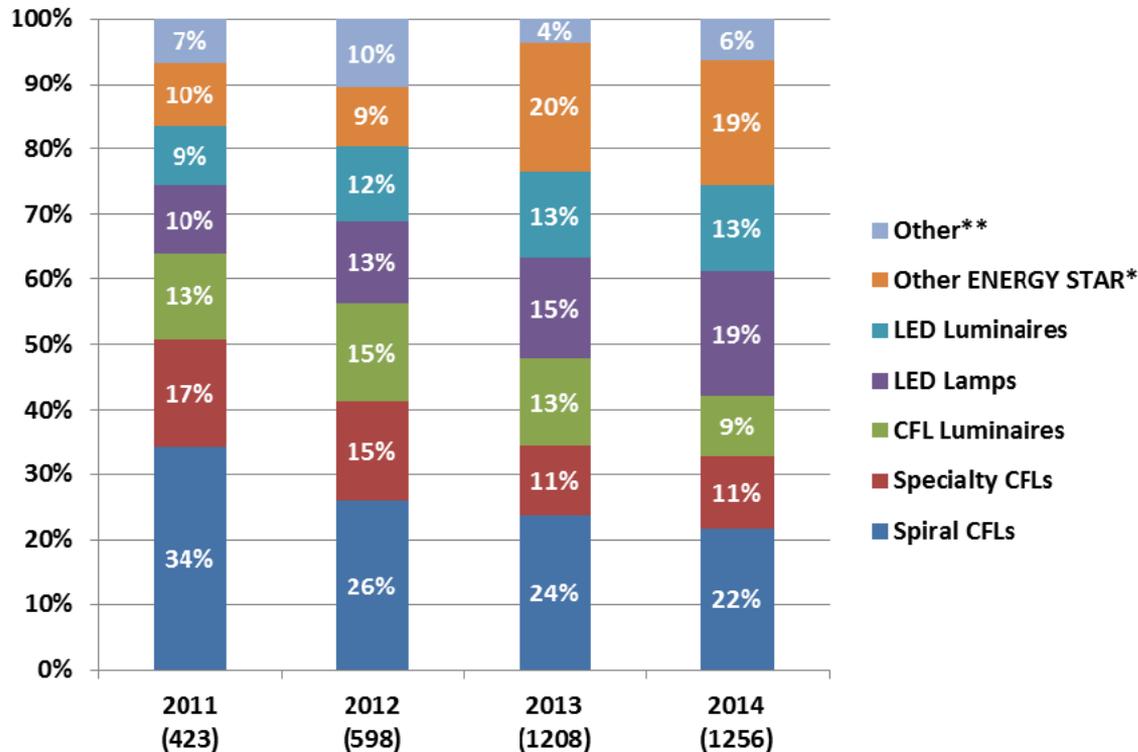
❖ The map below shows program budgets for lighting programs by state as reported by the energy efficiency program sponsors.





Utility Promotions: Product Types

ENERGY STAR and Energy-Efficient Lighting Promotions by Product Type 2011-2014
(Annual totals listed in parentheses)



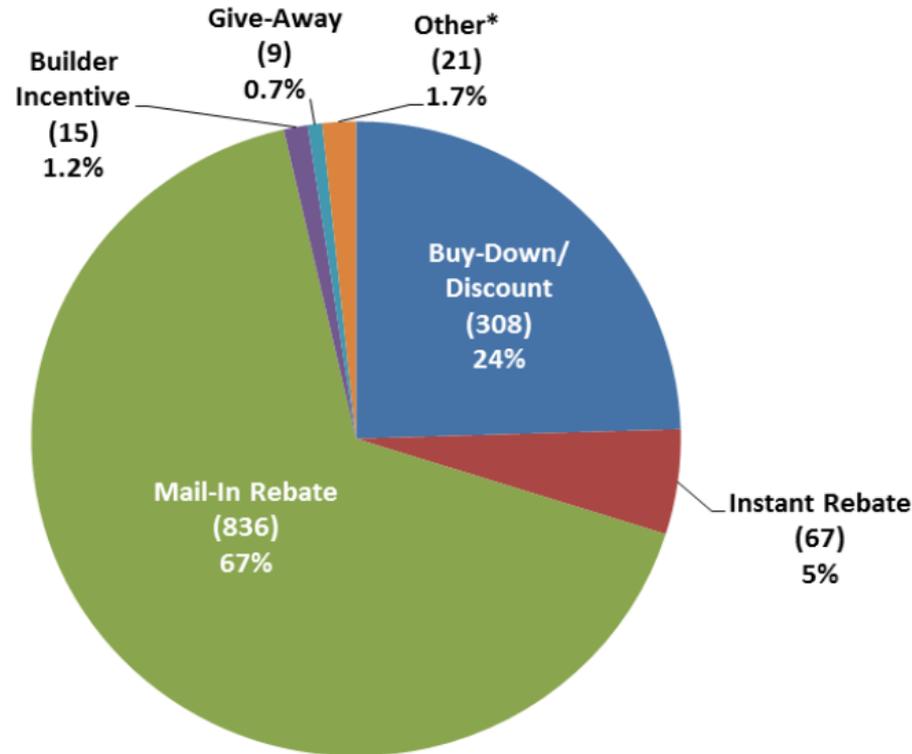
* The "Other ENERGY STAR" category is comprised of ENERGY STAR decorative light strings, CFLs w/pin base, ceiling and vent fans, and new construction programs. See the "Lighting Programs at a Glance" for individual partner details.

** The "Other" category is comprised primarily of commercial lighting products, such as LED exit signs, fluorescent T-8 or T-5, High Bay lighting, and occupancy sensors.



Utility Promotions: Incentive Type

2014 ENERGY STAR and Energy-Efficient Lighting Promotions by Incentive Type
(Totals listed in parentheses)



* The "Other" category is comprised of low-interest loans, bill credits, and other miscellaneous promotion types. See the "Lighting Programs at a Glance" for individual partner details.



Utility Promotions

- There are more than **1,250** individual incentive and promotion programs for ENERGY STAR certified lighting products
- These programs play a valuable role in helping consumers transition to more energy efficient lighting products, both through financial incentives and consumer education



What's Down the Road?

- Lighting Road Mapping Session with NEMA:
Wednesday, October 29, 2:00-5:00 PM
 - Build on more than 15 years of partnership and promotion of energy efficient lighting
 - Develop strategies for keeping all stakeholders engaged throughout the year
- Ongoing consideration and stakeholder engagement regarding verification testing



Thank You!

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www.energystar.gov/lighting
www.energystar.gov/lightingresources

