After Lighting: Utility Program Claimable Savings

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ACEEE EE as a Resource Conference, November 1, 2017
Introduction

- Not going to comment on status or forecast of lighting market, or transition to the future
- Provide a little data on how important lighting has been to EE programs
- Highlight a few issues, challenges, and opportunities

- Thanks to co-authors and colleagues in other states for contributions
Lighting has been a major contributor to program lifetime savings in many states. The chart below illustrates the percentage of residential electric lifetime savings from residential lighting across different years and states. 

- **2013**: Massachusetts 62%, Arizona (APS) 54%, Minnesota (Xcel) 60%
- **2014**: Massachusetts 60%, Arizona (APS) 58%, Minnesota (Xcel) 66%
- **2015**: Massachusetts 56%, Arizona (APS) 55%, Minnesota (Xcel) 79%
- **2016**: Massachusetts 60%, Arizona (APS) 60%, Minnesota (Xcel) 81%

The importance of lighting to C&I programs

Source: Optimal Energy analysis for Massachusetts Energy Efficiency Advisory Council, C&I Workshops
Society will still receive savings from lighting; savings just won’t be “claimable” by programs.

- Evolution of the market means that businesses and residents will continue to reap the savings and benefits of efficient lighting – which is a success story.

- However, federal standards and market developments (which impact net-to-gross ratios) mean utilities will not be able to claim program savings from lighting.
There will still be lighting opportunities in programs – program-claimable savings

- Residential:
  - Hard-to-reach customers and market segments
  - High lumen and specialty products
  - Lighting opportunities in the near-term (to ~2020)
  - Early replacement of lighting

- C&I
  - Better lighting products and systems still needed
  - Solid state lighting opportunities, especially with the integration of controls and DR capabilities

- How to guard against a premature exit from the markets/technologies while avoiding unnecessary support for already transformed markets/technologies
California potential study – Residential

Figure 4-21. Statewide Residential Incremental Electric Market Potential by End Use for Equipment Rebate Programs in Scenario 1 (TRC Reference)

California potential study – Commercial

Figure 4-31. Statewide Commercial Incremental Electric Market Potential by End Use for Equipment Rebate Programs in Scenario 1 (TRC Reference)

One challenge for residential programs: on-site program delivery approaches

- Program delivery approaches will also be impacted.
- Will programs pencil out for cost-effectiveness?
- Will programs remain a viable business opportunity for contractors?

Image Source: Massachusetts Energy Efficiency Advisory Council
BEYOND SAVINGS: PROGRAM DESIGN IMPACTS OF NO LIGHTING

Impact to retail supply chain?
- $34 million in incentive costs in 2016

Impact to customer?
- What is the significance of no cost lighting as a driver of HES customer participation?

Impact to contractor?
- 1.4 million bulbs installed in electric audits in 2016; 40 bulbs avg. per audit
- Lighting is 73% of electric audit direct install (DI) incentive (includes labor but not audit fees) costs ($385 electric DI/ $527 all DI)

Impact to multi-family retrofit?

Source: “No lighting” assumption made solely as one scenario for analysis, for the purposes of assessing potential impacts on one end of spectrum; for discussion by Massachusetts Energy Efficiency Advisory Council
New approaches: new measures and strategies

- Co-delivery
  - Electric & natural gas integrated programs
  - Water efficiency
  - Health services
  - Resiliency
  - Rate education
- Fuel switching/electrification
- Active demand management, new measures
- Storage
- Electric vehicles
- Solar PV co-delivery
- Utility support of codes & standards adoption, implementation
- New funding sources (i.e. health insurance/services)
- New approaches for evaluating cost effectiveness
EE Programs vs. Co-Delivered and Co-Funded

EE Programs

EE Policy Framework

Programs

Energy Savings and Demand Benefits

Co-Delivery and Co-Funded

EE Policy Framework

Water Savings Policy Framework

Coordinated Delivery of EE and Water Savings Programs

EE Funded

Water Funded

Contractor

Energy Savings and Demand Benefits

Water Savings Benefits

Jeff Schlegel and Optimal Energy, on behalf of Massachusetts Energy Efficiency Advisory Council

12
Value Propositions

Bringing Commercial Real Estate into the Internet of Things.

Source: Carol Jones, Enlighted; presentation at Design Lights Consortium Stakeholder Meeting, July 2017
What motivates customers & action? Where is the value?

Source: Alex Do, Acuity Brands; presentation at Design Lights Consortium Stakeholder Meeting, July 2017
(Several people have used the 3/30/300 analysis)
NWPCC 7\textsuperscript{th} Power Plan (2016)

Figure 12 - 10: Commercial Potential by End-use and Levelized Cost by 2035

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