

The Impact of Incentives on ENERGY STAR Certified Lamp Sales: Looking Back and Looking Forward

ENERGY STAR Partner Meeting
October 27, 2016



Do Energy Efficiency Programs Make a Difference?

- How do we measure the past impact of lighting programs?
 - Examination of two case studies
- What will be the future impact?
 - Impact of the new ENERGY STAR spec
 - Impact of EISA

Measuring the Past: MA vs. NY

| Year | New York* | Massachusetts |
|--------------|---------------------------------------|---|
| Pre-2011 | Standard and specialty CFLs supported | Standard and specialty CFLs supported |
| 2011 | LED incentives introduced | Standard and specialty CFLs supported |
| 2012 | Standard CFL incentives dropped | Standard and specialty CFLs continues |
| 2014-present | All upstream incentives ended | CFL incentive phase-out started; LED incentives ramped up |

*Excluding Long Island (LIPA)

Case Study #1: Massachusetts

- Consumer Survey (2015)
 - Massachusetts (n=610)
 - New York (n=132)
- On-site Studies (2009-2015)
 - Massachusetts (n=1,435)
 - New York (n=718)

Panel Study

- Started in 2013
 - 3 waves in MA
 - 1 wave in NY
- Revisit homes to observe changes



Case Study #1: Massachusetts

Study Sponsors

- The Massachusetts Energy Efficiency Advisory Council
- The Massachusetts Electric Program Administrators:
 - Cape Lighting Compact
 - Eversource Energy
 - National Grid
 - Unitil

Study Lead

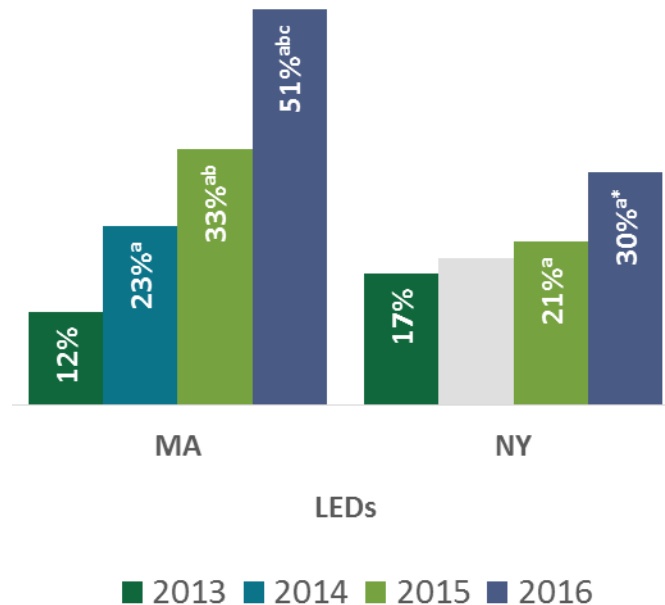


How Does Penetration Differ?

(% of Homes with at Least One LED)

Case Study #1: Massachusetts

- Comparing LED Penetration



^a Significantly different from 2013 at the 90% confidence level.

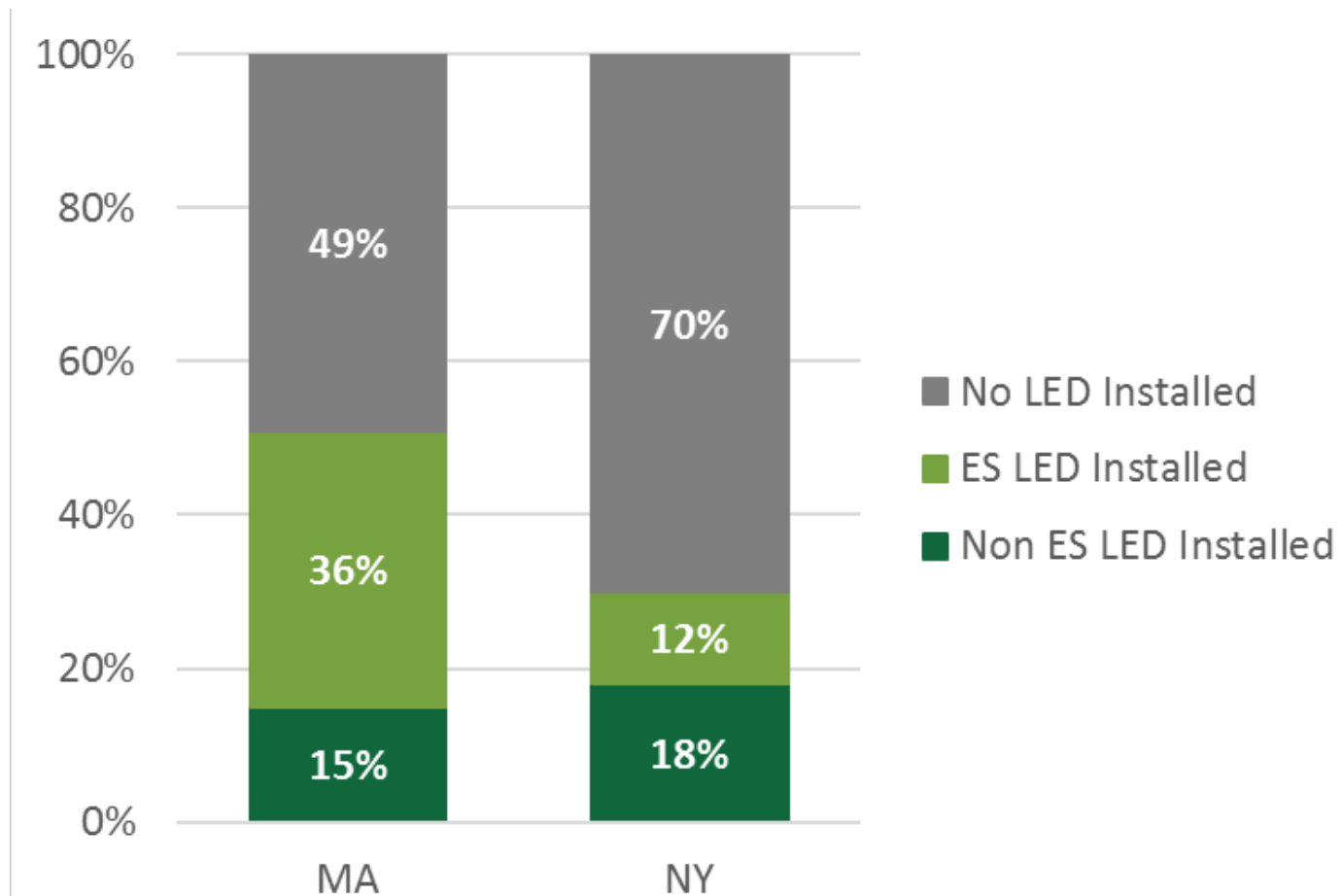
^b Significantly different from 2014 at the 90% confidence level.

^c Significantly different from 2015 at the 90% confidence level.

* Significantly different from corresponding year in MA at the 90% confidence

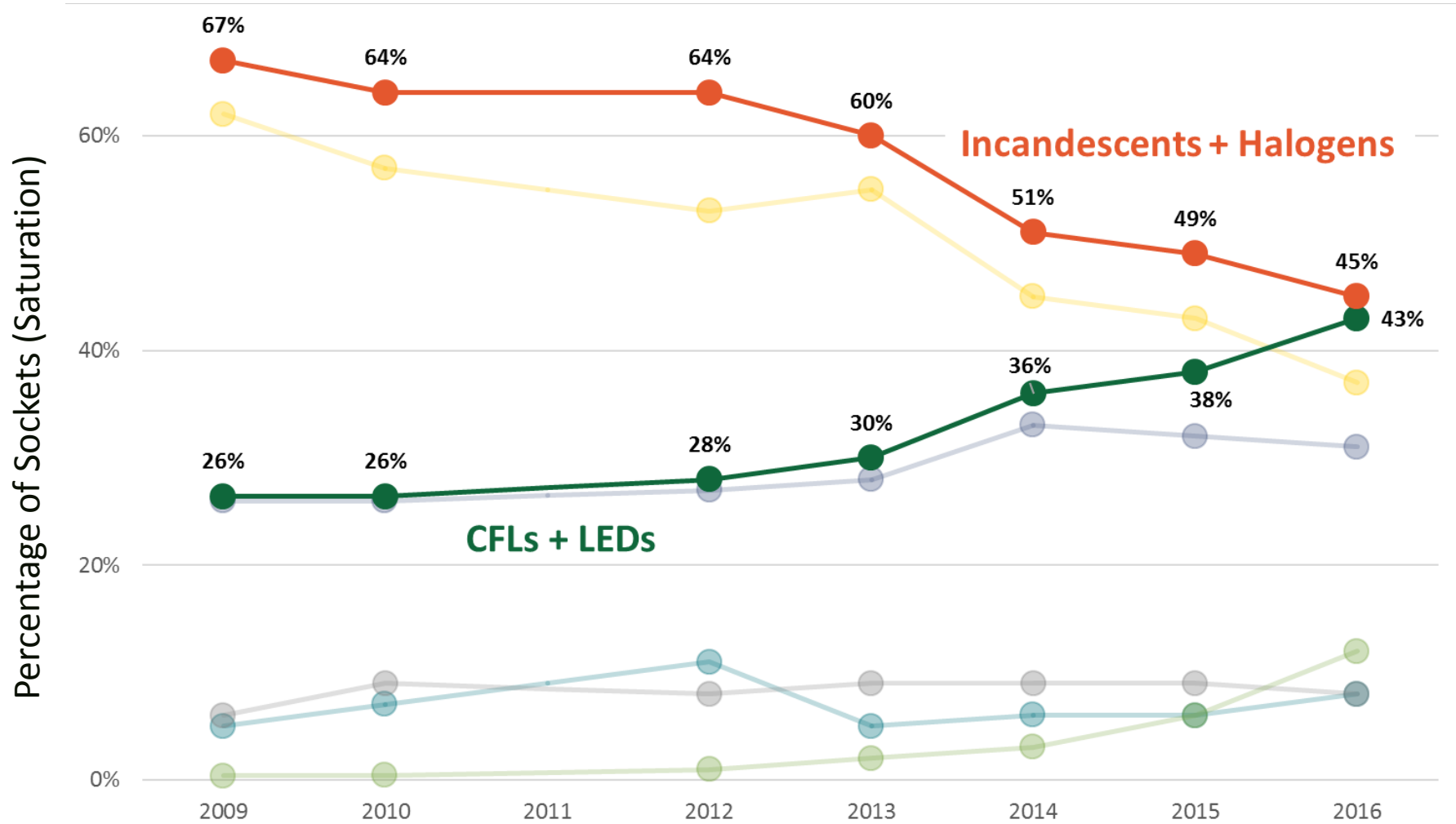
Case Study #1: Massachusetts

- MA & NY LED Bulb Penetration 2016 with ENERGY STAR LED Bulbs



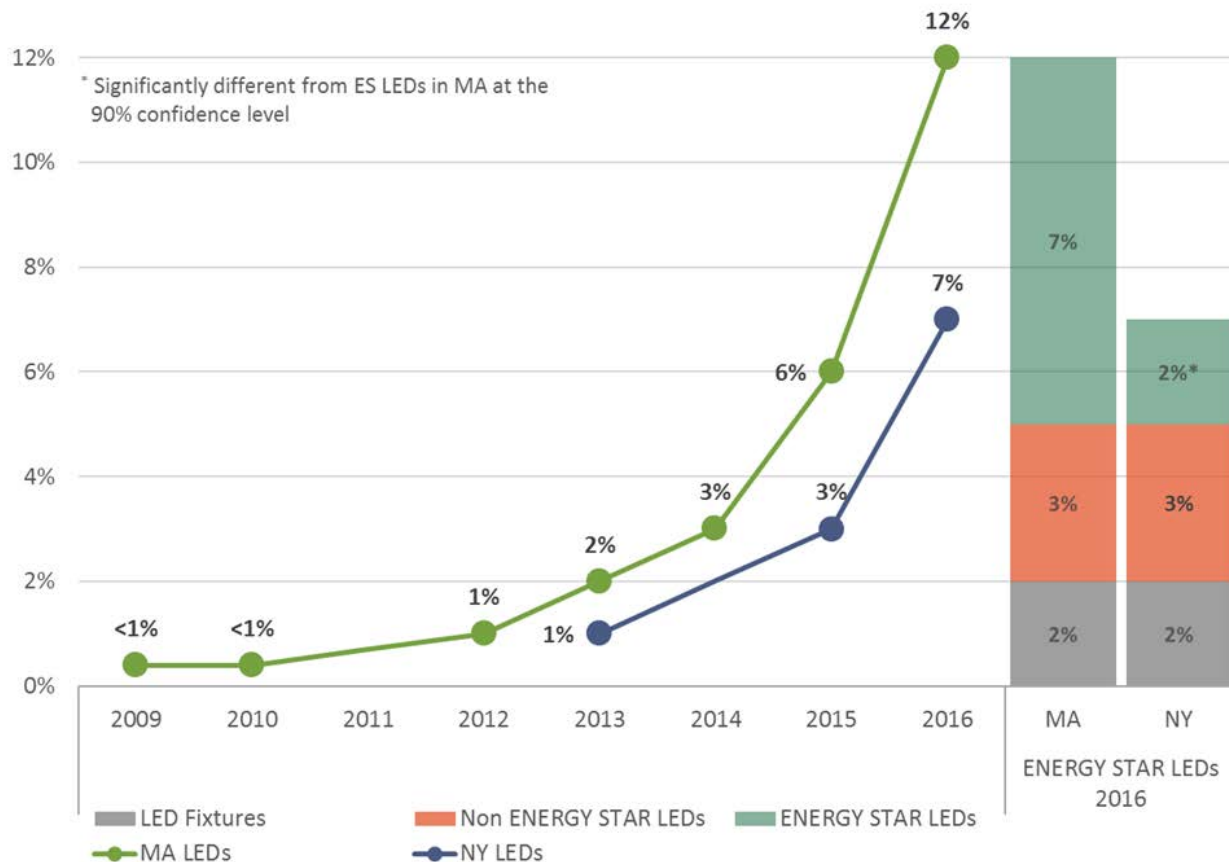
How Does Socket Saturation Differ?

Case Study #1: Massachusetts



Case Study #1: Massachusetts

- MA & NY LED Bulb Saturation 2009-2016 with ENERGY STAR LED Bulbs in 2016



Other Metrics

Case Study #1: Massachusetts

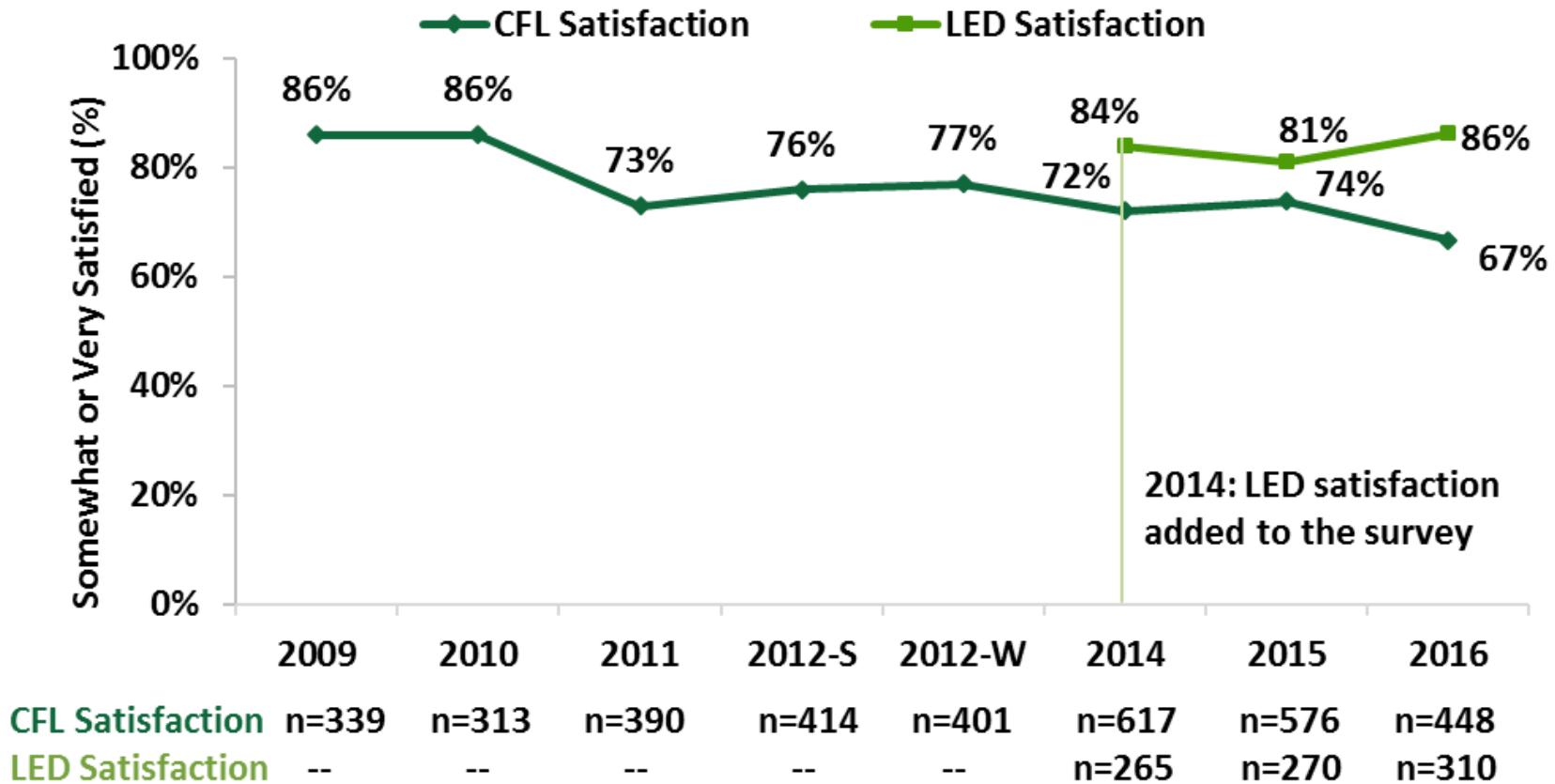
Understanding of ENERGY STAR Label

(Base: Respondents who reported that they were aware of the label)

| Understanding of ES LEDs | MA | NY |
|---|-----|-----|
| <i>Sample size</i> | 110 | 40 |
| All LED screw-in bulbs are ENERGY STAR certified | 63% | 58% |
| Some LED screw-in bulbs are ENERGY STAR certified | 36% | 40% |
| No LED screw-in bulbs are ENERGY STAR certified | 1% | 2% |

Case Study #1: Massachusetts

- Satisfaction by Bulb Type



Case Study #2: Using Sales Data to Assess Program Impacts

Case Study #2: LightTracker

The Challenge:

**Access to Full Category Lighting
Sales Data from All Retail
Channels**

Case Study #2: LightTracker

- LightTracker combines POS and Panel Data to provide the Best Available Picture of Lighting Sales



POS Data

+



+

Panel Data

=

=

Total
Market
Sales

All Channels



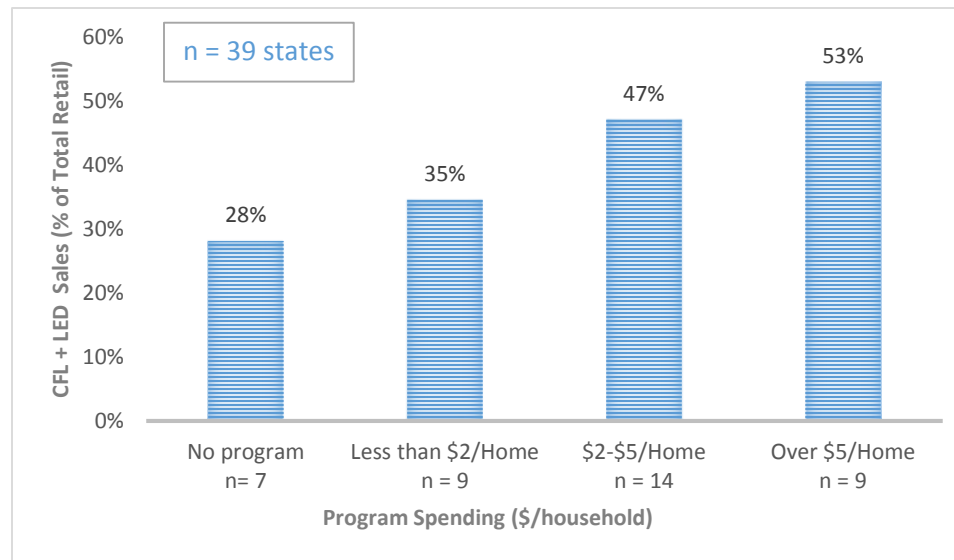
Case Study #2: LightTracker

The Sales Data Question:

**Do States with Energy
Efficiency Programs Sell More
Efficient Lamps?**

Case Study #2: LightTracker

- Percent of Efficient Lighting Sales Based on Program Spending



Case Study #2: LightTracker

- Also Developed a Regression to Control for Other Factors

EE Market Share_i

$$\begin{aligned} &= \beta_0 + \beta_1 * \text{Program Spending per HH} + \beta_c * \sum_1^c \text{Channel Variables} \\ &+ \beta_d * \sum_1^d \text{Demographic Variables} \end{aligned}$$

Case Study #2: LightTracker

| Factor | Direction of Influence | Significant?* |
|-----------------------------------|------------------------|---------------|
| Program Spending | ↑ | Yes |
| Square Footage of DIY/Club Stores | ↑ | Yes |
| Blue (democratic) state | ↑ | Yes |
| Median Income | ↑ | Yes |

*At 90% Confidence Level

Case Study #2: LightTracker

Data used for:

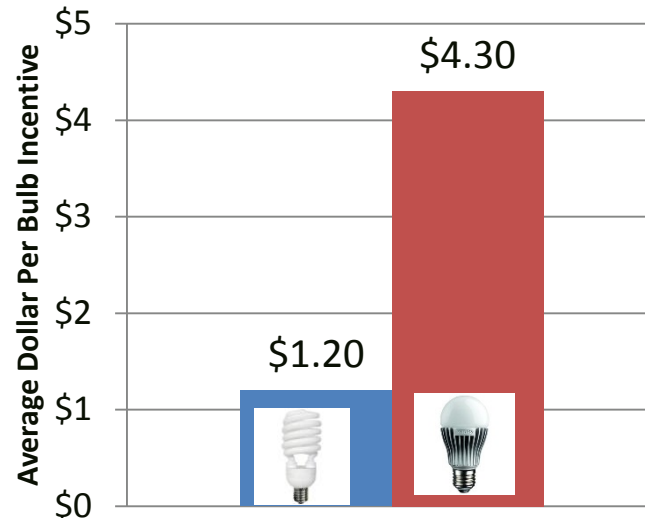
- Net-to-gross
- Incremental cost
- When to exit the market

**For 2016: Will break out ENERGY
STAR LED Bulbs**

What Will the Future Bring?

The New ENERGY STAR Specification

- Most programs around the country only supporting ENERGY STAR
- Challenge has been the incremental cost
- EISA 2009...



Conclusions

Program dollars have an impact!

- Increase in dollars leads to increase in sales
- Focusing on ENERGY STAR can increase market share
 - Ensure higher quality/satisfaction
- New ENERGY STAR specification/technology can hopefully lower the incremental cost

Questions?

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