

Urban Mining

Making Sustainability Sustainable

Achieving Carbon Neutrality in the Global Manufacturing Industry

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Historical Trends in Manufacturing Industry

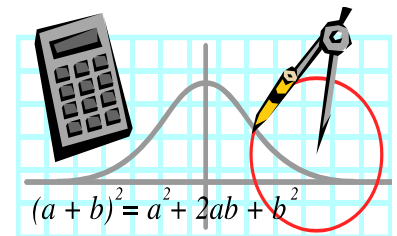
- Safety – 1950s (Zero Lost Time Accident)
✓ Industry Standard Now



- Environmental – 1970s (Zero Discharge)
✓ Industry Standard Now



- Quality – 1980s (Zero Defects)
✓ Industry Standard Now



- Carbon Neutrality – 2000s (Zero Carbon Impact)
□ New Industry Paradigm



Copenhagen, Denmark Taxi

- Example of Carbon Management



Less Idling

Better Fuel Mix

Less Dead Weight

Less “Scenic” Routes

Better Driving Habits

Local Offsets

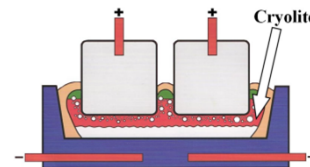
What is Carbon Neutrality?

- No International Definition
- My Definition:
“Cradle-to-Cradle” Paradigm

$$\sum \text{CO}_{2\text{eq}} = \text{ZERO}$$

+ Emitted during production.

- Green energy uses.
- Energy efficiency.
- “In-Use” energy saving products.
- Recycling, Reduce, Reuse
- Urban Mining



KWH



4/14/2012



Urban Mining

WHAT: Recovering Valuable Metal from Landfills

WHY: Best “Ore”, Lowest CO_{2eq} Option, \$80 Billion

HOW: Map Out Landfills, Find Most Economically
Lucrative Location, Core Samples

ISSUES: Legal, Ownership, Not Done Before

NEXT : Develop a Business Plan , Find “Seed Fund”

