

The Future of CFL Programs after EISA

Tami Buhr
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EISA: The End of Residential CFL Programs?

- Unlikely
- But it is the end of an era for a classic toy.....

The Easy Bake Oven



Old Easy Bake used 100w incandescent bulb



New Easy Bake has a heating coil

"We knew that the light bulbs were going to be phased out and we didn't want moms and girls to be scrambling to find the light bulb once they purchased it." – Michelle Paolino, Hasbro

EISA: An Evaluation Perspective

- Evaluator's Job: Look Into the Crystal Ball
 - Efficacy and cost of EISA compliant bulbs
 - LEDs: Ready for prime time? Cost?



Countdown to Implementation: Any Evaluation Issues?

Current Issues...

- Issue 1: Impact on TRC
 - Lifetime Energy Savings
 - Incremental Cost Considerations
- Issue 2: Opportunity to Baseline LEDs

Future Issues...

- NTG Impacts, Behavioral, Political

EISA Impact on TRC

- TRC: ratio of program benefits to costs
- EISA will impact both

$$TRC = \frac{\sum Benefits}{\sum Costs} = \frac{\sum EnergySavings * AvoidedCosts}{\sum IncrementalCost + ProgramCosts}$$

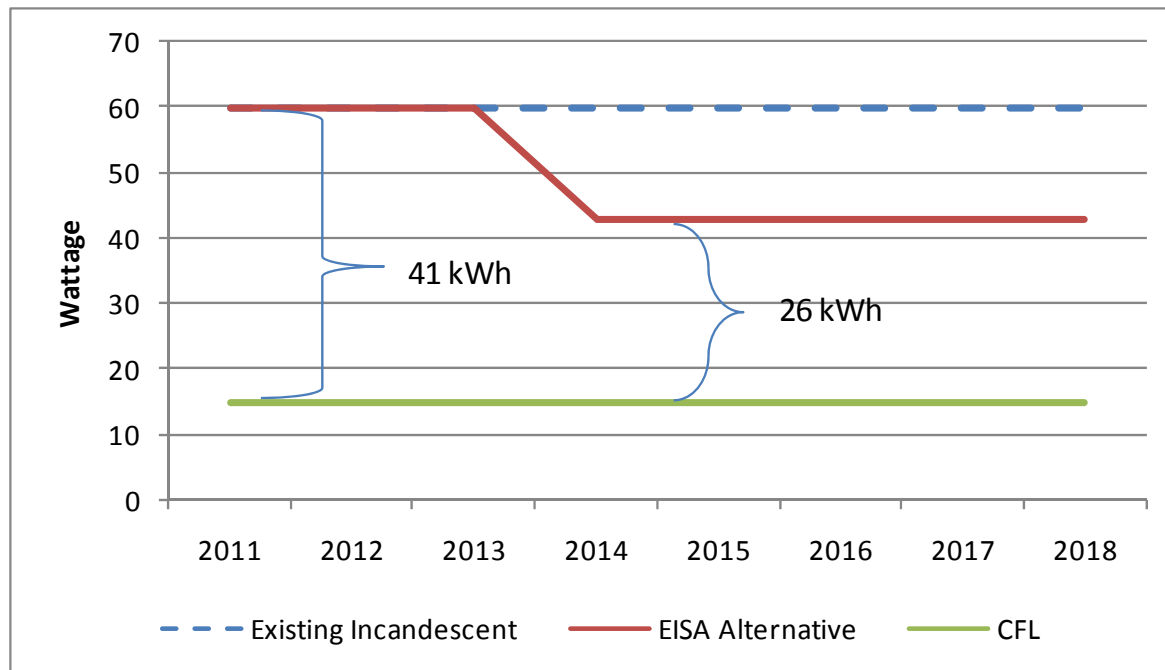
Issue 1: EISA and Lifetime Savings

First, the bad news...

- Savings are going down
- Current evaluations still assume delta watts ratios of about 4:1 (or 3:1 in some cases)
 - EC bulbs will be new savings baseline
 - Savings needs to be a “step function” with decreasing savings in future years when EISA goes into effect

Issue 1: EISA and Lifetime Savings

- Example:
 - 60w baseline drops to 43w in 2014
 - Energy savings from 14 watt CFL sold in 2011: 41 kWh from 2011-2013 but only 26 kWh from 2015-2018
 - 24% drop in gross lifetime energy savings



Issue 1: TRC and Incremental Costs

- The good news (for implementers): incremental cost is going down

Philips Soft White 100-Watt Incandescent Light Bulb (4- Pack) (E)*

\$1.47 /EA-Each (~\$0.37/bulb)



Philips EcoVantage 72-Watt Household Halogen Light Bulbs (2-Pack)

\$3.49 /EA-Each (~\$1.75/bulb)



Issue 2: Incremental Cost

- Example:
 - Assume incandescent cost of 40 cents, EISA bulbs @ \$1.75, and CFLs @ \$2.80
 - Incremental cost over lifetime (not only first cost)
 - CFLs are less expensive!

Year	Incand.	EISA	CFL
2011	\$0.40	\$0.40	\$2.80
2012	--	--	--
2013	\$0.40	\$1.75	--
2014	--	--	--
2015	\$0.40	--	--
2016	--	\$1.75	--
2017	\$0.40	--	--
2018	--	--	--
Total NPV	\$1.46	\$3.56	\$2.80

Issue 1: EISA Impact on TRC

- Energy savings decreases, but so does the incremental costs
- Relative difference in change of benefits versus costs will determine impact on TRC
- ***CFLs could be even more cost-effective if reduction in costs is greater than drop in benefits***

$$TRC = \frac{\sum Benefits}{\sum Costs} = \frac{\sum EnergySavings * AvoidedCosts}{\sum IncrementalCost + ProgramCosts}$$

Issue 2: Baseline Data on LEDs

- LEDs Continue to Become More Viable
 - Use for directional lighting
 - Good options in lower wattage categories
- Great opportunity for evaluators to track sales, penetration, saturation, and cost



The advertisement features a Philips LED bulb in its retail packaging on the left, with the Philips logo visible. To the right of the packaging is a single LED bulb. The text reads: "The First 60-Watt Equivalent LED" in a large, bold font, followed by "New and only at The Home Depot" in a smaller font. In the bottom right corner, there is a "Shop Now" button with a right-pointing arrow.

Issue 2: Baseline Data on LEDs

- Big challenge: LARGE incremental cost
 - Plus quality and directional concerns
- Incremental cost does decrease significantly with EISA
 - Plus longer lifetime (25,000 hours) than CFLs



Philips 12 watt (60W equivalent) A19 Ambient LED Soft White Light Bulb, Dimmable

Model # 409904 Internet # 202530170
Store SO SKU # 888865

★★★★★ 4.6/5 [Reviews \(25\)](#) [Write a Review](#)

\$39.97 /EA-Each

Issue 3: Baseline Data on LEDs

- At what point do LEDs become cost-effective, assuming EISA baseline?
- Consumer's perspective:
 - 28 kWh/year @ 15 cents/kWh consumer saves \$4/year
 - Last 3x as long: Cost-effective for consumer!
- Utility perspective:
 - Assuming avoided cost @ 5 cents/kWh
 - Price needs to be about +/- \$20 per bulb
- Would enough consumers recognize that the bulbs are cost-effective for utilities to meet savings goals?

Other Issues: Future NTG

- **Free ridership may increase**

- CFL alternative will be more expensive (no more 25 cent bulbs)
- More may buy CFLs without price reduction
- Satisfaction with EISA bulbs TBD

- **Free ridership may hold steady or decrease**

- CFLs still have liabilities (mercury, light quality)
- Some are still reluctant to use them
- Any incremental first cost is a barrier to some

Other Issues to Consider: Consumer Behavior

- For us it's an energy efficiency measure, to consumers it's a light bulb
- Consumers make economically irrational decisions
 - They don't do life cycle cost analysis



Other Issues: Consumer Behavior

- Consumer preference as well as misinformation could lead to incandescent hoarding and other behaviors that are hard to predict.
 - *“Bunny Williams, the no-nonsense decorator known for her lush English-style rooms, is laying in light bulbs like canned goods. Incandescent bulbs, that is...she is aware that there is legislation that is going to affect the manufacture of incandescent bulbs, but she’s not clear on the details, and she wants to make sure she has what she needs when she needs it.”*
 - *New York Times, May 25, 2011*

Public Opinion on EISA

- Recent evaluation found low awareness
 - Approximately 1/3 were aware of the law
 - Once law described, most frequently mentioned action to replace 100 watt incandescent was stockpiling incandescents, least frequent was replace with a CFL
- February *USA Today*/Gallup Poll found majority support for the law

Other Issues: EISA Is Increasingly Politicized

- EISA like other energy efficiency or “green” issues has become politicized
 - Is there solid evidence the earth is warming up?
 - Yes: 79% Democrats, 56% Independents, 38% Republicans (Pew Research Center, Oct. 2010)
- Several attempts to repeal EISA
 - Most recently the Better Use of Light Bulb Act (BULB) defeated in July
- Several states have passed or attempted to pass legislation to get around the ban

Public Opinion on EISA

“As you may know, in 2007, Congress passed a law to set higher energy standards for light bulbs. This means standard light bulbs, or incandescent light bulbs, will be phased out in the next three years. Do you think this is a good law or a bad law?” (*USA Today/Gallup, February 2011*)

	Total	Republican	Independent	Democrat
Good Law	61%	48%	58%	73%
Bad Law	31%	46%	28%	19%
Don't Know	8%	5%	14%	8%

Question Wording Matters

- Americans for Limited Government Poll, June 2011
- “Is the following statement true or false: Congress has passed an energy bill that will effectively ban the sale of traditional light bulbs beginning in 2012?”
 - 46% True, 17% False, 38% Don't know
- “While banning the sale of traditional light bulbs, a new law will allow only more expensive light bulbs that are expected to last longer and be more energy efficient. Should the sale of traditional light bulbs be banned?”
 - 25% Yes, 58% No, 18% Don't know

EISA: The End of Residential Lighting Programs?

It depends.....

- Availability and high cost of EISA compliant bulbs will make programs cost-effective
- But price is less of a barrier – Need for alternative program design
 - More direct install
 - Education about options
- And the “wildcards”
 - LED prices
 - Consumer reactions?
 - Politics



Graphic from Efficiency Vermont (newbulbintown.com)

Questions?

Tami Buhr

Director of Survey Research

Opinion Dynamics Corporation

(617) 301- 4654

tbuhr@opiniondynamics.com