



Northeast Energy Efficiency Partnerships

# Residential Lighting in the Northeast and Mid-Atlantic

Claire Miziolek, Residential Program Manager  
Northeast Energy Efficiency Partnerships (NEEP)

Lighting Roadmapping Session

Thursday, Jan 30<sup>th</sup>, 2014

# About NEEP

## MISSION

Accelerate energy efficiency in homes, buildings & industry in the Northeast - Mid-Atlantic region

## GOAL

Keep the region a national leader in accelerating energy efficiency

## STRATEGIES



Reduce Building Energy Use



Speed High Efficiency Products



Make Efficiency Visible

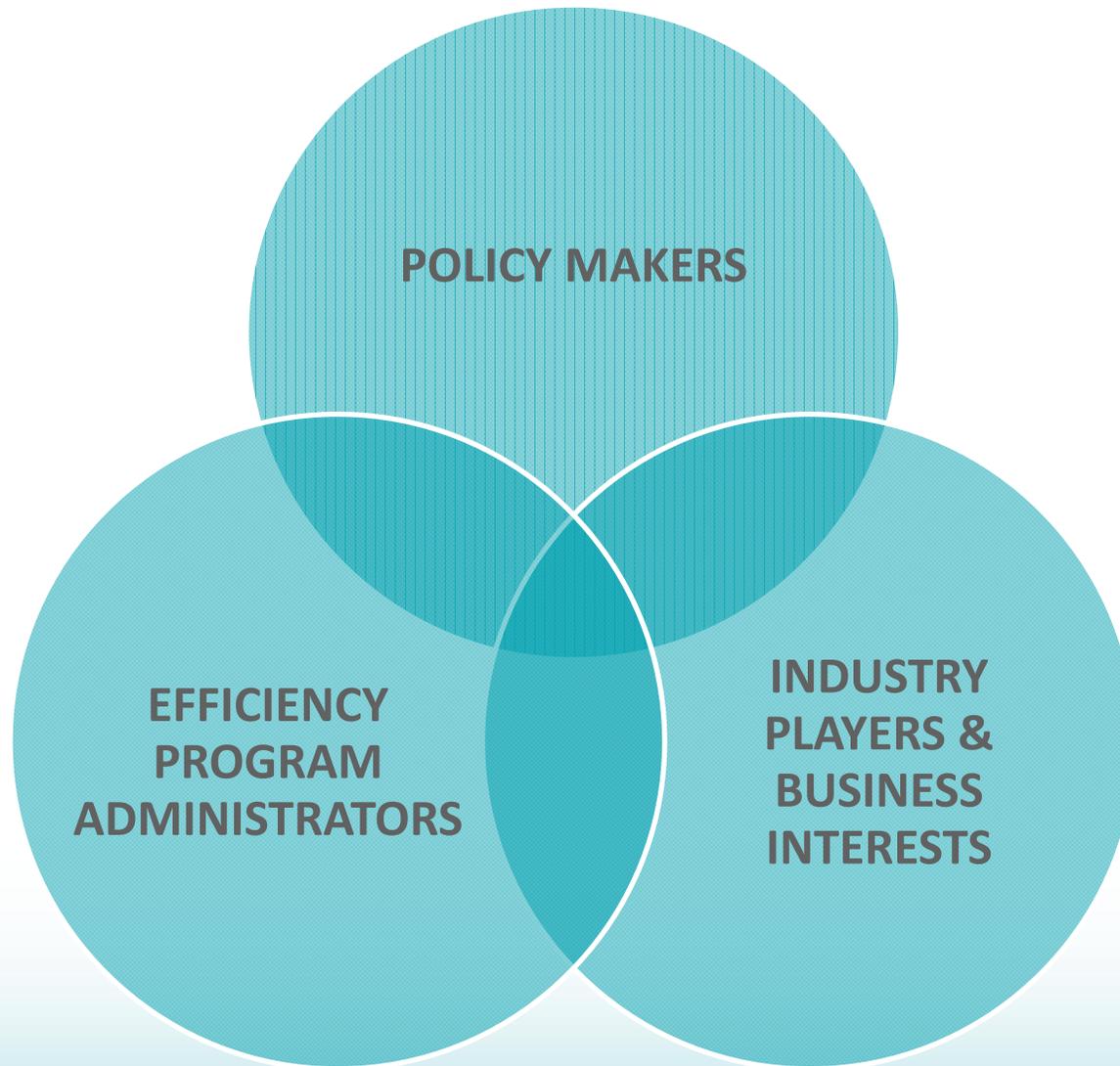


Advance Knowledge - Best Practices

*Regional energy efficiency collaborations since 1996*

# About NEEP

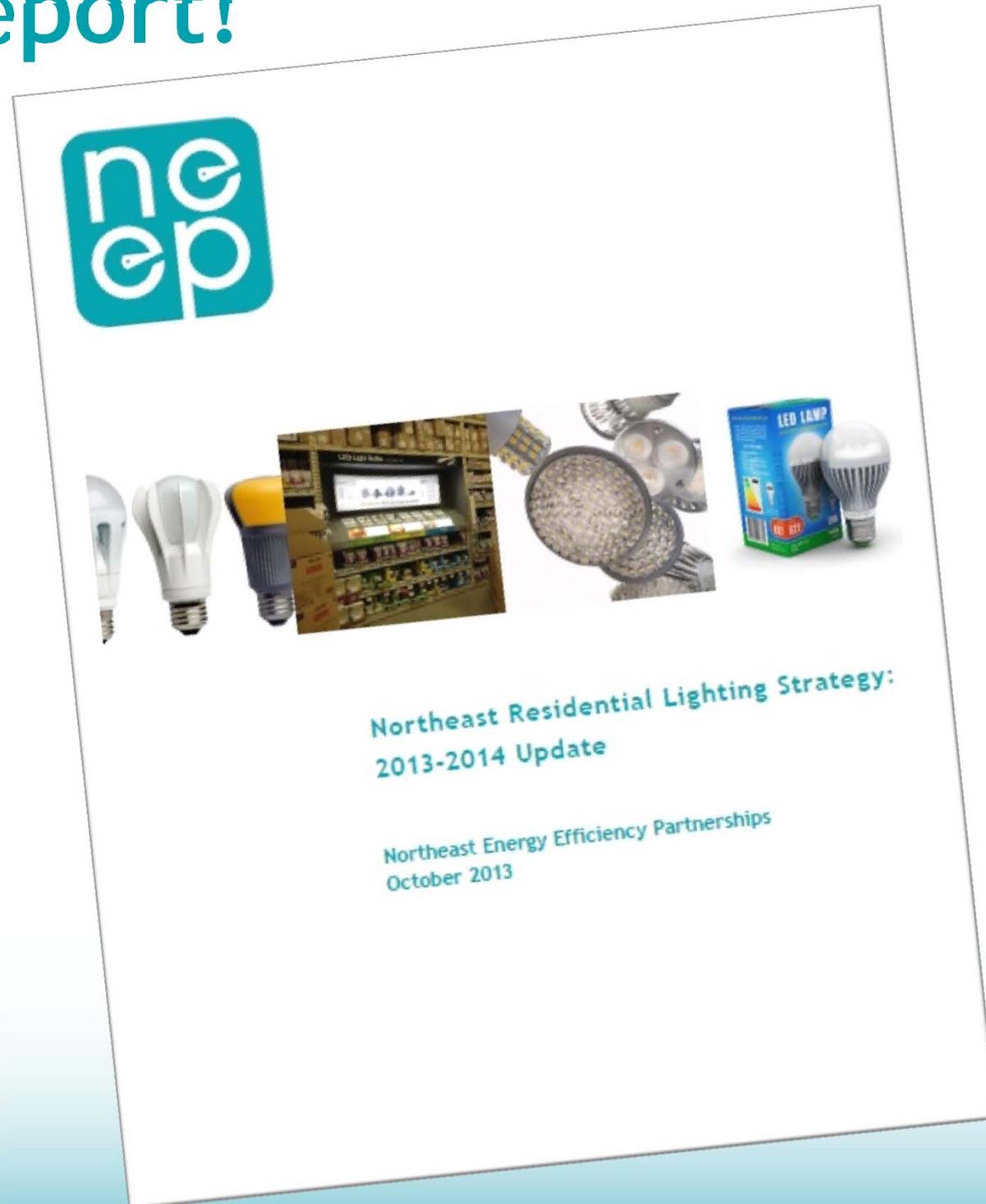
## PRIMARY AUDIENCES: WHO WE SERVE



# New Report!



Available  
from  
[neep.org](http://neep.org)



# Lighting Resource Center



Residential Lighting Strategy x

neep.org/efficient-products/high-efficiency-lighting/residential-lighting-strategy/index

**neep** NORTHEAST ENERGY EFFICIENCY PARTNERSHIPS  
FACILITATING PARTNERSHIPS TO ADVANCE ENERGY EFFICIENCY

PRIVATE PORTAL | Calendar | Blog |

ABOUT NEEP | PUBLIC POLICY | EFFICIENT PRODUCTS | EM&V FORUM | NEEP EVENTS | NEEP SUPPORTERS | MEDIA | RESOURCES | PRIVATE PORTAL

Home > Efficient Products > High Efficiency Lighting > Residential Lighting

## RESIDENTIAL LIGHTING

<p><b>HIGH EFFICIENCY LIGHTING</b></p> <p>Residential Lighting</p> <p>Commercial Lighting Technologies</p> <p>BUSINESS &amp; CONSUMER ELECTRONICS</p> <p>EMERGING TECHNOLOGIES</p> <p>WORKFORCE DEVELOPMENT</p>	<p><b>Products</b></p>  <p>Market data, product information, regional recommendation</p>	<p><b>Public Policy</b></p>  <p>Current developments, best practices, information for regulators and policy makers</p>
	<p><b>Consumer Value</b></p>  <p>Consumer research and analysis, marketing and education best practices</p>	<p><b>Regional Activity</b></p>  <p>Regional impact, program highlights, NE Residential Lighting Workshop</p>
	<p><b>Northeast Residential Lighting Strategy (RLS)</b></p>  <p>A regional roadmap for residential lighting efficiency programs</p>	<p><b>2013-2014 Update to the Residential Lighting Strategy</b></p>  <p>This is NEEP's newest RLS update and is informed by 2013 data. Released October, 2013.</p>

neep.org/efficient-products/high-efficiency-lighting/residential-lighting-strategy/



NORTHEAST ENERGY EFFICIENCY PARTNERSHIPS  
FACILITATING PARTNERSHIPS TO ADVANCE ENERGY EFFICIENCY

PRIVATE PORTAL

Calendar

Blog



ABOUT NEEP

PUBLIC POLICY

EFFICIENT PRODUCTS

EM&V FORUM

NEEP EVENTS

NEEP SUPPORTERS

MEDIA

RESOURCES

PRIVATE PORTAL

Home > Efficient Products > High Efficiency Lighting > Residential Lighting > Northeast Residential Lighting Strategy

## NORTHEAST RLS 2013-2014 UPDATE

### Northeast Residential Lighting Strategy: Significant Savings Still Remain for Residential Lighting Efficiency

HIGH EFFICIENCY  
LIGHTING

Residential Lighting

Commercial Lighting  
Technologies

BUSINESS & CONSUMER  
ELECTRONICS

EMERGING  
TECHNOLOGIES

WORKFORCE  
DEVELOPMENT



Northeast Residential Lighting Strategy:  
2013-2014 Update

Northeast Energy Efficiency Partnerships  
October 2013

High efficiency residential lighting will remain a huge source of savings for efficiency programs. The residential lighting market has a long way to go towards being transformed, and efficiency programs continue to have a very meaningful role to play.

NEEP worked in partnership with regional efficiency programs, regulators, policy makers, industry, other stakeholders, and consumers to research and develop a roadmap for the rapidly changing lighting market. The 2014-2013 Update to the [Northeast Residential Lighting Strategy \(RLS\)](#) details how the region can achieve critical energy savings over the next 7 years.

#### 2013-2014 RLS Update:

NEEP released an updated version of the RLS in October 2013. This report is intended to provide direction and support for energy efficiency program administrators (PAs), provide insight to regulators and evaluators, and be a planning tool for policymakers. Additionally, this document is intended to push this region to reach the full potential of residential lighting efficiency and is informed by regional stakeholders, NEEP Staff, and analysis from Optimal Energy and Energy Futures Group. Major updates include:

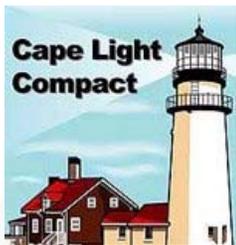
- Recent changes in regional program lighting program efforts, including the need for a huge shift towards LEDs
- Findings from recent program evaluation and market research activities; new socket saturations surveys, hours of use evaluations, and more
- New lamp specifications, building energy codes, federal lamp standards, and regulatory activities that will affect lighting program efforts
- Product developments and trends in the fast-changing residential lighting market
- Current consumer outreach and education
- New and revised regional recommendations

Just Released! Download the [2013-2014 Update to the Residential Lighting Strategy](#)

Download the full RLS report

Download the RLS report

# Efficiency Programs Analyzed



The United Illuminating Company



# Where We Are: 2013 Plans

Regionally, PAs continue support for CFLs and ramp up support of LEDs

- All states now support LEDs (about 4%)
- Retail support varies from 0.6 (NH) to 2.6 (VT) efficient lamps/household
- Efficiency Vermont and Massachusetts are pursuing CFL Market Lift pilots, NYSERDA has CFL Sales Performance Program
- Many PAs offer LEDs as a direct install option in their low income, existing home, multifamily, and Residential New Construction programs, etc.



# Where We Are: 2013 Plans



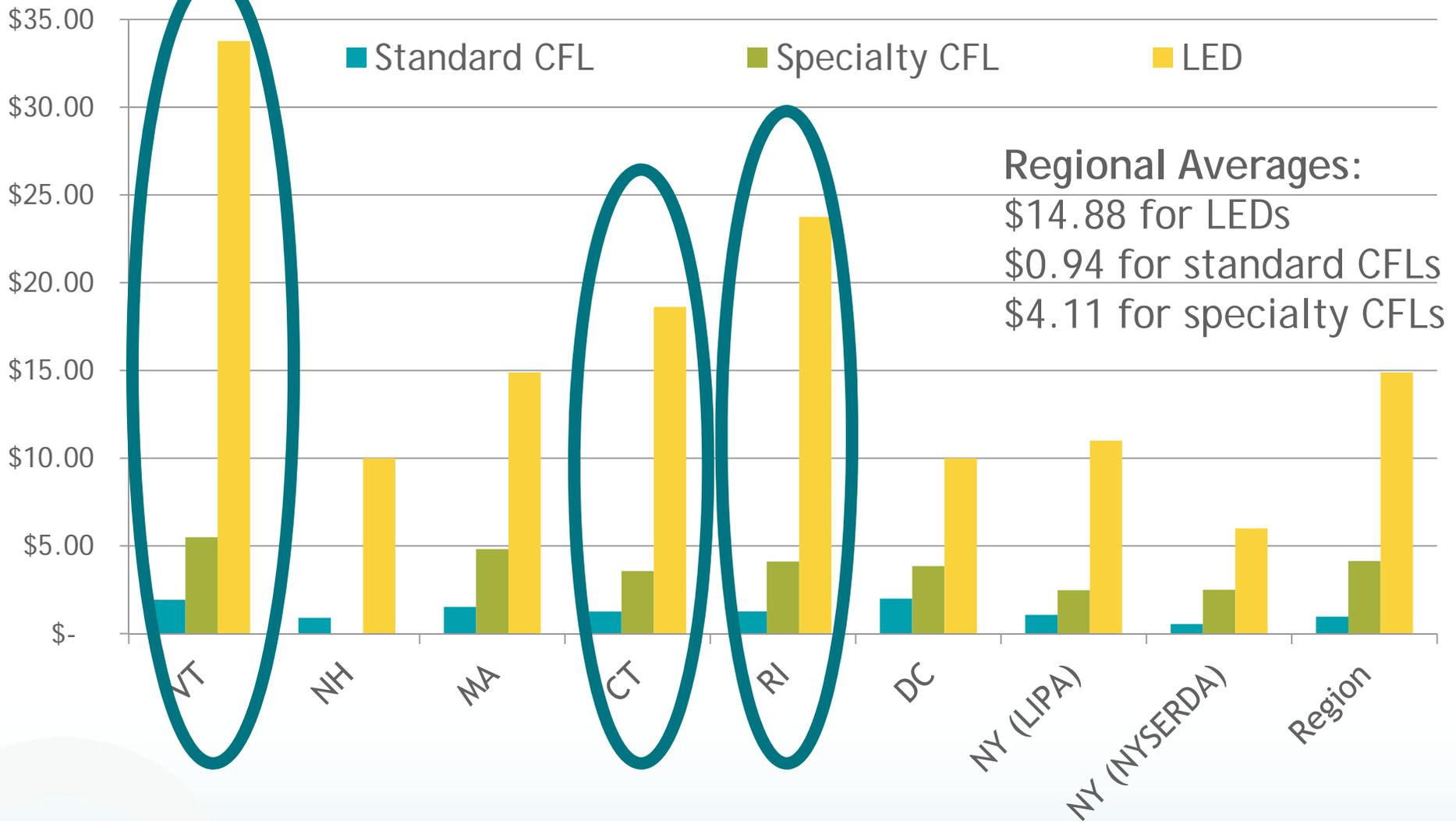
## Planned 2013 PA Retail Lighting Goals

State	CFL Units	LED Units	Total Units	Units/HH
CT	1,934,787	74,683	2,009,470	1.5
DC	280,000	3,000	283,000	1.1
MA	5,297,669	257,508	5,555,177	2.2
NH	321,521	12,896	334,417	0.6
NY-LIPA	1,555,000	300,000	1,855,000	2.0
NY-NYSERDA	7,595,032	100,000	7,695,032	1.2
RI	885,300	16,000	901,300	2.2
VT	576,990	91,800	668,790	2.6
Region	18,446,299	855,887	19,302,186	1.5

# Where We Are: 2013 Plans



## Average Incentive Per Product (Planned 2013)



Note: the actual PA average incentive amounts paid typically tend to be lower than PAs' planning assumptions.

# What We're Looking At: Codes and Standards



• IECC 2009 and 2012 **IECC= International Energy Conservation Code**

- High efficacy lamps: IECC 2009 requires minimum of 50%, IECC 2012 requires 75% of lamps or fixtures

- All 201
- Will bas

• EISA U

- 60 100 inv
- Sm
- Hal



ct, IECC

ting

**ity Act**

out,

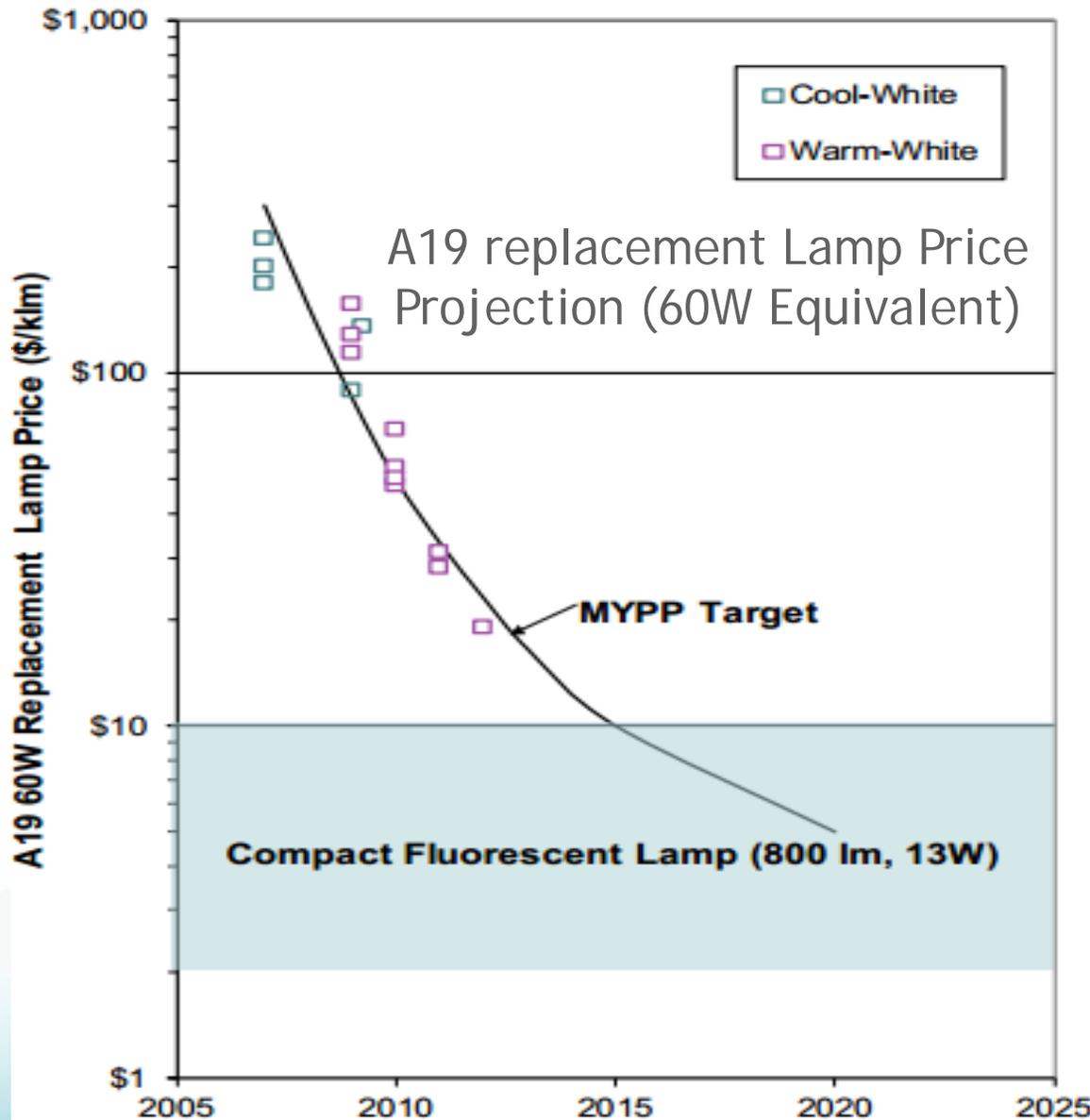
ed

rise to

the occasion

# What We're Looking At: LED Price Trends

Remember: Average 2013 planned incentive for LEDs is \$14.88



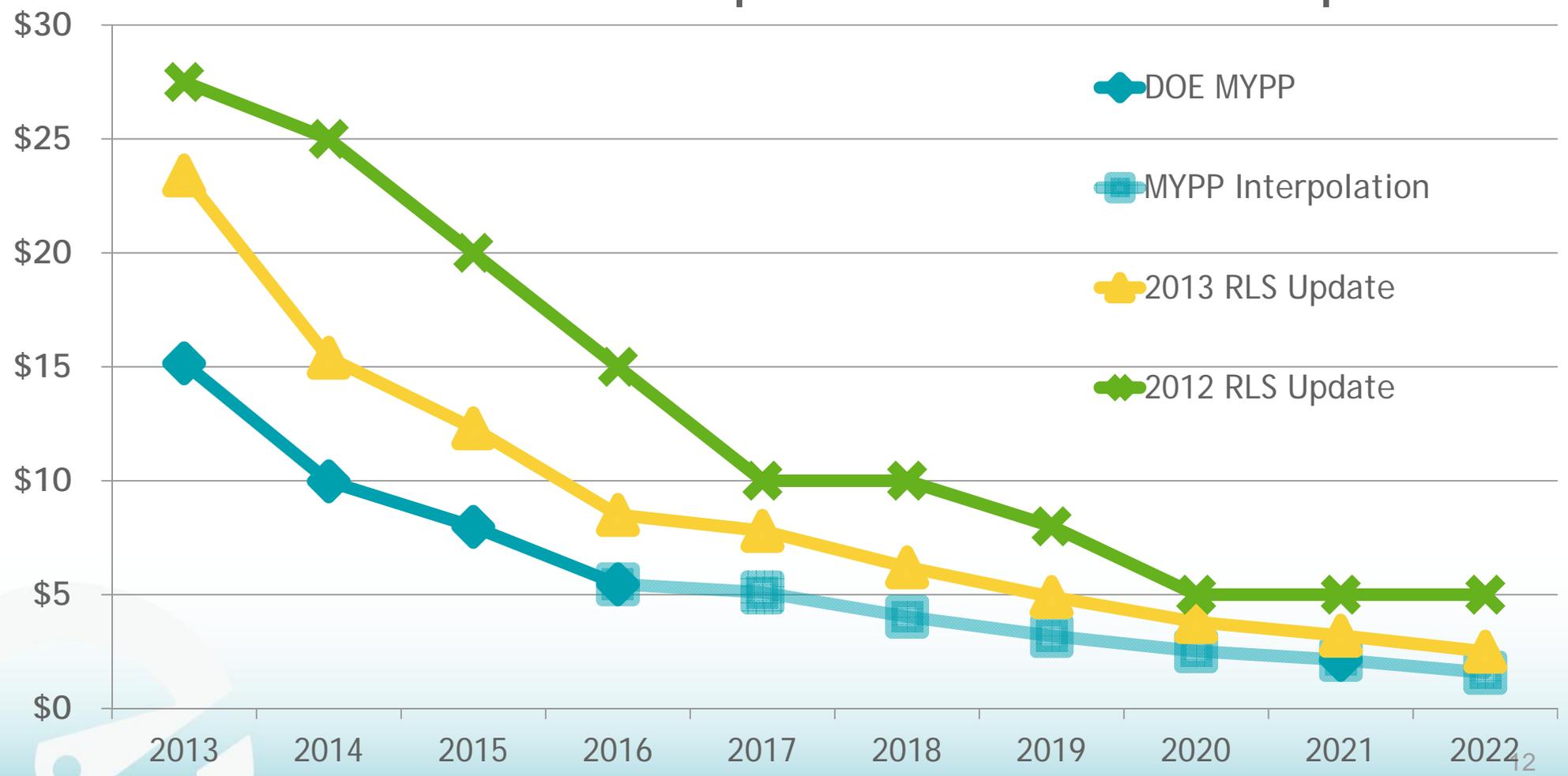
60W equivalents are:

- under \$15 at Home Depot
- under \$18 at Best Buy
- under \$13 at Home Depot



# What We're Looking At: LED Price Trends

Prices trending lower than previous forecasts:  
Cost of 60W Equivalent LED A Lamp



# What We Expect: Net-To-Gross Ratios & In-Service Rates



Higher NTG Factors for LEDs in early years  
 Lower NTG Factors for LEDs in future years  
 Higher ISR Factors for CFLs

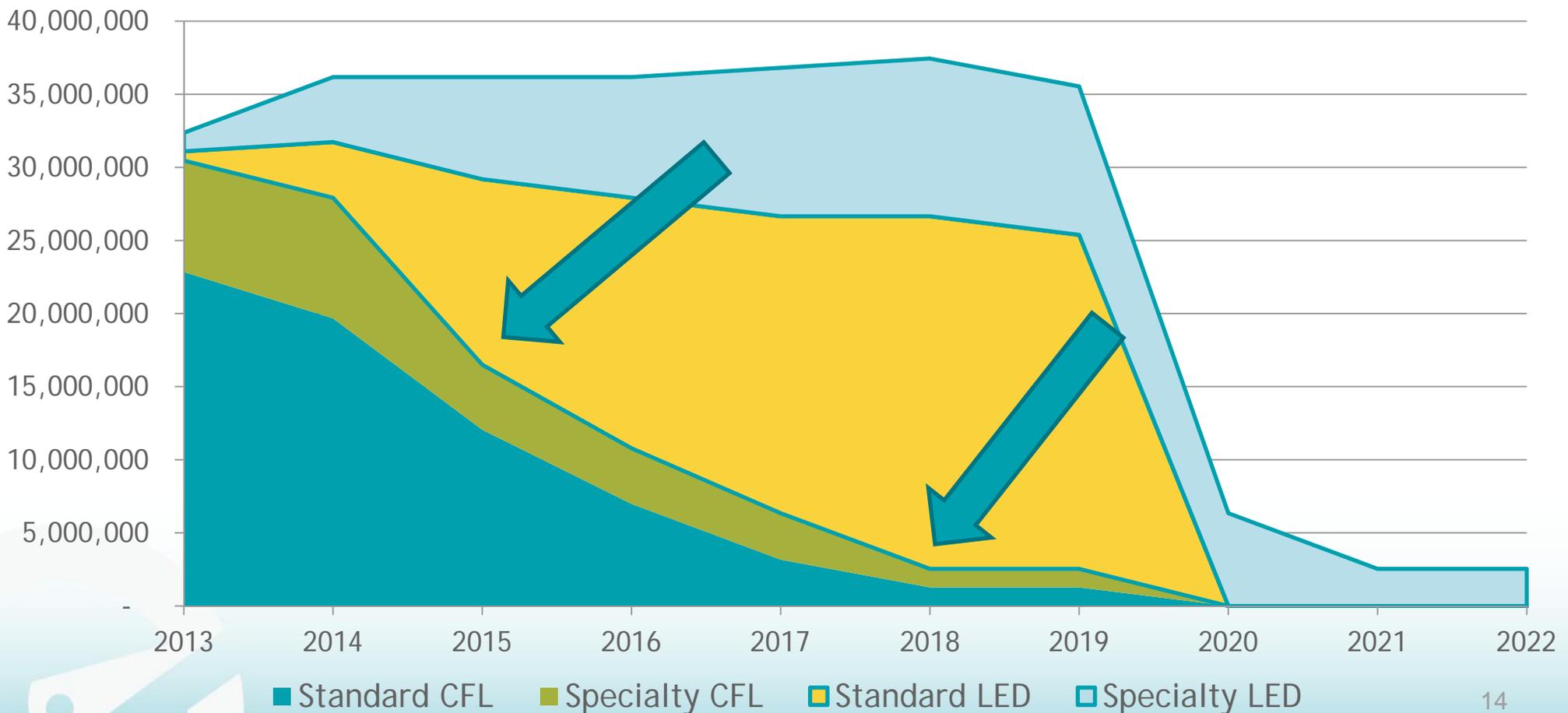
LED NTG	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
OLD (2012)	1.10	1.00	1.00	0.80	0.70	0.60	0.50	0.40	0.40	0.40
NEW (2013)	1.10	1.40	1.20	1.00	0.80	0.60	0.40	0.40	0.40	0.40
% Difference	0%	0%	-20%	-13%	-14%	-17%	-20%	0%	0%	0%

CFL ISR	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
OLD (2012)	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
NEW (2013)	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
% Difference	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%

# Where We're Going: Bulbs

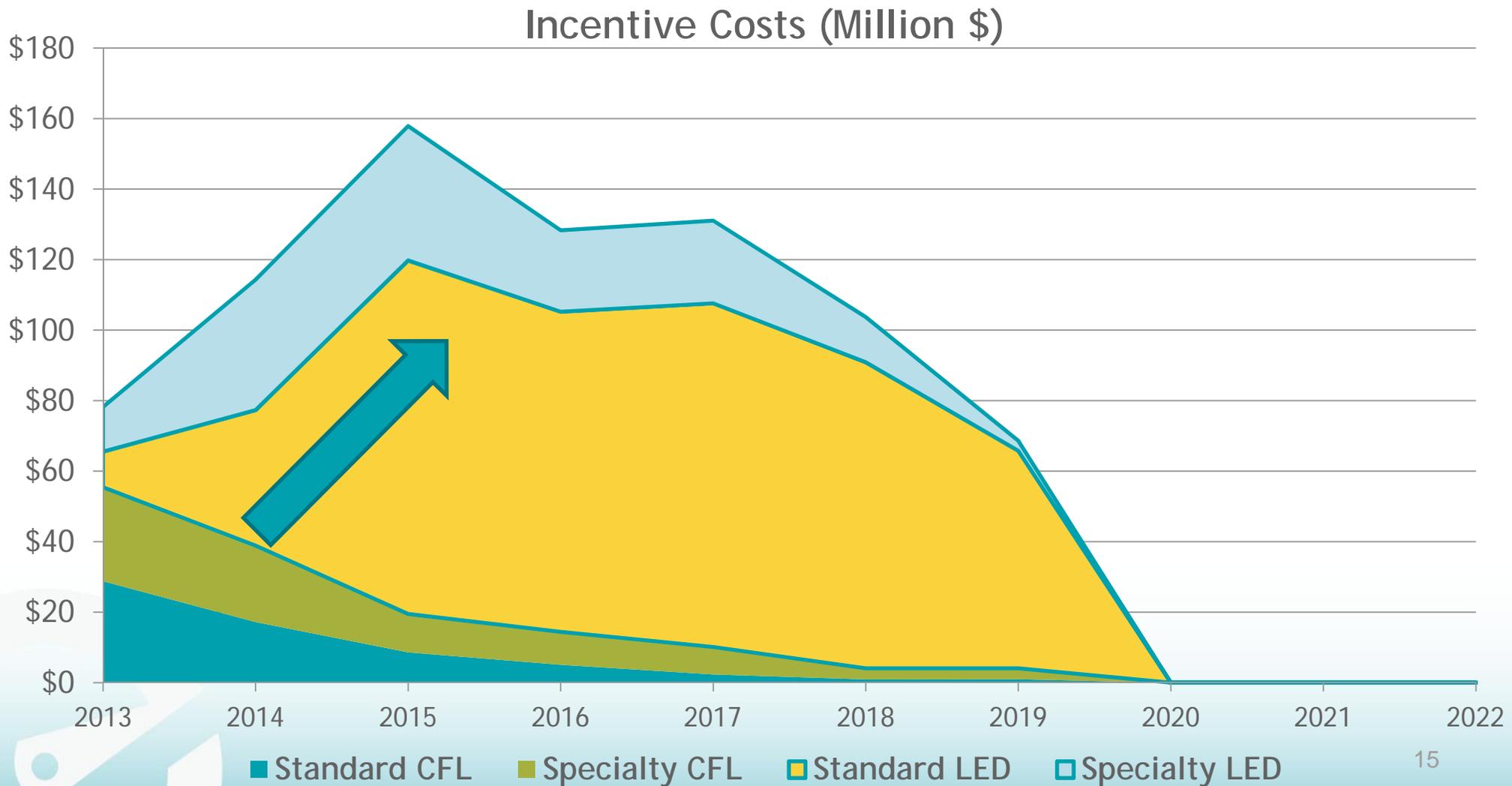
- Number of LEDs moving through programs increasing rapidly
- CFL bulbs fall to near zero after 2018.

Number of Bulbs per Year



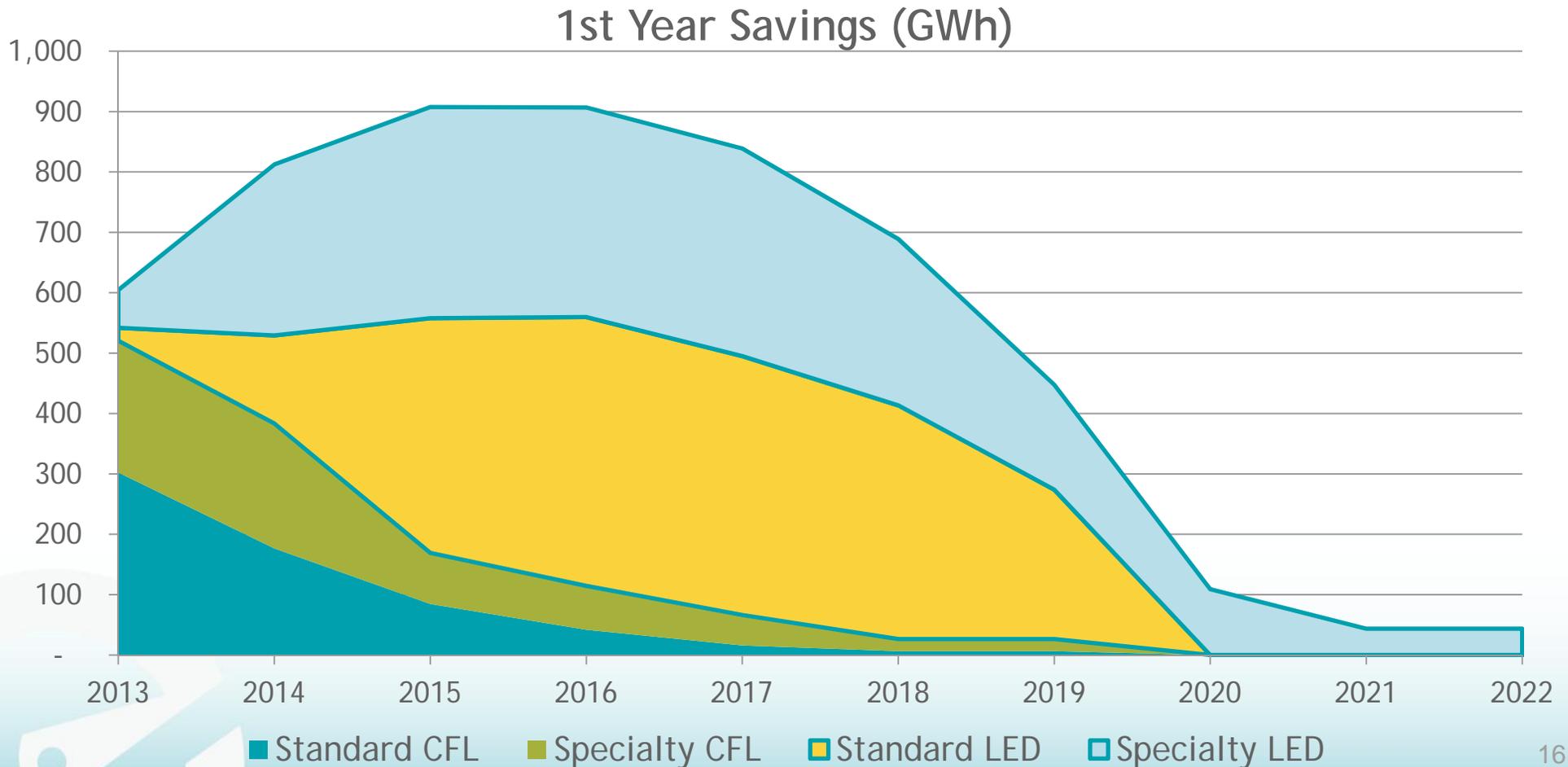
# Where We're Going: Spending

- Spending for LEDs increases quickly, drops off after 2015
- CFLs incentive spending near zero after 2018.



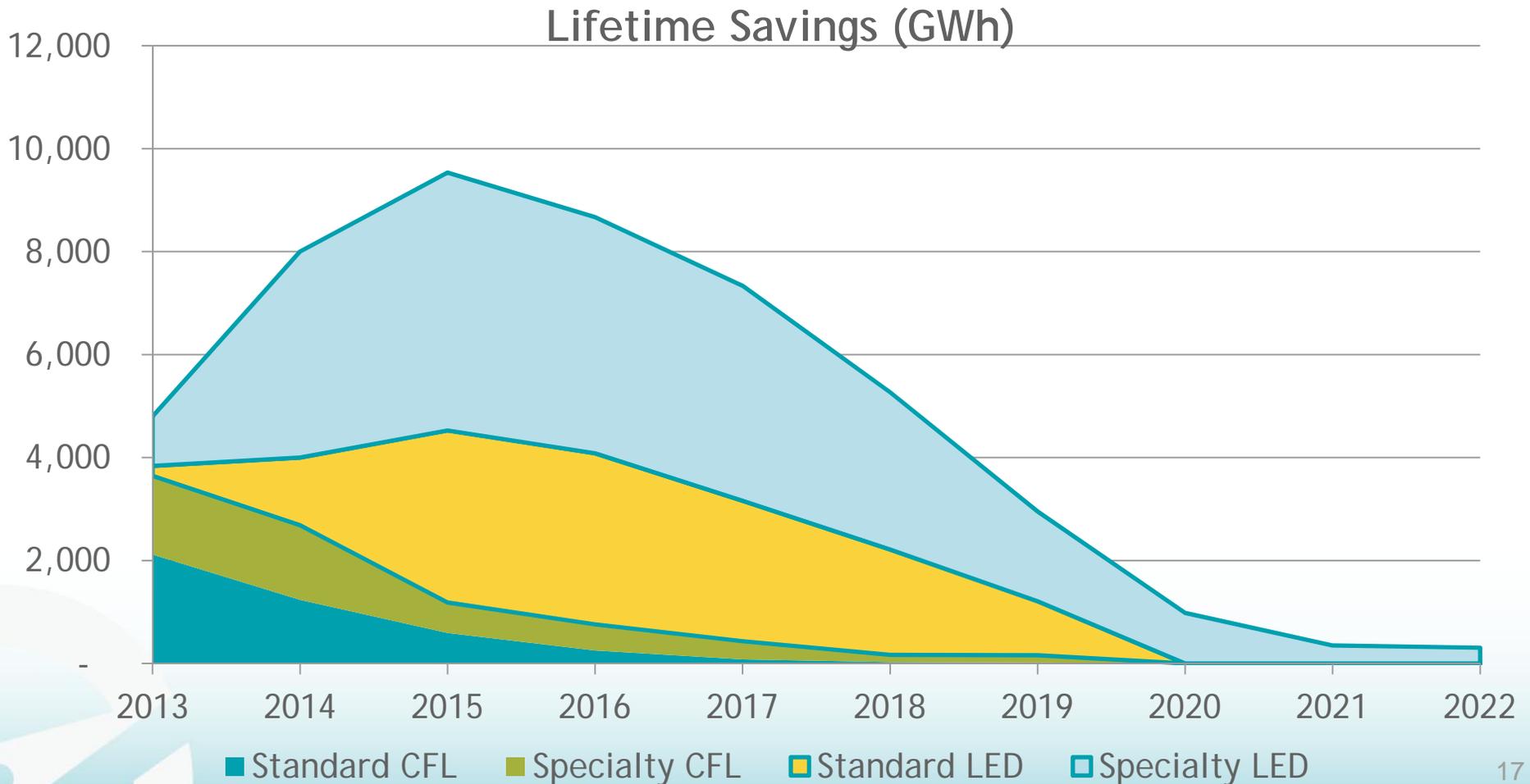
# Where We're Going: 1<sup>st</sup> Year Savings

- LED first year savings increase dramatically
- CFLs savings near zero after 2018.



# Where We're Going: Lifetime Savings

- LED lifetime savings increase dramatically
- CFLs savings near zero after 2018

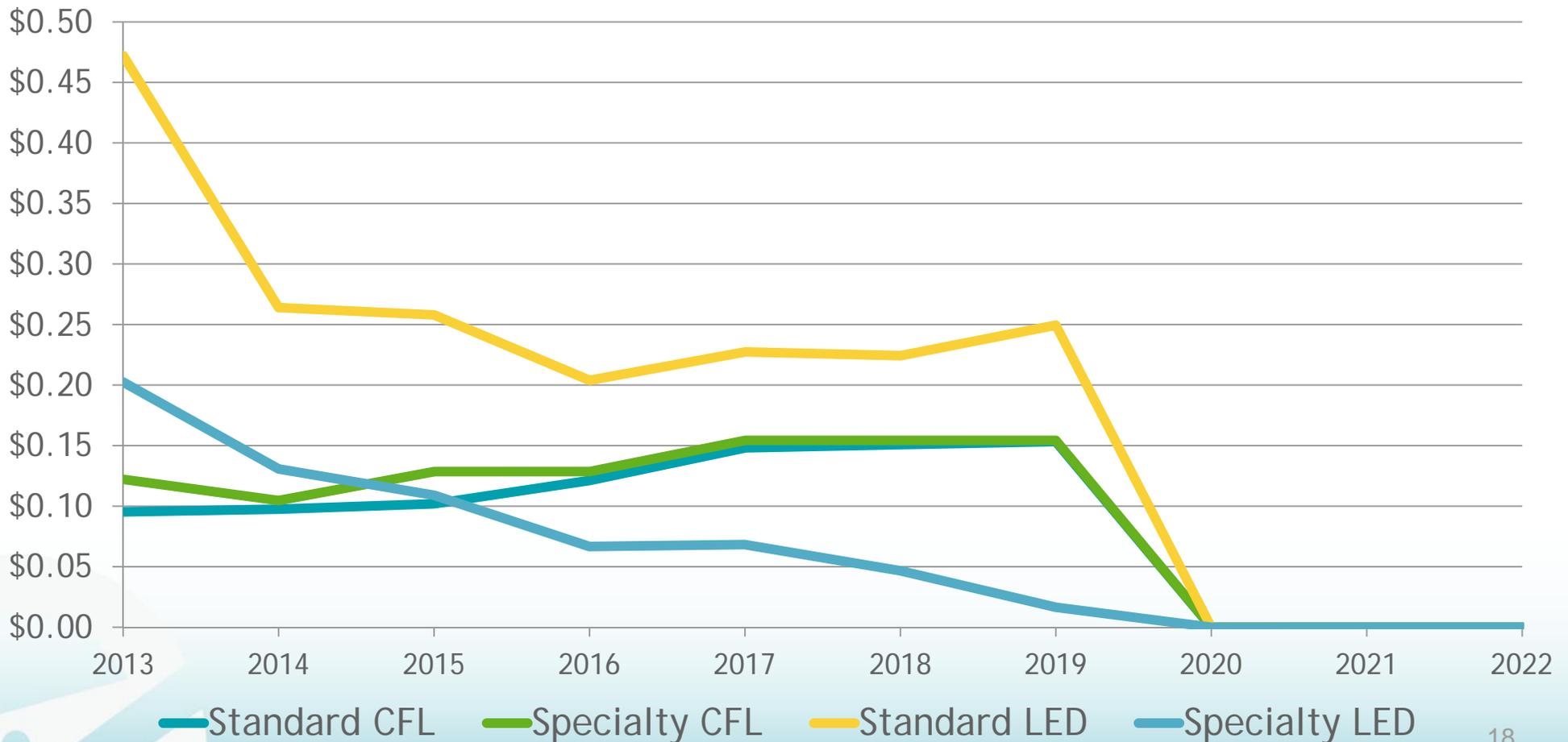


# Updated Projections: Spending/ Savings



- While in the short term costs are high, over time, the cost per kWh saved decreases

Incentive \$/1st Year kWh



# Where We're Going: RLS Recommendations

- Accelerate support of LED technology in near-term. Develop long-term strategy to shift away from CFLs.
- Promote higher quality and lower cost LED lamps to reduce costs.
- Improve messaging and education on key issues, including dimmer compatibility, using the right lamp for the application, and purchasing based on lumens rather than watts.



		BULB TYPES				
TABLE OR FLOOR LAMPS		 SPIRAL	 A SHAPE			
PENDANT FIXTURES		 SPIRAL	 A SHAPE	 GLOBE	 MR16	 CANDLE <sup>19</sup>

# What We Value

- Quality, Quality, **QUALITY!**
- And **EFFICACY**

The new lamp spec ensures high consumer satisfaction and uptake. Especially regarding:

- Color (Rendering and Temperature)
- Dimming Compatibility
- Light distribution and output
- Lumen Maintenance
- Safety
- Flicker

# Regional Concerns

- In the Northeast, we have incredibly aggressive savings goals: *efficacy and kWh savings are very important*
- We want to increase the socket saturation in our region—CFLs have stagnated around 30%—*how can we ensure LEDs replace inefficient bulbs?*
- *What approaches make sense for dimming, especially considering incompatibility between old dimmers and new “dimmable” LEDs?*
- *How can we minimize freeridership while also running successful, cost-effective programs?*

# Thank you! Leadership Advisory Committee & Report Input Providers

- Apex Analytics
- APT
- ASAP
- Cooper Industries
- Cree
- DC Sustainable Energy Utility
- Eco-Hatchery
- Efficiency Vermont
- Energy Futures Group
- GE
- The Home Depot
- ICF International
- LIPA
- Lutron Electronics
- Optimal Energy
- OSRAM Sylvania
- National Grid
- NMR Group
- Northeast Utilities
- NYSERDA
- Philips
- United Illuminating
- US EPA/ENERGY STAR
- VEIC

# Thank you!

For more information or to get involved:

**Claire Miziolek**

[cmiziolek@neep.org](mailto:cmiziolek@neep.org)

Northeast Energy Efficiency Partnerships

91 Hartwell Ave Lexington, MA 02421

P: 781.860.9177 [www.neep.org](http://www.neep.org)