

Urbaser Balfour Beatty's response to Gloucester Vale Against Incineration (GLOSVAIN) documents – Air Quality and Health Issues

Introduction

Gloucester Vale Against Incineration (GLOSVAIN) has recently published a number of documents which contain inaccuracies and misunderstandings about the impact of incineration plants in general, and the proposed Javelin Park plant in particular, on air quality and health. In this document, we have commented on the inaccuracies in three documents:

1. GLOSVAIN's letter to all head teachers of schools in Gloucestershire (dated March 2012);
2. The report "Schooling in the Shadow of the Incinerator" (dated March 2012); and
3. GLOSVAIN's response to the FAQ document published by Urbaser and Balfour Beatty (published March 2012).

We have not attempted to address every issue in this response, so it should not be assumed that we agree with statements which we have not specifically contradicted.

1. Letter to Schools

GLOSVAIN's position is set out in the second paragraph of their letter. For convenience, this is reproduced below, in ***bold italics*** with our response interwoven.

Incinerators emit a variety of toxic substances, such as dioxins, heavy metals and fine particulates.

These substances are emitted by many common human activities, for example cars, power stations, and bonfires all emit a variety of toxic substances. What is relevant in relation to the main issue of concern, is the ***impact*** of these substances. When considering the impact of emissions to atmosphere from any source, it is important to consider how much is released, how it is released and how the toxic substances can reach humans. All of these factors are fully considered in the air quality assessment and human health risk assessment included in our Environmental Statement which forms part of our planning application for Javelin Park.

These substances have well documented negative health impacts. For example, dioxins are known carcinogens, and can also give rise to a range of other health impacts.

While toxic substances, by their nature, have well-documented negative health impacts, it is important to consider the concentration of those toxic substances. This is because all substances are toxic (provided the exposure levels are high enough and the duration of exposure sufficiently long). However if the exposure level is reduced, a stage is reached below which the risk of adverse effect(s) will be negligible.

The statement by GLOSVAIN merely identifies that there is a hazard associated with toxic substances, but does not consider the risk, if any, to human health which results from exposure to the hazard. Our human health risk assessment for the Javelin Park EfW facility does assess this risk and concludes that it is negligible.

Although promoters of incineration point to studies that claim incinerators do not pose a health hazard, it remains the case that:

a. they increase the levels of toxic substances present in the environment

As explained earlier, this is not a useful statement as it does not consider the risks associated with these substances.

b. Other research claims to show a link between location relative to an incinerator and numbers of baby and child deaths, as well as birth defects, childhood cancers and respiratory illnesses.

Much of this research is not published in peer-reviewed journals. The research which has been published has been reviewed by the UK Health Protection Agency (HPA), whose conclusion is quoted below.

c. The UK Health Protection Agency has commissioned a new study into “birth outcomes” around incinerators in the wake of demands to reassess its current advice that incinerators are “not a significant risk to public health”, despite dismissing previous calls for further research in 2009.

The HPA announced this study in a press release on 24 January 2012. This included a very clear statement about the purpose of the study and the HPA’s views from HPA Chief Executive, Justin McCracken who said:

“It is important to stress that our current position on the potential health effects of well run and regulated modern Municipal Waste Incinerators remains valid. This is that while it is not possible to rule out adverse health effects from modern, well regulated municipal waste incinerators with complete certainty, any potential damage to the health of those living close-by is likely to be very small, if detectable. This view is based on detailed assessments of the effects of air pollutants on health and on the fact that modern and well managed municipal waste incinerators make only a very small contribution to local concentrations of air pollutants.

“However, we recognise that there are public concerns about this issue and this study will provide valuable new evidence. HPA continually seeks to review and extend the evidence base on which it bases its advice. We are therefore delighted to support this new study with researchers from the MRC-HPA Centre for Environment and Health.”

GLOSVAIN has omitted this statement when incorrectly insinuating that the HPA’s position has changed. A link to read the HPA’s full press release can be found at:

http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1317132452987?p=1317132140479.

GLOSVAIN also states in its letter that *“incineration contributes significantly to climate change, emitting more CO₂ per tonne than gas power stations in the production of its electricity.”* This statement adopts a narrow view of the subject, such that it paints a misleading picture. The GLOSVAIN statement ignores the fact that:

- Much of the carbon dioxide released by burning waste comes from biogenic sources i.e. those produced by living organisms or biological processes. This carbon dioxide is considered to be part of the natural carbon cycle, as opposed to carbon in fossil fuels.
- The Javelin Park EfW facility will only treat residual waste, which would otherwise be sent to landfill, where the biodegradable fraction would lead to releases of methane. Methane is a much more potent greenhouse gas than carbon dioxide.

Both of these factors are taken into account in the greenhouse gas assessment submitted in support of the planning application. This showed that the Javelin Park EfW facility would reduce global emissions of greenhouse gases by at least 40,000 tonnes of CO₂ equivalent per year.

2. ‘Schooling in the Shadow of an Incinerator’ Report

In this report, GLOSVAIN repeat some of the inaccurate statements which we have already addressed above, and suggest that emissions from the Javelin Park EfW facility would pose a risk to human health. GLOSVAIN then identify the numbers of schools which are within a 5 and 10 mile radius of the EfW facility and suggest that pupils at these schools are directly at risk because they are so close.

The premise behind the report is fundamentally flawed, for a number of reasons:

- The air quality assessment and the human health risk assessment confirm that there is no significant risk to human health at any location.
- GLOSVAIN focus on dioxins and, to a lesser extent, heavy metals. Exposure to these substances for both adults and children is predominantly through diet, which means that the location of the source of food provides a more accurate indicator of exposure than the location of a school.
- The air quality assessment, using the most modern atmospheric dispersion modelling software, shows that the highest concentration of emissions from the proposed EfW facility would occur around 500 metres away from the stack. Even at this point the change in ground level concentration will be small, and it is assessed that it will not give rise to a significant risk. At 2km away, ground level concentrations are at least 8 times lower than at that peak so that the risk to human health would be even lower.

We have reviewed the schools locator tool on the GLOSVAIN website. While there may be, as GLOSVAIN state, 140 educational establishments within 5 miles of the Javelin Park EfW site, there are only two within 1 mile, and a further 7 within 2 miles. The vast majority are 3 or more miles away from the EfW site. While the map shows two establishments within 1 mile, GLOSVAIN acknowledge (in an endnote to the report) that one of these is actually located 2.4 miles away, so the only establishment within 1 mile is Haresfield Primary School.

Our air quality assessment includes consideration of a sensitive receptor in the centre of Haresfield, close to the primary school. Therefore the impact at Haresfield, including the

impact on children, has been specifically included in the air quality assessment and the human health risk assessment.

For that human health risk assessment, we have followed best practice guidelines and deliberately adopted a pessimistic modelling approach (i.e. one that would overestimate the impacts). Haresfield was treated as a residential receptor, which means that the impact on children at the primary school, who are unlikely to spend the whole year in school, would in the majority of cases be overestimated, and would also take account of their local residency. Furthermore, modelling has been carried out assuming that the EfW facility emits continuously at its maximum permitted levels. Despite this, the impact on the health of children at the Haresfield receptor was still found to be negligible.

Haresfield Primary School is the closest educational establishment to the EfW site and is in the direction of the prevailing wind. It can be seen that the impact at any other educational establishment would be even smaller.

Overall, we conclude that any suggestion that, because there are 140 educational establishments within 5 miles of EfW site, there is an increased risk to the health of children attending those establishments, is misleading and not supported by the evidence.

3. FAQ Response

We would like to respond to only two of the points raised in this report.

GLOSVAIN state:

“The plant will emit a range of toxic pollutants, below present legal limits, but still significant. Some of these toxins, such as dioxins, are very poisonous and will only be monitored on a six-monthly basis.”

The reasons why we consider this statement to be misleading can be found in earlier sections of this document. Monitoring will be continuous in most cases.

GLOSVAIN state:

“If this is such a clear case, then why have the Health Protection Agency just commissioned a study by Imperial College into the health impacts of waste incineration, particularly on children, who are 2 to 3 times more vulnerable? Levels of cadmium in this area are already higher than allowable for children. This facility can only add to that. The environmental assessment already states that there is risk to the Cotswold Beechwoods even from a facility half the size of that proposed.”

The misleading insinuation about the HPA’s position has been addressed above.

The statement on cadmium is a misinterpretation of the human health risk assessment. The risk to human health of cadmium emissions has been assessed using the Environment Agency’s recommended methodology, as follows:

- The Environment Agency recommends a Tolerable Daily Intake (TDI) for the ingestion (i.e. eating and drinking) of cadmium of 0.36 µg/kg bodyweight/day. The TDI is defined as “an estimate of the amount of a contaminant, expressed on a bodyweight basis, which can be ingested daily over a lifetime without appreciable health risk.”
- The Environment Agency estimates the Mean Daily Intake (MDI) of cadmium as 0.19 µg/kg bodyweight/day, which is adjusted to 0.5 µg/kg bodyweight/day for a child weighing 20 kg. The MDI is the mean intake of a child in the UK from food and drinking water. This is unrelated to the location of the child but is based on surveys of the level of cadmium in food, measurements of cadmium in drinking water and estimates of typical amounts of food and water ingested.
- We have estimated the contribution of the EfW facility emissions to the ingestion of cadmium to be, at most, 0.005% of the TDI for a child, and this is clearly stated in the human health risk assessment which is part of our environmental impact assessment.

There is therefore no reason for GLOSVAIN to conclude that local cadmium levels are excessively high. Even if they were, an increase of 0.005% of the level which can be “ingested daily over a lifetime without appreciable health risk” is clearly not a cause for concern.

Finally, the statement about the Cotswold Beechwoods is misleading as it does not make it clear that the “environment assessment” being referred to was the initial assessment undertaken on behalf of the planning authority when considering potential sites for waste management facilities. The site specific assessment for the Javelin Park EfW facility shows that the impact at the Cotswold Beechwoods is predicted to be insignificant.