

EA Draft Environmental Permit for Covanta- Submission from Heather Mitchell.

Points of concern in EPR/WP3234DY

Background: There has been progressive toxification of the waste stream from the mid-Victorian era to the modern day – we now have heavy metals, synthetic plastics, and radionuclides in the waste.

Draft permit Page 2 from Introductory Note

It says emissions will be minimised by cleaning waste combustion gases as follows:

"Particulate matter and metals will be abated by bag filters"

- Unfortunately, the smallest and most damaging particles, PM_{2.5} and ultra fine particles, cannot be efficiently caught in the bag filters. They are so small they behave like a gas. While light in mass, they are very numerous, with a large surface area, and they attract to their surface molecules of heavy metals and toxins, becoming highly reactive catalysts, causing inflammation when inhaled. They can settle deep in the lungs, or enter the blood stream and even reach the brain.
- Up to 30% of particles in Boras, Sweden were attributed to a new incinerator(X-ray spectroscopy study Dec 2006). They are the main component of the 'local problem' with incinerators.

They are under researched with regard to the specific toxicity of the effluvia of incinerators. Current standards applied to licensing of incinerators are based on mass – known for many decades to be a bad approach. Coarse particles make up the bulk of the mass and can be caught in the bag filters. Fine particles are very light, more numerous, more deadly and cannot be efficiently caught.

According to WHO, there is no known safe level of exposure. There is differential deposition of metal on particles: with 80% Zinc, Lead, Copper on fine particles, but only 20% on coarse particles.

This reaffirms that inhalation of fine and ultrafine particles is a major route of exposure to toxic combustion by-products and acknowledges that further improvements in Municipal Waste Incinerators are essential for reducing risks caused by fine particles and heavy metals. (It puts one in mind of the asbestos problem which is still costing large sums in compensation due to lung cancer many years after inhaling tiny fibres) . North Norfolk paid out £38million to withdraw from a PFI funded incinerator, judging it cheaper than the estimated £650million in additional health costs over 25 years.

The Precautionary Principle means that we shouldn't risk harm if there is any doubt concerning safety to health. The public will not be served with a 'fail dangerous' approach. Fine particle pollution has been shown to be responsible for a range of human health problems including: initiating and worsening asthma, increasing hospital admissions for bronchitis, asthma, and other respiratory diseases, and increasing heart disease. (Ref Professor Vyvyan Howard MB ChB PhD FRCPATH. Particulate Emissions and Health: Ringaskiddy study 2009). and BCCF (31/10/2017) Incineration of Waste: The Particle Problem, slide presentation)

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2.3.7-2.3.13 Operations and Operating Techniques

The Draft permit makes frequent reference to 'abnormal operating conditions' when abatement systems fail and emission values may be exceeded. Note on p 23 of the Draft Permit, for emissions of dioxins, in Table S3.1 No limit is set, and monitoring is infrequent. Is this because research has shown that highly toxic dioxins may be emitted in abnormal amounts at start ups?

Tejima et al (2007) found that a single incinerator start up released greater than the 2 month's worth of dioxin released at steady state conditions. Ashes also had increased dioxin levels. Wang et al (2007) calculated that one start up could generate 60% of the total annual dioxin emission under steady state conditions. Furthermore, start-ups of some of the incinerators they studied were at least 2x larger than a whole year's operations.

2.3.5-2.3.6 Operations (continued)

"Waste generated must be correctly documented and sent to the relevant waste operation". 585,000 tons of waste annually will leave 1/3 of its weight in toxic bottom ash ie almost 200,000 toxic tons annually. In US this was taken to landfill by Covanta forming a sizeable toxic hill. In Netherlands toxic bottom ash has gone to road surfacing. Toxic breeze blocks for construction have been quoted. Very toxic fly ash has been mixed with bottom ash to get it accepted for landfill. **Missing are strong penalties for malpractice!**

If working to EU **Waste Incineration Directive**: Per ton of waste burned:

- ~550 ng TEQ dioxin are released to air
- ~ 300 kg bottom ash left as solid would contain ~ 30 times as much dioxin as goes to air
- ~ 30 kg of fly ash left would contain ~ 100 times as much as goes to air.
- **When toxic ash goes to landfill, road building etc, it represents a future hazard.**

3.5 Monitoring page 10

Daily emission limits on pollutants(carbon monoxide, sulphur dioxide, oxides of nitrogen, particulate matter, total organic carbon, hydrogen chloride) are expressed in %ages. While small in total in a small incinerator, they will be much greater in the mass incinerator Covanta proposes burning of the order of 500,000 tons of waste annually. This incinerator will make the air quality in Bedfordshire considerably more toxic. Unfortunately DEFRA has no monitoring stations for PM2.5s.

4.2 Reporting page 11

4.2.2 Reports on the performance of the incineration activities from monitoring of emissions, treatment of toxic ash, etc, over the previous year shall be submitted by Covanta annually to the Environment Agency.

In other words, Covanta monitors itself. Worryingly, its record of infringements of regulations in US over the years speaks for itself. It is a profit-making business and will make what profit it can, paying fines when found out in breach of regulations. The EA, also worryingly, in common with other public services in UK, has suffered cuts, making close and strict monitoring difficult to maintain.

1.2 Energy efficiency page 5

Combined Heat and Power was a selling point when Covanta applied and was granted planning permission, but it now looks unlikely. Is the planning permission still valid?

Mass incineration is highly energy inefficient. It is expensive to build, it may as in Bresnia in Italy, receive subsidies in operation, and pays no tax(unlike landfill), profits leave the country, and 3-5 times as much energy is saved by recycling. Note that recycling PET plastic even allowing for energy output from burning waste is 26.4 times as energy efficient, recycling HDPE is 10.2 times as energy efficient, and recycling other plastic is 10.9 times as energy efficient as incineration(ICF consulting 2005).

Is the technology the right one?

The value of recycled waste material has been rising steadily as demand has increased as the world economy grows. The 500,000 tons of waste required to keep this mass incinerator operating will undermine any aspiration towards modern

resource management. Recycling technologies will remain unexplored, as will the circular economy. Incineration requires a linear economy, where resources are mined, made into goods, then combusted, with a large net loss of energy along the way. The list of waste acceptable to be burnt(see pages 18,19) includes paper, card, plastic, food waste, agricultural waste, all of which could be reclaimed if properly collected and sorted, according to the waste hierarchy, thus saving energy and resources. Excess incineration capacity overall will mean even less incentive to recycle (Eunomia report). The Clean Growth Strategy(12/10/17) seeks to help us fulfil UK Paris carbon reduction pledges, but this incinerator is little better than a coal-fired power station in carbon dioxide output, not to mention the highly toxic fine particles, the dioxins, and the furans. It will add to global warming and prevent more progressive energy and sustainability policies.

Curiously, in the Draft Permit page 6, the waste hierarchy is mentioned only in relation to the waste generated and not the waste burnt.

Local population and sensitive sites

House building and population have grown apace since 2011 when the Covanta application for planning was taken away from the local authorities and granted by the now defunct IPC. Several primary and secondary schools and a new 6th form college are a short distance away from Rookery Pit South, the site of the incinerator. Research shows that toxic ultra fine particles are especially damaging for children and those with respiratory problems.

Several sites with nature and tourism interest exist now that the Forest of Marston Vale has been restored from brick fields and kilns to offer recreation, nature and fresh air. Marsh harriers and bitterns now visit, and cuckoos and turtle doves can be heard. Other sites of interest linked by attractive walks include Ampthill Park, Houghton House(John Bunyan's House Beautiful), Marston Thrift, Center Parcs, Woburn Abbey, Duke of Bedford's Golf Course, and Kingswood.

Mass incineration is the wrong technology in all respects and should not be granted an environmental permit. It would change the nature of the area, be polluting, expensive and wasteful of resources, unsafe for human health and "there is no evidence of a safe level of exposure or a threshold below which no adverse health effects occur" quote World Health Organisation.

