

Does the United Kingdom Manage Its Waste?

By Warren Fothergill

Waste in the United Kingdom is a major concern, and taking action in relation to its generation, control and re-use is essential. However, the UK government doesn't identify with the fact that we are indeed a throw-away society, not only from a domestic viewpoint, but commercially too. Whilst there are 'waste management' aspects within both commercial and domestic areas, we still struggle with the concept of dealing with its generation, disposal and opportunity to recycle.

The UK has yet to identify with sustainable waste management and government department figures are alarming to say the least (see Fig. 1), demonstrating a worrying increase of circa 8% over an 8 year cycle; so do we assume that it's a 1% increase per year?

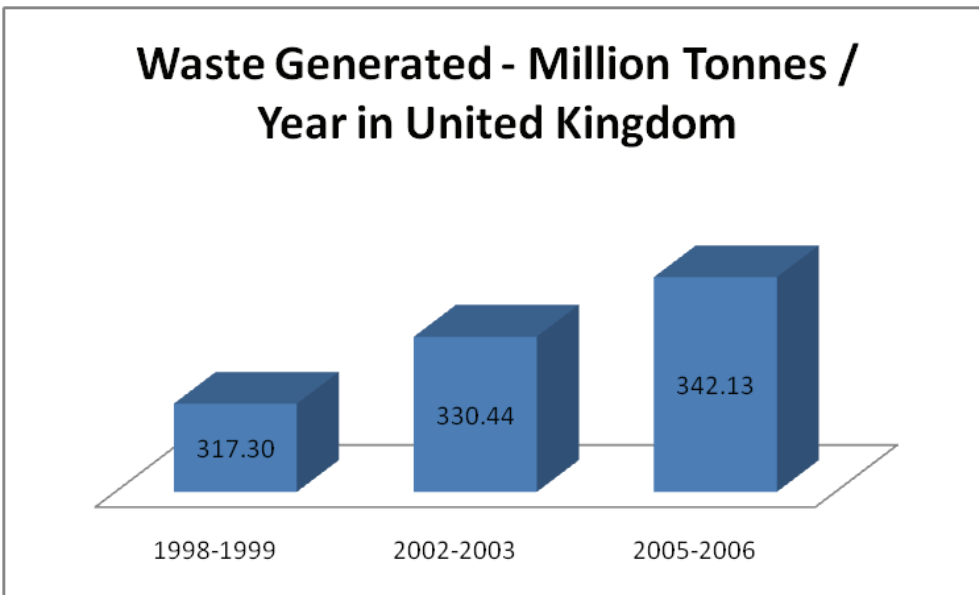


Fig 1. Waste Generated in the UK 1998 - 2006 (1)

The previous question is debatable but we need to address the total figures and how we sub-divide in both generation and treatment.

If we address the generation of waste from 2 areas, domestic and commercial (see Fig 2); we see the gulf is vast; however we also need to assess the size increase over the same period. Household waste increases nearly 15% over the 8 year whilst commercial waste only increased by 7.17% over the same period. Quite a substantial difference, but why is this so?



QUOTE

“Let every individual and institution now think and act as a responsible trustee of Earth, seeking choices in ecology, economics and ethics that will provide a sustainable future, eliminate pollution, poverty and violence, awaken the wonder of life and foster peaceful progress in the human adventure.”

– **John McConnell,**
founder of **International Earth Day.**

GOOD NEWS

Ontario's Beleaguered Auto Workers Get Some Good News

Finally, April 27, General Motors Workers in Niagara's St. Catharines area got some welcome news when GM announced it is investing \$235 million on the future of its St. Catharines engine plant.

“The new engine allocation at St. Catharines in the latest in a series of investments in our Canadian facilities...” said Kevin Williams, president, GM Canada.

Source: Niagara At Large

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Waste Breakdown (million tonnes / year)

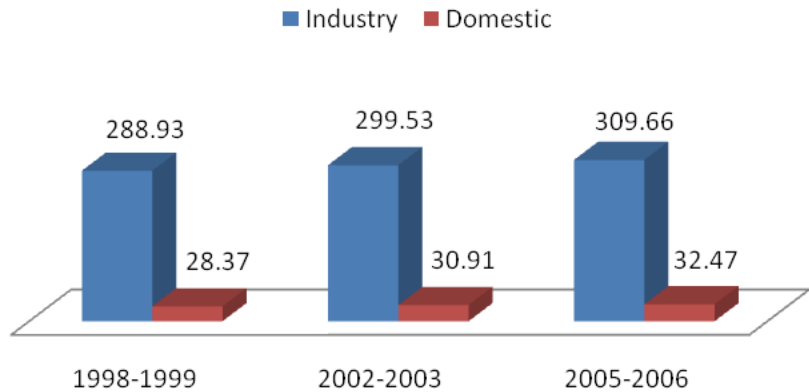


Fig 2. Waste Generated in the UK 1998 – 2006 by Type (1)

The UK typically utilises two aspects of management on areas like health and safety and the environment; typically the 'Carrot' or 'The Stick'. Once again though, this only applies to 'commercial' sectors, or does at the time of going to press. The first 'Stick' is taxation, and predominantly within the waste arena, this is known as 'Landfill Tax'. It was 1996 when this was first introduced, the then Conservative government, as part of their waste strategy, instigated this financial penalty for the 2 waste streams likely to be sent to landfill: active waste (likely to change e.g. breakdown or contaminate) at £7 per tonne and inert waste (stable non reactive e.g. concrete) at £2 per tonne. Today, the cost of sending 1 tonne of active waste to a landfill is £48 landfill tax, landfill operator's gate fee – typically around £22 (2) plus Value Added Tax, equating to £82.25 of which £60.25 is government tax! Again, a major revenue stream at the expense of the UK's commercial/ industrial processes, but how can we reduce the impacts to the business whilst benefitting the environment?

The answer to the above is simple – research your waste stream and the alternative solutions out there. But what alternatives are there for waste?

As you can see from fig. 3, there are alternatives to landfill, but the various types of facilities all have different costs associated, with many having a scope of charges, though it's the factors like 'environmental' impacts that are not addressed. Technology and competition at both regional and local levels needs to be introduced, if not induced, to drive developments in waste management forward. We are today looking at a stagnating market, with the producer pays principle still leading the way for the commercial and industrial areas.

In the past 5 years, only 2 sectors to my knowledge have voluntarily looked to reduce landfill, those being the major retail outlets and the gypsum products sector. Indeed these have been ground-breaking agreements, leading the way in waste management, through life-cycle analysis, but unfortunately other sectors are slow on the uptake, though that's not to say substantial savings haven't been made!

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Type of Facility	Grade/Material	Median Cost	Range
Materials Recycling Facility	Cans/plastic/paper/card	£24	£6 - £50
Composting	Open-air windrow (OAW)	£23	£12 - £49
	In-vessel (IV)	£38	£15 - £70
	Anaerobic Digestion (AD)	£52	£40 - £65
Landfill	Gate fee only	£22	£8 - £42
	Gate fee plus landfill tax ³	£54	£40 - £74
Incineration	All facilities	£68	£24 - £141
	Post-2000 facilities	£83	£68 - £141
Mechanical Biological Treatment		£62	£42 - £82
Wood Re-processors	Grade A	£20	£0 - £45
	Grade B	£31	£25 - £38
	Grade D	£35	£25 - £47

Fig. 3 – Cost of Alternative Disposal Routes (2)

Finally, the domestic waste, which is driven by the consumer, paid for by the consumer in tax (there is commonality between industry and the householder) and, it is a big AND, they can do pretty much what they want with the waste? Yes local authorities may look to introduce recycling and collection schemes, but in the household bin, we are allowed to put in to it whatever we like; from solvents to foods, from paints to clothes it really doesn't matter.....

To conclude, industry is trying to manage its waste, but the majority of householders struggle. Why? Well the onus is on the individual, no penalties and all waste is collected. Industry, it pays through high taxes, for haulage and additional monies for specific waste streams.

Until there is a major uptake in commercial waste management activities within the UK and the drive from the Local Authorities to deliver more than a collection service, industry in the UK will pay for the masses of households who don't reduce, re-use or recycle!! Local Authorities receive allowances (income) for rationing landfill from the EU. Therefore, until that day when the household is taxed for its waste, the waste companies will generate healthier profits until the day landfill becomes extinct, in that there are no more holes in the ground to refill and is likely to be in the next 10 years!

Works Cited

1. Environmental Accounts: Waste; Total arisings in the UK. *Defra*. [Online] [Cited: April 11, 2010.] <http://www.statistics.gov.uk/STATBASE/ssdataset.asp?vlnk=5329>.
2. Comparing the cost of alternative. *Waste Resources Action Programme*. [Online] August 2009. [Cited: April 11, 2010.] <http://www.wrap.org.uk/downloads/W504GateFeesWEB.94e0d26f.7613.pdf>.

About the Author

Warren Fothergill is an Health, Safety & Environment Advisor for **Siemens AG (Energy Service, Service Fossil)** in the United Kingdom. Mr. Fothergill is a Graduate Member of the Institute of Occupational Safety & Health

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ENVIRONMENTAL COMPLIANCE IN ONTARIO

This course provides an overview of key legislation that regulates hazardous waste, air emissions, sewer discharges, storage, transport, disposal of hazardous materials, substance reporting (NPRI, O.Reg. 127), PCB management, designated substances, the 3 R's, and emergency response. The goal is to assist course participants with:

1. Updating & reviewing environmental legal requirements for manufacturing firms in Ontario;
2. Identifying applicable legislation: Federal, Provincial & Municipal;
3. Locating and referencing applicable environmental legislation.

The first day will consist of legislation discussions, so that participants can begin to create checklists to check their own compliance. At the end of day one, there will be a "take home" assignment requiring each participant to return to their workplace and use their checklists to review their own compliance on-site.

Day 2, held one week later, will be spent reviewing the findings from the "take home" assignment, and reviewing additional legislation.

This format provides participants with the opportunity to apply what they learn right away, return to the instructor to ask questions, and then learn some more. This format of training has been delivered numerous times in the past, and attendees always appreciate the chance to 'use' what they learn, and spread out the instruction time, both of which contribute to better course retention.

Course Outline:

1. Introduction & Course Logistics
2. Overall Regulatory Framework
3. Air Emissions
4. Water Quality and Effluents
5. Waste
6. Due Diligence
7. Enforcement and Regulatory Relations
8. Q & A and Discussion
9. Quiz

Bonza Training Solutions & WESA Inc. are pleased to present:

Environmental Compliance in Ontario

This course provides an overview of key legislation that regulates hazardous waste, air emissions, sewer discharges, storage, transport, disposal of hazardous materials, substance reporting (NPRI, O.Reg. 127), PCB management, designated substances, the 3 R's, and emergency response. (2 day course)

Course Dates: June 16 & 23, 2010.

Time: 8:30 a.m. to 4:30 p.m.

Location: Waterloo, ON

Course Fee: \$895

Trainer: Lianne L. Sinclair, WESA Inc.

Registration Deadline: April 6, 2010.

This course is available for on-site delivery.

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DOE - Design of Experiment - NEW COURSE!

Course Description

This course will provide participants with a working knowledge and skills necessary to design conduct and analyze industrial experiments. Basic principles of experimental design and their applications to quality and productivity improvements will be presented. The various design techniques will be discussed such as the Classical, Taguchi and Shainin approach. The main focus of the experiments will utilize the Shainin methodology.

Learning Objectives:

The course provides an intuitive introduction to the theory and practice of experimental design. The course also provides instruction and practice in the planning and analysis of experimental data. This course will help participants understand the steps of DOE application and use to improve the quality level and solve the production problems.

Who should attend?

This course is especially useful for individuals who want to understand and apply a collection of formal experimental procedures specifically designed to identify optimal process conditions. Quality Engineers, Line supervisors, and those assigned responsibility for leading Quality and Productivity teams will benefit from participating in this course.

Prerequisite:

There are no formal prerequisites; however a practical understanding of elementary applied statistics would be beneficial. A working knowledge of problem solving methodologies such as; Root Cause Analysis, PDCA, 8D, etc. would also be helpful.

Duration:

 Two days

On-site option: This is normally a 2 day course, however an additional 3rd day is optional for companies wanting to apply more of what they have learned to various current quality and productivity issues.

DOE - Design of Experiment - NEW!

This course will provide participants with a working knowledge and skills necessary to design conduct and analyze industrial experiments.

Scheduled Dates: June 21-22 - Waterloo ON

Course Fee: \$895

See above for full course outline.

Please call for more information.

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