Reporting Sustainability: Zero Waste, Cradle-to-Cradle, and Life Cycle Assessment
Kentucky Chapter of Air & Waste Management Association
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W. Blaine Early, III
Stites & Harbison, PLLC
250 W. Main Street, Lexington, KY
bearly@stites.com
Benefits of Sustainable Practices

• Internal
  – Achieve financial rewards from process, energy, and materials savings, subsidies, tax incentives
  – Satisfy corporate initiatives and requirements
  – Employee satisfaction

• External
  – Brand reputation and customer good will
  – Command higher prices
  – Positive environmental impact
Community Goals – Sustain Louisville

- Divert Solid Waste from Landfill
  - 50% by 2025
  - 90% by 2042
- Focus on Residential and Commercial Use (other than industrial)
  - food waste and composting
  - recycling
Community Goals – Maryland 2014

- Zero Waste Initiatives
  - Source reduction and reuse
  - Recycle
  - Divert organic waste
  - Target specific wastes (e.g., electronics, pharma, containers)
  - Incentives and markets
  - Waste to energy
  - State leadership
  - Educate
Challenges to Proving Success

Deciding what to count

Lack of common standards (guidelines, statutes, incentives)
Risks of Uncertainty

• Making a business mistake
  – Losing money, losing customers
  – Lost capacity for incentives or rebates

• Bad internal or customer relations
  – Disappointment with outcomes

• Liability for inaccurate implementation or claims
Federal Trade Commission’s *Green Guides*

- Purpose is to avoid making environmental marketing claims that are *unfair or deceptive*.
- Examples include:
  - Should not make general, unqualified statements about environmental benefit.
  - Must have reliable, scientific data to substantiate factual assertions.
- Third-party certification does not reduce obligation to substantiate claims.
Lifecycle Assessments or LCA

“The term ‘life cycle’ refers to the major activities in the course of a product’s life-span from its manufacture, use, and maintenance to its final disposal, including the raw material acquisition to manufacture the product.”

– USEPA 2006
Life Cycle Assessments or LCA

- USEPA 2006
Circular Life Cycle Assessments - Steel

Steel in the circular economy

CIRCULAR ECONOMY

STEEL

LIFE CYCLE THINKING

Reduce

Recycle

RECYCLING

REUSE & REMANUFACTURING

USE

MANUFACTURING

Remanufacture

PRODUCTION

Reuse

RAW MATERIALS

DESIGN
Example Third-Party Reviews

• Cradle to Cradle

• Energy Star
  https://www.energystar.gov/

• epeat Green Electronics Council
  http://www.epeat.net/about-epeat/

• UL
  http://industries.ul.com/environment/certification/validation-marks/environmental-claim-validation

• U.S. Zero Waste Business Council
  https://true.gbcio.org
Cradle to Cradle

• “a beneficial design approach integrating multiple attributes: safe materials, continuous reclamation and re-use of materials, clean water, renewable energy, and social fairness.”

  » Cradle to Cradle Certified Product Standard, Version 3.1, page 1

• Standards include
  – no banned list chemicals present above thresholds
  – a defined life cycle for product materials
  – self-audit to assess protection of human rights
UL Environmental Claim Validation

• UL offers three levels of waste validation.
• The validation is intended to provide third-party confirmation that the entity complies with specific guidelines.
• UL’s Waste Diversion Validation addresses levels of performance such as
  – Landfill Diversion Rate
  – Virtually Zero Waste to Landfill
  – Zero Waste to Landfill
Questions?