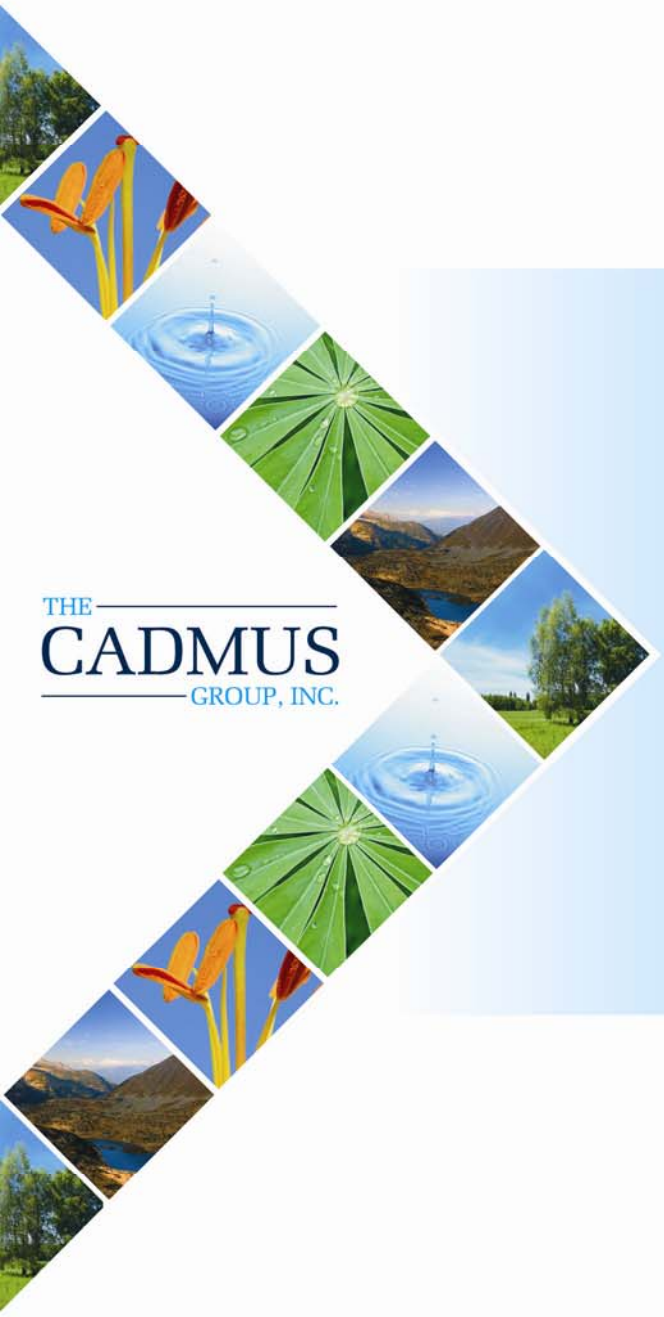


THE CADMUS GROUP, INC.

Potential Impacts from EISA on the Residential Lighting Sector

Kate Swayne
The Cadmus Group, Inc.
October 13, 2011

What is EISA?

- Energy Independence and Security Act of 2007

What is EISA? (continued)

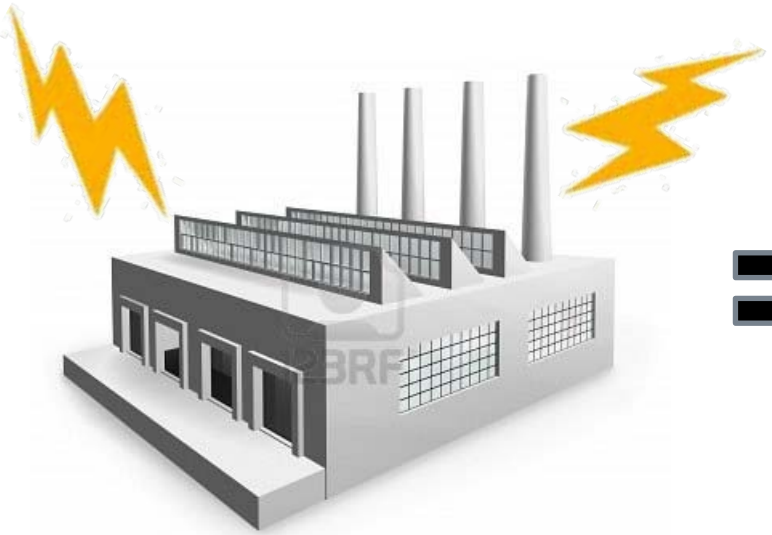
Current Wattage	Rated Lumen Ranges	Maximum Rated Wattage	Minimum Rated Lifetime	Color Rendering Index	Effective Date
100	1490-2600	72	1,000 hours	80	1/1/2012
75	1050-1489	53	1,000 hours	80	1/1/2013
60	750-1049	43	1,000 hours	80	1/1/2014
40	310-749	29	1,000 hours	80	1/1/2014

Source: Energy Independence and Security Act Legislation

Various Perspectives

- In-depth interviews with:
  - Lighting professionals
  - Residential Construction professionals
  - Lighting Manufacturers
  - Lighting Retailers
- In-person focus groups with residential customers

Gap



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Overall EISA Trends

- Which products will succeed?
- What will success depend on?

Potential Consumer-Related EISA Trends

- Purchasing preferences and satisfaction TBD
  - In one study, when asked, consumers said…
    - Most likely to: stockpile incandescents
    - Least likely to: purchase CFLs
    - More than half willing to try new technologies

Consumers and CFLs

"CFLs are blobby"

"I don't like taxes and I don't like those twisty bulbs"

"Poor light quality"

"Mercury – ahh!!"

"Don't turn on fast"

"Sometime normal light bulbs will become illegal and I will be forced to buy those coil ones that don't work"

LEDs

- Cost-effectiveness ranges
  - LEDs should be priced 10-15% above CFLs or $10-20 to be cost-competitive (based on multiple manufacturer interviews, not hard numbers)
- Changing technology
- Concerns about quality

Retailer-Related EISA Trends

- Majority aware of EISA
- Customer feedback – upset about changes
- Stockpiling trends
- Working with utilities and manufacturers to provide in-store education through end-cap displays and staff education

Manufacturer-Related EISA Trends

- Many new technologies
- Rapidly-changing market, will be price and marketing dependent
- See need for more direct install and/or giveaways
- Halogens, CFLs, and lower wattage incandescents are predicted for near-term
- Halogens, CFLs, and LEDs are predicted for longer-term

Lighting Designers and Architects

- Aesthetics important (not bills)
- Appropriate controls for purpose
- Designers do not like CFLs (more acceptable to architects):
  - Poor light quality
  - Poor aesthetics
  - Poor dimming capability
- Potential for LEDs

Lighting Designers and Architects (continued)

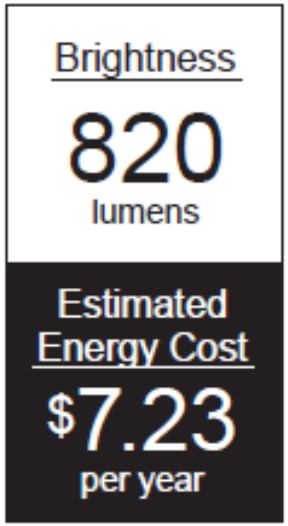
- Education needed for consumers and electrical contractors
  - All need training: lighting demos, show rooms, technical details
- Education needed for designer and architects
  - Lighting contractors need continuing education credits
  - Aware of curriculum and options

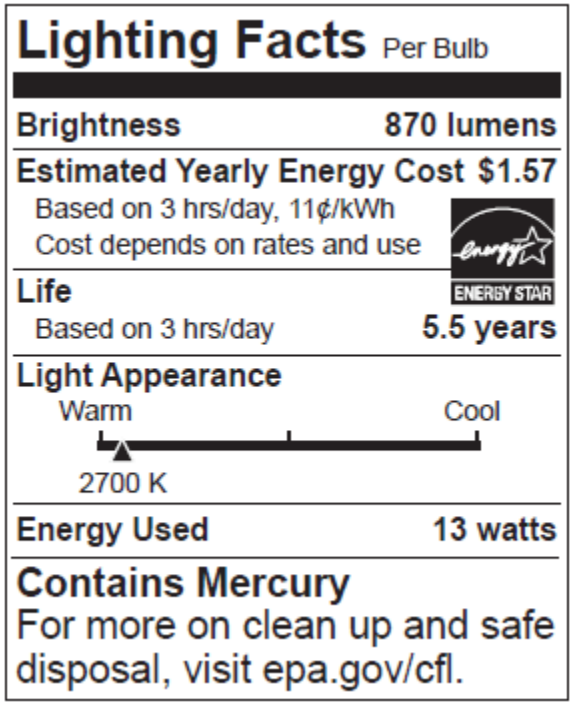
CFL Utility Programs

- Still valid, potentially a one-year lag
- Less savings potential, but still valid savings
- Will likely continue until at least 2013
- Increase direct install programs and giveaways

Industry Guidance Needs

- Federal Trade Commission
- Lumen Coalition
- ENERGY STAR®
- Utilities
- Research institutions





Implications

- Future lighting programs will include a mix of technologies, applications, and delivery
- More elements of portfolio design (and risk management) will be applied to residential lighting programs
- The mix will be critical – and changing – matching technologies to services, delivery, providers, and incentives

Discussion

- Changes in consumer purchasing behavior
- Changes in manufacturing
- Potential implications for energy-efficiency programs

Questions?