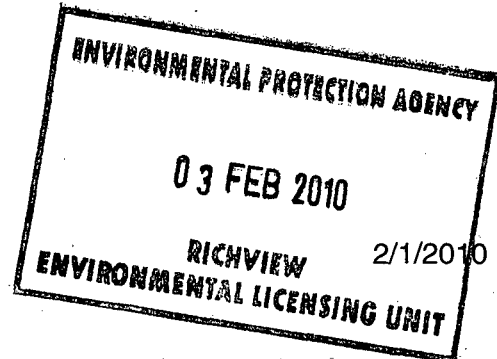


INDAVER

Aoife Loughnane
Office of Climate, Licensing & Resource Use
c/- PO Box 3000
Johnstown Castle Estate
Co. Wexford



Dear Aoife,

RE: Response to HSE Submission

Please find below our response to the submission from the Health Service Executive (HSE) dated 27th April 2009.

As you may be aware from Article 12 & 13 submissions, a number of detailed design developments have emerged since April 2009 that prompted the application for an amendment to the existing planning permission. Planning permission was granted for these amendments by Meath County Council on 10/11/2009 with final permission confirmed on the 14/12/2009.

A revised EIS, referred to here as the "2009 EIS", was submitted as part of this planning amendment and has been forwarded to the EPA with the Article 12 & 13 submissions. The EIS originally submitted to the EPA with the Revised Waste Licence Application (RWLA) will be referred to here as the "2006 EIS". The only change in the 2009 EIS that is relevant to comments from the HSE submission is a revised noise modelling exercise.

Other amendments mostly relate to changes to the shape and size of the main process building, site infrastructure (gatehouse, warehouse, turbine building, ESB compound, storage tanks) and services (drainage scheme, sewage treatment, internal road network). A summary of amendments is provided in the response to Article 13 Compliance.

Response to HSE Comments

Question 1

The previous licence outlined a system of monitoring to be conducted by the applicant. The applicant would be given full responsibility for monitoring, assessing results and formulating reports on all environmental emissions from the development. Independent monitoring should be a requirement of the licence and should be conducted by the EPA or consultants employed on behalf of the EPA.

Response 1

Monitoring arrangements are described in Section F.2.1 of the RWLA.

A suite of air emissions from the stack will be continuously measured, in line with the EU Directive 2000/76/EC, via automatic sampling and testing equipment. It would not be practicable to independently monitor these emissions on a continuous basis. Grab samples will also be taken by external accredited laboratories to monitor some stack emissions that



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cannot be continuously monitored (heavy metals and their compounds), ambient odour, groundwater well quality and so on.

All sample points will be made accessible for independent inspection and monitoring as required. All monitoring will comply with the European Standards EN 14181:2004 and EN 13284-2:2004 for quality assurance of automated measuring systems to measure stationary source emissions and dust in flue gas respectively.

Question 2

The World Health Organisation fact sheet on 'Dioxins and their effects on Human Health' states that dioxins tend to bio-accumulate in the food chain. The Food Safety Authority of Ireland Report 'Waste Incineration and Possible Contamination of the Food Supply with Dioxins', 2003 recommends in order to maximise consumer protection, rigorous monitoring programmes must be maintained. A monitoring regime for dioxins in the surrounding environment should be incorporated in the licence.

Response 2

As noted in Section F.2.1 of the RWLA, Indaver will continuously sample for dioxin emissions from the stack. Samples will be analysed on a fortnightly basis by an independent laboratory. All sampling equipment and analysis results will be available for independent auditing.

In addition to this, it is noted that the EPA carries out regular environmental monitoring for dioxins in cows' milk. Carranstown, the location of the Meath waste-to-energy facility, is identified in this survey programme as an area of perceived potential risk. Samples from this area (sample #17B) have been taken in four surveys since 2004.

It is further noted that emissions limits under the Waste Incineration Directive (2000/76/EC) are among the most stringent of any industry. The EPA's Irish dioxin emission inventory¹ estimated that in 2000, 75% of dioxin emissions to air were from uncontrolled combustion processes compared with 0.02% from the nine existing hazardous waste incinerators. Projections for 2010 estimated that even with the development of an additional 1,000,000 tpa capacity MSW incineration and 50,000 tpa capacity hazardous waste incineration, only 1.8% of dioxin emissions to air would be from waste incineration processes. This is based on incinerators operating at EU Waste Incineration Directive emissions limits, whereas facilities typically only operate at 20% of this limit or less². These figures compare with an estimated 84% of dioxin emissions to come from uncontrolled combustion processes, 8% from the power generation and heating sector and 3.9% from the road transport sector.

Question 3

On page 2-26 of the EIS, the applicant specifically refers to the World Health Organisation, Site Selection for New Hazardous Waste Management Facilities, 1993, stating that step 1 eliminates unsatisfactory areas and does not include the Carranstown site. The publication relates to hazardous waste management facilities, however, as the applicant states in the EIS, 'many of the site selection criteria contained therein can be usefully applied to non-hazardous facilities'. The first step in this process is the elimination of unsatisfactory areas. Areas with limestone deposits and areas critical for aquifer recharge are deemed unsuitable. These characteristics apply to the site at Carranstown. The applicant has not addressed this matter.

¹ Hayes, F. and Marnane, I., *Inventory of Dioxin & Furan Emissions to Air, Land and Water in Ireland for 2000 and 2010*, available at <http://www.epa.ie>

² See for example, Sustainability Report 2007, available at <http://www.indaver.com>

Response 3

In Appendix 2.6 of the 2006 EIS, areas with limestone deposits and areas critical for aquifer recharge were considered to have low applicability to the selection of a site for a waste to energy plant because they are mainly applicable to landfill sites of a hazardous nature. These factors are designed to protect watersheds and reservoirs used for public water supply.

As outlined in Section 10.7 of the 2006 EIS, in the case of landfill sites the production of leachate and its potential to pollute groundwater would limit/prevent the siting of such facilities on limestone deposits. However, a waste-to-energy facility handles all waste within a contained building and water tight bunker. Where necessary, mitigation measures like double containment of the waste bunker are taken. This both prevents the generation of leachate and ensures that if leachate is generated, it is captured. For these reasons, the Carranstown site was not eliminated at step 1 of the WHO site selection process.

It is noted in Section 2.3 of the 2009 EIS that in granting planning permission both Meath County Council (in 2006) and An Bord Pleanala (in 2007) agree that the chosen site is a suitable location to operate a waste-to-energy facility.

Question 4

A large scale dewatering scheme is in operation at Platin Cement Works adjacent to this site, the applicant has stated that the ground water beneath the site is influenced by the cone of depression in the quarry. Further ground water pumping from this body is proposed to supply the East Meath and South Louth public water supplies. Further abstraction as proposed by the applicant may have a serious impact on this ground water body. Perhaps the applicant should explore the feasibility of supplying water to the site from the dewatering operation at Platin Cement Works.

Response 4

Section 10.8.2 of the 2006 EIS and Section 10.7.2 the 2009 EIS both state that, with regards to the impact of the proposed abstraction for operations:

"The proposed abstraction will not alter the extent of the Platin cone of depression as the planned abstraction is relatively small in comparison to the Platin extraction.

Also, as the amount Platin abstracts is varied to maintain the water table level at or just below the quarry floor the proposed abstraction will not materially add to the total amount of groundwater abstracted from the aquifer. Rather the planned abstraction at the development site will probably result in a small net reduction in the amount of groundwater abstracted from beneath the nearby quarry excavation with the total being abstracted from the aquifer remaining largely unchanged.

However, if the planned abstraction on the development site were to impact on the groundwater levels in nearby private wells, the Company would remedy the situation by deepening the impacted well(s)."

It is therefore submitted that the abstraction will not have a serious impact on the ground water body.

Question 5

The agency should consider implementing a strategy for monitoring local wells in the area to ensure that this development does not have a significant adverse effect on the quantity or quality of local private water supplies. The location and depth of the required groundwater boreholes, necessary in order to obtain representative samples, should be specified in the

licence. The groundwater monitoring regime should include analysis of microbiological and hydrocarbon parameters. The monitoring frequency and scope of sampling should be sufficient to permit a full assessment of the quality of groundwater in the area.

Response 5

As outlined in Section F.5.2 of the RWLA, groundwater quality monitoring will be carried out at three permanent monitoring wells located on the site. Two of the three wells will be located to downstream of the bunker, the main potential source of contamination, and would therefore detect any potential contamination before it can reach wells offsite. This is in line with EPA guidelines.

In line with W0167-01, groundwater samples will be analysed by external consultants for a range of parameters including Total Organic Carbon, ammonia, conductivity (monthly) and pH, nitrite, nitrate, chloride, fluoride, metals and their compounds and organohalens (biannually) and/or other parameters as required by the EPA.

Section 10.7.2 of the 2009 EIS further notes that in the event of an unmitigated accidental groundwater discharge any resulting plume would move in the direction of the Platin groundwater excavation. It is therefore unlikely that such discharges would impact on local well water quality.

Question 6

The applicant carried out background noise monitoring which indicated that noise levels already exceed EPA Guideline limits. The applicant states the development will operate within EPA Limits at nearest noise sensitive locations. The applicant should clarify this matter.

Response 6

As noted in Section 8.5.1 of the 2006 EIS and Section 8.5.2 of the 2009 EIS, the EPA noise limits for the facades of residential properties are designed to ensure that overall impact is kept within acceptable margins. However, this does not assist with the assignation of relative impacts e.g. of the impact of a new development on existing background noise. In order to do this, it is appropriate to consider the likely change in ambient noise level as a result of the scheme under consideration. Table 8.4 of the 2009 EIS outlines the subjective reaction and impact associated with a change in ambient noise level. This finds that any change of less than 3 dB L_{Aeq} has an imperceptible reaction and negligible impact on sensitive receptors.

The results of the original noise modelling exercise set out in Table 8.12 of the 2006 EIS found that the anticipated change in ambient noise level is 0 dB L_{Aeq} for daytime hours and +1 dB L_{Aeq} for night time hours. This would result in an imperceptible increase in noise levels with negligible impact on residents.

A revised noise modelling exercise based on revised building layouts was carried out for the 2009 EIS. This found, as set out in Table 8.9, that no change (0 dB L_{Aeq}) to ambient noise level could be anticipated for both daytime and night time periods. Referring again to Table 8.5, this indicates that subjectively, the development would result in an imperceptible change in noise levels with the resulting impact on the most sensitive receptor (R1) being negligible.

Question 7

The main wastes arising from the proposed facility would be bottom ash, boiler ash and flue gas residues. Given the nature of municipal solid waste and the diversity of its components, how will the applicant determine the hazardous nature of waste for appropriate treatment/disposal?

Response 7

As noted in Section H.4.1.a of the RWLA, waste is classified as hazardous if it displays any of the properties listed in Annex III to Directive 91/689/EC and, as regards H3 to H8, H10 and H11 of the said Annex, one of a range of properties as listed in 2000/532/EC. This is set out clearly in the European Waste Catalogue.

Indaver will conduct full composition and leachate testing on the bottom ash, boiler ash, and flue gas cleaning residues in the initial stages of operation of the plant to characterise the residues.

Once initial characterisation tests indicate the composition and the classification for disposal of the various ash types, monitoring of ash will be conducted in line with the licence requirements. The existing waste licence 167-1 requires that ash monitoring is conducted quarterly on the bottom ash and boiler ash and biannually on the flue gas treatment residues.

Should you have any further queries about this submission please do not hesitate to contact us.

Kind Regards



Claire Downey
Project Coordinator

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