

33 Precinct Street  
Coupar Angus  
Perthshire  
PH13 9DG

**The Registrar**

SEPA  
Strathearn House  
Broxden Business Park  
Perth  
PH1 1RX  
6 May 2009

Dear Sir/Madam,

**Objections to SITA's PPC licence application to operate an incinerator at Binn Farm, Glenfarg – 2<sup>nd</sup> letter**

I should like to make the following additional comments on the above application:

**Incinerator Bottom Ash (IBA)**

It is my understanding that the Environment Agency in England changed its position on the toxicity of IBA in 2008 and that, to satisfy the requirements of Article 9 of Waste Incineration Directive 2000/76/EC, it is now of the opinion that IBA should be periodically tested for toxicity (see [web page](#)). I believe that "Classification of Incinerator Bottom Ash", updated by the Environment Agency on 29 November 2008 is the relevant guidance document. Hopefully a similar position is taken by SEPA.

The procedure for testing the toxicity and hazardous nature of IBA is set out in Technical Guidance WM2 (v.2.2) Hazardous Waste (Environment Agency 2008).

The applicant appears unaware of or unresponsive to this change, as there is no mention of it in their application. I therefore suggest that:

- The applicant is asked to provide details of the on-site laboratory and procedures which will be used for the periodic toxicity testing of IBA.
- The applicant is asked for details of the storage time for the IBA to allow a reduction of its alkalinity through contact with air and rainwater. (From German practice a minimum of 12 weeks seems to be required to achieve a pH of 10 to 11, and a pH of 11 is still high enough to dissolve lead and be hazardous for that reason.)
- The applicant is asked for details of the procedures and separate storage facilities which will be needed for that proportion of the IBA which is discovered to be hazardous, bearing in mind also that leachates from the IBA may fail the H14 ecotoxicological criterion.
- The applicant is asked for an estimate of the tonnages of IBA classed as hazardous which are likely to be produced, referencing IBA toxicity

tests for plants with similar waste streams in the UK and elsewhere. Limited testing by the Environmental Services Association (ESA) has revealed 12% or more of IBA to be hazardous. Note also that a 2002 study of MSW incinerator bottom ashes collected in five countries (Belgium, France, Germany, Italy and the UK) concluded that “all bottom ashes should be classified as ecotoxic materials”. (Lapa N., R. Barbosa et al, 2002, *Ecotoxicological assessment of leachates from MSWI bottom ashes*, Waste Management 28(6): 1020-6). The same study concluded that IBA leachates are as toxic as the ashes.

- The applicant is asked for an assessment of the available landfill capacity in the region for hazardous IBA and fly ash, and what additional transport movements are likely to be required to move hazardous IBA to suitable landfill sites locally and elsewhere.

With regard to the proportion of the IBA which is classified as non-hazardous, I suggest that the applicant is asked to take a cautious approach as to the quantities which may be incorporated into aggregates or building materials and to assume that a significant proportion may have to be sent to non-hazardous landfill if it fails to find a market. The applicant and SEPA may wish to take account of the recently introduced Dutch Building Materials Decree which regards IBA as a special category that requires isolation precautions before use to avoid the leaching of heavy metals from construction materials. The forthcoming Environment Agency review of IBA may lead to similarly restrictive guidance being introduced.

### **Greenhouse Gas Assessment**

There are several problems in the section of the application dealing with climate change (4.1.8). In paragraph 4.1.8.2 Fichtner assumes that 63% of the waste is biodegradable, as defined by the Scottish Government in the legislation for the Landfill Allowance Trading Scheme. In fact the biodegradable content would be based on a compositional analysis of waste in Perth and Kinross, taking into account what was diverted from landfill by recycling and composting – as per the following regulations and guidance:

- Landfill Allowance Scheme (Scotland) Regulations 2005, ss13 and 14
- Landfill Allowance Scheme (Scotland) Regulations 2005 – Scottish Executive Guidance: March 2007, s4
- Landfill Allowance Scheme (Scotland) Regulations 2005: SEPA Guidance on Operational Procedures, ss6 and 7

Using this guidance, the biodegradable portion of MSW in Perth and Kinross in 2005/6 was only 54%. DEFRA’s Waste Infrastructure Delivery Programme (WIDP) Information Note (available at <http://www.defra.gov.uk/environment/waste/wip/widp/documents/chp-information-note090127.pdf>) states:” the level of fossil fuel energy content of MSW is deemed to be 50% from 2009 to 2013, 60% from 2013 to 2018 and 65% from 2018. This trajectory is line with waste policy, reflecting how the composition of residual municipal waste is expected to change over time with increased separate collection and treatment of food and other biodegradable waste streams.”

This means that 50% of the waste should be assumed to be biodegradable from 2009 to 2013, 40% from 2013 to 2018, and 35% from 2018 onwards. I suggest that the applicant is asked to recalculate the projected greenhouse gas emissions from the incinerator and revise section 4.1.8.2 accordingly.

Similarly the applicant should be asked to recalculate the emissions from landfill in paragraph 4.1.8.3 using the updated percentages of biodegradable versus non-biodegradable waste.

At paragraph 4.1.8.2, the applicant states: "Carbon dioxide from the combustion of biomass is not considered to contribute to global warming, since this carbon has been recently extracted from the atmosphere via photosynthesis." This view is not universally supported and requires some scrutiny in its detail.

What does the word "recently" mean in this context? Within the last 12 months? Within the last 12 years? Within the last 50 years? I suggest the applicant is asked to explain the meaning of the word "recently" and to support the explanation with the results of surveys of residual waste indicative of the average age of the biogenic content, and the average length of time required by the biogenic content to extract carbon dioxide from the atmosphere.

As food and green waste collections increase over time, we can reasonably expect a growing proportion of the biogenic waste to be "heritage" waste and to consist of manufactured items; e.g. furniture, textiles, paper, cardboard, plywood etc. If a wooden dining or office chair made in 1959 is sent for incineration, can the term "recently" still be held to apply? Without a time limit on the term "recent", taking this approach to its extreme, even coal and oil would qualify to be called biogenic and thus carbon neutral.

In short, this approach requires a vague backward accounting model which is of no help whatsoever in meeting the UK government's challenging target of reducing our greenhouse gas emissions by 80% by 2050. The atmosphere does not distinguish between greenhouse gases produced by biogenic waste and fossil fuel derived waste.

A forward accounting model, which takes account of the urgent need to reduce emissions in absolute terms, would be more appropriate in this critical situation. If the applicant was required to demonstrate that biogenic growth was taking up emissions at a rate equal to or better than the emissions from burning biogenic waste in a 12 month period, this would provide greater certainty of a carbon neutral life cycle. Even this would require careful auditing. A significant proportion of the paper, cardboard, construction wood and plywood entering the UK comes from illegal sources in the developing world, where no attempt is made to replant the land with carbon dioxide absorbing plants and where natural regeneration takes many years. Much of this material quickly enters the UK's residual waste stream, either for landfill or incineration. How is such biogenic waste to be considered as carbon neutral?

The best hope may be the inclusion of all forms of waste disposal, including the incineration of biogenic waste, in the carbon trading scheme provided for in the Climate Change Act 2008. I trust SEPA will actively support this.

I am aware that the applicant may look to the present guidelines of the IPCC (Intergovernmental Panel on Climate Change), which appears to believe that the use of biogenic carbon (including emissions) can be adequately reported under the Agriculture, Forestry and Other Land Uses (AFOLU) sector, inferring that emissions from burning biogenic carbon do not need to be reported elsewhere. The IPCC position is not necessarily helpful to controlling greenhouse gas emissions effectively and is not necessarily well suited to the UK government's environmental policy priorities, since it is aimed at monitoring long term decline in the total carbon embodied in the living biomass rather than meeting the more and more urgent and agreed need for a rapid reduction in emissions, whatever their source.

I have no reason to think that SEPA is bound by the conventions of the IPCC and that it cannot exercise its discretion to make the applicant mindful of its duty to contribute to the urgent national need to reduce all greenhouse gas emissions absolutely in the shortest possible timescale. Given that in England the Environment Agency is minded to require all new coal power stations to be fitted with Carbon Capture and Storage, and given that it is open to the applicant to propose alternative waste disposal processes with lower greenhouse gas emissions, it is not unreasonable to ask the applicant what steps will be taken to reduce progressively the greenhouse gas emissions from the Binn Farm site in line with national targets, and whether those steps will include Carbon Capture and Storage.

In calculating avoided greenhouse gas emissions, Fichtner use fixed point data, in other words relying on present day data for the calculation of emissions from coal and gas fired power stations, incinerators and landfills. What is needed is a forward projection of these calculations, making reasonable predictions of avoided emissions over the lifetime of the incinerator, taking account of the impact of changes in the waste stream and changes in waste management practice required by UK legislation and government policy. Taking Fichtner's fixed point in time data and merely making a straight line projection with that data over the next 25 years does not help us see how using an incinerator will really help or hinder us in achieving the government's greenhouse gas reduction targets.

Yours faithfully

Michael Gallagher