

# **CHALLENGES AND OPPORTUNITIES FOR RESIDENTIAL LIGHTING PROGRAMS**

***THERE'S STILL A LOT TO DO***

**ENERGY STAR PARTNERS MEETING  
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Glenn Reed, Energy Futures Group

# Acknowledgements

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- Northeast Energy Efficiency Partnerships (NEEP) Residential Lighting Strategy (RLS) Project Team
  - Linda Malik, NEEP
  - Glenn Reed, Energy Futures Group
  - Gabe Arnold, Optimal Energy
  - Stephen Bickel, D&R International
  - Chris Calwell, Ecos Consulting

# Residential Lighting Strategy (RLS): Objectives and Outcomes

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- ❑ Engage national and regional thought leaders
- ❑ Assess market and PA program status
- ❑ Estimate remaining cost-effective savings opportunity
- ❑ Identify market, institutional and public policy barriers
- ❑ Define elements of a regional Residential Lighting Strategy
- ❑ Build multi-state support to implement the recommended regional RLS

# Elements of an Residential Lighting Strategy



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- ❑ **Situation Analysis**
- ❑ **Long-Term Goals – Vision**
- ❑ **Market Transformation Strategies**
  - Near and Long-Term
  - Consumer Messaging/Education
  - Market Initiatives & Promotions
  - Product Quality Assurance
  - Public Policy Support
- ❑ **Recommendations for Stakeholders**

# Recommendations

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## ■ Major Energy Savings Remain

- Move from 25-30% socket saturation to 100%
- Can contribute 300-600 MWh/year to regional residential energy savings goals (2012-2019)
- But program costs will increase significantly

## ■ Continue to aggressively support CFLs

- ENERGY STAR® spirals focus for next three-five years
- Specialty for longer (?)
- Address consumer CFL mercury concerns
- Easy product disposal

# Recommendations (cont.)

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- ❑ **Consider promoting 2x halogens in the near-term**
  - Focus on higher lumen applications where no LEDs
  - Savings similar to “average” CFL
- ❑ **Ramp-up LEDs quickly**
  - Availability, quality and cost will determine pace
  - Many ENERGY STAR<sup>®</sup> directional lamps that can compete with reflector CFLs
  - Currently, limited A-lamp (omni-directional) availability
    - But expected to increase quickly
  - Focus on quality products → ENERGY STAR<sup>®</sup>
  - Will be more costly on a \$/kWh basis

# Recommendations (cont.)

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- **Consumer Education – consistent coordinated messages nationally & regionally**
  - Simple messages to communicate and promote efficient lighting **choices**
    - Near-Term – regional coordination using LUMENs platform
    - Long-Term – national leadership w/ industry partnerships to develop simple, consistent messages to select best options
- **Focus on product quality/customer satisfaction**
  - Continue national product performance testing & ENERGY STAR® delisting
  - Expand to include new products – LEDs, etc.

# Recommendations (cont.)

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- ❑ **Multiple program strategies & channels to influence consumer lighting choices**
  - Retail Product Promotions
  - Residential Retrofit, Weatherization & Low Income
  - New Construction & Remodel
  - Integration with building energy codes
- ❑ **Closely monitor, measure and respond to the rapidly evolving residential lighting market**
  - Track product market share, pricing, socket saturation, product quality, customer satisfaction
  - Flexible programs and promotions – rapid response to changing conditions & opportunities



# Recommendations (cont.)

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- ❑ **Engage regulators upfront to address uncertainties**
  - Provide long-term view of opportunity for lighting savings (it's still large!)
  - Enable program flexibility to address changing conditions, new products
  - Negotiate key program planning assumptions upfront
  - Apply new program models: Market share/Market Lift

# Remaining Residential Lighting Savings for the Northeast



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- Seven state region: New England and New York
- Moderately aggressive implementation
  - 1.6-2.0 units/household per year from 2012-2019
- Post-2020 lifetime savings significantly reduced by 2020 EISA standard

# Remaining Residential Lighting Savings for the Northeast



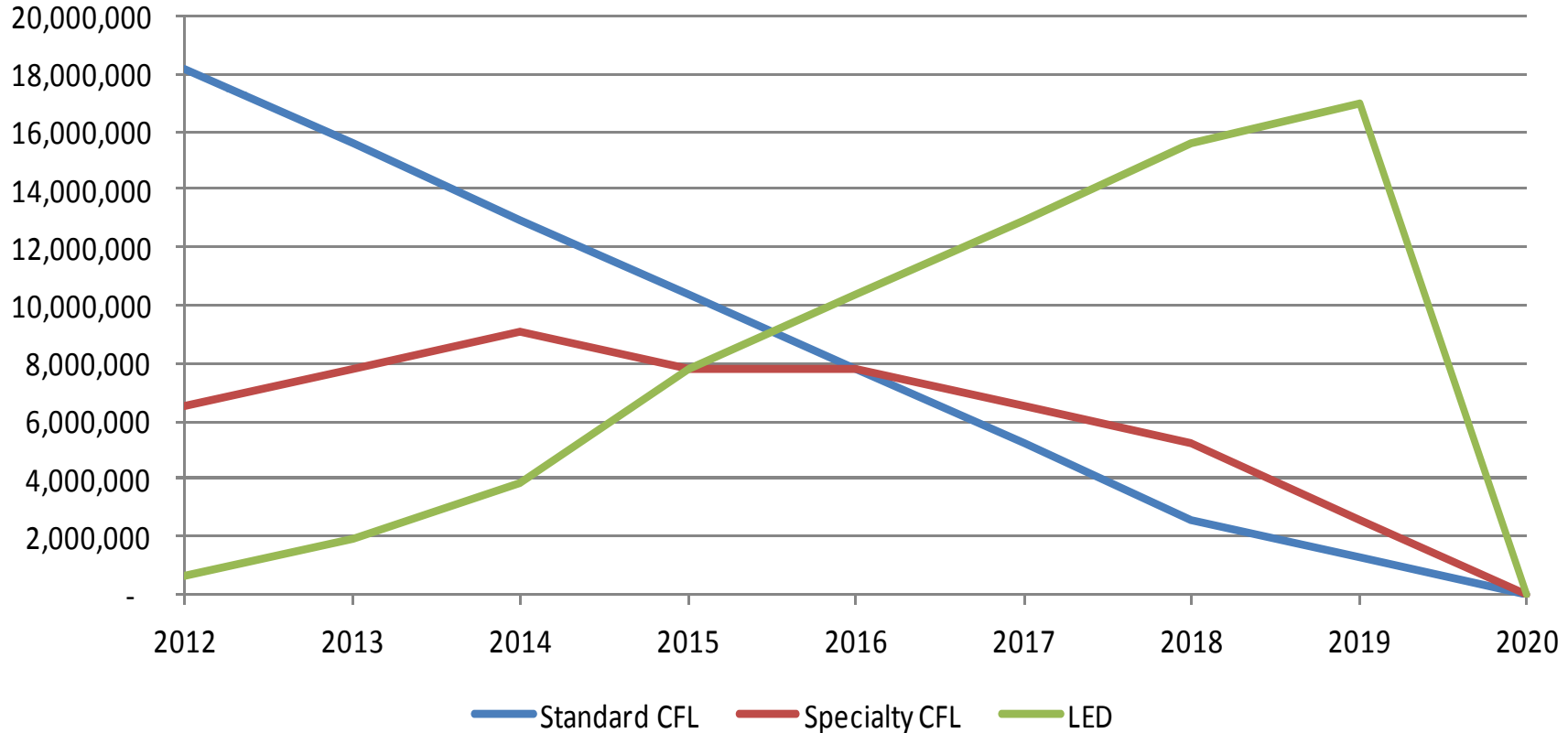
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- ❑ Incentives based on ~70% of incremental cost
- ❑ LED product price declines steadily
  - \$30 (2012) → \$5 (2020)
  - Assumes ENERGY STAR®
- ❑ CFL product prices remain constant
  - Increasing price for phosphors; limited new industry investment

# Decreasing reliance on standard CFLs

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## Number of Bulbs per Year

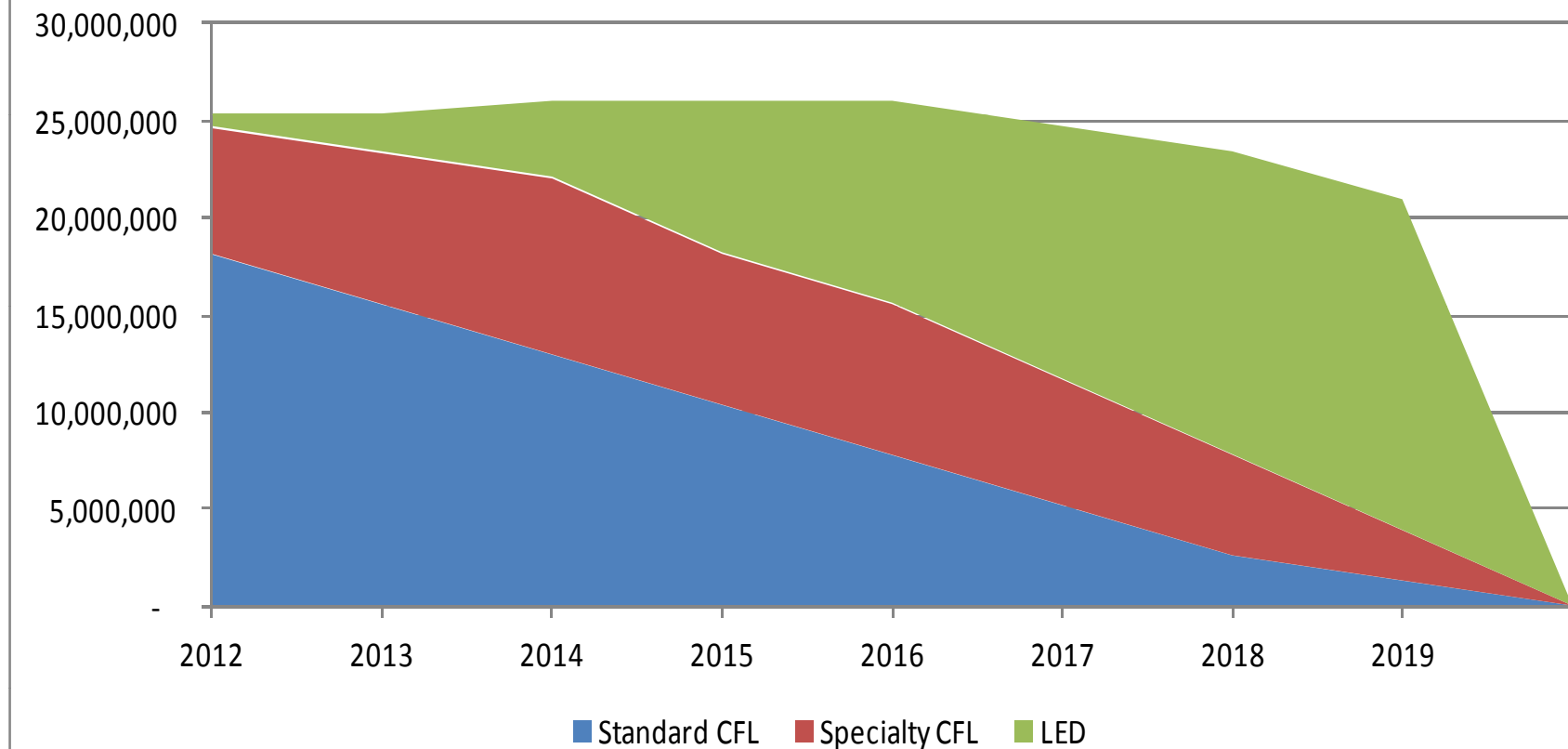


# And increasing reliance on LEDs



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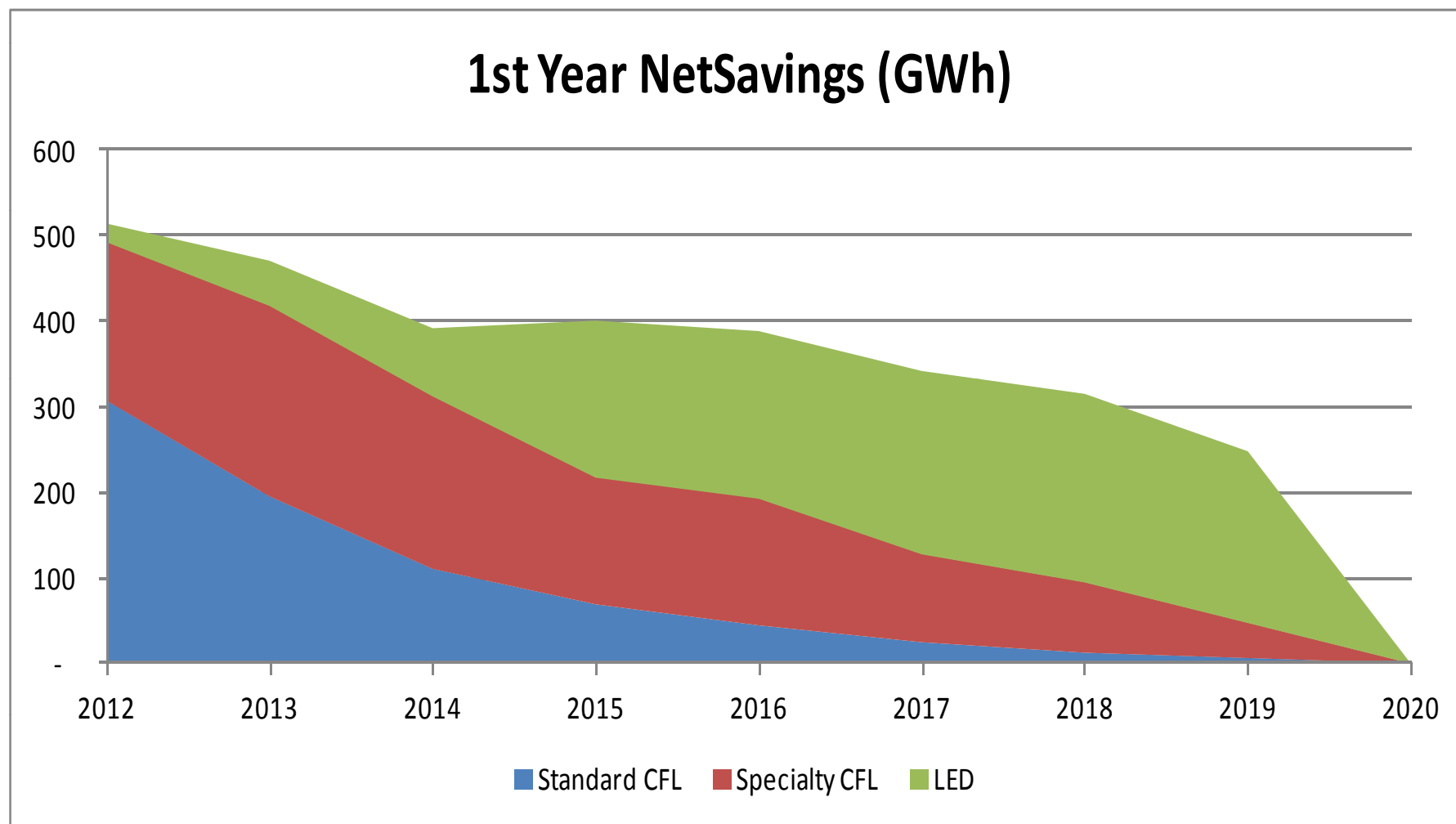
## Number of Bulbs per Year



# There still will be significant lighting savings



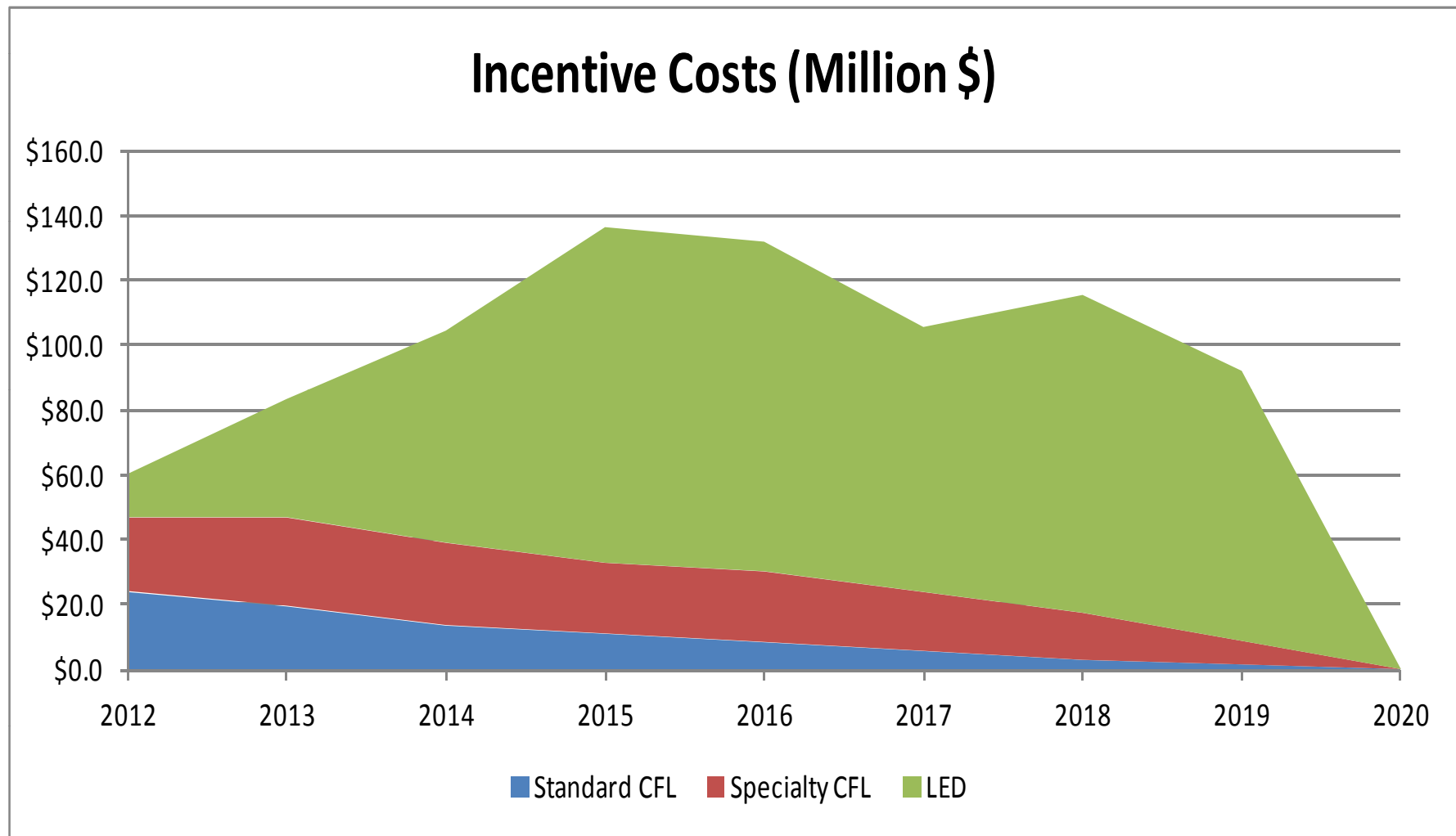
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# LED Incentives will require larger budget commitments



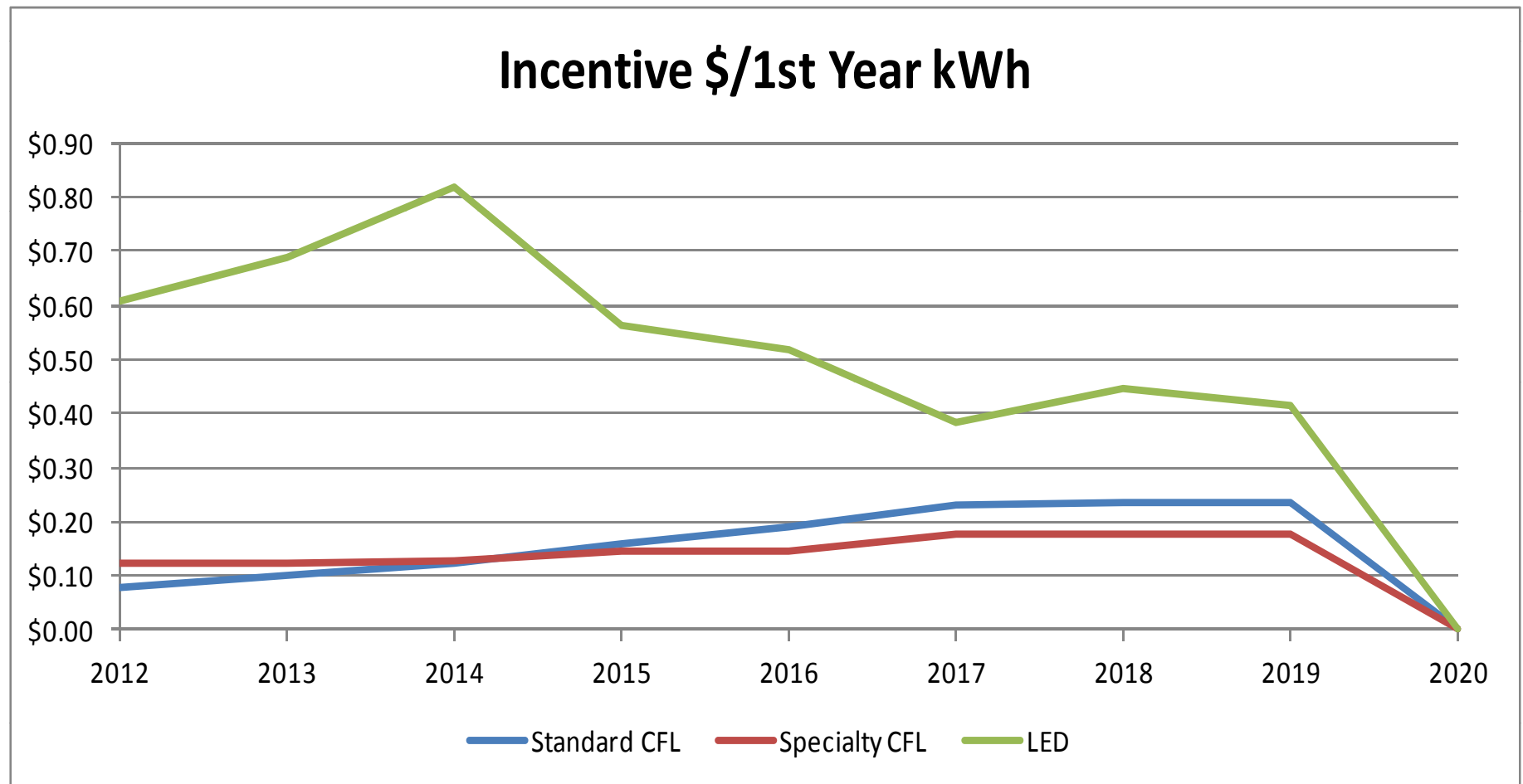
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# Regional savings opportunity: Estimated cost of net energy savings



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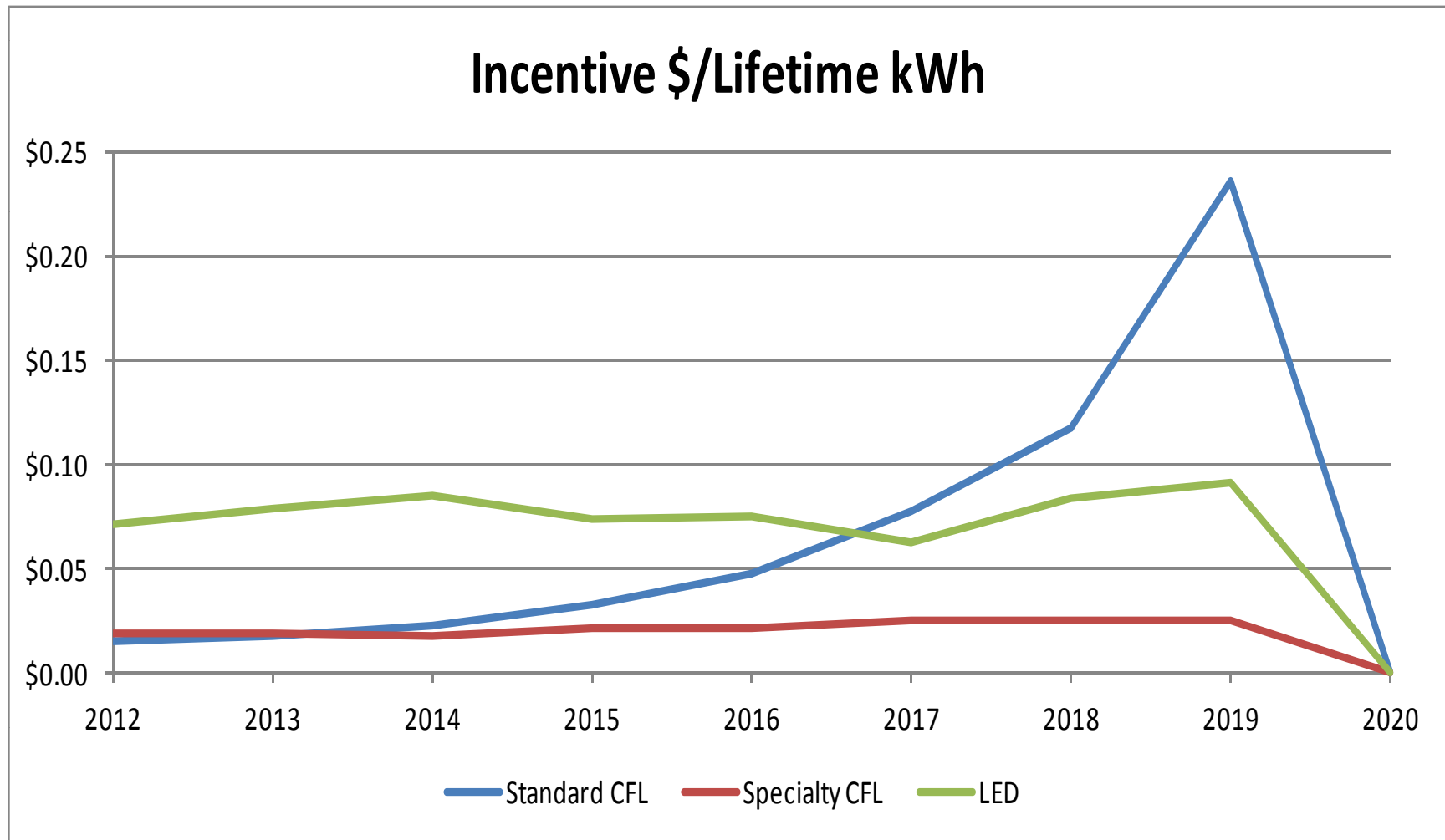




# Regional savings opportunity: Estimated cost of net energy savings



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# Reasons for increased costs of lighting savings



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- Higher LED and specialty CFL incentives
- Decreasing reliance on “cheap” standard CFLs
- Decreasing net savings/lamp in future years
  - ▣ Declining NTG ratios
  - ▣ Lower gross savings: increased baseline efficiencies
- 2020 EISA significantly reduces lifetime savings

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## Q&A

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