

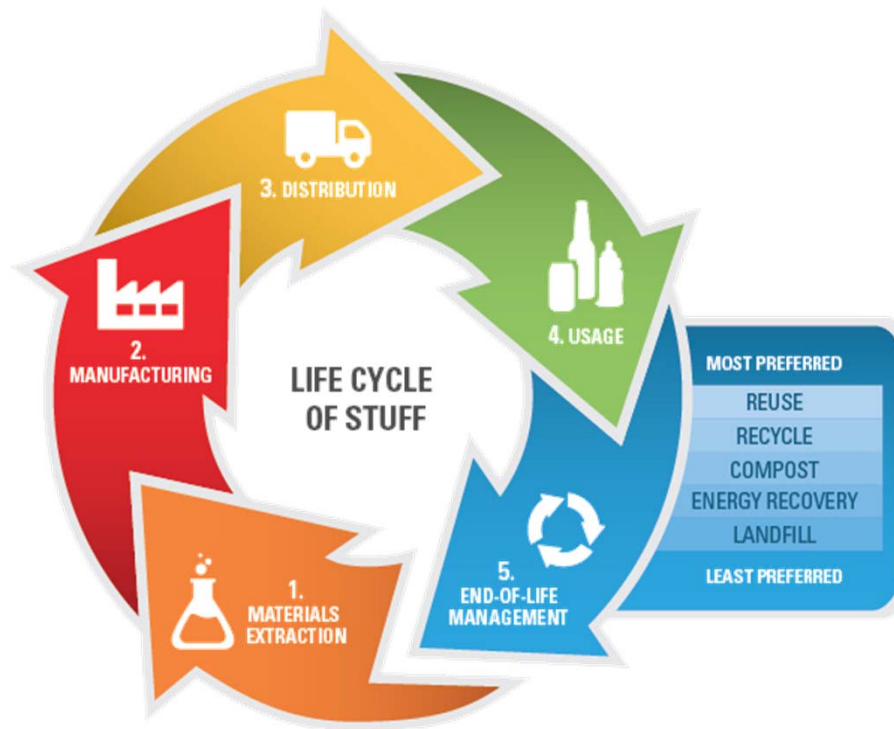


The U.S. Perspective on Sustainable Materials Management

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CHANGING HOW WE THINK ABOUT OUR RESOURCES FOR A BETTER TOMORROW

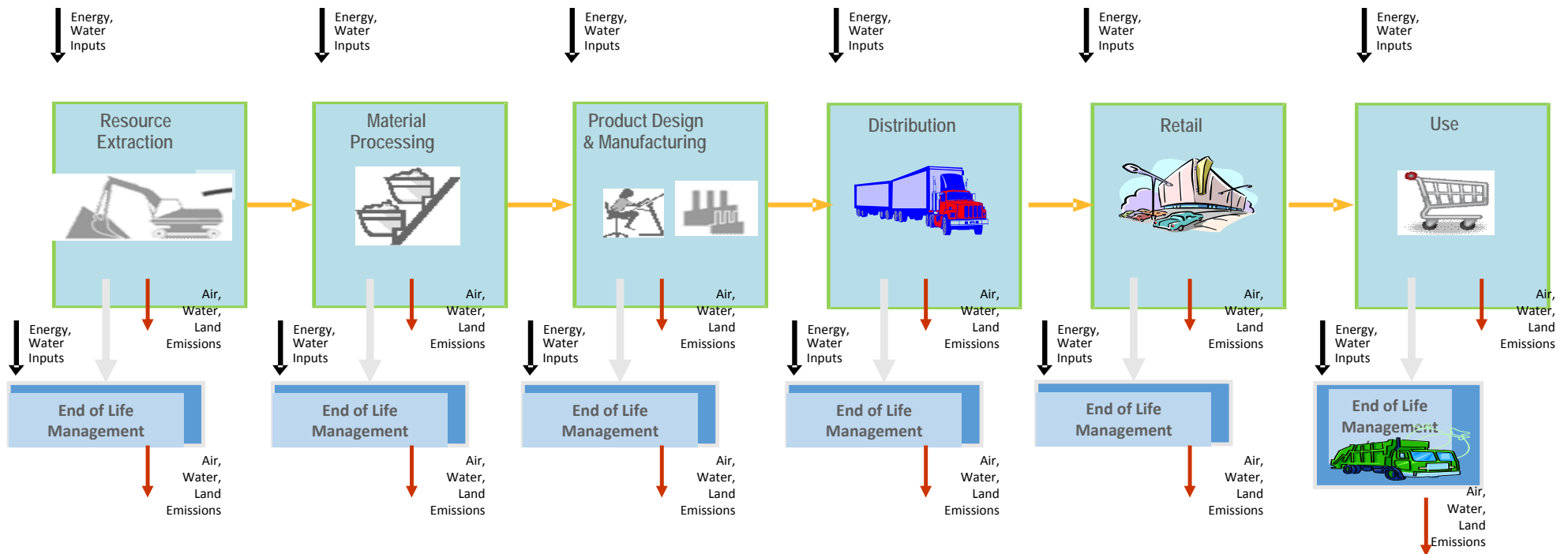
What is Sustainable Materials Management?



“An approach to serving human needs by using/reusing resources productively and sustainably throughout their life cycles, generally minimizing the amount of materials involved and all associated environmental impacts.”

The Road Ahead, pg iii

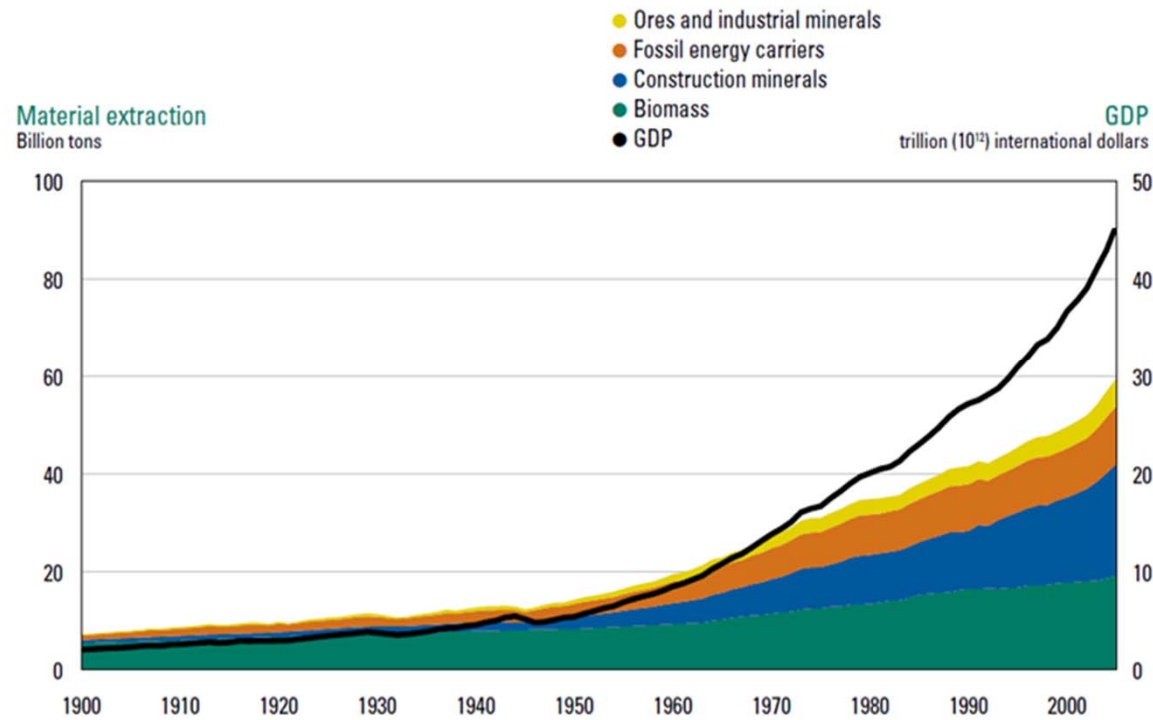
What is SMM: Material/Product Life Cycle



- Hidden flows account for up to 75% of the total materials, but are not accounted for in the gross domestic product.

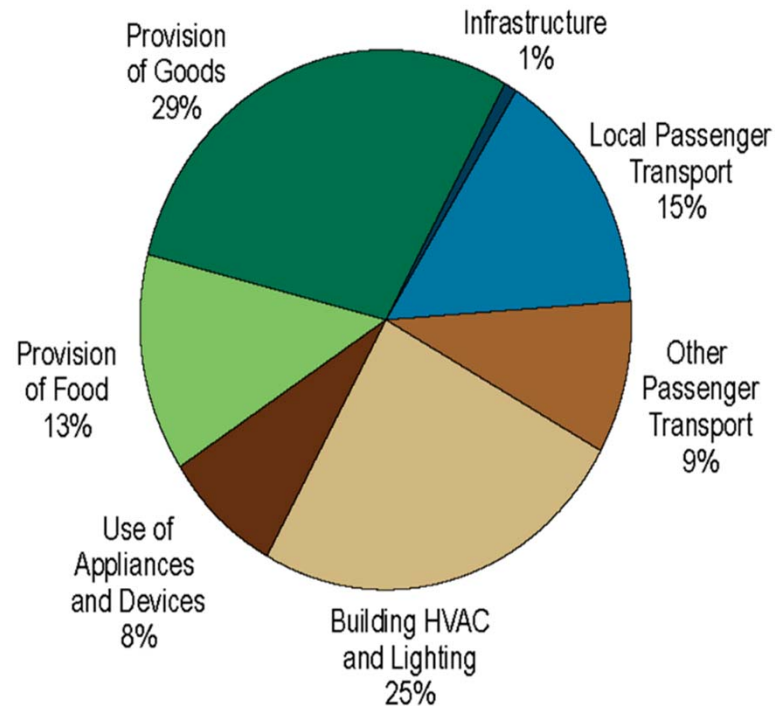
Why SMM? Present Material Use-GDP Decoupling Insufficient

Figure 2. Global material extraction in billion tons, 1900–2005



Source: Krausmann *et al.*, 2009

Why SMM?

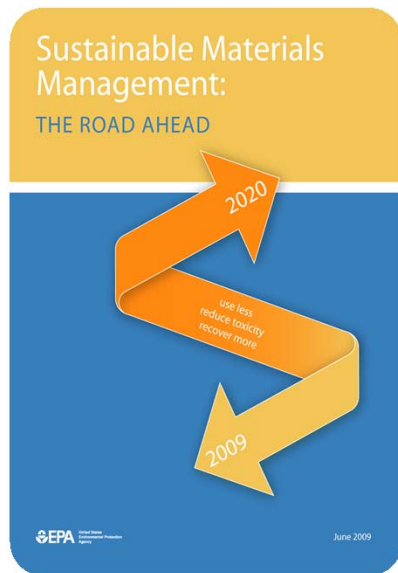


U.S. Greenhouse Gas Emissions

(Source: Opportunities to Reduce Greenhouse Gas Emissions through Materials and Land Management Practices 2009)

- **SMM offers new opportunities to address climate change:**
 - Materials Management is represented by the *Provision of Goods* and *Provision of Food*.
 - Accounting for 42% of U.S. GHG emissions.

The Road Ahead Recommendations



- Recommendations and analysis serve as the foundation for current and future materials management efforts.
- Recommends various EPA-wide approaches.
 - Sustainable Food Management
 - Electronics
 - Life Cycle Assessment Efforts
 - Multi-attribute green product labeling standardsE3: Economy-Energy-Environment
 - Product Service Systems – promotion of business models that transform the sale of products to the sale of services

Food Loss Reduction and Recovery in the U.S.

- EPA's Food Recovery Challenge
 - Partnering with organizations and businesses to prevent and reduce wasted food.
 - Over 700 participants (grocery stores, restaurants, universities, schools, hospitality and venues) conduct audits of their food management practices and identify steps in their process to reduce wasted food through source reduction, donation, or composting and/or anaerobic digestion.
 - Nearly 2 million tons of food recovered providing a GHG benefit of 1.4 million tons of CO₂E = annual emissions from 290 thousand passenger cars.
- EPA collaborating with U.S. Department of Agriculture
 - U.S. Food Waste Challenge
 - Sustainable Development Goals



Electronics



- EPA's SMM Electronics Challenge
 - Participants contributed 22% of the total used electronics collected in the U.S. in 2012 (baseline year of Challenge).
- Champion Award winners included Best Buy Co., Inc., Dell Inc., and Sprint



- In 2013, Challenge participants increased their collection totals by over 7.6%. The increase of over 15,000 metric tons to certified recyclers is equal to:
 - Taking 8,500 passenger vehicles off the road for one year;Or
 - Saving enough energy to power more than 3,700 U.S. homes for one year.

Integration of SMM into EPA's Recycling Regulations

- EPA's recycling regulations advance the principles of SMM by recognizing the economic incentives manufacturers have for materials reuse and recycling in their production process.
 - This contrasts with stricter regulation of third-party hazardous material recyclers, who have an economic incentive to over-accumulate materials they are paid to accept.
- Specifically, the recycling regulations facilitate in-process recycling, where materials are returned to the production process. In addition, the regulations favor commodity-grade recycled products, such as metals commodities.
- The regulations also recognize the potential of higher value solvents from one industry (e.g., pharmaceuticals) being remanufactured into similar high grade solvents in another industry (e.g., chemical manufacturing).
- Benefits of the regulations include energy and resource savings in addition to an estimated future annual cost savings as high as \$59 million per year.

Working With Industry & Government Leaders

Recent conversations with U.S. industry representatives indicate EPA can do more to help:

- Better define terms like recycling, recovery, disposal, and diversion, so all can understand and align more closely on our definitions and measures of success.
- Convene and educate stakeholders across all parts of the materials use and recovery process, to facilitate true life cycle based approaches.
- Open more communication channels and increase transparency in reporting so secondary materials markets and the businesses they spawn can be more efficient.



Thank You!

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