



Northeast Energy Efficiency Partnerships

# It's Not Just a Pretty Bulb (or is it?)

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# About NEEP

## Mission

Accelerate energy efficiency as an essential part of demand-side solutions that enable a sustainable regional energy system

## Approach

Overcome barriers and transform markets via *Collaboration, Education, and Enterprise*

## Vision

Region embraces **next generation energy efficiency** as a core strategy to meet energy needs in a carbon-constrained world



*One of six regional energy efficiency organizations (REEOs) funded by the US Department of Energy (US DOE) to link regions to US DOE guidance, products, and programs*

# Background

- NEEP's State of the Market: A Residential Lighting Brief
- Read it!



## The State of the Market: A Residential Lighting Brief

Northeast Energy Efficiency Partnerships, July 2016

### Introduction

Northeast Energy Efficiency Partnerships (NEEP) has been tracking the residential lighting market for several years and has provided analysis in many reports.<sup>1</sup> As the transformation of this complex market gains traction, we find the conversation and need for new information narrowing to one key topic: LEDs. While CFLs continue to play a role in residences and amongst Northeast and Mid-Atlantic program administrators, the LED has transitioned into the starring role of the residential lighting show.

In mid-2016, NEEP's State of the Market Brief focused on updating regional residential lighting progress towards market transformation; looking also at the latest and greatest in technologies, program approaches, and trends in the LED lighting space. As can be gleaned from the curve presented below, the Northeast and Mid-Atlantic region is tracking ahead of the projections put forward in the 2015 Residential Lighting Strategy Update.<sup>2</sup>



When 2015 socket saturation information started to become available, we found that what we had projected as efficient lighting socket saturation for 2016 was actually achieved in 2015. If transformation continues along the same trend line as initially predicted, the region could reach the goal of 80-90 percent efficient lighting 1-2 years ahead of schedule. As this brief will discuss, the pace of advancement is largely based on advances in the LED market.

### Extra, Extra: New Lower Lifetime LEDs Certify to ENERGY STAR Lamps 2.0!

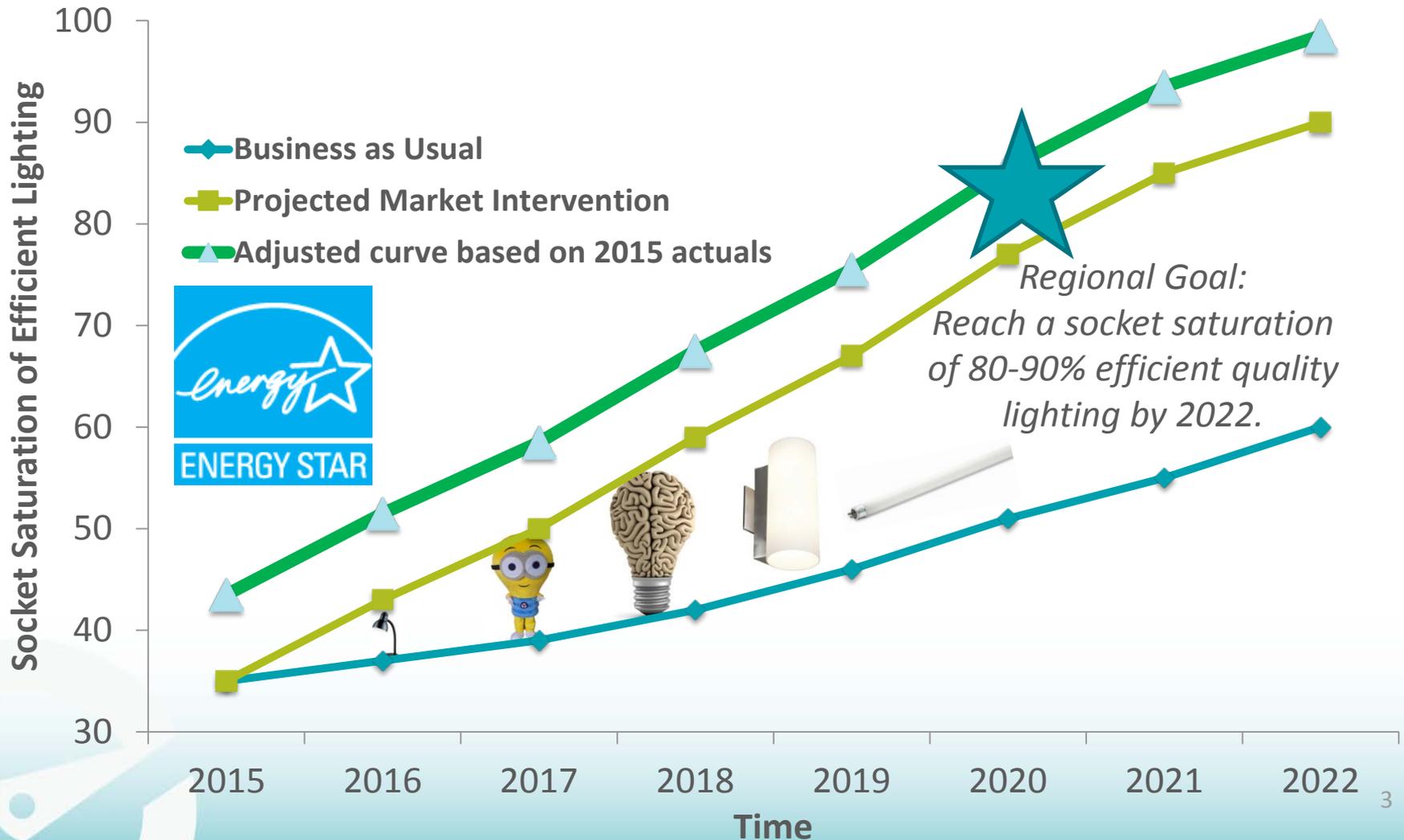
With the finalized Version 2.0 Lamps Specification released by ENERGY STAR in late 2015,<sup>3</sup> stakeholders across the country eagerly awaited the availability of new products to meet the new specification. Since the newly-set efficacy levels were very stringent, no CFLs from the current list will meet the new specification. For the omnidirectional product category, ENERGY STAR and stakeholders worked hard to establish criteria that would maximize the quality, efficiency, and affordability of LEDs.



# Northeast Regional Goal, on Pace to Exceed Targets



## Residential Lighting Market Transformation Curve



# Balancing Act



# Online Profile: CFL

*Name:* Just call me CFL

*Stats:* b. 1976

*Occupation:* Bread and butter measure for efficiency programs (or at least, I was...)

*Interests & features:* Provide efficient light. Be involved in love-hate relationships

*Benefits:* Lowest-cost efficient option (or at least, I was...) My mom thinks I'm popular!

*Long term prospects:* I was ENERGY STAR certified, but I didn't pass the test for Lamps 2.0. My specialty lamps are already really unpopular. I get the feeling retailers are giving me the slow fade...

# Online Profile: Lower-Lifetime LED



*Name:* Lower-lifetime (aka “ish” aka “basic” aka “value”) LED

*Stats:* Born in May, 2015

*Occupation:* If you ask me, I provide good light with a good lifetime at a great price! (though not currently 3<sup>rd</sup>-party verified on my claims.)

*Interests & features:* I don’t really like to dim and my beam angle might be a little different than what you’re used to, but I like to live for 10,000-20,000 hours—YOLO!

*Benefits:* You can’t resist my low cost and LED nature!

*Long term prospects:* Shout out to EPA! ENERGY STAR Lamps 2.0 will allow me to apply (at 15,000 hours)... I might make it into programs after all!

# The fight is over: LEDs win!

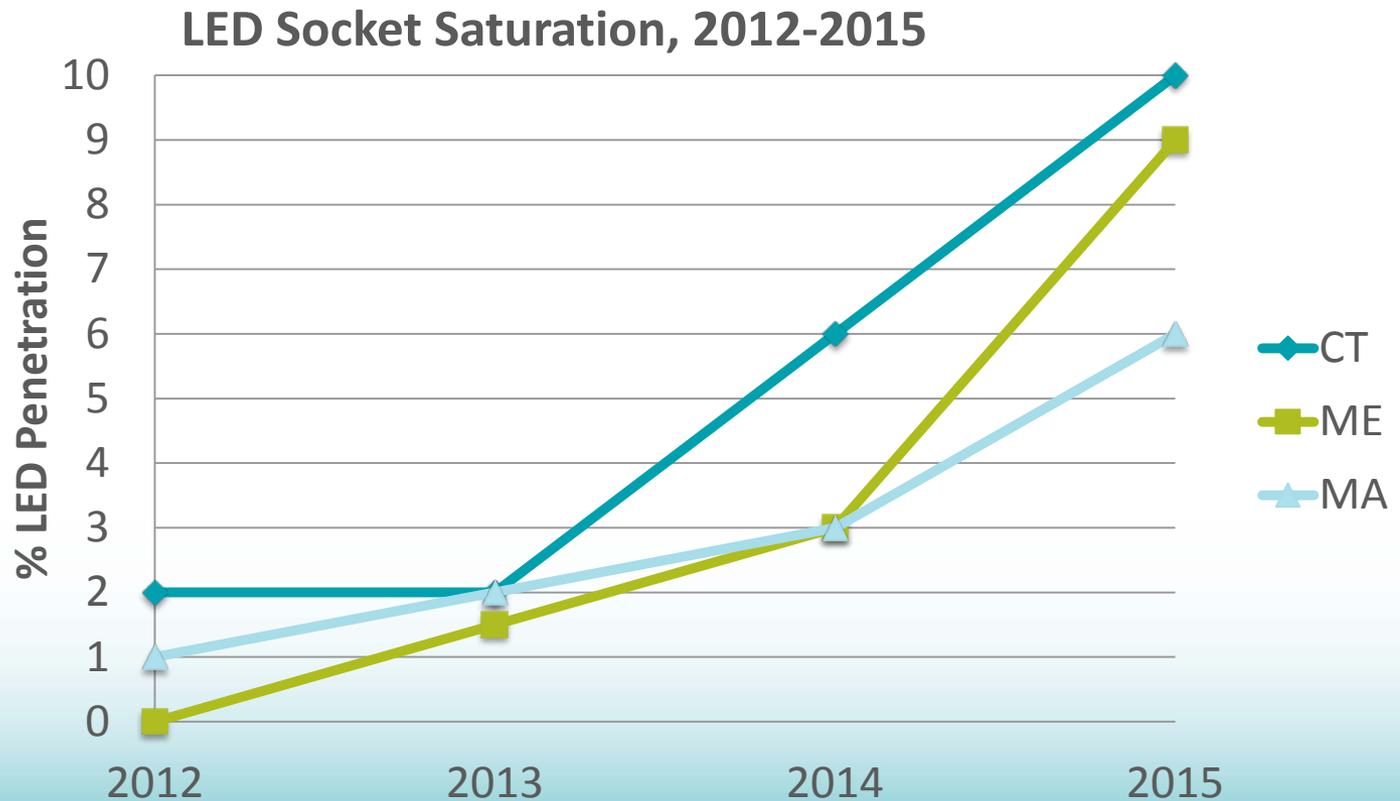


VS.



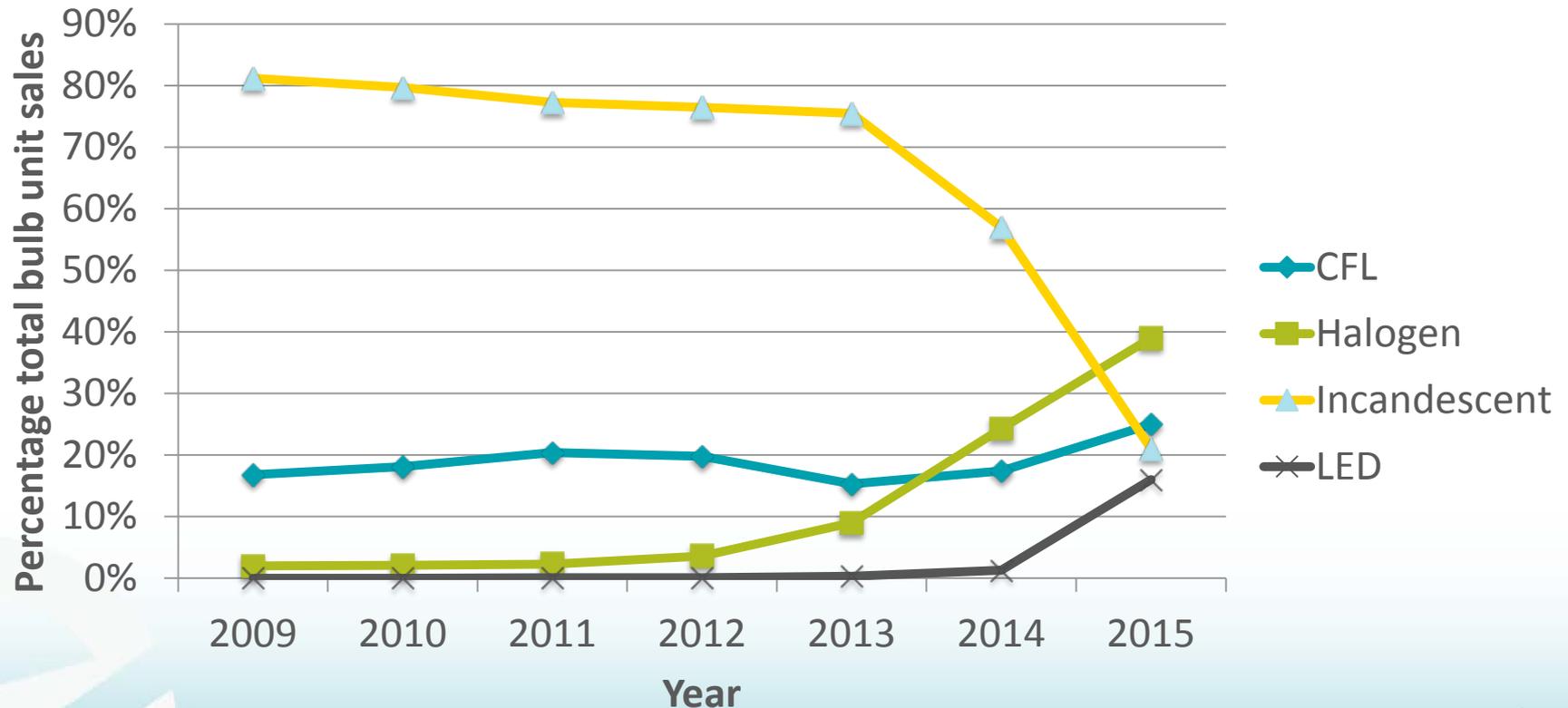
# Customers love LEDs!

- 2015 Socket Saturation results are in:
  - Connecticut
  - Maine
  - Massachusetts



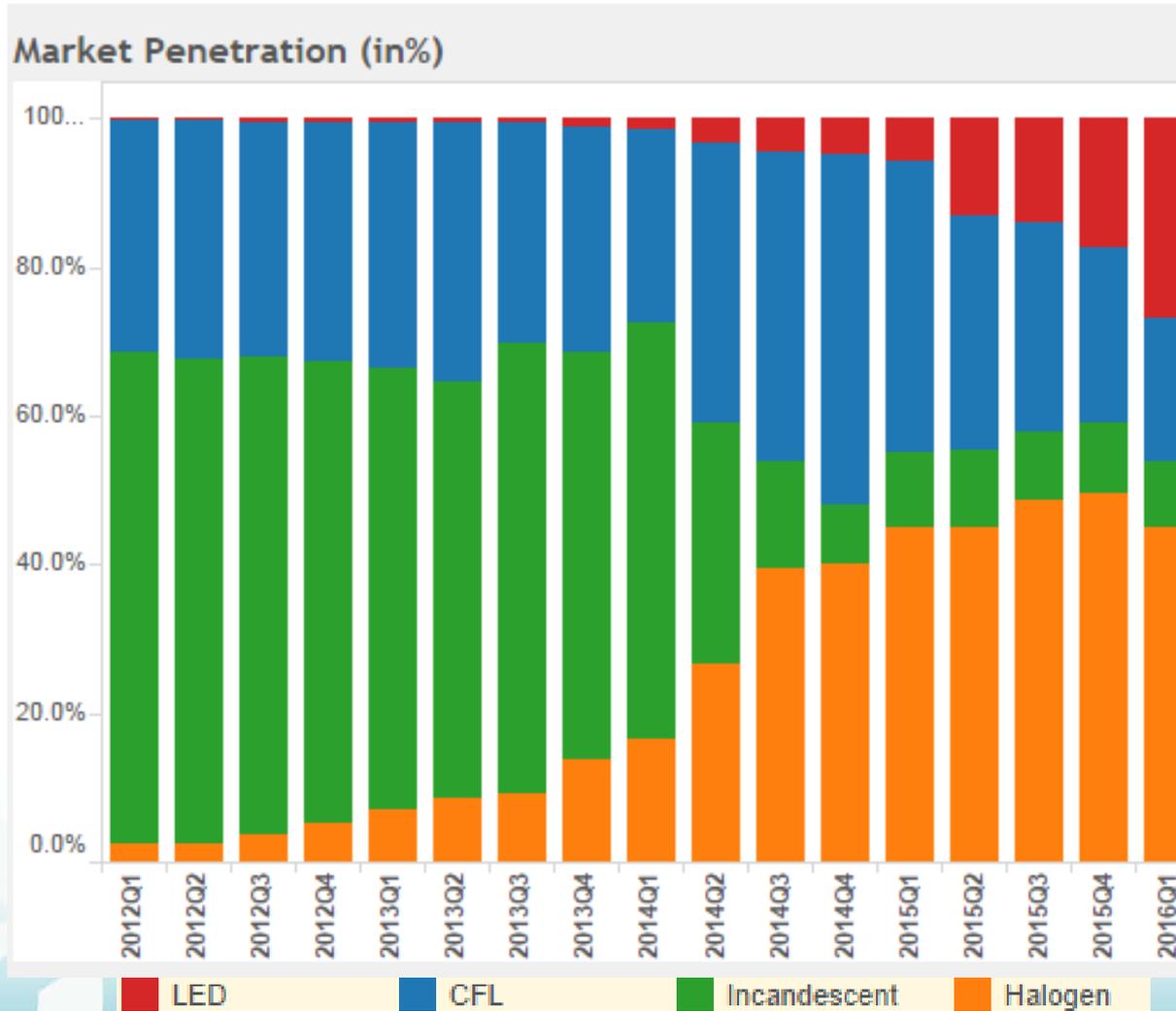
# Customers love LEDs

- Sales Data from CREED LightTracker for the Northeast:
  - CT, DE, ME, MA, MD, NH, NJ, NY, PA, RI, VT
  - All Channels, both POS and Panel Data in 2015



# Customers love LEDs?

- Shipping Date from NEMA



# ENERGY STAR Lamps 2.0: How are we Looking?



- Testing is long, but lamp 2.0 population is finally growing since finalized at end of 2015
- Nearly 800 A-style LEDs certified to Version 2.0, many of which are 15,000 hour lifetimes (below)
- 29 manufacturers

Wattage Equivalency	40W	60W	75W	100W	Total
Number Certifying (in publication, late July)	20	28	7	10	65
As of 8/4	24	33	9	18	84
As of 10/20	55	94	37	41	227!

# Northeast Program Administrators Helping the Market Transform

State	Planned 2015 Retail LED %	Actual % of LEDs through program in Q1, 2016	% LED Planned for all 2016
CT	50%	68%	65%
DC	34%	60%	66%
MA	49%	61.6%	75%
NH	59%	75.5%-88.5%	51%-84% <sup>xii</sup>
NY (PSEG LI)	41%	65%	63%
RI	27%	63.8%	75% <sup>xi</sup>
VT	48%	78.1%	96.5%

- Program Administrator's Continued Role?
  - Support ENERGY STAR!

# Why?

- Remember the introduction of CFLs? Why ENERGY STAR got in the lighting quality assurance game?
- Evolution to Lamps 2.0
  - 25,000 hours necessary when a bulb costs \$20. When below \$5, not as necessary
  - Value bulbs entered market, splash in 2015 with 10-15K bulbs
  - No 3<sup>rd</sup> party verification on these bulbs—could be high quality, but mostly a mystery
  - ENERGY STAR adopted, changed spec to lower lifetime, allow more flexibility and potential for lower cost products



# Concerns with non-ENERGY STAR LEDs:

- No QA/QC
- Lack of Transparency
  - picking manufacturers in a vacuum—could be subject to scrutiny
- Efficiency
  - 2.0 is MORE EFFICIENT than 1.1. Claims more savings?
- Free ridership and attribution
  - chasing the market, not pushing it
- ENERGY STAR = Quality.





# QUESTIONS?

# THANK YOU!

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