

International Workshop to launch the Green Economy Initiative
1-2 December 2008

Waste Management Briefing Note

Introduction

Sustainable waste management involves the safe and clean handling, transfer, storage and disposal of waste. It also involves the three Rs – reduce, re-use, and recycling. The Green Economy initiative (GEI) will focus on the economic opportunities from investing in sustainable waste management. These opportunities are expected to come from the development and deployment of technologies that reduce waste generation as well as business opportunities in waste treatment and recycling. Sustainable chemical management is closely related to waste management. Due to the limited knowledge of the economics in this area, however, the chemical elements will be addressed in either a revised or a separate briefing note or at a later stage.

Data used in this note are collected randomly from the internet. They are not meant to be fully comprehensive and consistent. They are presented here to give a sense of the growing trend and potential gains in this increasingly important sector.

Status

- The global market value of environmental technologies, products, and services currently runs at about \$1,370 billion. Of this, waste management/recycling runs at about \$41 billion.
- Landfill gas-to-energy (LFGTE) programs have been developed as a means of converting methane generated by decomposing organic materials such as food into useable energy. The IPCC reported 1,150 LFGTE plants operating globally in 2003 and cited capture rates of 20 percent, far lower than the 75 percent rate claimed by some waste management companies.
- The Bureau of International Recycling estimates that its 60 members worldwide process 500 million tons of waste annually, including ferrous and non-ferrous metals, stainless steel and special alloys, paper, textiles, plastics, and rubber. With an annual turnover of \$160 billion, federation members employ more than 1.5 million people. This figure is but a fraction of worldwide recycling employment, and presumably excludes most of the developing world.
- In 2000, 9,765 jobs in paper reprocessing (along with an additional 5,450 in general recycling collection and 1,624 in general sorting) were reported in the United Kingdom.
- The World Bank estimates that in 2002, Brazil collected 3 million tons of paper and had 28,347 jobs specifically in paper recycling.
- In the US recycling generates \$236 billion annually and employ 1.1 million people at 56,000 public and private facilities. The national average recycling rate of roughly 30 percent saves about 256 billion barrels of crude oil, the equivalent of fueling 22 million cars each year.
- Remanufacturing operations worldwide save about 10.7 million barrels of oil each year, or an amount of electricity equal to that generated by five nuclear power plants. They also save a volume of raw materials that would fill 155,000 railroad cars annually. In 2000, the remanufacturing sector in the European Union member countries accounted for about 4 percent of the region's GDP.

Prospects

- By one estimate, the global market value for environmental technologies – products and services – is projected to increase to \$2,740 billion by 2020. Of this, waste management and recycling is projected to increase to \$63 billion by 2020.
- In 2004, China surpassed the United States with a total of 190 million tons of waste. About 1.3 million people are employed in China's formal waste collection system; however, there exists an additional 2.5 million informal workers or scrap collectors. By 2030, China is expected to generate 480 million tons of waste, 10 percent of which is estimated to be recoverable paper.
- Total global municipal solid waste (MSW) is forecasted to increase by 37.3percent between 2007 and 2011.

Drivers

- Increasing scarcity of resources, from oil, to minerals and timber, has turned recycling and re-use into a booming business.
- Waste management can be highly labour-intensive, with the potential to create a large numbers of jobs.
- With rapid industrialisation and increasing standards of living in the developing world, the volume of waste is accumulating faster than the waste management capacity. Increased awareness of the health impacts from poor waste management is driving citizens to demand solutions.

Main issues

- The global demand for waste to the purpose of recycling and re-use is growing rapidly, outstripping the supply. There are concerns over the export of waste to the disadvantage of domestic recycling businesses.
- Not all waste trade is sustainable. There are cases where developing countries have become a dumping ground for heavily polluting second hand vehicles and e-waste exported from developed countries.
- The issue of labour and health standards in waste management in many developing countries also remains a serious concern.
- Of the three Rs, reducing waste generation in the first place tends to receive relatively less attention. There may be an inherent contradiction in the three Rs, since reducing the waste generation would mean reduced supply for the recycling businesses.