Our Ref: 04.PA0045
P.A.Reg.Ref:

Your Ref:

An Bord Pleanála

Jane Hennessy
Indaver Ireland Limited
4th Floor, Block 1
West Pier Business Campus
Old Dunleary Road
Dun Laoghaire, Co. Dublin

20th March 2017

Re: Waste to Energy Facility,
Ringaskiddy, Co. Cork.

Dear Madam,

I have been asked by An Bord Pleanála to refer further to the above mentioned proposed development.

Please be advised that An Bord Pleanála, in accordance with section 37(F)(1)(a) of the Planning and Development Act, 2000, as amended, hereby requires you to furnish the following further information/ clarification in relation to the effects on the environment of the proposed development:

1. It is noted that on the final day of the oral hearing that was held in relation to the proposed development possible discrepancies in the content of Appendix 6.3 and Appendix 6.4 of the environmental impact statement accompanying the application were brought to the attention of the hearing. In these circumstances it is considered necessary in the interests of justice, and prior to An Bord Pleanála concluding an environmental impact assessment, to request that the applicant comment on and clarify any such discrepancies and, if necessary, correct any errors.

   Accordingly, you are invited to submit comments and clarifications in respect of any such discrepancies.

2. The issue of helicopter navigation safety at Haulbowline Naval Base has been brought to the attention of An Bord Pleanála in submissions by the Department of Defence to the oral hearing. You are invited to respond to the contents of the submission from the Department of Defence dated 11th May 2016 and presented on the same date to the oral hearing (copy attached).

   In any response you are requested to comprehensively address all matters relating to the navigation and safety of helicopters using the naval base including, but not limited to, the following:

   - the matters raised by the Department of Defence;
   - low gradient flight paths on take-off from and landing at the naval base;
   - the impact of local climatic conditions including occasions of atmospheric pressure inversion in Cork Harbour on the character of the plume from the proposed stack;
   - the possible requirement, based on best international practice, for an exclusion zone around the naval base.

   It would be useful for the Board in their consideration of the proposed development if your response to item No. 2 was supported by graphics, maps and diagrams as appropriate.

(1)

(104.)

DEPT OF DEFENCE REPLY TO INDAVER REPORTS

An Bord Pleanála Hearing – Waste to Energy Facility, Ringiskiddy, Co. Cork

11 May 2016

The Dept of Defence would like to acknowledge the efforts that were made in the compilation of the three response reports presented on 04 May 2016, recognising the significance of the concerns expressed by the Dept of Defence and Defence Forces in the oral submission of 22 April 2016.

The Dept of Defence welcomes the opportunity to respond to the three reports and provide clarification where required. In order to put this reply into context, it is perhaps beneficial to briefly describe in broad, non-technical layman's terms how a large helicopter (such as a 6.8 tonne Air Corps AW139 helicopter) performs an approach to land, take-off, departure and climb-out. Some other activities the Air Corps performs with the Naval Service and Army at Haulbowline will also be briefly mentioned.

As a helicopter arrives in the general vicinity of the intended landing site (in this case the Main Square at Haulbowline), the approach phase commences with a "high recce". The high recce is a large orbit of the landing area at approx 500-1,000 feet above ground level (depending on cloud height). The orbit is performed using a radius of roughly 800-1,000 m from the landing site. The high recce is used to assess the wind and likely directions of approach and departure, and to ensure the general approach area, landing area and departure area is clear. The helicopter then descends down to approx 200-300 feet above ground level (depending on local obstacles) in order to perform a "low recce". The low recce is performed closer to the landing area, again in an orbit, and is used to confirm wind direction, and confirm that the landing area is clear, amongst other things. The helicopter then climbs back up to approx 500 ft above ground level while positioning out to a point approx 2 km from the landing site in order to perform the final approach, which is always performed into wind. During the final approach the helicopter descends from 500 feet to ground level, with speed gradually reducing to 40 knots and then much slower during the latter stage of the approach to land. For take-off, the helicopter will initially perform a vertical climb clear of the obstacles (buildings around the Main Square) and then depart into wind. The helicopter must be maintained into wind during the departure and climb-out until a safe speed is reached which will allow the helicopter to continue flying on one engine should a single-engine failure occur during take-off. Approx 1-2 km is required for the departure climb-out, depending on the wind strength.

within the distance required for approaches, departures and other operations into Haulbowline.

3. Various references are made to the Irish Aviation Authority Rules of the Air Order (SI 72/2004) requirement to avoid obstacles by 150m / 500 feet, and considerable effort is made in the report to identify various buildings, pylons and other structures in vicinity of Haulbowline, stating that they all must be avoided by 500 feet. There are two major flaws with this assessment:

   a. The Irish Air Corps is a military aviation organisation as the aviation arm of the Irish Defence Forces. In accordance with the Air Transport & Navigation Act (1946) and the Irish Aviation Authority Act (1993), the Irish Aviation Authority Rules of the Air Order (SI 72/2004) does NOT apply to military aircraft. The Irish Air Corps therefore is in no way bound by the Irish Aviation Authority's civil aviation rules, and therefore the above mentioned requirements do not apply to Irish Air Corps military aviation activities. The Irish Air Corps operates under the direction of the Director, Military Aviation and is bound by the Irish Air Corps Air Regulations Manuals under the Defence Acts. However, it is the policy of GOC Air Corps to operate to best practice civil aviation rules when possible.

   b. The 500 ft requirement in SI 72/2004, in accordance with paragraph 3(a) of that Order, does not apply to an aircraft while it is landing or taking-off. The concern of the Irish Air Corps relates to helicopters that are landing and taking-off at Haulbowline, and therefore the 500 ft requirement to avoid obstacles as mentioned throughout the Arup report is not applicable.

4. The report states that when a 1,000 ft avoidance area is applied to the proposed Indaver stack, there is still 695m from this avoidance area to Haulbowline. As described above, a large helicopter requires much more than 695m for landing and taking-off, especially if under-slung load operations are being performed.

5. Finally the report states that a "1,000 ft avoidance zone is unnecessary" due to the risk height above the stack reaching to 100m (330 feet) while a 500 ft limit is in place for obstacles clearance. Aside from the fact that as already stated the 500 ft limit does not apply to aircraft landing or taking-off, such as occurs at Haulbowline, it is considered best safety practice to apply a safety margin above a known high-risk hazard. Thus, if the high-risk zone of the plume rises to 100m (330 ft) above the stack (as estimated by Indaver), it would be reckless to operate an aircraft anywhere close to that high-risk zone, and therefore a safety margin is applied. This safety margin or safety buffer is applied from the top of the high-risk zone, ie. it is treated as if it were a solid obstacle.

the distance identified by Indaver as possibly requiring such action. The only evacuation road off the island for up to 1,000 personnel would be *towards* the Indaver facility (and the hazard).

<u>WFAC Report</u>

10. Again the Wind Farm Consultants use "as a primary source of reference, the Irish Aviation Authority (IAA) Integrated Aeronautical Information Package" and also refer to the "International Civil Aviation Organisation Standards, Recommended Practices and Procedures". In fact the bulk of the WFAC report refers to the IAA 500 ft rule. As previously stated, none of these civil standards and requirements apply to Irish Air Corps military aviation (see para 3.a. above), therefore despite the effort that Indaver put into commissioning the report most of the report is in fact not applicable.

11. The report states that the "IAA consider that there will be no effect on civil aviation"; the Irish Air Corps is not civil aviation, and therefore the IAA's consideration does not apply to the Dept of Defence submission.

12. The report states that "Cork airport authorities have responded that they have no observations to make". The Dept of Defence submission concerns military aviation operations to/from Haulbowline Naval Service base, not Cork Airport, therefore this statement is not considered relevant to the Dept of Defence submission.

13. The report continues to refer to the Irish Aviation Authority requirement for 500 ft obstacle clearance, and even makes mention of breaching these rules and potential legal/disciplinary action. It is surprising that a Consultant company, considering the previous military experience of the authors of the report, would fail to realise that such civil requirements do not apply to the Irish Air Corps, just as the UK Civil Aviation Authority requirements do not apply to Royal Navy or RAF aircraft (the two services from which the authors came).

14. The report very briefly acknowledges that the 500 ft requirement does not apply to an aircraft landing or taking-off. However this is omitted later in the report when stating that the 500 ft clearance will ensure separation from obstacles. The report therefore contradicts itself. As described earlier, if the wind dictates it, a helicopter landing or taking-off into/out of Haulbowline will pass through the area to be occupied by the proposed stack and plume, as the 500 ft rule does not apply.

15. The report refers to extant FAA guidance on overflying exhaust plumes (2015), but fails to mention that in the very same Memorandum it states *"the FAA has determined that*

risk area is known, the standard aviation safety margin of 500 ft may be applied between the top of the plume risk-height and safe aircraft operating height, which comes to 1,075 feet above ground level.

18. This also supports the updated (April 2014) official US Dept of Transport Aeronautical Information Manual, which states in para 7-5-15 a. "Flight hazards exist around thermal plumes.... These hazards are most critical during low altitude flight, especially during takeoff and landing."

Final Comments & Conclusion

The Dept of Defence position on the Indaver facility has not changed. The construction of such a facility in such close proximity to Haulbowline Naval Service base creates a flight safety hazard to Irish Air Corps helicopter operations. Risk management involves controlling the risks created by hazards where uncertainty exists. Uncertainty surrounds the potential effects on helicopter jet-engines operating in the vicinity of the proposed Indaver stack. Considering the catastrophic consequences of a helicopter suffering a double engine failure with 15 people on board, in the light of such uncertainty, robust risk controls would need to be introduced to ensure safe military aviation operations at Haulbowline. Such risk control measures will impact on the Irish Air Corps' ability to operate helicopters into Haulbowline, depending on local weather conditions. Haulbowline is the Naval Service's only base in Ireland; if the wind is blowing in an unfavourable direction, it is not possible to choose another base. As previously outlined, Haulbowline is an important strategic location for the Irish Defence Forces, with aviation activities performed there including marine counter terrorism, joint Naval Service / Air Corps exercises including simulated attack, cargo-slinging for replenishment of ships at sea, and so on. Therefore restrictions on the Irish Air Corps' ability to operate with the Naval Service at Haulbowline is not just a local issue but carries strategic implications for the State.

This concludes the Dept of Defence reply to the Indaver reports.