



Almost zero waste

Escalating waste production and new attitudes, approaches, regulation and business models lead many to aim for an almost zero-waste society.

Some commentators predict that the amount of waste being generated will double over the next twenty years. This is due to increasing population, increasing urbanisation and increasing consumption. The problem is shared with energy, food and water supplies because the richer people get, the more they use. Waste is already the source of almost 4% of the world's greenhouse gases, mostly in the form of methane from rotting food. However, although great improvements have been made in dealing with it, the importance of waste management has been low on the collective agenda for too long.

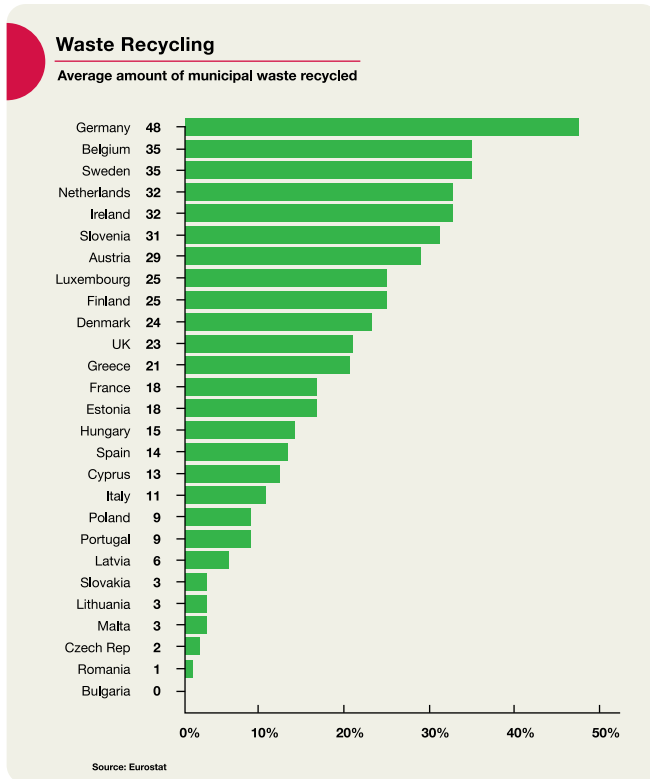
The average American throws away over 700 kg of rubbish each year while, in Europe, each person produces over 500 kg of domestic waste and the developing nations are catching up fast. By 2030, Indians will be producing twice as much as they do now and Chinese people three times as much. On top of this, we generate huge quantities of construction debris, industrial effluent, mine tailings, sewage residue and agricultural waste. Dealing with it all is a costly exercise: rich countries spend some \$120 billion a year disposing of their municipal waste alone and another \$150 billion on industrial waste.

In a number of countries, the primary means of waste disposal is landfill and many see that this cannot continue – aside from the associated risks to human health and the local environment, there simply isn't enough land to fill. Yet the main alternative, burning

waste, can be just as bad, both for people and for the planet.

The problem is that, with current practices, the world just can't cope. Many workshop participants suggested that we need to decouple waste generation from economic growth. It's a challenge to change people's mindsets but some regions have already introduced major initiatives to both reduce the amount of waste produced and also increase the levels of recycling. At one extreme, in places like San Francisco, new technologies are being introduced to automatically sort domestic trash and so reduce landfill. In his initial view on the future of waste, Ian Williams suggested that, 'in Switzerland, the practice of domestic sorting of waste has become so culturally ingrained that the country achieves some of the highest recycling rates in the developed world'. However, several people question this as a model for others: 'I wonder how far this model is transferable to other economies and cultures?' 'I can see a North European adoption quicker than an Asian one and so question its overall impact.'

In other places, even higher levels are being achieved. For instance, some claim that in Mumbai the natural system of domestic sorting to rag-pickers on the city's dumps means that recycling rates top 80%. In one Mumbai workshop, it was claimed that this figure is actually nearer 95%. That said, no matter how good Mumbai is at collecting its rubbish, its record



in disposing of it is poor. Dumps are unregulated so, for example, the city's biggest landfill site, Deonar, has no measures to control leaching, which means toxins are allowed to flow through the surrounding marshes and into the Arabian Sea.

Mumbai's waste collection process effectively works largely because there are enough poor people prepared to go through the cast-offs of the rich. Looking forward, it is argued, as individual wealth increases and the incentives change, the system will change and probably become less efficient. Certainly, few other countries would welcome the current

Mumbai model of waste collection. Alternative approaches are needed.

A primary focus of regulatory and governmental attention in many countries has been on waste production by industry. Whether targeting waste discharge into rivers, recycling of key materials, design for disassembly practices or replacement of multiple plastic components with more sustainable options, industries around the world are being encouraged to improve production processes and reduce waste. However, in our workshops, it was emphasised that not enough progress has been made and that, to successfully tackle the waste challenge and move us to a more balanced system, three primary developments need to – and most likely will – take place over the next decade.

The first of these is improving consumer awareness. It is argued that, even in some leading European countries, our eco-literacy is still very low. Although places like Austria are seen to be well ahead in this respect, there is in general a lack of understanding of the impact that waste has on the environment and the economy, and the knock-on effects of transporting and burning waste. As such, we can expect a significant ramping up of school education, media campaigns and local council initiatives in the next ten years to nudge people towards behaviour change. 'A world where we focus as much on waste prevention as on waste treatment is essential.'

Secondly, the mindset of many in industry, as well as consumers, will need to shift towards waste being seen as a resource rather than a by-product. As the cost of dealing with waste escalates, new regulation around full cradle-to-grave product lifecycles comes into force and stories such as Nike's use of recycled

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plastics for its 2010 World Cup shirts gain traction, many see that a fundamental re-think will occur as innovative businesses consider the possible opportunities presented by waste materials. While this may start with the more precious materials in short supply – and therefore be of particular interest to the electronics sector – it will quickly flow through into the mainstream world of plastic bottles, automotive components and food.

Food waste is increasingly an issue. In the UK today, over 35% of food is wasted; in the US, the figure is even higher. In a world where food security and supply are becoming key issues, many observers argue that a tipping point will be reached where attitudes to waste have to change. One suggestion in Mumbai was that we should learn from the past – why not return to the days where hawkers at the train station offer tea from clay cups rather than

polystyrene alternatives which are cast aside and scattered across the platform?

Thirdly, and arguably most critically, new business models for waste management will come into force over the next decade. In most countries, waste is seen from a centralised view with big investments in incinerators and the like. The trouble is that both the problem and the solution to better waste management is one that sits more comfortably in a small and distributed model. Local sorting and localised reuse are catalysts for major improvements in waste management, but the financial incentives are rarely there. Even where there are, in locations such as Mumbai, (allegedly) 'corrupt politicians are supporting the creation of large centralised mixed waste processing plants that will add complexity, increase cost and reduce the overall system efficiency.'

Around the world, we heard that this shift towards localised business models, ones in which we have 'a more intelligent way of managing resources on our overall balance sheets', is both essential and, if anything significant is to really change, highly probable. Governments and regulators should perhaps take note.



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