How to Develop a "Green" Lighting Policy

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Sustainable Lighting Policy Overview

- Environmental Goals/Commitments
- Energy efficiency
- Waste prevention (long life)
- Toxicity reduction (mercury, lead)
- Recycling (“takeback”)
- Sustainable manufacturing
- Vendor reporting and training

Lighting Policy Goals

- Save energy (best value)
- Reduce greenhouse gas emissions
- Qualify for “green building” credits
  - LEED-NC (new construction)
  - LEED-EB (existing buildings)
- Promote toxics reduction/recycling
- Encourage producer responsibility
- Support sustainable manufacturing

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Energy Efficiency Standards

- Establish lumen/watt standards for major types of lamps, ballasts, fixtures
- Efficiency standards built into ENERGY STAR, EcoLogo certifications
- CRI as efficiency “surrogate” (CA bid)
- “Super T8s” in renovation, retrofits (Alameda County, CA)
- New construction vs. replacements

Restrictions on Inefficient Lighting Equipment

- Incandescent lamps
- Non-LED exit signs
- Fluorescent lamps with preheat starters
- T12, T9 (circular) fluorescents
- 2-pin CFLs
- Magnetic ballasts
- Mercury vapor lamps, ballasts

Long-life Lamps

- Lower replacement, installation and disposal/recycling costs/impacts
- Less energy in manufacture, transport
- Lamp life varies by type, grade and manufacturer
  - Incandescents (750 – 3,000 hours)
  - CFLs (6,000 – 15,000 hours)
  - 4-foot T8s (7,500 – 30,000 hours)
  - LEDs (25,000 – 100,000 hours)

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Specify Long-life Lamps

- Look for XL, XP, LL, PLUS models
- Set rated hour minimums based on "best in class"
- Lamp life standards established
  - ENERGY STAR for CFLS (6,000 hours)
  - Canada's EcoLogo for CFLs (10,000 hours)
  - New York City (all fluorescents)
  - State of California (T8s, T12s, CFLs)
  - San Francisco (4-foot T8s)

Toxics in Lighting Equipment

- Mercury
  - Power plant, incinerator, smelter emissions
  - All fluorescent lamps (especially older models)
  - Most HID lamps (mercury vapor, metal halide, high-pressure sodium)
  - Neon signs

- Lead
  - Solder of screw-in bases
  - Glass
- PCBs (in ballasts sold before 1979)

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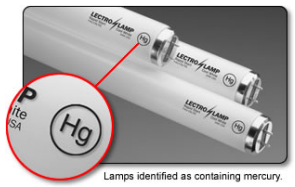
Specify Low-Toxicity Lamps



- Make policy commitment to buying least-toxic lamps that meet needs (WA)
- Require bidders to disclose mercury and lead content of lamps (NJ, SF)
- Set mercury caps (best in class)
  - Europe (RoHS), ENERGY STAR, Canada EcoLogo
  - CA, NYC, SF, Wal-Mart, Green Guide to Health Care
- Avoid fixtures/ballasts for high-mercury lamps
- Give preference for lead-free lamps

Lamp Recycling (Takeback)

- Policy should require all mercury-added lamps to be recycled (universal waste)
  - >600 million fluorescent lamps sold in US/yr
  - ~2% of CFLs; ~30% of linear fluorescents recycled
- Require vendors to “takeback” lamps
  - Create infrastructure like European Union’s
  - Encourage manufacturers to redesign lamps
  - CA bid requires lamp vendors to offer recycling

Sustainable Lamp Manufacturing

- Policy should require:
  - Vendors to disclosure lamp manufacturing sites and monitoring reports
  - Manufacturers to follow Electronic Industry Code of Conduct (EICC)
  - Recyclers to Sign Pledge of True Stewardship

Contact

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