

Resources and Waste

Addressing Consumption and Waste

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(where sold)

Waste and recycling is an energy issue: It takes energy to create the resources we routinely buy and dispose of every day. If we handle waste badly it's not just a source of pollution and nuisance, it's a waste of energy and resources. We have to manage waste according to its value as a resource, and a sink of energy that must be avoided, not merely as a "problem" that we have to get rid of.

Understanding waste in the UK

As with energy, the media's view of waste is that household waste production is responsible for the nation's waste mountain. Household waste is a problem, but in the context of UK waste production it's only a small part of the problem. Industry and commerce together produce over 2½ times more waste than households. Construction and demolition waste, although less problematic than household, industry and commercial waste (because its mostly inert) amounts to more than these three put together.

Household waste may not be the greatest part of the problem, but it is one of the most difficult to deal with as it's so *heterogeneous* – it's a mix of many different waste types that are difficult to separate for safe disposal (e.g., batteries/chemicals) or recycling (e.g., aluminium foil). The failure of many local councils to collect segregated recycleable materials, and instead concentrate on collecting mixed recycleables so that people need not "change their habits", hampers the development of recycling.

Even if we cut household waste production by half the effect overall would be negligible. As other waste sectors, especially commercial and industrial, are larger it diminishes the benefits of reducing or recycling household waste. What's the point minimising household waste if our shops, offices and industry are churning out ever-greater quantities of waste on our behalf and do not recycle it?

"What has recycling done for us..."

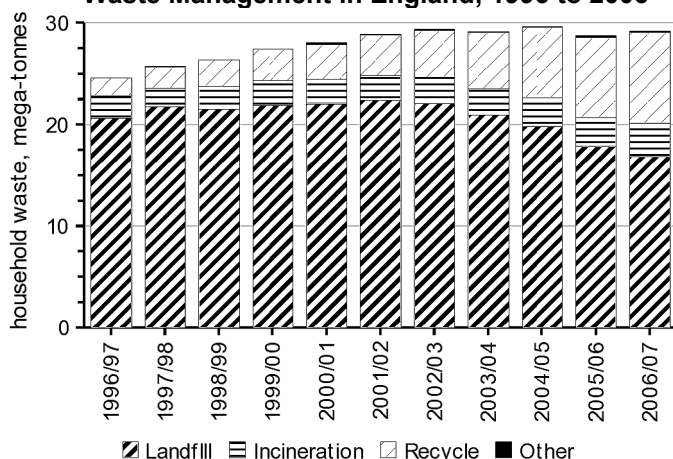
Recycling is good; recycling more waste is good; but in the context of the current system of waste

management in the UK *recycling isn't working*. We treat recycling as an end in itself when in fact the greater problem is the production of waste, and the wastage of energy and resources that this creates. Unfortunately, as with energy consumption, the blame in the public debate on waste is put upon households. This is because government is unwilling to intervene in the production of waste by society – because it would severely affect the way businesses work – even though the evidence to date shows that this is the policy solution that works.

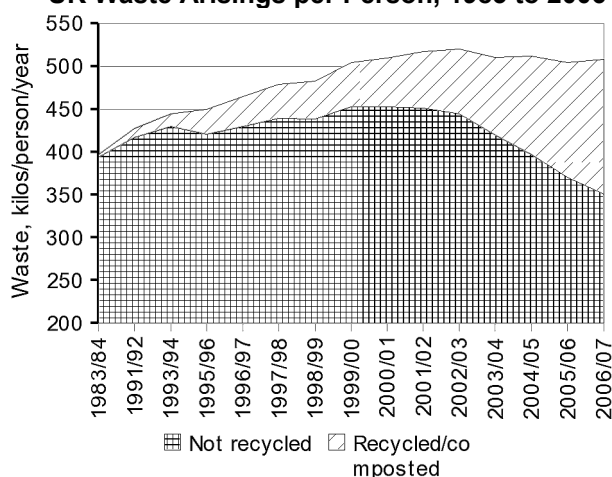
The recycling of household waste has grown at a high rate over the past decade, but at the same time household waste production has also grown at 1.8% per year. This means that although the mass of waste recycled has grown over five times in the last decade, the percentage of waste recycled has only increased just over four times. In fact, until 2005/6, slightly more waste was still landfilled or burnt than a decade before. Since then the halt in the growth of waste has allowed the proportion recycled to accelerate. If this hiatus in growth hadn't taken place, and the past trend had continued, there would have been another 5 or 6 million tonnes of household waste requiring disposal, and about half of that would have gone to landfill or incineration.

If we look at the change over the last five or six years the landfill tax and other measures have had the effect of stopping the growth in waste production (you can see on the graphs below that since around 2002 waste production has levelled out). This has allowed recycling to 'catch up' and reduce the

Waste Management in England, 1996 to 2006



UK Waste Arisings per Person, 1983 to 2006



quantity of material going for final disposal. The other notable effect is the shortage of disposal sites as new environmental regulations, and opposition from local campaign groups, has choked-off the supply of new disposal capacity. By tightening waste controls further, ideally through strict producer liability measures, we could see waste production actually fall.

Beware the Planning Bill

The Planning Bill that is currently going through Parliament (Autumn 2008) has been highlighted as a measure to allow the construction of new nuclear reactors. Whilst this might be the case in the headlines, those in local authorities and industry responsible for planning waste disposal are far more interested in the scope it will give to expand waste facilities without having regard to local opposition.

For at least the last ten to fifteen years local authorities across the UK have had plans for incinerators sitting in their 'bottom draws'. Very few have tried, with a private sector partner, to commission new incinerators as these proposals provoke massive local opposition. The Planning Bill, if made law, could override this opposition as large incinerators could be classed as "essential infrastructure".

If, as seems likely, this is the case then it would be disastrous not only for the quality of the local environment, but also for the development of better waste policies. Rather than seeking better segregation and recycling local authorities would instead opt for bulk, unsorted collection and incineration as a means of dealing with household waste production.

Resource destruction

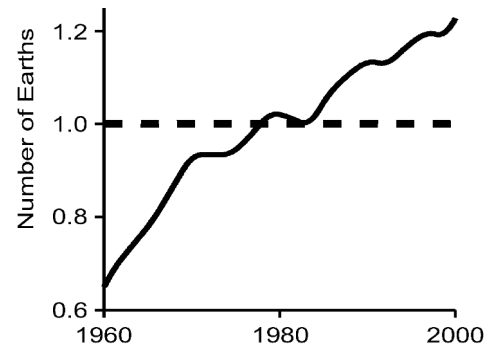
When we think about waste one of the principle limitations on the "waste system" is the Second Law of Thermodynamics: Energy and materials lose their "quality" when we utilise them. If you make a kilo of plastic and turn it into plastic bags, use the bags, and then recycle them, you'll never get the full kilo of plastic back again. Recycling uses less energy, and creates less greenhouse gases than producing new plastic, but because of the Second Law you must always find new sources of plastic to replace the plastic lost. Recycling, on its own, is therefore no solution to resource and energy depletion – we have to manage demand for resources instead.

The UK's waste system is primarily focussed on the disposal of materials, not managing their intrinsic value as energy or resources. An excellent example is the recent fashion for biodegradable plastic bags. What's the point of investing energy in producing a plastic bag that we deliberately engineer to decay into nothing? – it disperses beyond viable use the energy and resources invested in producing it in the first place. It's far more "ecological" to make a plastic bag that can be recycled because we can recover the value we invested in it during its manufacture. Engineered biodegradability just makes the energy and resources invested in materials easier to waste!

Ultimately the problem we face is resources. As oil

and gas production decline so the production of plastic, metal, and even renewable (biomass based) resources will become difficult to find. For example, as we use-up the best sources of iron or aluminium the energy required to process the raw materials increases exponentially with the decrease in the quality of the resource (an effect of the Second Law).

The underlying problem is that the human race has exceeded the *carrying capacity of the Earth* – the ability of the Earth to produce the resources we demand and



Source: *Limits to Growth - The 30 Year Update*

absorb the pollution we produce – two decades ago (see graph). The present acceleration of the effects of pollution, ecological damage and climate change are a direct result of this. We are now testing the stress points in the Earth's systems through our continued demand. If you look at the "ecological footprint" it mirrors the change in global growth (it reduces during global recessions). Clearly then, like energy, the simplest way to address the human ecological footprint is to reduce growth and then institute a long-term economic contraction and descent.

The future of waste management in the UK

The greatest problem we face at the moment is the government's policy of encouraging waste incineration (of all waste, not just household). The driver here is the need to meet targets for the reduction of waste going to landfill. Although the government considers incineration to be a renewable source of energy if we view the energy and resource implications objectively it is not. Recycling waste using current technology saves *four times more* energy than incinerating that waste would produce.

The simplest solution to waste would be *strict producer liability* – if a company makes or sells an article they are responsible for its reclamation. If we enforced this you can bet that very quickly we'd find most shops using refillable containers and other forms of reusable packaging. It's also likely that the service life of goods would dramatically increase as this is the simplest way to reduce the need to manage to mass of waste we produce each year.

In terms of a wider economic strategy, we need to implement *zero waste systems* – mechanisms to reduce waste production and arrange for the full reuse/recycling of waste materials to eliminate the need for disposal. The type of localisation that we must implement to address energy depletion will make this easier as the point of material production is closer to the point of use and waste production.