RESIDENTIAL LIGHTING MARKET UPDATE

ENERGY STAR 2.0, EISA 2020, AND NEW MARKET ACTORS
LIGHTING IS IMPORTANT

Lighting accounts for more than 1/3 of the region’s residential energy and demand savings.
START WITH THE HOUSES...

Single Family
4,023,937 homes (74%)

Manufactured
543,730 homes (10%)

Multi-family
863,104 units (16%)
ADD THE LIGHTS…

- **Single Family**
  - Average: 63 lamps and 40 fixtures

- **Manufactured**
  - Average: 35 lamps and 21 fixtures

- **Multi-family**
  - Average: 23 lamps and 14 fixtures (per unit)
292M
AND THE MARKET IS CHANGING (REALLY) FAST

Technology

Regulation
We track market trends
We analyze sales and shelf data
We conduct interviews
We model Momentum Savings
We’re going to talk about

SALES TRENDS
ENERGY STAR 2.0
SUPPLY CHAIN
EISA 2020
INSTALLED STOCK
Reflects Past Decisions

PRODUCT FLOW
Tells Today’s Story
NEEA’s RETAIL SHELF SURVEYS
What do the DATA TELL US?
2012

- **INC**: 49%
- **HAL**: 7%
- **CFL**: 43%
- **LED**: 2%
SPECIALTY LAMPS

- Incandescent: 56%
- Halogen: 12%
- CFL: 17%
- LED: 25%
- Specialty Lamps: 3%
Where are the remaining opportunities?
General Purpose and Dimmable 59%
Reflectors 17%
Decorative 15%
Globe 7%
3-Way 2%

Source: Unit sales by application. Weighted analysis of NEEA shelf-stocking and Nielsen sales data; 2015
Source: Unit sales by application. Weighted analysis of NEEA shelf-stocking and Nielsen sales data; 2015

General Purpose and Dimmable: 26%
Reflectors: 10%
Decorative: 11%
Globe: 5%
3-Way: 2%
BIG-BOX IS BIG LIGHTING.
FOUR RETAILERS DOMINATE RESIDENTIAL LIGHTING

Cree
Philips
TCP
GE
LSG
Felt
Osram

Home Depot
Walmart
Costco
Lowe's
SHARE OF EFFICIENT LAMPS STOCKED BY STORE LOCATION

DIY Retailer 1

Store Locations

- Efficient
- Inefficient
- Average Share of Efficient Lamps
SHARE OF EFFICIENT LAMPS STOCKED BY STORE LOCATION

DIY Retailer 2
SHARE OF EFFICIENT LAMPS STOCKED BY STORE LOCATION

Mass Merchandise Retailer 1

![Chart showing share of efficient lamps stocked by store location for Mass Merchandise Retailer 1. The chart uses a bar graph with red and green sections to represent efficient and inefficient lamps, respectively, across different store locations. The y-axis represents the percentage share, ranging from 0% to 100%, and the x-axis represents store locations. The chart also shows the average share of efficient lamps across all locations.](chart-image-url)
What’s going on with ENERGY STAR 2.0?
Some manufacturers thought the original ES2.0 specification was **TOO STRINGENT AND OUT OF STEP** with current consumer preferences and awareness.
Other manufacturers DISAGREED.

They built their business model on high-quality ENERGY STAR lamps.
VERDICT: COMPROMISE
MORE LEDs WILL QUALIFY

Less stringent dimmability testing
25,000 hours
15,000 hours
SUPPLY IS CHANGING.
<table>
<thead>
<tr>
<th>Category</th>
<th>Players</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Manufacturers</td>
<td>GE, Osram Sylvania, CREE, Philips</td>
</tr>
<tr>
<td>Contract Manufacturers</td>
<td>MLS, San’an Opto</td>
</tr>
<tr>
<td>Small &amp; Mid-sized</td>
<td>MaxLite, TCP, Lighting Science Group</td>
</tr>
<tr>
<td>Manufacturers</td>
<td></td>
</tr>
<tr>
<td>Traditional Retailers</td>
<td>Home Depot, Lowe’s, Walmart, Costco, ACE Hardware, Fred Meyer</td>
</tr>
<tr>
<td>Online Retailers</td>
<td>1000bulbs.com, LampsPlus.com, LightingDirect.com</td>
</tr>
</tbody>
</table>
NOW.
22.8 years

10 years

LESS OF THESE
MORE OF THESE

4.6 years
## WHAT'S THE IMPACT?

<table>
<thead>
<tr>
<th>Type of LED</th>
<th>Efficient</th>
<th>Dimmable</th>
<th>Longer Lifetime</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENERGY STAR</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>NON-ENERGY STAR</td>
<td>YES</td>
<td>NO</td>
<td>NO</td>
</tr>
</tbody>
</table>
RETAILERS ARE PHASING OUT CFLs

With cheaper, more popular LEDs, why sell CFLs?
OK, WHAT’S NEXT?
EISA 2020

In February, DOE issued a notice of proposed rulemaking for general service lamps.
Proposes a minimum efficacy of 70 lumens/watt, which **ONLY SOME LEDs** can currently meet.
MOST ENERGY STAR LAMPS WON’T QUALIFY
HOWEVER....

Manufacturers still do not consider EISA 2020 to be set in stone

U.S. job loss – four halogen plants
Even if it does not pass as proposed, EISA requirements will increase.
WHAT HAPPENS NEXT?

DOE seeks public comment

DOE issues Final Rule

Covered lamps to comply 3 years after Final Rule issued
RECAP

Sales data help programs watch a changing market.
RECAP

Halogens have assumed much of the incandescent market share; LEDs have done the same for CFL.
RECAP

Specialty lamps present different opportunities
RECAP

Supply chain shifts have impacted market offerings and program dynamics
RECAP

EISA 2020 may transform the market, but uncertainty exists
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APPENDIX
THANK YOU

neea
REFLECTORS (17%)

Source: Unit sales by technology and application. Analysis of NEEA shelf-stocking and Nielsen sales data; 2015
DECORATIVE AND MINI BASE (15%)
What is the state of RESIDENTIAL LIGHTING?
HOW BIG
is the regional market?

900 MILLION LAMPS
Estimated 2014 National Shipments

4.2 PERCENT
PNW as % of National Population

92 PERCENT
Retail Lamps Purchased by Residential Customers

34.4 MILLION LAMPS
Top down estimate of 2014 PNW residential lamp market

Source: Cadeo analysis of NEMA shipments. Population statistics taken from US Census Bureau
HOW BIG is the regional market?

15.7 MILLION LAMPS
2014 Nielsen Sales Data for PNW

23.5 PERCENT
% of Total PNW Sales Captured by Nielsen

92 PERCENT
Retail Lamps Purchased by Residential Customers

61.3 MILLION LAMPS
Bottom-up Estimate of 2014 PNW residential lamp market

Source: Cadeo analysis of NEMA shipments, Nielsen sales data.
But what’s on the shelves?
EFFICIENCY MIX
(ENERGY STAR v. NON-ENERGY STAR)

DIY Retailer 2

Mass Merchandise Retailer 1

DIY Retailer 1

% General Purpose ENERGY STAR LEDs