

Claim – ‘Energy from Waste incinerators help combat climate change’**1) Carbon Emissions compared to conventional fossil fuel power stations:-**

As agreed at the Paris Climate Change Summit in December last year it is vital to cut carbon emissions as rapidly as possible and the government is now closing down coal burning power stations because they are the most carbon polluting source of power, yet Energy from Waste (EFW) incinerators emit as much carbon per unit of electricity generated as coal fired power stations, and far more than gas fired power stations, see table below:-

Performance of efw incineration vs conventional power stations.

Table 1: GHG Emissions

	<u>g CO2 equ per kWh</u>
Gas-fired	382
Oil-fired stations	770
Coal fired stations	835
Incinerator, CHP	967
Incinerator, heat only	1086

(Includes Biogenic Carbon, Heat=0.4 x Electricity)

”The assumption that energy from waste incineration ‘helps to combat climate change’ is not so obvious from the above analysis”.

“Changing Climate for Energy from Waste” Eunomia 2006 p 11

This is supported by the US Environment Protection Agency who show that EFW Incinerators emit more CO2 per megawatt-hour than coal-fired, natural-gas-fired, or oil-fired power plants. Source: U.S. EPA Clean Energy web page, “How Does Electricity Affect the Environment,” <http://www.epa.gov/cleanenergy/energy-and-you/affect/air-emissions.html> 2008.

NB **Biogenic carbon or biomass** (i.e. card, wood, paper, food waste) is NOT ‘carbon neutral’ as claimed by the waste industry. Such claims ignore CO2 emissions from these materials. This is inaccurate. These materials are mostly produced from unsustainable forestry and land practices that are causing the amount of carbon stored in forests and soil to decrease over time. Incinerating these materials not only emits CO2, but also destroys their potential for reuse as manufacturing and composting feedstocks. **This ultimately leads to a net increase of CO2 concentrations in the atmosphere and contributes to climate change.** (Stop Trashing the Climate Zero waste benefits climate change - Gaia paper <http://www.no-burn.org/downloads/Stop%20Trashing%20the%20Climate%20Report%20Executive%20Summary%20-%20low%20res.pdf>)

See also with the reasoning of the Inspector in the Ardley decision, with which the Secretary of State concurred, that: **“...electricity from EfW is not an energy flow which occurs naturally and repeatedly in the environment”** [PINS ref 2119454, SoS Decision Letter Paragraph 25, and Inspector’s Report Paragraph 16.84] and with the statement at Paragraph 1.8 of the UK Bioenergy Strategy that “bioenergy is not automatically low carbon, renewable or sustainable” [UK Bioenergy Strategy. Published April 2012. DECC, Defra, DfT. Available from: http://www.decc.gov.uk/en/content/cms/meeting_energy/bioenergy/strategy/strategy.aspx].

2) Carbon emissions compared to landfill:-

HM Customs & Excise (2004) state that “The climate change impacts of incineration were worse than those of landfill, even taking into account the offsets associated with energy recovery”.

(Combining the Government’s Two Health and Environment Studies to Calculate Estimates for the External Costs of Landfill and Incineration, December 2004 - based upon emissions data from an authoritative work on the health impacts of waste management carried out by Enviros 2004 (Quoted in ‘A changing Climate for Energy from Waste’ – Eunomia 2006)

NB Please note that we are not advocating landfill for waste that contains recyclable material and especially not biodegradable material that has not been properly stabilised with AD, however it does have an important place in the transition towards zero waste (or as near to that as is practicable):-

Advantages of Landfill for residual waste after first removing untreated organic matter & toxics:-

- Locks up carbon in plastics & treated un-compostable organic matter (no GHG release)
- Stores recyclables till price right (mining plastics)
- Cheap (unlike incineration)
- Flexible (unlike incineration)
- Still available

Very useful as short term part of transition to zero waste

Defra's Economics of Waste and Waste Policy states on page 14 that: "MBT (mechanical biological treatment)-landfill provides the best emissions performance in terms of the treatment/disposal of residual waste. It essentially involves landfilling somewhat stabilised wastes with some material recovery. The magnitude of the environmental impact depends on the extent to which the waste is stabilised." [The Economics of Waste and Waste Policy. Waste Economics Team Environment and Growth Economics, Defra (June 2011). Available from: <http://www.defra.gov.uk/publications/files/pb13548-economic-principles-wr110613.pdf>]

Claim – ‘Incineration is compatible with recycling and sustainable waste management’.

1) Ludwig Kraemer former head of EU Waste Management said:-

“An incinerator stifles innovation, it needs to be fed for 20 – 30 years, and in order to be economic needs an enormous input from quite a region. So for 20 – 30 years you stifle innovation, stifle alternatives, just in order to feed that monster which you build.”

(Speaking on the BBC Panorama programme ‘Rubbish’)

2) Denmark - well known for its EFW incinerators situated in many towns providing heat and electricity to residents, now has incinerator over-capacity (as has Germany and Sweden) and is importing waste from UK & elsewhere.

BUT is now aiming to be fossil fuel free by 2050 and as part of this has a

New waste management plan November 2013:-

“Denmark without Waste – Recycle more – Incinerate less”

- **aim to phase out all waste incinerators**
- **aim for zero waste.**

NB Denmark has abnormally high rates of testicular abnormalities in boys and cancer in young men of other European and Scandinavian countries. This was associated with women having very raised levels of dioxins in breast milk. A detailed survey was carried out in Finland as a comparison where women had much lower levels of breast milk dioxin (and no raised incidence of testicular abnormalities. No nutritional or lifestyle differences were found. The authors of the paper failed to note that at the time of the research Finland had one incinerator compared to the several hundred in Denmark.

<http://www.dailymail.co.uk/health/article-1215877/Chemicals-breast-milk-linked-testicular-cancer.html#ixzz14o6fXt12>

Zero waste – not just pie in the sky if the right policies are implemented.

e.g. Denmark above.

San Francisco Population = 850,000 – Aiming for zero waste by 2020.

Rate of diversion of waste from landfill and incineration. 50% waste diverted by 2000, 63% waste diverted by 2004, 70% waste diverted by 2008, 72% waste diverted by 2009, 75% waste diverted by 2010, 80% by 2013. NB this does include commercial waste too but note the progress towards the goal of ± zero by 2020 (<http://discardstudies.com/2013/12/06/san-franciscos-famous-80-waste-diversion-rate-anatomy-of-an-exemplar/>)