

Attachment 7.1.3.1 – Emissions Compliance Report

This section includes an assessment of the proposed emissions in terms of compliance with current or proposed Emission Limit Values (ELVs) and statutory instruments.

The following instruments have been used to assess the compliance of all potential emissions:

- Emissions to Air – Directive 2010/75/EU on Industrial Emissions (integrated pollution prevention and control) which specifies the pollutant emission limit values for waste incineration; and the Medium Combustion Plant (MCP) European Union (EU) Directive 2015/2193 and MCP Regulations 2017 (S.I. No. 595 of 2017) on the limitation of emissions of certain pollutants into the air from medium combustion plants;
- Emissions to Stormwater – Consideration of Surface Water Regulations (S.I. 272 of 2009 and S.I. 386 of 2015);
- Emissions to Sewer – Not Applicable.
- Noise Emissions – Environmental Protection Agency (EPA) publication *Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4) 2016*.
- Groundwater quality - Groundwater Threshold Values (GTVs) from the European Communities Environmental Objectives (Groundwater) Regulations, S.I. 9 of 2010 & S.I. 366 of 2016.

The majority of the information required for this section has already been provided as part of the Environmental Impact Assessment Report (EIAR), prepared in June 2019.

1.0 DISCHARGE TO AIR

1.1 Main Emissions

There will be one main air emission source resulting from activities at the proposed site, referred to as A2-1 Waste-to-energy plant stack. Emissions leaving the stack (A2-1) will pass through an extensive flue gas treatment system designed to ensure compliance with the emission limit values for waste incineration set out in the EU Industrial Emissions Directive 2010/75/EC. The advanced post-combustion flue gas cleaning technology which will be employed is detailed in Attachment 4.8.1 *Operational Report*.

Council Directive 2010/75/EU on Industrial Emissions (IED) has outlined air emission limit values as set out in Table 8.3 of Chapter 8 in the EIAR.

The Directive has also outlined stringent operating conditions in order to ensure sufficient combustion of waste thus ensuring that dioxin formation is minimised. Specifically, the combustion gases must be maintained at a temperature of 850°C for at least two seconds under normal operating conditions for non-hazardous waste whilst for hazardous waste containing more than 1% halogenated organic

substances, the temperature should be raised to 1100°C for at least two seconds. These measures will ensure that dioxins/furans, polychlorinated biphenyls (PCBs) and PAHs are minimised through complete combustion of waste.

Specific emission measurement requirements have also been outlined in the directive for each pollutant:

- 1) continuous measurements of the following substances; NO_x, CO, total dust, TOC, HCl, and SO₂;
- 2) bi-annual measurements of heavy metals, dioxins and furans.

Indaver is committed, as a minimum, to meeting all the requirements of Council Directive 2010/75/EU. Indeed, due to the advanced post-combustion flue gas cleaning technology employed for emission point A2-1, expected average emission values will be lower than the maximum values. The maximum emission concentrations and mass emission rates for A2-1 have been detailed in Attachment 7.4.1.

Further details on the emission concentrations and mass emission rates used for air dispersion modelling of stack A2-1 can be found in Appendix 8.1, Section 8.1.1 and Table A8.2 of the EIAR.

1.2 Monitoring

As detailed in Attachment 7.4.1, continuous stack emission monitoring of A2-1 will be conducted for Total Dust, TOC, HCl, HF, NH₃, SO₂, NO₂, Mercury and CO with biannual sampling for Dioxins / Furans, Cadmium and Thallium, and the other metal emissions. Dioxin /Furan sampling will also be done on a continuous basis in the stack with analysis results produced approximately every two weeks. Stack monitoring of PM₁₀ and PM_{2.5} will be conducted on a quarterly basis.

No ambient dust monitoring will be conducted on a routine basis at the site and there are no significant emissions of dust anticipated once the development is operational.

An odour management plan will be implemented for the development and will be compliant with the Odour Impact Assessment Guidance for EPA Licensed Sites (AG5). Odour surveys will be conducted on a quarterly basis.

Full details of the proposed monitoring regime for emission point A2-1 are provided in Attachment 7.4.1. The monitoring regime proposed for the stack emissions from A2-1 surpasses the monitoring requirements specified in Directive 2010/75/EU.

2.0 DISCHARGE TO SURFACE WATER (STORMWATER EMISSIONS)

Due to the nature of the run-off from the existing facility and the inclusion of hydrocarbon interceptors, the proposed discharge is unlikely to contain more than trace hydrocarbons. It is not anticipated that the proposed development and the proposed onsite activities will cause the surface water quality to exceed the

Environmental Quality Standards as set out in SI 272 of 2009 and SI 386 of 2015 (Surface Water Regulations).

Further information on the surface water drainage can be found in Attachment 4.8.3 *Soil and Groundwater Baseline* and in Chapter 4.14.3 of the EIAR.

2.1 Stormwater Monitoring

Proposed final discharge from the site will be at Emission Point SW-1. The discharge will be controlled using a pump from the surface water attenuation tank up to and including the 30-year rainfall event.

The final discharge from the attenuation tank will be monitored at Monitoring Point SW-2. Monitoring will be undertaken continuously for TOC, pH and conductivity and will be sampled for any other parameters required by the EPA licencing procedures. Continuous monitoring will also be in place on the inlet to the firewater retention tank and any exceedances will trigger the automatic isolation of the firewater tank from the attenuation tank.

There are stringent controls in place to ensure that in the unlikely event that stormwater becomes contaminated it will be prevented from discharging off the site and into the storm sewer. All separators on-site will be fitted with an oil alarm system which will be tied back to the building management system in accordance with BS EN 858-1.

3.0 DISCHARGE TO SEWER

There will be no process effluents or other industrial wastewater discharges associated with the proposed development.

4.0 NOISE EMISSIONS

The following standard noise criteria are anticipated to apply at the nearest noise sensitive locations (NSLs):

- Daytime (07:00 to 19:00hrs) 55dB $L_{Ar,15min}$
- Evening (19:00 to 23:00hrs) 50dB $L_{Ar,15min}$
- Night time (23:00 to 07:00hrs) 45dB $L_{Aeq,15min}$

The proposed waste-to-energy facility has been assessed against the relevant operational noise ELV's prescribed within the EPA's noise guidance document *Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities* (NG4, EPA 2016) at the closest noise sensitive locations. The assessment has concluded that due to the distance between the proposed development and the nearest sensitive buildings, the proposed site layout and the recommended noise mitigation measures, the facility can operate within the adopted day, evening and night-time noise limit values.

Further details on the noise criteria and the noise model results are provided in Chapter 10 of the EIAR.

4.1 Compliance Monitoring for Noise

Four locations have been proposed for on-going annual noise monitoring. These have been selected taking account of potential access restrictions onto private property and accessing safe monitoring locations for personnel for day, evening, and night-time surveys. See Attachment 7.5 of the Licence application for further details on the proposed noise monitoring locations.

Given there may be potential access constraints at some noise sensitive locations and the presence of extraneous noise sources in the vicinity, it may be necessary to undertake compliance noise monitoring (if required) at the site boundary or at a suitable proxy location and assess to the nearest NSL's. Any such assessment should be undertaken in accordance with the guidance outlined in the EPA NG4 document and supported by a sufficiently detailed noise report outlining the calculation methods used to determine the noise emission levels at the NSL's. Simultaneous monitoring may be required initially to set appropriate limit values at alternative locations.

5.0 PROTECTION OF GROUNDWATER

As part of this assessment, consideration has been given to EU Council Directive 2006/118/EC in relation to the protection of groundwater. The 2006 Directive establishes specific measures as provided for in EU Council Directive 2000/60/EC in order to prevent and control groundwater pollution. The Directive also complements the provisions for preventing or limiting inputs of pollutants into groundwater already contained in Directive 2000/60/EC and aims to prevent the deterioration of the status of all bodies of groundwater¹.

Under the 2006 Directive, the Member States must also establish the chemical status of each groundwater body in accordance with the European Communities Directive 2000/60/EC (commonly known as the Water Framework Directive [WFD]) and must undertake measures to protect groundwater defined as having 'Good Water Status' whilst also moving to achieve 'Good Water Status' in all other groundwater bodies. The Groundwater Body (GWB) underlying the site is the Ringaskiddy Water Body (IE_SW_G_072). Currently, the EPA on-line mapping tool (accessed December 2018) classifies the Ringaskiddy water body as having 'Good Status', with a risk classification of "under review".

Groundwater samples were collected and analysed as part of the Soil and Groundwater Baseline Assessment (see Attachment 4.8.3). The results show that the groundwater quality at the site complies with the Groundwater Threshold Values (GTVs) from the European Communities Environmental Objectives (Groundwater) Regulations, S.I. 9 of 2010 & S.I. 366 of 2016, and the EPA Interim Guidelines for groundwater, where available.

¹ Directive 2006/118/EC of the European Parliament and of the Council of 12 December 2006 on the protection of groundwater against pollution and deterioration

There will be no direct discharges of contaminated water to groundwater or soil environment during the operation of the installation, and an environmental management plan (EMP) will be in place to ensure compliance with licensing requirements. This will include full and adequate containment and management of potential contaminants. Site-specific emergency response measures will be in place and all relevant personnel will be trained accordingly.

In order to minimise any impact on the underlying sunken strata from material spillages, chemical storage tanks will be fully bunded (or double skinned as appropriate) in designated areas with an impervious loading area. Bunding will be to a volume in compliance with EPA standards.

Drainage from the yard around the diesel storage area will be to the 2 no. Class 1 full retention interceptors which will be inspected and properly managed. All tanks, concrete bunding and transfer pipelines will be tested regularly to confirm integrity as per the site's licencing requirements.

As such, it is considered that other than those parameters that are natural elevated in the local groundwater body, there will be no impact on the quality of the groundwater status of the Limerick Ringaskiddy GWB from the site operations. As such, it is anticipated that the site operations will not result in exceedances in the GTVs.

5.1 Soil and Groundwater Monitoring

A total of 3 no. groundwater monitoring wells (MW-1 to MW-3) will be installed across the site for the purpose of undertaking regular groundwater monitoring as will be a requirement of the IE licence. The monitoring will detect any changes in groundwater quality during the operational phase of the facility.

Soil monitoring will also be undertaken every 10 years at 2 no. boreholes (locations to be agreed with the Agency). Analysis will include any relevant substances as per the Soil and Groundwater Baseline study (see Attachment 4.8.3).

The groundwater monitoring locations are proposed as shown in Drawing No. CD5010-Ground Well & Soil Sampling. Further details of the proposed groundwater and soil monitoring are presented in Attachment 9.1.

6.0 COMPLIANCE WITH BEST AVAILABLE TECHNIQUES

The proposed facility is intended to replicate successful and proven technologies and processes already developed and in use in existing facilities. The design team have assessed BAT and ensured compliance with the relevant BAT as a minimum requirement.

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.

6.1 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, 2006;
- BREF document on Best Available Techniques 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; and,
- BREF document on Best Available Techniques for General Principles of Monitoring, 2003, and Monitoring of Emissions to Air and Water from IED Installations (2018).

Please refer to Attachments 4.7.1 to 4.7.5 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 facility when completed will comply with the required best available techniques.

6.2 Emerging Techniques

An 'Emerging technique' is defined as a novel technique for an industrial emissions directive activity that, if commercially developed, could provide either a higher general level of protection of the environment or at least the same level of protection of the environment and higher cost savings than existing best available techniques.

It is concluded that the proposed technology, based on successful and proven technologies and processes already developed and in use at Indaver's Meath facility, is not novel and no specific aspect is considered to represent an "Emerging technique".

6.3 Cleaner Technologies, Waste Minimization and Raw Material Substitution

Please refer to Section 8 of the IE Licence application for details regarding Waste Minimisation.

There are limited opportunities for the substitution of raw materials in the proposed process. The raw materials used have been developed carefully, with due respect to minimising potential environmental nuisances or other consequences of their use.

Cleaner technologies are addressed in Section 9 under Energy Efficiency.

6.4 General Environmental Measures

The facility will be managed by an experienced team of engineers, production staff and maintenance specialists. All operatives will be trained for their specific duties and work will be carried out in line with standard operating procedures. In the event of an accident or other malfunction staff will be trained to address the accident as efficiently and effectively as possible thereby minimizing pollution arising therefrom.

Following grant of the IE licence, Indaver will be required to comply with the conditions of its licence. All emissions from the facility will be abated and monitored to ensure compliance. For further details of the controls in place, including accident prevention and management of liabilities, see Section 9.

7.0 REFERENCES

ARUP (2019) Environmental Impact Assessment Report, Ringaskiddy Resource Recovery Centre. Prepared by ARUP for Indaver Ireland Ltd.