

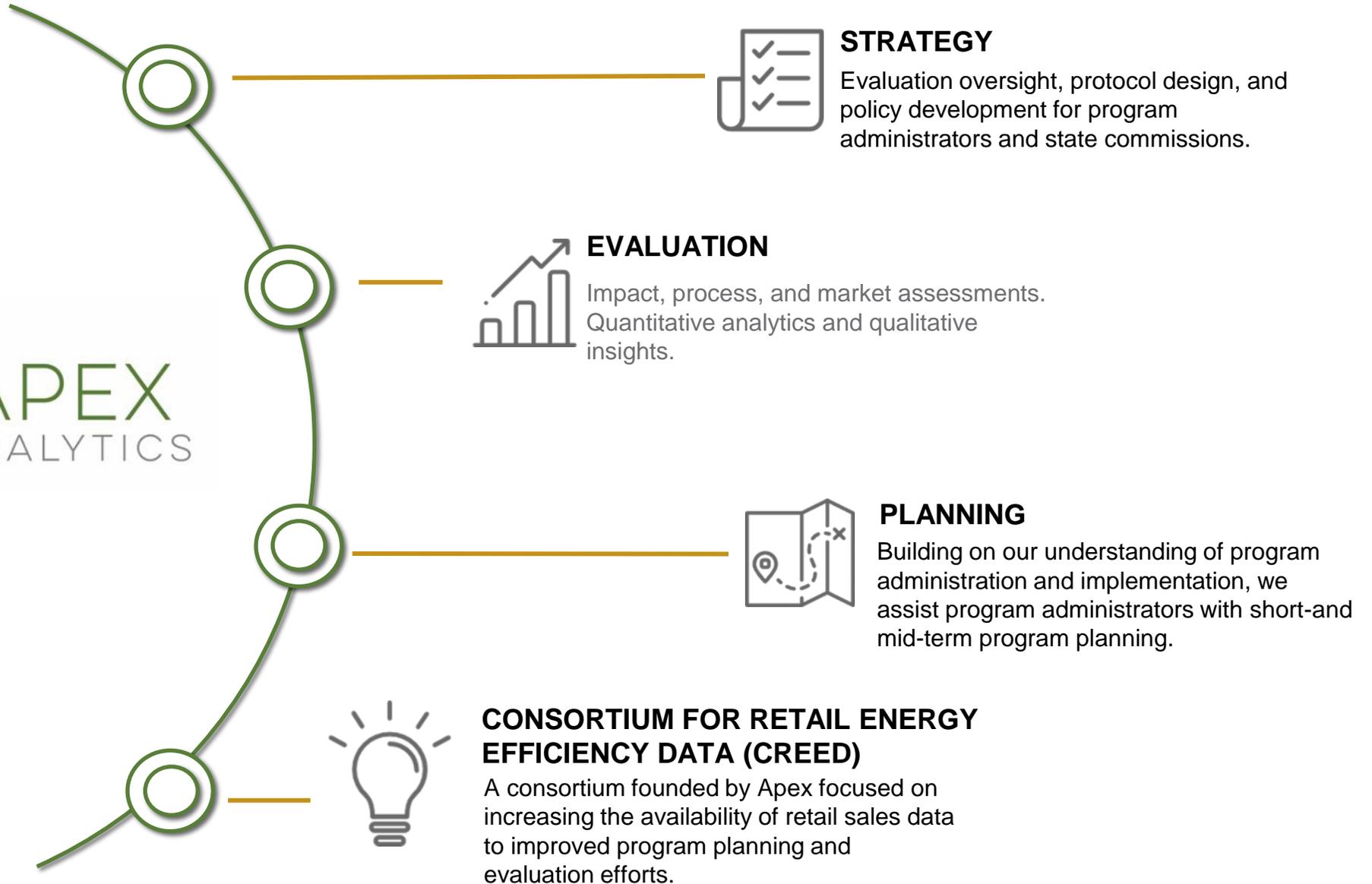


ILLUME ADVISING & APEX ANALYTICS PRESENTS

Insights into EISA 2020:
A Gradual Decline or a Steep Cliff?

Presented by: Katie Parkinson, Apex Analytics

AESP Brown Bag, November 29th, 2018





RESEARCH OVERVIEW

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- Conducted in June-July 2018, on behalf of Franklin Energy
- Research Objectives:
 - How the EISA 2020 backstop will affect residential lighting energy savings;
 - Assess what savings assumptions are currently planned in 2020 and beyond;
 - Determine how manufacturers are changing their manufacturing practices based on EISA and other rulemakings
 - What plans other entities are making among this ambiguous legislative landscape.

RESEARCH ACTIVITY	DATA ANALYZED
Literature reviews	Technical Reference Manuals (TRMs) Utility program evaluation reports Potential studies Regulatory filings Program plans
Stakeholder Interviews	Manufacturers and distributors the California Energy Commission (CEC)
Evaluation and Utility Discussions	Four evaluation experts Two utility staff One implementer



KEY FINDINGS OVERVIEW

FINDING 1

Currently significant uncertainty regarding the EISA 2020 backstop



EVIDENCE: RESPONDENTS

The **stakeholders** were evenly split on whether the backstop had been triggered, or they felt the situation was **too unclear** for any educated assumptions to be made.

Respondents were also **mixed** on whether the backstop would be fully enacted in 2020, enacted with some modifications, or fully repealed.

Most stakeholders at the ENERGY STAR Partner meeting agree that adoption will likely be **settled in court**.

ASAP counselled retailers that “it’s the law.”

Others assert that formal rulemaking must be published in order to trigger the backstop.

Manufacturers are uncertain of how the Backstop discussion will play out.



*“I’m hearing yes;
I’m hearing no. Your
guess is as good as
mine.”*

*- Manufacturer,
when asked if the Backstop
will be enacted in 2020*

EVIDENCE: ECONOMIC AND POLITICAL FACTORS

Economic Considerations: Halogens are significantly more profitable for retailers and manufacturers than LEDs.

- Higher margin per sale
- Shorter lifetime (drives store visits and more sales)
- Halogens are manufactured in the U.S. (i.e., potential loss of jobs with banning halogens)

Political Considerations: Current political administration limiting environmental regulation.

- Fuel efficiency standards
- Delaying appliance and HVAC efficiency standards

Manufacturers, through NEMA, are fighting the legislation that would outlaw these profitable technologies.



“All of our R&D is going into LEDs. We see the future and that’s where we are driving. It’s just that tail of the halogens are still out there and they are still worth hundreds of millions of dollars to us, so we are going to keep that shelf space until our replacement for that is ready.”

- Manufacturer

FINDING 2

LEDs are expected to become the dominant technology in the lighting market



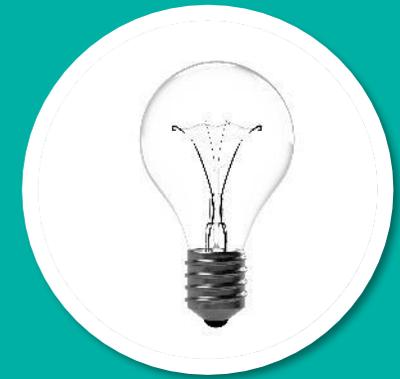
EVIDENCE

Stakeholders reported that the **lighting market** is transitioning toward LED technologies **with or without the Backstop**.

They believed this was so because of the role utility programs have had in **moving the market through subsidizing bulbs**, allowing consumers that would typically shy away from the high price point to experience LEDs with lower risk.

They also believed that **consumer education** has and will continue to play a large role in the **market transformation**.

LEDs are believed to own a significant share of the market and expected by stakeholders to dominate in standard bulbs within the next five years.



“LEDs are quickly replacing incandescent and halogens from fixtures and screw-based lamps, all based on market conditions, regulations, pricing, and consumer acceptance. LEDs will get there anyway.”

- Manufacturer

HOWEVER...

By lobbying DOE that the market is moving on its own, stakeholders are hoping this impacts the decision on the Backstop (i.e., it's not needed).

Efficient lighting market share has remained **flat** for a few years.

Efficient lamps still represent **less than half** of all lamp sales.

States that have **cut programs** have shown **evidence of backsliding** (MA vs. NY).

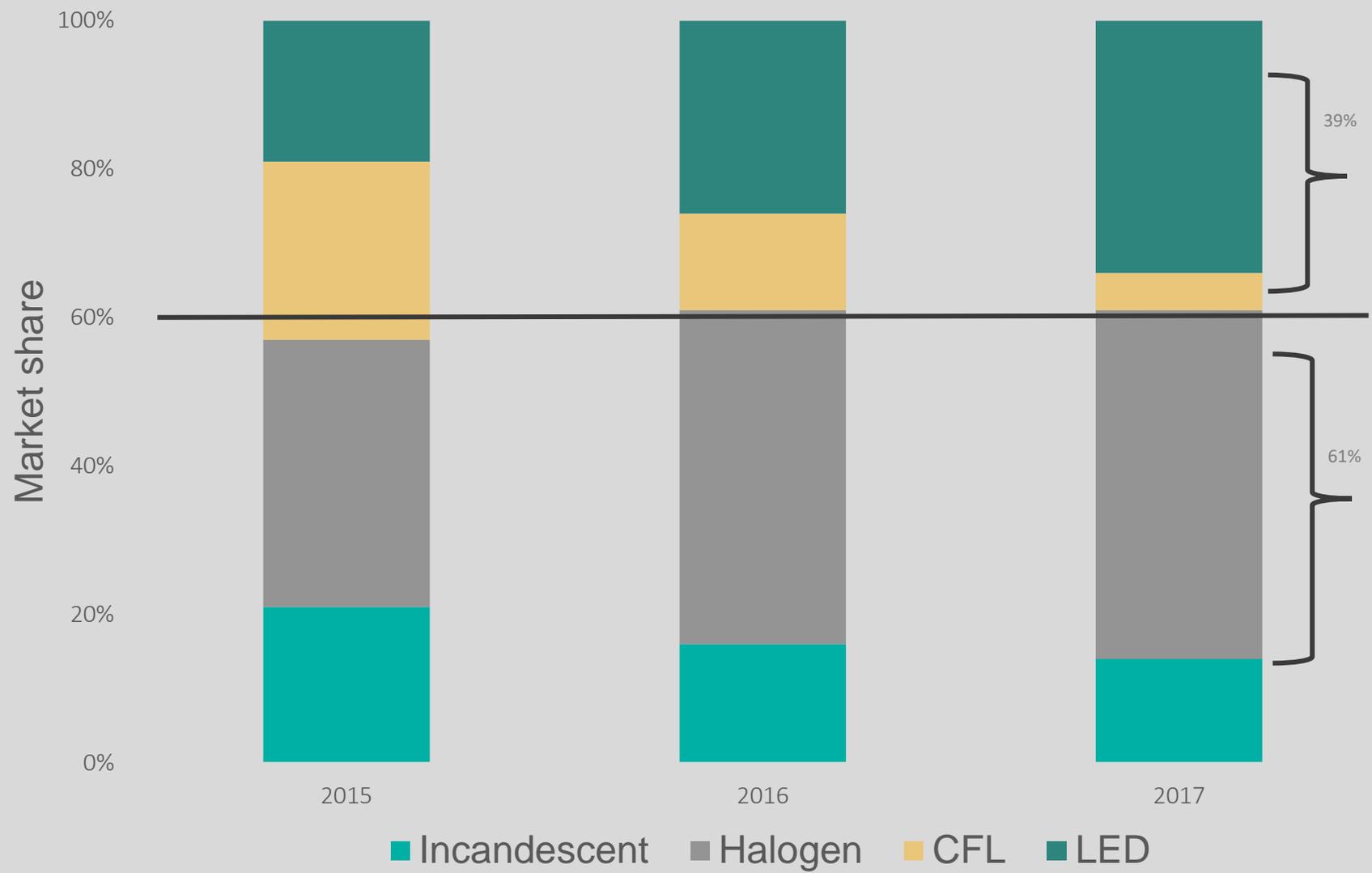
ConEd decided to reintroduce upstream lighting in 2018.

While it might seem as though LEDs have reached saturation, sales data and examples from states who experienced backsliding after stopping incentives for LEDs suggests the market has not yet been transformed.



"I have an old house and I have a lot of old fixtures with halogen super savers and MR 16s in there. LED technology just isn't there yet for me, so I stockpiled the bulbs I need until it is. I'm going to keep the lighting that I like until the lighting quality [with LEDs] comes around to where I want it to be."

- Manufacturer



FINDING 3

Even within this uncertainty for utility lighting programs, opportunities may remain for lighting post-2020



EVIDENCE

Opportunities for direct install or exchange programs (where participants bring in, inefficient lighting in exchange for new bulbs) could still yield cost-effective savings, albeit with shorter lifetimes.

Recent evaluation studies have found that 64 percent of *installed* bulbs and around seven *stored* bulbs in an average home are still inefficient technologies (Cadmus, 2017).

Utilities may be able to use the wattage of these installed bulbs as a baseline, and capture the savings from this inefficient installed lighting stock (i.e., early replacement).

California IOUs have cut upstream programs (early 2018), but are likely continuing direct installation programs through 2019.

The amount of inefficient bulbs still in circulation suggest that savings from lighting upgrades might still be possible, even after the backstop's implementation.

Source: Focus on Energy. Potential Study, Appendix A. Baseline Data. Cadmus 2017.
https://www.focusonenergy.com/sites/default/files/Focus%20Potential%20Study%20Appendices_0_0.pdf



“With direct install programs, the ...implementation contractor examines the labeled wattage of bulbs in similar fixtures in each home to estimate the wattage the consumer used before the energy-efficient lighting was installed.”

-Residential Lighting
Evaluation Protocol,
The Uniform Methods Project:
Methods for Determining Energy
Efficiency Savings for Specific
Measures

FINDING 4

TRMs and states should incorporate uncertainty into future lighting savings claims



EVIDENCE

All states we researched assume the backstop will be adopted for both standard and specialty bulb types.

The variation between the states occurs around the *timing* of adoption.

While some states have assumed a CFL equivalent baseline beginning in January 2020 (and thus minimal potential savings after that), several other states have recognized the uncertainty over EISA and assume savings will continue to 2022 and 2023.

All states considered anticipate the backstop will go into effect, but some will expect the standards to be met immediately while others allow a grace period for adjustment.



“A provision in the EISA regulations requires that by January 1, 2020, all lamps meet efficiency criteria of at least 45 lumens per watt... Therefore the measure life... should be reduced once the assumed lifetime of the bulb exceeds 2020. Due to expected delay in clearing retail inventory and to account for the operating life of a halogen incandescent potentially spanning over 2020, this shift is assumed not to occur until 2021.”

-Illinois Statewide Technical Reference Manual for Energy Efficiency Version 6.0 (155)

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SOURCES

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Illinois Statewide Technical Reference Manual for Energy Efficiency, Version 6.0 (2017)

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New York Standard Approach for Estimating Energy Savings from Energy Efficiency Programs – Residential, Multi-Family, and Commercial/Industrial Measures, Version 5.2 (2018)

Duke Energy Carolinas, LLC's Application for Approval of Demand-Side Management and Energy Efficiency Cost Recovery Rider Docket No. E-7, Sub 1105 (2016)

Technical Reference Manual: State of Pennsylvania (2016)

Texas Technical Reference Manual (2017)

<https://rtf.nwcouncil.org/measure/residential-lighting> and Residential Lighting RTF Presentation (2017)

Focus on Energy 2016 Energy Efficiency Potential Study (2017)