

US EPA ARCHIVE DOCUMENT

Life Cycle Footprints for Green Servicizing

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*The content of this presentation reflects the views of the author and does not represent the policies or position of the U.S. EPA.

Servicizing Can Contribute to Sustainable Materials Management

- Innovative business models that substitute services for material products can dramatically reduce the supply chain resources needed to deliver value to the customer
- However a servicized business model still has an **environmental footprint**, driven by the utilization of people, property, vehicles, buildings, energy, etc. as well as ecosystem services
- Comprehensive **life cycle assessment** (based on functional unit) can provide a fair comparison between a servicized model and a traditional product-based business model
- This is not easy with conventional LCA tools, but it is feasible using economic input-output methods

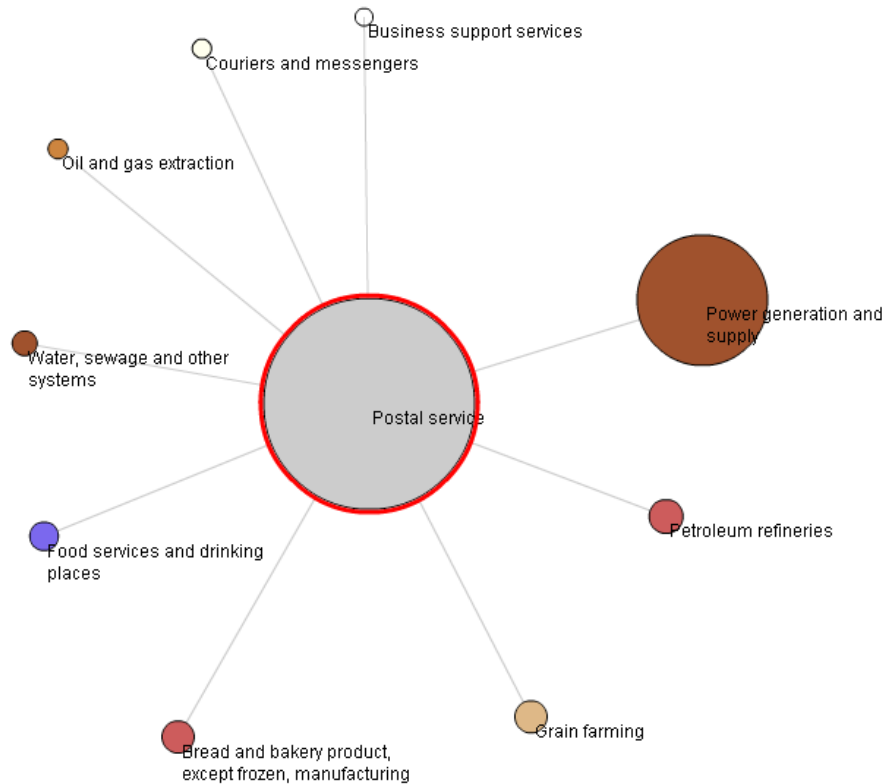


Example: Water Footprint of Postal Services

Supply Chain Navigator™ (Economic Input-Output LCA)

Type sector name

Select \$ value (in millions)



Postal service
requires about
3 liters of water use
per 44c delivery

Select Table Data

History

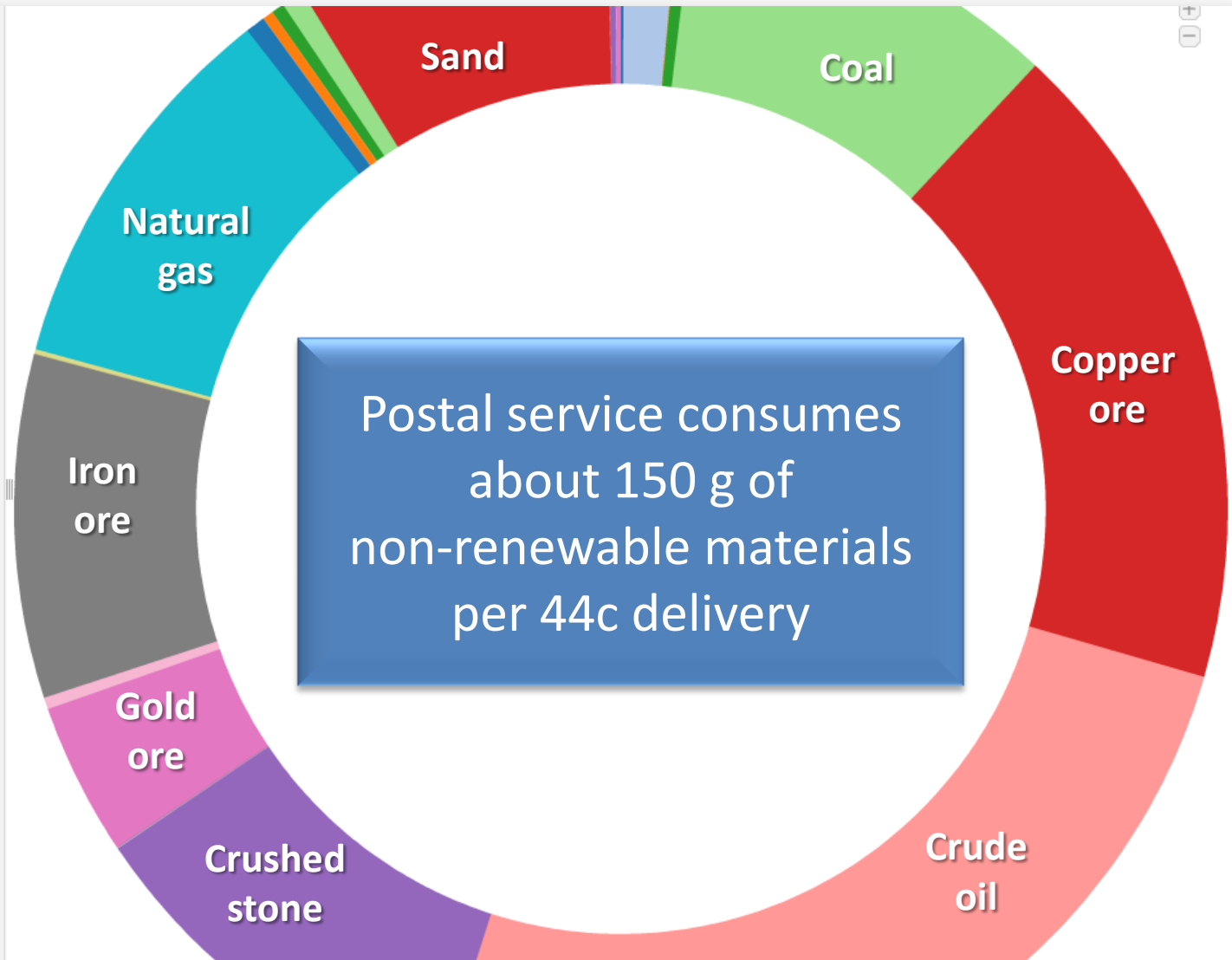
- Agriculture, Forestry, Fishing, Hunting
- Mining
- Utilities
- Construction
- Manufacturing
- Wholesale Trade
- Finance and Insurance, Real Estate
- Professional, Scientific, and Technical Services
- Management of Companies and Enterprises
- Administrative and Support and Waste Management
- Educational Services, Health Care and Social Assistance
- Arts, Entertainment, and Recreation
- Accommodation and Food Services, Other Services
- Public Administration



Non-Renewable Material Flow for Postal Services

Eco-LCA™ (Ecologically-Based LCA)

- Alumina
- Apatite
- Barite
- Chromite
- Clay
- Coal
- Copper ore
- Crude oil
- Crushed stone
- Diatomite
- Feldspar
- Garnet
- Gold ore
- Gypsum
- Iron ore
- Lead ore
- Mica
- Molybdenum ore
- Natural gas
- Nuclear
- Other Non-metallic
- Perlite
- Potash
- Pumice
- Quick lime
- Salt
- Sand
- Silver ore
- Soda ash
- Talc and pyrophyll
- Titanium ore
- Tripoli
- Zinc ore



Comparative Water Footprint of Selected Services

Eco-LCA™ (Ecologically-Based LCA)

