



IES Street and Area Lighting Conference

RECYCLING STREET LIGHTS

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Street Light Recycling

Learning Objectives

Participants will be able to:

1. Identify.....How to select a qualified recycling partner
2. Compare.....Recycling approaches and alternatives
3. Describe.....Best practices when establishing recycling programs
4. Analyze.....Expected results from engaging a qualified recycler



How to select a recycling partner for street light recycling

- Tender process - number and types of fixtures, frequency, how to be managed, disposed, re-used, re-purposed, or recycled
- Environmental Stewardship / Health and Safety - Recyclers qualifications: Quality Control Procedures, Approved vendors, any Environmental or Regulatory infractions
- Integrity/reputation/track record - references, Insurance, Workers Safety/ Insurance Boards, or equivalent state compensation boards
- Logistics and support - recycler works with you to make it easier on your end, with terms equally beneficial to both parties
- Benefits of packaging street lights - in gaylord boxes vs. loose in a dumpster with breakage of lamps & glass
- Benchmark commodity pricing to protect both generator and recycler - AMM value on day of proposal, vs AMM value on day of pickup referencing B/L



Recycling Approaches and Impacts



Awareness of Environmental and Health Impacts

- Disposal at scrap yards vs. proper packaging and transport protocols
 - Domestic vs Export (price vs Int'l trade restrictions, compliance) - may be restrictions on rebates from electrical authorities if re-purposed
 - Packaging/handling/transport determines risk to environment and people and value of recovery
 - Resale of fixtures or components
-
- Proper protective equipment, training, tools and dismantling techniques
 - Minimize glass lens and lamp breakage with potential mercury releases, cross contaminated materials affecting recovery and potential value
 - Landfill impacts - going on in underserved communities
 - Mercury effects on human health - neurological, renal [kidney] cardiovascular, and immunological)
 - Bioaccumulation in the environment through the air and ingestion



Typical Cobra Head Street Light



Packaging/Transport Options



Components of Typical Light Fixtures

- Aluminum Shell, Reflector
- Glass or Plastic Lens Covers
- Capacitors (oil or dry - if > 35 yrs old may contain PCBs)
- Igniters, Ballasts (transformers w/steel laminations and Cu, Cu/Al or Al windings)
- Photocells
- Mercury Lamps - MV, HPS, LPS, Metal Halide (HPS dominate)
- Insulated Wire
- Foam or insulated gaskets
- Miscellaneous ferrous components (bolts, brackets, screws, etc)
- Recyclable packaging wastes (cardboard, plastic, skids, paper, other)



Visual Components:

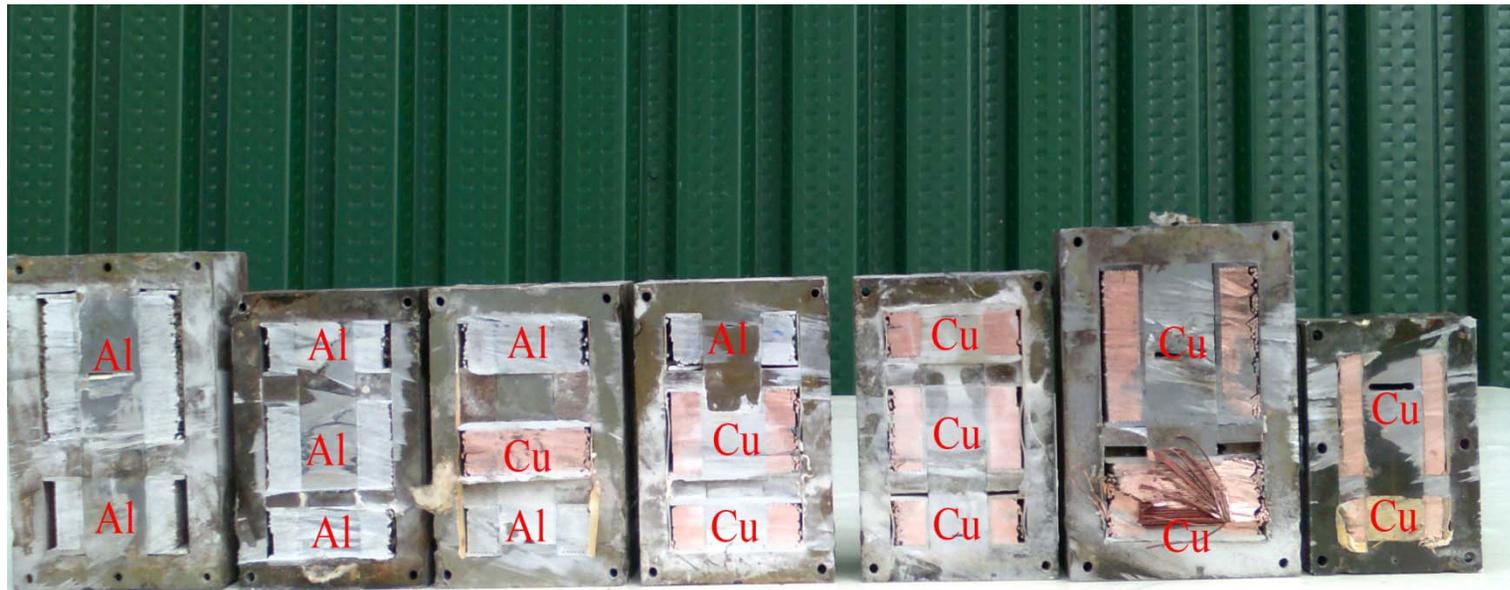


What happens to the old street lights?

| | |
|---|-------------|
| Aluminum Body | 33.5% - 50% |
| *Ballast (core/coil) | 30% |
| Cu, cu/al or al windings – weights vary | |
| Miscellaneous Ferrous | 0.5% |
| Plastic Covers or Base | 16.5% |
| Clear Lenses | 10% |
| Ceramic Lamp Holder | 2% |
| HID Lamps | 1.5 -2% |
| Insulated Wire | 0.5% |
| Photo Cell | 1.0% |
| Capacitors, Igniters | 1.0 to 2% |



Variation by Composition and Weight



Benchmark Commodity Pricing



Weights should be Indexed to the AMM Non Ferrous Scrap Old Aluminum Sheet & Cast Price or other index FOB nearest city on the day of pickup or other established criteria as agreed or identified.

Example: 10% of low side quote:
 Benchmark (AMM index at right) shows Atlanta Market Range 37-42 (cents/pound)

So Therefore 10% of .37 = \$.0370/lb

AMM NONFERROUS SCRAP PRICES

PRICES EFFECTIVE MONDAY, SEPTEMBER 14, 2016 ESTIMATE

ALUMINUM (rev. 08/31/15)

| | Atlanta | Boston | Buffalo | Chicago | Cincinnati | Cleveland | Detr |
|---|---------|--------|---------|---------|------------|-----------|------|
| Segregated low copper clips | 43-48 | 41-44 | 44-47 | 43-45 | 39-44 | 39-42 | 41- |
| Mixed low copper clips | 41-46 | 37-39 | 42-44 | 39-40 | 38-40 | 36-39 | 39- |
| Mixed clips | 38-40 | 38-39 | 42-44 | 37-41 | 38-41 | 37-39 | 37- |
| Aluminum borings, turnings, clean and dry | 21-26 | 21-24 | 16-21 | 21-26 | 20-25 | 19-24 | 23- |
| Old aluminum, sheet and cast | 37-42 | 36-38 | 38-39 | 40-45 | 39-44 | 37-40 | 37- |
| Used beverage cans, clean and dry | 42-45 | 32-34 | 34-35 | 38-43 | 38-43 | 36-38 | 33- |
| Industrial castings | 37-40 | 36-37 | 34-35 | 39-44 | ..... | 38-43 | 41- |
| 63S aluminum solids | 49-51 | 51-52 | 50-51 | 49-54 | ..... | 48-53 | 49- |
| 75S aluminum clips | 36-39 | 33-35 | 36-38 | 37-42 | ..... | 34-39 | 41- |
| 75S borings, turnings, as is | 23-26 | ..... | ..... | 34-39 | ..... | 24-29 | 29- |
| Aluminum utensils | 38-42 | ..... | 37-38 | 28-32 | ..... | 32-37 | 34- |
| Painted aluminum siding | 37-42 | 35-37 | 40-41 | 35-40 | ..... | 36-41 | 36- |
| Litho sheets | 53-58 | 48-52 | ..... | 46-51 | ..... | ..... | 46- |

LEAD (rev. 08/31/15)

| | Atlanta | Boston | Buffalo | Chicago | Cincinnati | Cleveland | Detr |
|--------------------------------|---------|--------|---------|---------|------------|-----------|------|
| HEAVY SOFT LEAD | 33-38 | 41-44 | 40-45 | 39-44 | ..... | 38-43 | 35- |
| Mixed hard lead | 31-34 | ..... | 41-43 | 37-39 | ..... | 39-43 | 36- |
| Undrained, whole old batteries | ..... | ..... | 17-19 | ..... | ..... | 16-21 | .. |
| WHEEL WEIGHTS | 29-27 | 21-23 | 28-32 | 16-20 | ..... | 21-25 | 21- |

ZINC (rev. 08/31/15)



Expected results from engaging a qualified recycler

- ✓ Accurate and Reliable Reporting
- ✓ Health and Safety Compliance
- ✓ Environmental Compliance
- ✓ Fair market costs/credits based on the following:
 - Proposal / tender requirements
 - Packaging and Transportation Logistics
 - Current commodity market pricing
- ✓ Certificates of Recycling, Disposal and/or Destruction
- ✓ Mutually Beneficial Client/Recycler Partnerships



WE DO NOT RECYCLE THESE COBRA HEADS!



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How to select a recycling partner for street light recycling

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THANK YOU

