



Ricardo
Energy & Environment

**Session C: Drivers and barriers for
development of Waste to Energy**

Regulation

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Overview

1. Problems resulting from inadequate regulation
2. The link between regulation and sustainability
3. The link between regulation and public acceptance
4. Regulation of WtE in Europe

Problems resulting from inadequate regulation

- The waste industry throughout the world has had a bad reputation
 - Low priority for public funding
 - Low levels of investment
- This can result in a range of problems:
 - High levels of emissions
 - Accidents and malfunctions
 - Nuisance (smoke, odour, dust, vermin)
 - Local environmental pollution
- Consequences for new development:
 - Unpopularity of new facilities
 - Lack of trust
 - Difficult to demonstrate good performance



Smoke from a medical waste incinerator



Protest against a proposed WtE facility

- Strong regulation is crucial to improve sustainability of WtE facilities
 - Strategic waste management: the right facility in the right place
 - Don't restrict other options for managing waste
 - Delivering low carbon energy: the right waste materials
 - Avoiding air pollution problems:
 - Handling feedstock
 - Combustion conditions (time/temperature/turbulence)
 - Rapid cooling
 - Emission limits and abatement plant
 - Stack height
 - Managing other impacts: amenity, noise,
- Robust regulations can address all these aspects
- Robust enforcement
- Welcomed by responsible operators
 - Stability
 - Opportunity to invest and do business



**Abatement plant,
Allington WtE, UK**

- Strong regulation provides the basis for design of new facilities
- Strong regulation enables a clear message to be communicated
 - Low carbon energy
 - Safe disposal of waste
 - Minimal health risks, much lower than other comparable risks
 - Good neighbour
 - Action when things go wrong
 - “Don’t take my word for it – the regulations require it”
- Public response – always mixed
 - A good track record of industry performance is helpful
 - *“If we don’t burn our waste, what ARE we going to do with it?”*

9.2 Significance of risks to health

On the basis of the information set out above, it was concluded that emissions to air from the proposed South Street ERF will not pose unacceptable health risks to residents or allotment-holders in the vicinity of the proposed facility.

Excerpt from Heath Risk Assessment for UK WtE facility

ML

November 26, 2014 12:25

I'm not saying I agree or disagree with the incinerator, but I would like to ask this question to all those against it.

If we don't burn our waste, what ARE we going to do with it?

We can't bury much more because the land fill sites are almost full.

We can't dig any more land fill sites because there isn't a lot more room left.

Land fill sites take thousands (if not millions) of years to break down the waste.

Burning produces a valuable "waste" product in heat - useful for electricity.

There are concerns regarding the air pollution but necessity is the mother of all invention so if we burn it and have tight air pollution legislation air filters will improve.

Recycling is beginning to pick up pace but we are still a long long way off where we need to be.

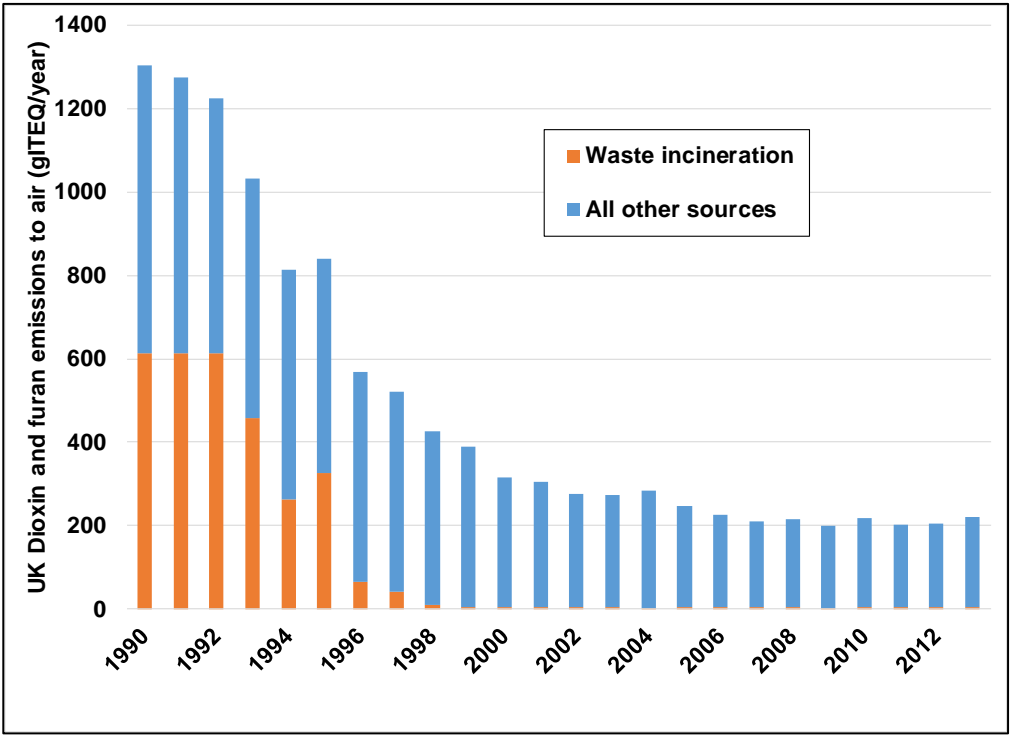
Public comment on news report about UK WtE facility

- No specific regulation prior to 1989 (municipal waste) or 1994 (hazardous waste)
 - For example, WtE facilities contributed over 50% of dioxin emissions
- Directive 2000/76/EC on the Incineration of Waste
 - Set specific requirements on combustion process (temperature; residence time)
 - Did not require specific abatement technology, but set specific emission limits
 - Set monitoring requirements
 - Set requirements for action in the event of emissions above limits, or emission monitoring equipment not operating
 - Existing plant required to upgrade or close

28.12.2000	EN	Official Journal of the European Communities	L 332/91
DIRECTIVE 2000/76/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 December 2000 on the incineration of waste			
THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,		waste, and 0,2 ng/m; TE for installations burning more than 1 tonne per hour of hazardous waste.	
Having regard to the Treaty establishing the European Community, and in particular Article 175(1) thereof,		(3)	The Protocol on Heavy Metals signed by the Community within the framework of the UN-ECE Convention on long-range transboundary air pollution sets legally

Regulation of WtE in Europe

- Waste Incineration Directive was effective in improving performance
 - Specific, enforceable requirements
- Enabled confidence in new development
- Now incorporated in Industrial Emissions Directive 2010/75/EU
- Other directives address other relevant issues e.g. safety; industrial permitting



UK emissions of dioxins and furans 1990 - 2013