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
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%.

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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

Source: U.S. Energy Information Administration, Annual Energy Outlook 2014
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

Source: U.S. Department of Energy, Adoption of Light-Emitting Diodes in Common Lighting Applications 2013
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

Source: Bulb Price Trend Tracker
ENERGY STAR LED Omnidirectional A-type Light Bulb Prices

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

$ per Lamp

$90
$80
$70
$60
$50
$40
$30
$20
$10
$-

ENERGY STAR - Certified LED A-type Light Bulbs

- 40 Watt Equivalent (~450 lumens)
- 60 Watt Equivalent (~800 lumens)
- 75 Watt Equivalent (1,100 lumens)
- 100 Watt Equivalent (1,600 lumens)

* 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

Source: Bulb Price Trend Tracker
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!

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

- 83% Omni
- 13% Directional
- 4%>1% Decorative
- 4%>1% Nonstandard LED
CFL Shipments

ENERGY STAR Certified CFL Shipments by Type

Millions

- Omnidirectional
- Directional
- Decorative

2012
2013
LED Bulb Shipments

ENERGY STAR Certified LED Bulb Shipments by Type

- Omnidirectional
- Directional
- Decorative
- Nonstandard

2012 vs 2013

Millions

Omnidirectional | Directional | Decorative | Nonstandard
Fixture Shipments

Luminaires Shipped by Type in 2013

- Indoor Fixtures - SSL: 30%
- Indoor Fixtures - non-SSL: 27%
- Outdoor Fixtures: 35%
- Retrofit Kits - SSL: 8%
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

Source: U.S. Department of Energy, Adoption of Light-Emitting Diodes in Common Lighting Applications 2013
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**

<table>
<thead>
<tr>
<th>Directional Lamps</th>
<th>LED Installed Base Units millions</th>
<th>Total Energy Consumption Source– tBtu (Site – TWh)</th>
<th>LED Energy Savings Source– tBtu (Site – TWh)</th>
<th>Potential LED Energy Savings Source– tBtu (Site – TWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>11.4</td>
<td>195 (18.7)</td>
<td>23.7 (2.3)</td>
<td>174 (16.7)</td>
</tr>
</tbody>
</table>

Source: U.S. Department of Energy, Adoption of Light-Emitting Diodes in Common Lighting Applications 2013
Decorative Lamps (2013 Summary)

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

Source: U.S. Department of Energy, Adoption of Light-Emitting Diodes in Common Lighting Applications 2013
MR 16 Lamps (2013 Summary)

- 46 billion MR16 lamps
- 10% LED
- Fastest

Source: U.S. Department of Energy, Adoption of Light-Emitting Diodes in Common Lighting Applications 2013
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
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
New Product Finder Tools

- Create customized lists & charts to display product information
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 ENERY STAR!

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

LEARN MORE AT energystar.gov
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
Madame Helga - Margaret the Zombie - Floyd’s Explosive Surprise
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 sigs, 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)

- Mail-In Rebate (836) 67%
- Instant Rebate (67) 5%
- Buy-Down/Discount (308) 24%
- Give-Away (9) 0.7%
- Other (21) 1.7%
- Builder Incentive (15) 1.2%

* 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