



Kieran Doherty
An Bord Pleanála
64 Marlborough Street
Dublin 1
D01V902

15th May 2017

Dear Mr. Doherty,

Re. Waste-to-Energy Facility, Ringaskiddy Co. Cork. 04.PA0045

Thank you for your letter of the 20th of March 2017, regarding the Board's request for further information. Enclosed is Indaver's response to the Board's request for further information.

Regarding Appendix 6.3 and Appendix 6.4:

1. We confirm that there are no discrepancies within Appendix 6.3 of the EIS, being the Sampling and Analysis of Soil and Sediment Samples for PCDDs, PCDFs and PCBs at Various Locations Around Cork Harbour. Appendix 6.3 remains as submitted in the EIS.
2. Appendix 6.4 of the EIS is the following report: Modelling of PCDD/F Intake for Ringaskiddy Waste to Energy Facility by AWN (2015). We confirm that two attachments to Appendix 6.4, being attachments D and J were the wrong print-outs and were included in error. Enclosed are the correct print-outs of attachments D and J that are referenced in the report and an addendum explaining how the two appendices were attached in error.
3. In order to independently verify the modelling, Indaver commissioned an independent review of the modelling report, which was undertaken by Prof Paul Johnston (Trinity College Dublin), an independent environmental expert who has advised environmental committees of both the Oireachtas and the House of Lords. Prof Johnston considered and reconfirmed the robustness of the model, methodology, inputs, and outputs. He has agreed with the conclusions of the modelling report submitted at Appendix 6.4 of the EIS. In the course of his review, he noted a number

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of minor transcription errors in the modelling report which do not change the conclusions but which the AWN expert has corrected in the interests of completeness. Accordingly, we also enclose a new and marked-up version of the modelling report, that corrects those minor issues.

4. These documents demonstrate that the conclusions of the Appendix 6.4 report remain unchanged, as do the conclusions in Section 6.5.3.6 of the EIS. Namely, that the proposed development will have no significant impact on dioxin and furan intake for even the theoretical maximum at risk individual, and that, with respect to dioxin and furan intake, the facility will have no impact on human health.

Regarding helicopter navigation safety and the submission of the Department of Defence dated the 11th of May 2016:

The Department of Defence's submissions, including the submission of 11th of May 2016, were informed by its concern in relation to the plume which might be emitted from the stack at the proposed development. At the time of the Department of Defence's first submission, there was no specific information available about potential interaction between the plume and helicopters. By the time of the second submission, it had been calculated that a plume from a larger facility than the proposed development could have a worst-case effect on helicopters up to 100 metres from the stack top. The Department of Defence based its second submission on this plume analysis.

Indaver has taken on board the Department of Defence's submissions and the Board's queries and has commissioned the relevant expert, Dr Porter of AWN, to undertake a site-specific analysis of the potential effect of the plume from the proposed development on helicopters. According to that analysis, it has been demonstrated that the plume will have no effect on helicopters other than in the immediate vicinity of the stack (3.5 metres or less). In these circumstances, we understand that the basis for the Department of Defence's concern falls away. In any event, the aviation experts engaged by Indaver have further considered the Department of Defence submissions and have confirmed that the proposed development does not create any additional constraints on helicopter flight in the area. The experts have provided evidence to back up their assessments and to correct any issues arising from the Department of Defence submissions.

Please see below a description of the three expert reports enclosed in this regard. See Appendix 1 for five drawings created by Arup and a photomontage created by Brady Shipman Martin.



1. **Plume Modelling Assessment report:** Dr Porter has undertaken a site-specific analysis of the impact of the plume on helicopter flight using the AMDS-5 model, with inputs including actual emission data for the proposed development and meteorological data for the region, including all meteorological conditions for the years studied. The analysis focused on oxygen, temperature, and vertical velocity, as the Mitre Corporation has found that these are the three parameters most relevant to helicopters. Dr Porter found that the combined risk zone for all three parameters was a 3.5 metre radius from the top of the stack.
2. **Helicopter Navigation report:** Enclosed is a report by Shane Savage and Mark Hourigan, both of whom have served in the military and who have extensive experience in helicopter operations and the operations of, to and from Helicopter Landing Sites. They conclude that the proposed development does not pose any additional flight safety consideration to the safety of Irish Air Corps helicopter operations from Haulbowline Naval Base (HNB). They note that the aviation environment in the proximity of the proposed development already imposes existing, significant constraints on helicopter operations. Given these already-existing constraints and the flight safety considerations they impose, the proposed development will not have any effect on the flight profiles or paths which should be currently flown from Haulbowline.
3. **Aviation Safety report:** Enclosed is a report by Graham Liddy, a former member of the Irish Air Corps whose area of expertise is air transport safety and accident investigation. He notes that there are already significant limits on helicopter operations in the area of the proposed development. In light of these limits, he also concludes that the proposed development will not require the imposition of any further restrictions on helicopter operations. In addition, in his expert opinion, the proposed development does not pose a threat to the safety of Air Corps helicopter operations conducted in the area of the Naval Service (NS) base at Haulbowline, Co. Cork and nearby Spike Island in Cork Harbour.



4. Appendix 1:

Photomontage

- View from Haulbowline Island – Existing and Proposed

List of drawings

- Helicopter Flight Path to Indaver Stack Layout Plan Sheet 1;
- Helicopter Flight Path to Indaver Stack Layout Plan Sheet 2;
- Selection of some stacks and tall/high structures in the Lower Harbour, Cork – Existing;
- Selection of some stacks and tall/high structures in the Lower Harbour, Cork – Proposed;
- Selection of some stacks and tall/high structures in the Lower Harbour, Cork – Proposed – Larger Scale

Case study on interaction between waste to energy plant and naval base

On the 27th of April 2017, John Ahern (Executive Chairman of Indaver), Jackie Keaney (Commercial Director of Indaver) and Dr Porter (AWN Consulting) visited the Energy-from-Waste Combined Heat and Power (EfW CHP) facility located at HM Naval Base, Devonport UK. The purpose of the visit was to gain an understanding of how the operations of a waste-to-energy facility (EfW) fitted in with the operations of a busy naval base, which has helicopter operations. The visit was facilitated by John Meaken, the Nuclear Services and Support Manager for the Naval Base, Ministry of Defence. Devonport is the largest naval base in Western Europe and the EfW CHP is located at the northern section of the base itself. John Meaken noted that the navy sought to have the EfW CHP located at the base in order to benefit from the significant reduction in energy costs it would provide.

It is not submitted that this case study is precisely similar to the proposed development, nor to the activities of the Irish Air Corps. However, Indaver and its experts believe that this case study provides a useful example of international best practice, as referenced by the Planning Board in the request for further information. Both of the aviation experts have referenced this facility in their reports.



In advance of the development of the EfW CHP facility at Devonport naval base, a study was undertaken to assess the interaction between helicopter operations at the base and the proposed facility. The study found that the proposed facility would not affect helicopter operations at the base, and its findings have been borne out. The waste to energy plant has been operating since 2015 without interfering with the operations of the Naval base in any way as we believe would be the case for Haulbowline.

Following consultation with the Naval Base Helicopter Operators it was agreed that the proposed CHP plant would place the main building and flue stack clear of the flight path. The study therefore concluded that the proposed CHP plant location should not affect helicopter operations in the Naval Base. Figure 1 of the study illustrates the two helicopter approaches available. All approaches must conform to one or other of these two illustrated profiles irrespective of the wind direction. The full study regarding the interaction between the plant and the helicopter operations is enclosed. It is also available here:

https://www.mvv.de/media/media/downloads/mvv_energie_gruppe_1/geschaeftsfelder_1/umwelt_1/environment_2/environment_1/plymouth/planningapplication/4_environmental_statement/volume_03_appendices/061d_Helicopter_Flight_Path_Risk_Assessment.pdf

The Indaver stack is at a greater distance from the Haulbowline Naval Base landing sites, at 1,175 metres from the Main Square, than the Energy-from-Waste CHP facility is from the ships at the Devonport naval base at 525 metres from the closest point where these ships are tied up.

John Meaken (contact details on the enclosed document) has extended an invitation to An Bord Pleanála, the Department of Defence, and the Irish Air Corps, should they wish to visit the EfW CHP at Devonport. See Appendix 2 for further information on the facility.

Summary of responses to the Board's four specific questions in the RFI

(a) The matters raised by the Department of Defence have been further addressed in this response and in the enclosed reports.

(b) The aviation experts have assessed that there is no additional impact due to the proposed development on low gradient flights paths on take off and landing at the Haulbowline naval base, and have provided evidence to substantiate this assessment.

(c) Dr Porter's site-specific analysis takes account of local climatic conditions including occasions of atmospheric pressure inversion on Cork Harbour in assessing



the character of the plume from the proposed stack and in finding that the risk zone for helicopters extends no more than 3.5 metres from the stack top.

(d) The aviation experts have advised that there is no requirement for an exclusion zone around the naval base in Irish law and practice or international best practice as set out in their reports.

The requirement of the Southern Regions Waste Management Plan includes 300,000 tonnes capacity for residual municipal waste as well as 50,000 tonnes capacity for hazardous waste and an additional but unspecified capacity for industrial waste. There is currently a lack of suitable recovery capacity within the Southern Region while a large quantity of residual MSW is being exported for recovery in similar facilities in continental Europe.¹

In 2016, the consequences of not having sufficient residual treatment capacity resulted in the enactment of emergency measures to mitigate a waste crisis and underlined the critical need for additional capacity. On the 11th November 2016 the three Regional Waste Management Plan Offices circulated a communication to all Local Authorities advising of a serious and urgent situation with regard to waste operator's lack of access to outlets for the disposal of residual and related waste in the period up to the 31st December 2016.

To prevent or limit potential environmental pollution, a number of County Councils activated available landfill capacity under Section 56 of the Waste Management Act 1996. This measure gives a local authority broad powers to take measures in order to prevent or limit environmental pollution. Following receipt of applications from Local Authorities, the Environmental Protection Agency, granted Technical Amendments to the Licences for both facilities which provide for the additional intake of waste for a limited period of time.²

It was helpful that physical landfill capacity was available during this time to allow these short term measures to be taken. While landfill levels were reduced due to the expected increase in recovery capacity with the commencement of operations at Dublin Waste to Energy, emergency measures were invoked even after relying on over 500,000 tonnes

¹ http://southernwasteregion.ie/sites/default/files/Part%203_0.pdf Page 31.

² <http://wicklownews.net/2016/11/temporary-increase-of-waste-acceptance-at-ballynagran-landfill/>



of export capacity. Furthermore, industry predicts a further reduction in exports in 2017 with forecasts estimating levels merely at 320,000 tonnes.³

The foregoing situation highlighted the problem of depending upon an increasingly unreliable export capacity and emphasises the urgent need for an additional 300,000 tonnes of residual waste treatment capacity.

Thank you in advance for your consideration of these matters.

Yours sincerely

A handwritten signature in blue ink that reads "Jane Hennessy". The signature is written in a cursive style and is positioned above a horizontal line.

Jane Hennessy

³ Regional Waste Management Plans 2017-Update, National Waste Forum 25th April 2017

