Sustainable Materials Management

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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?

- 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.

**U.S. Greenhouse Gas Emissions**
SMM and Recycling

• We have domestic capacity to process 2 billion pounds of soda bottles, yet currently we only collect 1.4 billion/annually. And there is growing demand for more recycled plastic.

• The aluminum industry is eager for more aluminum cans – Yet in the U.S. we bury nearly half of our cans in landfills, which by the way are valued at over $1 billion.

• Glass recycling capacity exceeds supply by 65%.

• Paper recycling is available to 87% of Americans.
SMM and Recycling

U.S. Recycling and Reuse Industry:
• Consists of 56,000 establishments that employ > 1.1 million people

• Generates an annual payroll of nearly $37 billion

• Generates a gross of over $236 billion in annual revenues (U.S. Recycling Economics Information Study 2001)

Southeast Recycling Development Council (SERDC):
• In Tennessee, local governments pay $42 million annually to bury commodities with a raw value of $180 million.

• Alabamians pay $25 million to bury $193 million worth of materials.

• The southeast region of the US could have 21,500 more private sector jobs if those states recycled 10% more material.
What is EPA doing?

- Measurement
- Convening
- Analysis
- Regulatory Action
- Work in Targeted Sustainable Materials Management Focus Areas
Working With Industry

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
  o Specific focus on measurement systems including the enhancement of existing data and development of new data such as those for measuring the circular economy
Sustainable Materials Management (SMM) provides significant opportunities to:

- Reduce the 42% of U.S. GHG emissions attributable to Materials Management
- Target work where environmental impacts are the greatest
- Contribute to US efforts toward UN Sustainable Development Goals (SDG)
- Build strong communities and economies
- Provide national and international leadership
- Demonstrate measurable results