

**Indaver Ireland Limited**

## IE Licence Review Application

Emissions Compliance Report

Reference: LA010332

Issue | 28 April 2023

This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

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## Document Verification

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# 1. Introduction

Indaver Ireland Limited (Indaver) propose to develop its existing waste-to-energy (WtE) facility in Carranstown, Duleek, County Meath. The proposed development will include the following main elements:

- Increase in the amount of hazardous waste accepted at the facility for treatment in the WtE plant to a maximum of 25,000 tpa;
- Increase in the annual total waste accepted at the site for treatment in the WtE facility to 250,000 tpa;
- Development of a tank farm and unloading area for the storage and processing of aqueous liquid wastes;
- Development of a Hydrogen Generation Unit (HGU);
- Development of an ash storage building for the storage of bottom ash;
- Acceptance of up to 30,000 tpa of third party boiler ash and flue gas cleaning residues and other similar residues for treatment in the existing ash pre-treatment facility on site; and
- Development of a warehouse, workshop and emergency response team (ERT)/office building.

This Emissions Compliance Report forms part of Section 7 'Emissions' of the application for the revised IE Licence, as submitted by Indaver to the EPA, to take into account the proposed development.

This Emissions Compliance Report provides an assessment of compliance in relation to air, noise and stormwater emissions with current Emission Limit Values (ELVs) and statutory instruments.

## 2. Emissions to Air

The categorisation of main, minor and potential air emission points has been determined based on EPA guidance. Attachment 7-4-1 Emissions to Air Main - Fugitive provides further information on the existing and proposed main and fugitive emissions points, and Attachment 7-4-2 Emissions to Air Minor - Potential lists the minor and potential emission points within the site.

### 2.1 Main Emission Point

As per IE Licence W0167-03, Indaver currently have one no. licensed main emission point to air. This main atmospheric emission point (hereafter referred to as A1-1<sup>1</sup> as per Attachment 7-4-1) is the vent stack which is located in the main process building. The primary contaminants of air streams at the facility comprise of TOC, HCl, HF, SO<sub>2</sub>, NO<sub>x</sub>, CO, dust, metals and dioxins. CO, Total dust, TOC, HCl, SO<sub>2</sub> and NO<sub>x</sub> are required to be monitored on a continuous basis with the remaining parameters monitored on a quarterly or biannual basis or as otherwise agreed with the Agency. No new main emission points will be associated with the proposed development.

### 2.2 Minor Emission Points

Following construction of the proposed development there will be a total of 35 no. minor air emissions points on site. Such emissions sources include air handling units, passive air extracts, boiler blowdown vents, pressure control valve, steam/ condensate room extracts, vents from bottom ash hall, oxygen vent, fumehood from the laboratory etc.

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<sup>1</sup> Unless otherwise agreed with the Agency, the main emission point will be named in line with site procedures and historic records at Indaver A1-1 will be used for the main emission point to air.

## 2.3 Potential Emission Points

Once the proposed development is operational there will be a total of 40 no. potential air emission points on site. As per EPA guidance, these emissions are not active under normal operating conditions and only arise in the event of a by-pass or pressure relief valves and include smoke vents, safety valves and overpressure relief valves etc.

## 2.4 Atmospheric Emissions Compliance

IE Licence W0167-03 outlines the pollutants, emission limit values and monitoring frequency required for the main air emission point A1-1. Parameters are monitored on a continuous, monthly, bi-annual or 3-yearly basis, depending on the relevant parameter. Annual reporting on air emissions is included in the Annual Environmental Reports (AERs) prepared by Indaver.

Following a review of the site's AERs for the last 5 years (2017 - 2021), no exceedances in the emission limit values (ELVs) for A1-1 were recorded.

To accommodate fluctuations in the thermal load of the plant and the associated changes in the flue gas flowrate, the maximum average daily flue gas flowrate is to be increased from 183,700 Nm<sup>3</sup>/hr to 200,000 Nm<sup>3</sup>/hr.

Air modelling results, which are provided as Attachment 7-1-2 Air Emissions Impact Assessment, demonstrates that with a volume flow rate of 200,000 Nm<sup>3</sup>/hr the proposed development will be fully compliant with all relevant ambient air quality standards even when modelled at the maximum emission limit values as per W0167-03. Typically, the plant operates well below these emission limit values and under the new BREF on Waste Incineration, the plant will also be required to perform to new more stringent values during normal operating conditions.

# 3. Noise Emissions

In accordance with Condition 6.2 and Schedule B.4 of the current IE Licence (W0167-03) Indaver carry out noise monitoring surveys at the boundary of the facility. The site's noise monitoring points (AN1-1 to AN1-4) demonstrate compliance with the noise limits as outlined in Table 1 for day, evening, and night-time operations at four locations. Annual noise monitoring includes a tonal assessment.

There are six potential sources of continuous noise from process equipment at various points in the plant (N1-N6). The stack, air cooled condensers and turbine coolers are the most significant continuous sources of noise as they are located externally.

**Table 1: Operational Noise Limits for the Indaver Ireland Limited Facility**

Daytime dB L <sub>Ar, T</sub> (30 minutes)	Daytime dB L <sub>Ar, T</sub> (30 minutes)	Daytime dB L <sub>Aeq, T</sub> (15-30 minutes)
55 <sup>Note 1</sup>	50 <sup>Note 1</sup>	45 <sup>Note 1</sup>

*Note 1: There shall be no clearly audible tonal component or impulsive component in the noise emission from the activity at any noise-sensitive location.*

A review of the AERs for the past 5 years (2017-2021) has been undertaken as part of this emissions compliance report. No exceedances were detected and noise emissions are in compliance with the limits set out in the IE W0167-03 and Table 1. One noise complaint was received in 2020 and two in 2019, however following investigation, these were not found to be attributable to Indaver's activities and have now been closed.

Given the range of activities currently on site and the noise levels associated with each, the baseline noise levels the onsite, screening measures and distances to nearest sensitive receptors, activities associated with the proposed development will not give rise to any perceptible increase in levels of noise beyond the site boundary.

The proposed development will operate in accordance with noise emission limit values as stated in the IE licence (W0167-03). Further details are provided in Attachment-7-1-3 Noise Impact Assessment.

## 4. Emissions to Stormwater

The existing site stormwater drainage system has been designed in general accordance with Sustainable Drainage Systems (SuDS) principles and collects rainwater from all roofs, hardstands, roads and landscaped areas. Runoff from these areas pass through an underground oil interceptor before being collected in an attenuation pond prior to discharge via pump to an external drainage ditch.

As per IE Licence (W0167-03) stormwater is continuously monitored for conductivity, pH and TOC prior to discharge. Two continuous monitoring points are in place, one is located prior to the attenuation pond and another at the outlet of the attenuation pond. In the event exceedances are detected at the first monitoring point, storm water is diverted to an underground firewater retention tank and is either used in the waste-to-energy process or sent offsite for disposal. If the concentrations of TOC, pH and conductivity exceed the limits at the second monitoring point the discharge pumps shutdown and water that cannot be discharged is disposed of to a licensed contractor. No water can be discharged when the readings are outside the trigger levels. In addition to the system being monitored 24/7 at the Distributed Control System (DCS), stormwater is also visually inspected on a daily basis.

Stormwater arising from the construction of the proposed development will be managed and controlled as per the sites existing stormwater drainage system. Stormwater from new paved areas will discharge into the existing stormwater system, whereas drainage from areas where unloading occurs and tank farm will drain via a forecourt interceptor and silt trap prior to being discharged to the existing stormwater system on the site. The existing storm water system has sufficient capacity to accommodate the proposed development. The proposed development will also include a 146m<sup>3</sup> stormwater attenuation tank for the concrete area and bottom ash storage building which will offer additional attenuation volume and ability to manage any potential for contaminated run-off from the bottom ash storage building and truck parking area.

A review of Indaver's Annual Environmental Reports for the past 5 years (2017-2021) have shown no exceedances in pH, TOC or conductivity has been recorded.

Storm water will continue to be monitored and managed in accordance with the IE Licence W0167-03.

## 5. Compliance with Best Available Techniques

The proposed development has been designed to ensure compliance with the relevant Best Available Techniques (BAT). It is anticipated that in many cases, the technique that offers the highest level of protection to the environment will be BAT, but the Directive also requires that the likely costs and benefits of implementing a technique are considered.

### 5.1 Relevant Decisions on BAT

The following documents are considered potentially relevant in terms of BAT conclusions, BREF and BAT guidance:

- BREF document on Best Available Techniques for Waste Incineration 2019;
- BREF document on Best Available Techniques (BAT) Conclusions for Waste Treatment, 2018;
- BREF document on Best Available Techniques for Energy Efficiency, 2009;
- BREF document on Best Available Techniques for Emissions from Storage, 2006;
- BREF for General Principles of Monitoring, 2003, and Monitoring of Emissions to Air and Water form IED Installations (2018), and
- Assessment of Compliance with Conclusions on Best Available techniques from the BAT Conclusions for the Production of Chlor-alkali (2013).

Refer to Attachments 4-7-1 to 4-7-6 for detailed assessments of compliance with BAT for each of the above listed BAT Reference (BREF) and BAT guidance documents. It is concluded from this assessment that the site will comply with the required best available techniques.