# ICF Energy Efficiency Products Workshop

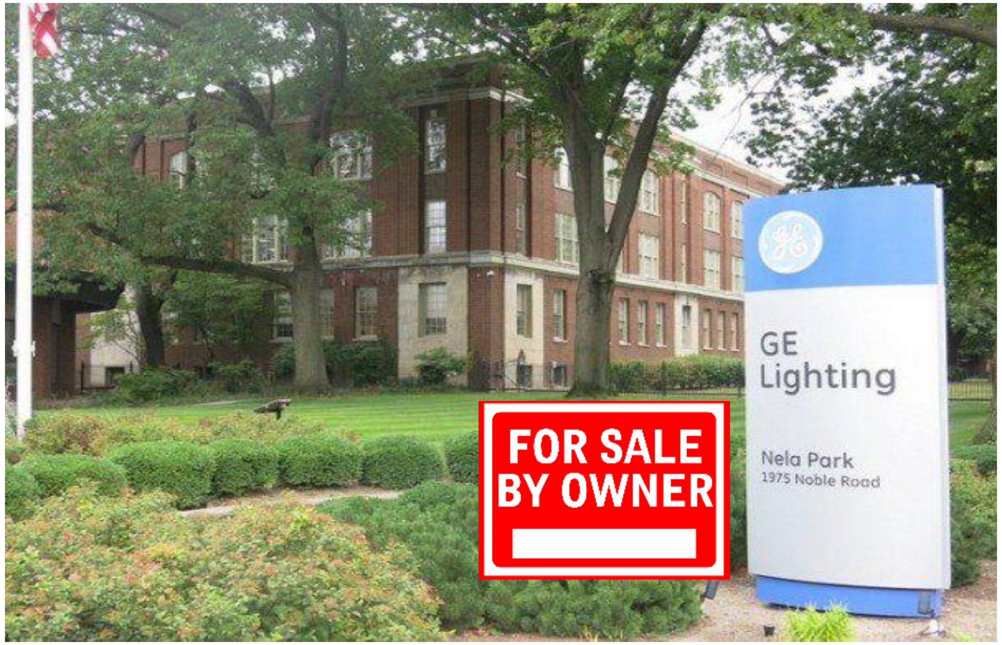
## Residential Lighting Market

**September 2, 2017**

# GE Updates

## New CEO, John Flannery

## GE Lighting is officially for sale!

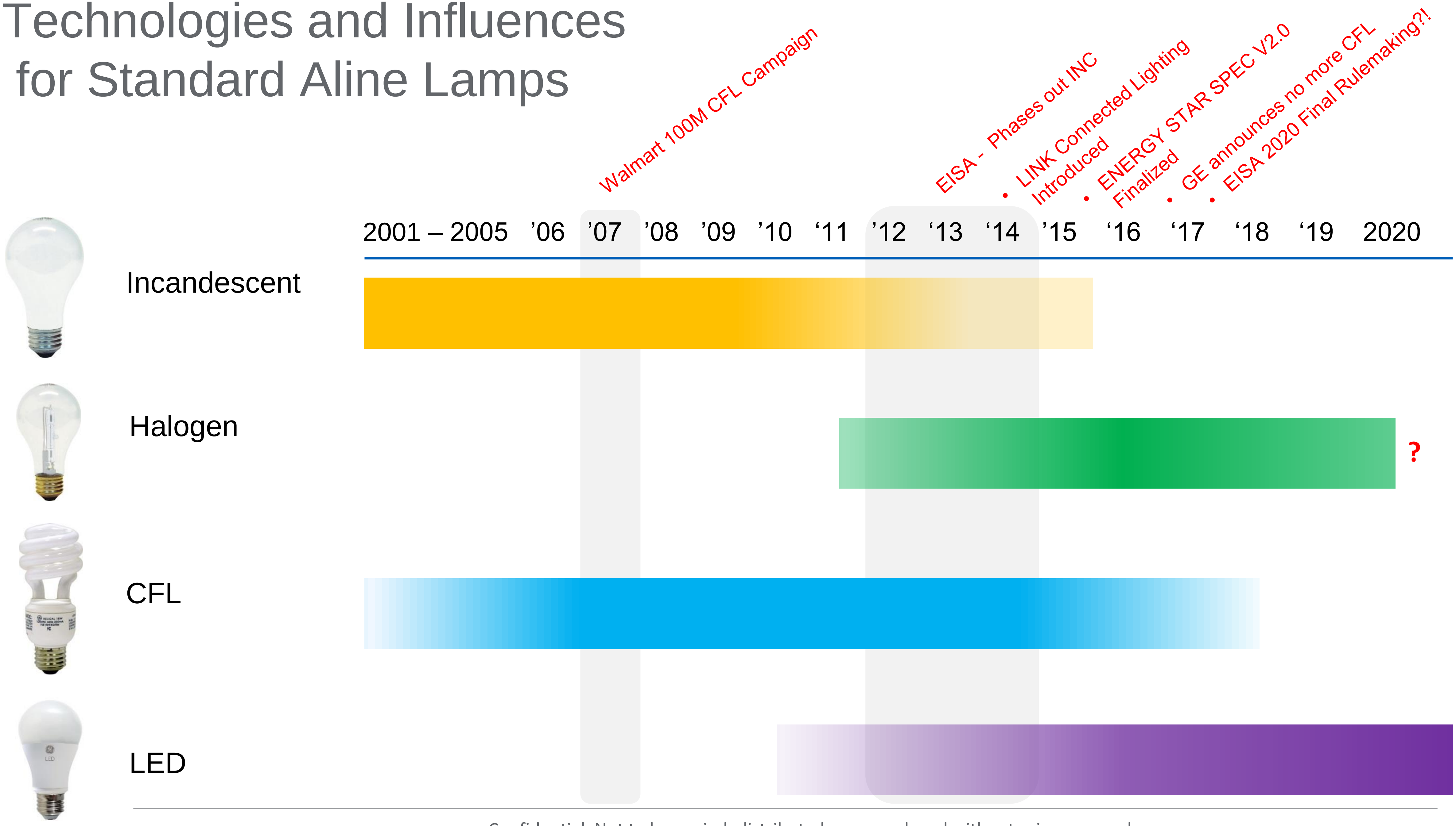


# The Lighting Industry:
# Where we’ve been & where we are going

# Trivia Question

**In 1980, the market sold in almost 4 billion lamps. Half of these lamps were INC or LFL bulbs.  Any idea what the other 2 billion were?**

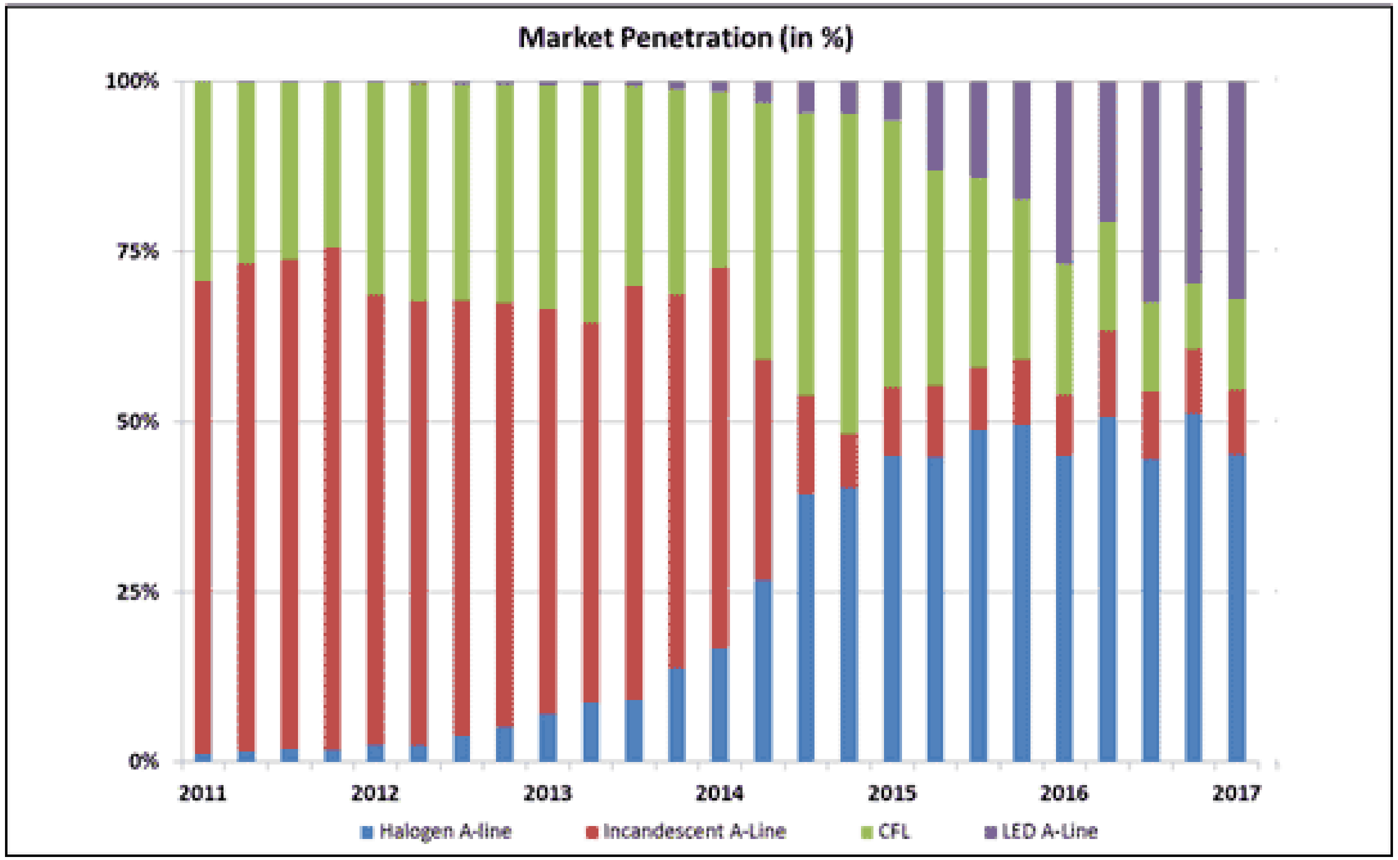

# Technologies and Influences for Standard Aline Lamps



# Shipment Market Highlights

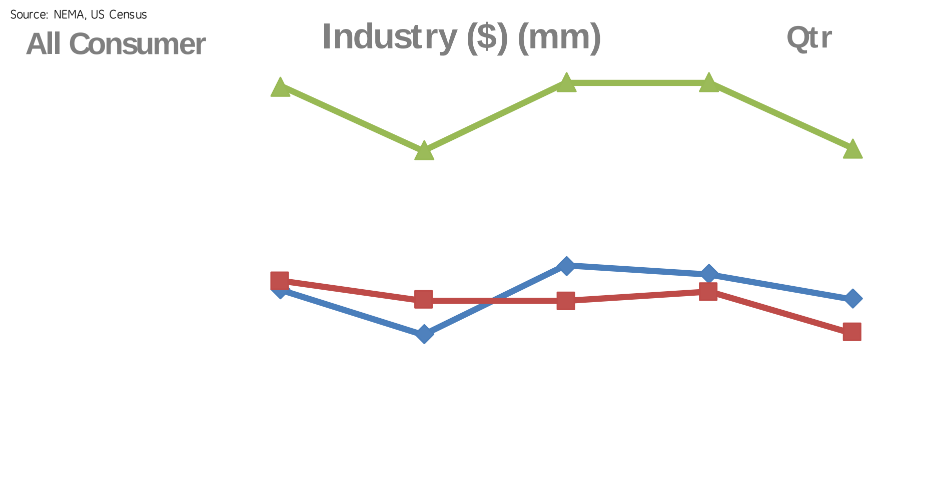
# NEMA 1st Q 2017 Update: A-Line

Halogen: 45%
Inc: 10% (historically 70% – 75%)
CFL: 13% (historically 25% - 35%)
LED: 32%

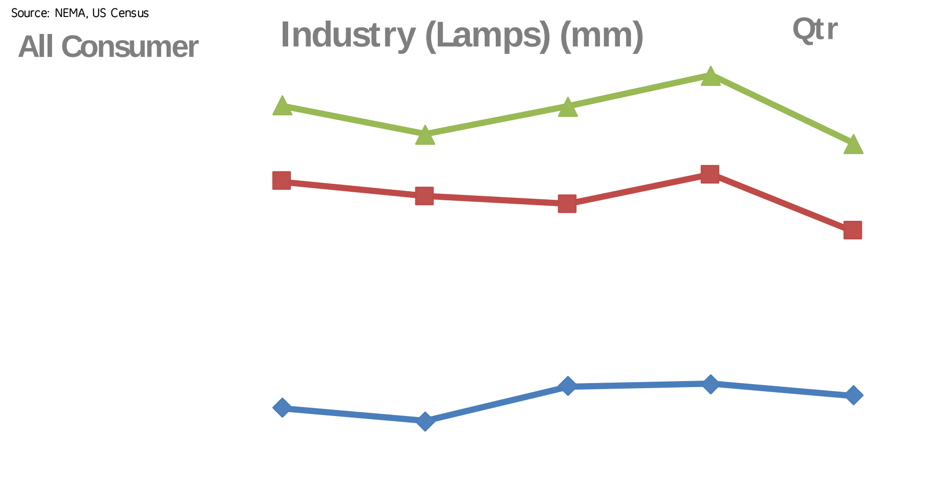


# Consumer Industry Shipment Volumes – Q1 2017

- Q1 ‘17, shipment dollars are down $98mm (16)% vs Q1 ‘16
- Q1 marks the first quarter for negative LED dollar shipments (5)%
- Lamps decline is (10)%
- LED lamps are +16%




| | 1 | 2 | 3 | 4 | 1 |
|---|---|---|---|---|---|
| | | | 2016 | | 2017 |
| LED | $307.1 | $235.8 | $345.0 | $331.7 | $291.9 |
| All Core | $321.2 | $290.7 | $289.0 | $303.2 | $238.5 |
| All Core + LED | $628.3 | $526.5 | $634.1 | $635.0 | $530.5 |

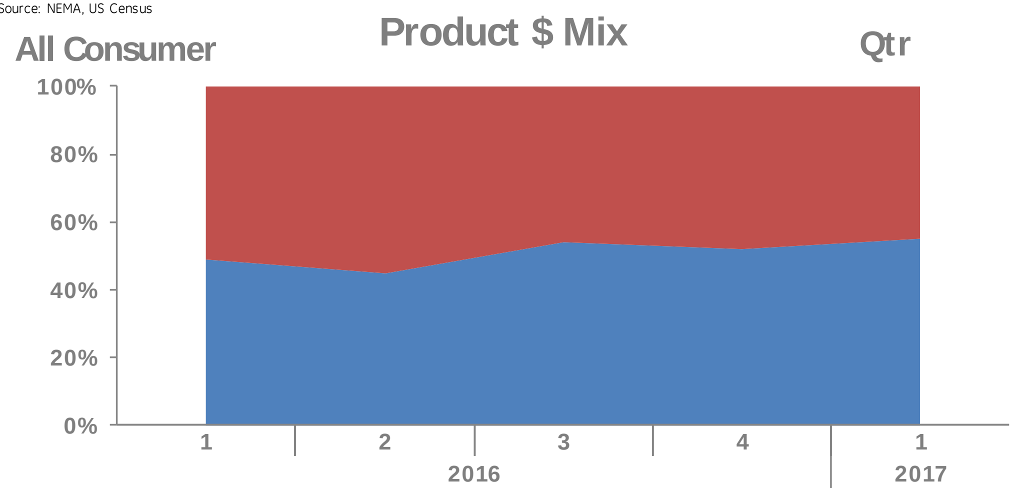



| | 1 | 2 | 3 | 4 | 1 |
|---|---|---|---|---|---|
| | | | 2016 | | 2017 |
| LED | 85.4 | 70.2 | 109.7 | 112.3 | 98.7 |
| All Core | 340.1 | 323.2 | 314.8 | 347.4 | 284.0 |
| All Core + LED | 425.5 | 393.4 | 424.5 | 459.8 | 382.7 |

# Consumer Industry Mix – All Lamps

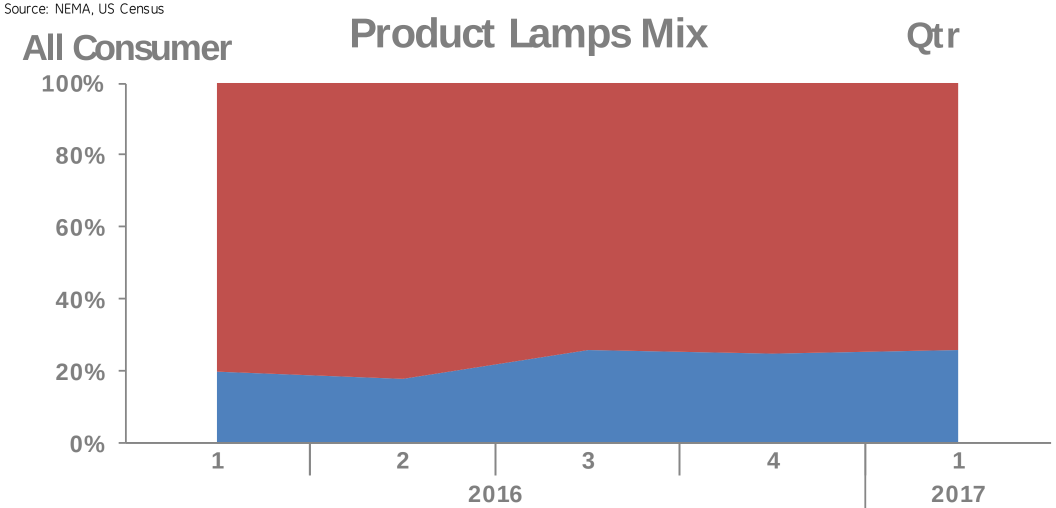
- A mix shift in dollars of 6 points from a year ago, LED shipments now represent 55% of market shipments
- Core still represents 74% of lamps shipped; major shifting opportunity for LED at only 26% of mix

Source: NEMA, US Census




| | 2016 Q1 | 2016 Q2 | 2016 Q3 | 2016 Q4 | 2017 Q1 |
|---|---|---|---|---|---|
| All Core | 51% | 55% | 46% | 48% | 45% |
| LED | 49% | 45% | 54% | 52% | 55% |

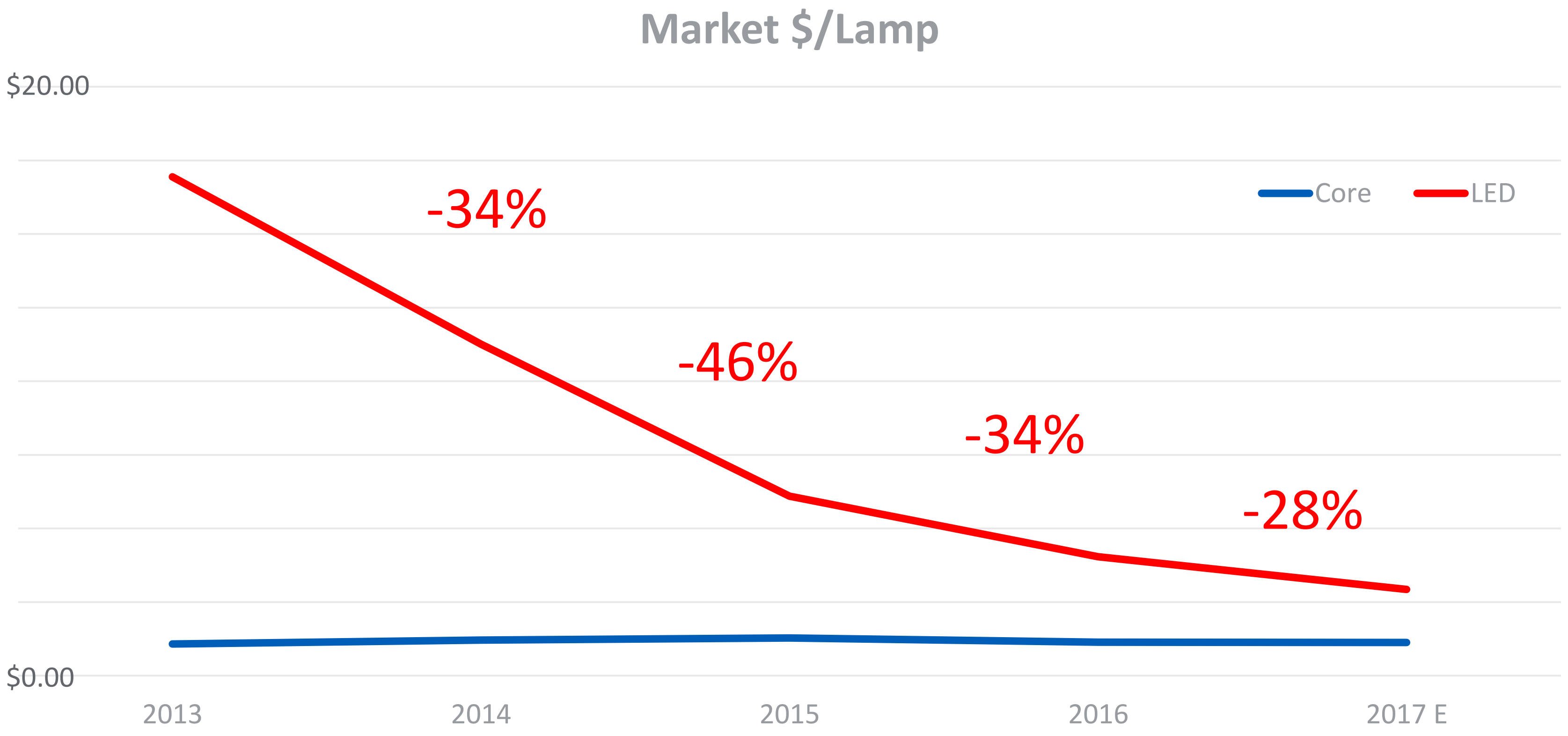
Source: NEMA, US Census




| | 2016 Q1 | 2016 Q2 | 2016 Q3 | 2016 Q4 | 2017 Q1 |
|---|---|---|---|---|---|
| All Core | 80% | 82% | 74% | 75% | 74% |
| LED | 20% | 18% | 26% | 25% | 26% |

# Consumer LED Price Trends

- Avg LED shipment prices down 75% in just 4 years…from $13.55 in 2013 to $3.23 in 2016
- A-line price declines starting to plateau in 2016, but now Deco & Reflectors have seen greater deflation (30%+)




Source: NEMA

# Consumer Market Price per Lamp - LED

- Overall LED price held vs Q4, as A-line declines plateau and retailers shifted to new innovation on deco LED

| | 1 | 2 | 3 | 4 | 1 |
|---|---|---|---|---|---|
| | | 2016 | | | 2017 |
| Total LED | $3.60 | $3.36 | $3.15 | $2.95 | $2.96 |
| A-line | $2.95 | $2.72 | $2.67 | $2.48 | $2.35 |
| Deco | $4.45 | $4.14 | $3.51 | $3.11 | $3.39 |
| Mini Ref | $5.29 | $4.79 | $3.98 | $4.70 | $5.54 |
| Cans | $10.38 | $9.83 | $9.14 | $8.67 | $10.83 |
| Linear | $7.71 | $7.56 | $6.49 | $6.19 | $5.45 |
| PAR | $8.78 | $8.23 | $7.82 | $7.03 | $6.44 |
| Reflector | $5.02 | $4.35 | $4.29 | $3.99 | $3.70 |

Source: NEMA

# The Retail Market

# Item Penetration by City

- Minneapolis had the highest percentage of households that bought LED in the past year – 38%!
- 27% of Detroit households bought LED in the past year.

*Item Penetration: % of HHs in that market who purchased at least 1 LED at retail in that time period.*

| City | 52 weeks ending 4/1/2017 |
|---|---|
| Minneapolis | 38.3 |
| Oklahoma City - Tulsa | 32.9 |
| Kansas City | 31.7 |
| St. Louis | 31.1 |
| Milwaukee | 31.1 |
| Washington DC | 29.4 |
| Seattle | 28.9 |
| Detroit | 27 |
| Baltimore | 18.6 |

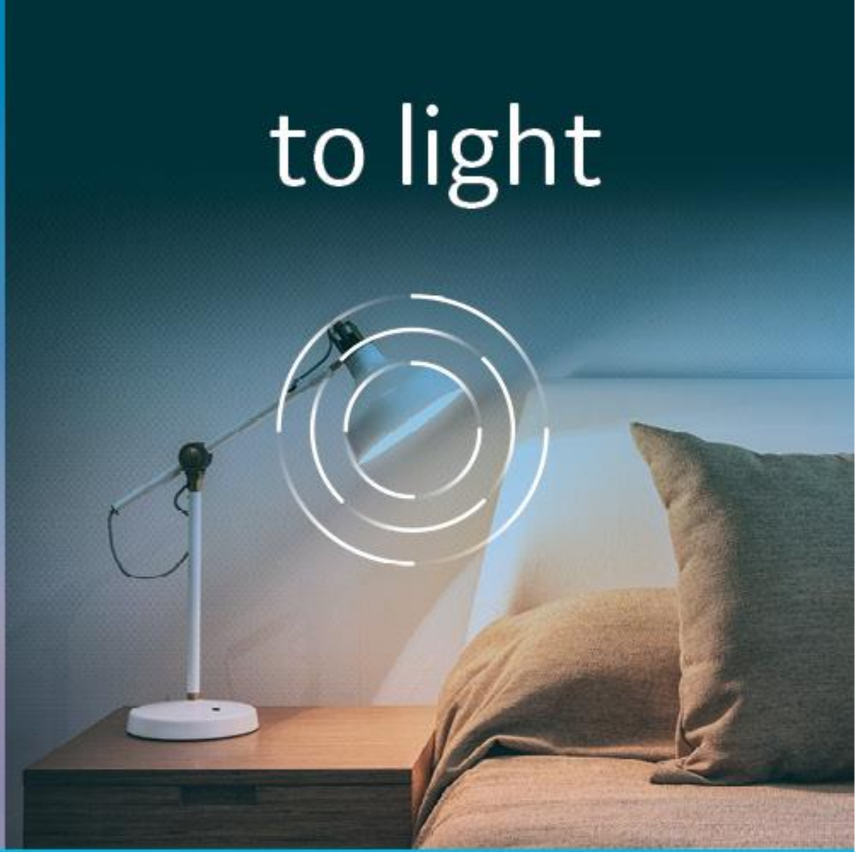
# Loyalty by City

The most loyal LED city is San Francisco.

For Detroit, of the 27% of HHs that bought LED last year, 70.4% of those HHs' lighting dollars were LED!

*Loyalty: Of HHs that purchased LED in the time period, the % of their total annual lighting spend given to LED.*

| City | 52 weeks ending 4/1/2017 |
|---|---|
| San Francisco | 90.8 |
| Detroit | 70.4 |
| Minneapolis | 66.8 |
| Kansas City | 62.9 |
| Baltimore | 53.5 |
| Milwaukee | 52.5 |
| St. Louis | 48.3 |
| Washington DC | 42.6 |
| Oklahoma City - Tulsa | 39.7 |




We started with the light bulb, an invention that fulfilled the basic human desire to see and experience more of the world.

We are transforming ourselves from a traditional light bulb manufacturer to an LED powerhouse and smart home catalyst.

# Key Takeaways

- 74% of the market (lamps) is NOT LED.
- Opportunity exists to influence LED sales.
- The lighting market (lamps) is decreasing.
- The lighting market (dollars) is flattening out.
- LED pricing is down, 75% decline in 4 years.
- LED socket penetration estimate in 2020 is 50%.
- Connected products are the next big shift.
- Lighting category evolution moving from Consumable to Durable

Imagination at work