

# Muck and brass

Feb 26th 2009  
From The Economist print edition

## The waste business smells of money

RECYCLING aside, waste firms often describe themselves as recession-proof. The logic is simple: their workload is always increasing. As countries get richer and more urban and their populations expand, they throw away ever more stuff. The OECD forecasts that although municipal waste in rich countries will grow only by a fairly sedate average of 1.3% a year up to 2030, or about 38% in all, India's city-dwellers will be generating 130% more rubbish and China's over 200% more over the same period. That increase will come partly from a growing amount of waste generated per person but mainly from a rising urban population. Overall, Nickolas Themelis of Columbia University expects worldwide waste to double by 2030.

Growing wealth generally goes hand in hand with more concern for the local environment. In time, governments in developing countries will make sure that more waste is collected and tighten the rules about disposal. For example, India's Supreme Court has ruled that all cities of 100,000 people or more should provide a waste-collection service. The Indian government, for its part, has set guidelines and targets for treatment and is working on a law on e-waste. At present these rules are observed mainly in the breach, but with time and public pressure compliance should grow.

In rich and poor countries alike the authorities are increasingly inclined to entrust waste management to the private sector. That reflects not just the economic orthodoxy of recent decades but also the rising cost of complying with ever stricter environmental rules. In Britain municipalities have been obliged to hold public tenders for waste management since 1989. In America private firms dispose of roughly 70% of all waste. The more go-ahead cities in China, including Beijing, Shanghai and Guangzhou, have handed some rubbish-disposal contracts to private firms.

Mumbai offers a good example of the way things are going. Its collection rate is already well above the Indian average of 60%. Its environmental standards are also rising. Although almost all its waste currently goes to municipally owned dumps such as Deonar, with almost no pollution controls, the city plans to transform them into sanitary landfills and to build a new, greener facility from scratch. It is also installing equipment to collect methane and leachate at a recently closed dump, Gorai. The role of the private sector is growing: the local government has brought in consultants for the Gorai project and hopes to involve private partners in the landfill schemes. It is already using contractors to take most waste to its dumps.

One big Indian city, Chennai, has contracted out its rubbish collection to Veolia Environnement, one of the giants of the waste industry, which has a number of contracts in developing countries, including Brazil, South Africa and China. Its main rival, Suez Environnement, is active in China, Morocco and elsewhere. Covanta, the world's biggest waste-to-energy firm, already runs one facility in China and has several more in the works.

Waste firms see ample opportunities in the rich world, too, because ever stricter regulations are helping to make up for the slower growth in waste volumes. On the whole, says Henri Proglia, the boss of Veolia Environnement, the more complicated the treatment, the higher the margin.

Between 1985 and 2005, as America's regulations got tighter and small landfills went out of business, average tipping fees rose from less than \$10 per tonne to almost \$35. But the European Union is probably the most zealous regulator: it has separate legally binding "directives" on waste policy in general, hazardous waste, the transportation of waste, pollution control, landfills, incinerators, and a host of specific sorts of waste, from cars to packaging to electronic goods. That has helped to push average tipping fees much higher than America's: €74 a tonne in France, for example, and €50 in Italy, according to CyclOpe.

The big waste-industry companies welcome tighter regulation. Unlike the tiddlers, they can afford the investment needed to comply with it. The search for economies of scale has led to dramatic consolidation in recent decades. In Britain, between 1992 and 2001 the market share of the 15 biggest companies rose from 30% to 60%. In America consolidation is still in progress. Last year the third-biggest waste firm, Republic Services, spurned an offer from the biggest, Waste Management, and instead spent \$6 billion buying the second-biggest, Allied Waste Industries. The two remaining firms have a combined market share of 41%, according to Standard & Poor's, a rating agency.



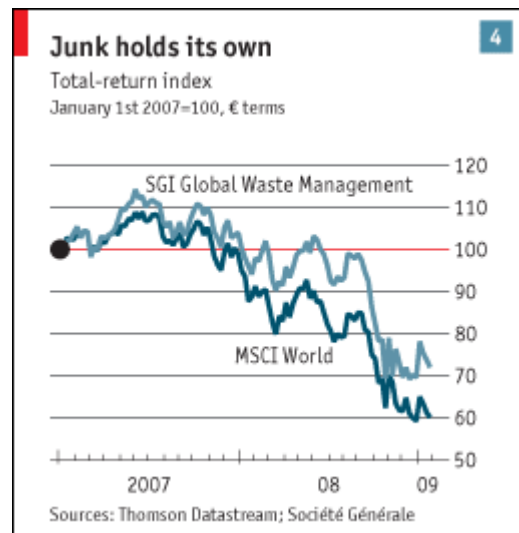
Artful Spittelau

## It just keeps coming

For such big, integrated firms, waste is also a very stable business. Although households and businesses produce somewhat less rubbish in tough economic times, the decline in volume is usually only a percentage point or two, says Mr Parker of the National Solid Wastes Management Association. And contracts often run for long periods. Four Winds Capital Management, an investment firm that is setting up a waste-industry fund, reckons that the average length of a collection contract is seven years; of a disposal contract, nine years; and of an integrated contract, 17 years. No wonder that the big firms' earnings are still growing nicely. Shares of listed waste firms have also suffered less than most in the recent downturn (see chart 4).

Waste firms often have multiple revenue streams, which can also help them weather a downturn. A waste-to-energy firm, for example, earns “gate fees” for taking the waste in the first place, as well as payments for the power it generates and any metals it recovers from the ash. Recycling firms are the obvious exception, but even they deal in a variety of goods whose prices do not always move in lockstep.

Concern about global warming should provide a big boost for the waste business in the future. Methane from landfills accounts for only about 4% of greenhouse gases, but it can be dealt with relatively cheaply and easily. Recycling tends to consume less energy than making goods from scratch, which helps to curb emissions.



Cities are particularly keen to tackle landfill gas, says Mr Blumenfeld of San Francisco’s Department of Environment, because it is one of the few sources of emissions over which they have jurisdiction. And in places that do not have much heavy industry it can make quite a large contribution to total emissions: in San Francisco its share is 18%.

In many countries power from landfill gas or waste-to-energy plants (like the one at Spittelau, outside Vienna, illustrated above) attracts subsidies of one kind or another because it saves emissions. In the developing world it can earn UN-backed carbon credits, which can be sold to governments or firms that must reduce their emissions under the Kyoto protocol. Mumbai, for one, plans to sell such credits when its landfill-gas project at Gorai comes on stream.

Firms such as Covanta see worries about climate change as a spur to waste-to-energy projects. Incineration could save up to a gigatonne of emissions if widely adopted, says Covanta’s boss, Anthony Orlando. That is about one-seventh of the current global total. Already, the world’s 700-odd waste-to-energy plants generate more power than all its wind turbines and solar panels put together.

Japan and Singapore burn more than 50% of their municipal waste. Burning is also popular in many European countries. China currently incinerates only 2% of its rubbish, but has set itself a goal of 30% by 2030. That will involve an investment of at least \$6.3 billion, according to New Energy Finance, a research outfit. Even America is thinking again: in 20-odd states that require utilities to generate a proportion of their power from renewable sources, waste-to-energy plants count towards the goal. Mr Themelis reckons it could supply as much as 4% of the country’s electricity.

But it is Britain that currently offers the biggest incentives to waste firms. Trying to meet a target set by one of those European directives, it discourages landfilling by taxing it heavily. The tax rose by £8 per tonne in April last year, to £32 (\$46, €37), and is set to rise by a further £8 both this year and next. In a country that still sends over half its waste to landfill, municipalities and businesses are desperate to find other ways of disposing of their rubbish.

No wonder, then, that so many of them are experimenting with avant-garde technologies. The government estimates that meeting the target will require £10 billion of investment. As one entrepreneur puts it, Britain is “beachfront property” for anyone with a nifty new waste-processing technology to sell.

# Less is more

Feb 26th 2009

From The Economist print edition

## The ultimate in waste disposal is to tackle the problem at source

SIEBEN LINDEN, a hamlet in former East Germany, half-way between Hamburg and Berlin, looks deceptively normal. There is a cluster of houses, some fields, a few cars parked by the side of the road and a small shop, all set against the backdrop of a looming pine forest.

Closer inspection, however, reveals a few peculiarities. Several of the modern-looking buildings turn out to be made of wood, straw and mud. There are huge quantities of logs, because wood-fired stoves and boilers provide all the heating, and quite a few solar panels, which generate most of the electricity. And there are more young people around than usual in rural Germany. Sieben Linden, a self-proclaimed eco-village, is growing fast, unlike the surrounding towns.

The 120 inhabitants have decided to live in as green a manner as possible. They are trying to wean themselves off fossil fuels, grow their own food and timber, acquire fewer frivolous possessions and produce less waste. Food comes either from their own fields or from wholesalers, so there is no need for much packaging. Any scraps are composted. Urine from the toilets is diverted to a reedbed for natural purification, and the faeces are turned into compost for the community's forest.

The residents live separately but share big appliances such as washing machines and cars. Before buying a new tool, say, they will put a note into the community's logbook to ask if anybody has one they could borrow. If not, they will probably buy one secondhand. They often wear one another's hand-me-downs. Unwanted possessions are left out for others to help themselves.

Carefree consumption is not actually forbidden, though it would raise eyebrows, says Eva Stützel, who helped to found Sieben Linden over a decade ago. But the main reason the inhabitants buy less and waste less is that they have a rich community life which does not revolve around trips to shops, restaurants and cinemas. They go ice-skating on a nearby pond in winter and swimming in summer; they teach one another horse-riding and yoga and tai chi; they put on plays and concerts and seminars.

The idea, explains Kosha Joubert, another resident, is not to adopt a dreary, ascetic lifestyle but to demonstrate that it is possible to live in a green manner without undue sacrifice or disruption. Western urbanites could easily adopt elements of the eco-village lifestyle, she says, by forming car pools, say, or shopping co-operatives.

## Tipping point

Until recently most people in the waste industry had assumed that it was impossible to reduce the amount being produced and were concentrating on putting the stuff to better use. But lately that assumption has been challenged. For one thing, the pace at which the rich world churns out rubbish has been slowing.

Between 1980 and 2000 the amount of waste produced by the OECD countries increased by an average of 2.5% a year. Between 2000 to 2005 the average growth rate slowed to 0.9%. That was just ahead of the rate of population growth (0.7%), but well behind the rate of economic growth (2.2%). The OECD describes this as "a rather strong relative decoupling of municipal waste generation from economic growth", although it expresses