

Attachment 7.1.3.3 Receiving Environment Report

1.0 INTRODUCTION

AWN Consulting Ltd. (AWN) was appointed by Indaver to complete a Receiving Environment Report for proposed Resource Recovery Centre in Ringaskiddy, Co. Cork. This report is to accompany an application for an IE licence.

This report was completed in accordance with the *Environmental Protection Agency's (EPA) Licence Application Form Guidance – Industrial Emissions (IE), Integrated Pollution Control (IPC) and Waste* and should be read in conjunction with Attachment 7.1.3.2 *Emissions Impact Assessment*.

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.

1.1 Description of Site

The site for the Ringaskiddy Resource Recovery Centre is located approximately 15km to the south-east of Cork City, in the townland of Ringaskiddy on the Ringaskiddy Peninsula in the lower part of Cork harbour. The L2545, the main road from Ringaskiddy village to Haulbowline Island forms the northern boundary of the site. The eastern boundary of the site extends to the foreshore of Cork harbour along Gobby Beach. The lands to the immediate south and west are in agricultural use. The site surrounds the Hammond Lane Metal Recycling Co Ltd facility. The site is located approximately 800m east of the village of Ringaskiddy. The site covers an area of approximately 13.55 hectares and is situated on a north-facing slope. The site is currently covered in scrub with some pockets of trees and open grass areas.

The proposed development is a Resource Recovery Centre which will consist principally of a waste-to-energy plant (waste incinerator) for the treatment of up to 240,000 tonnes per annum of residual household, commercial and industrial non-hazardous and hazardous waste and the recovery of energy. Of the 240,000 tonnes of waste, up to 24,000 tonnes per annum of suitable hazardous waste will be treated at the facility. The proposed development will maximise the extraction and recovery of valuable material (in the form of ferrous and non-ferrous metals) and energy (in the form of 21 megawatts of electricity) resources from residual waste.

In addition to the provision of the waste-to-energy facility, the proposed development will include an upgrade of a section of the L2545 road, a connection to the national electrical grid, an increase in ground levels in part of the site, coastal protection measures above the foreshore on Gobby beach and an amenity walkway towards the Ringaskiddy Martello tower.

A full description of the existing site and the proposed development can be found in Sections 4.2 and 4.5 respectively of Chapter 4 of the EIAR.

2.0 AIR EMISSIONS

2.1 Ambient Air Quality

An extensive baseline survey was carried out in the region of the proposed Ringaskiddy Resource Recovery Centre facility over the period October 2018 to January 2019. This supplements the extensive baseline surveys undertaken in

November 2006 to February 2007, from April 2008 to July 2008 and August 2014 to July 2015. These surveys focused on the significant pollutants likely to be emitted from the facility and which have been regulated in Council Directive 2010/75/EU. The substances monitored over these survey periods were NO₂, NO_x, PM₁₀, PM_{2.5}, benzene, SO₂, heavy metals, HCl, HF and PCDDs/PCDFs. The air monitoring program was used to determine long-term average concentrations for these pollutants in order to help quantify the existing ambient air quality in the region. NO₂, benzene and SO₂ were also monitored at a number of additional locations to give some spatial representation of the levels of these species.

The updated extensive baseline survey which was carried out in the region of the proposed Ringaskiddy Resource Recovery Centre facility over the period October 2018 to January 2019 focused on NO₂, PM₁₀, PM_{2.5}, benzene, SO₂, HCl, HF, PCDDs/PCDFs (dioxins/furans) and heavy metals over a 3-month long period. The air monitoring program was used to determine long-term average concentrations for these pollutants in order to help quantify the existing ambient air quality in the region. NO₂, benzene and SO₂ were also monitored at a number of additional locations to give greater spatial representation of the levels of these species.

Further details including the results of the baseline surveys can be found in Section 8.3 of Appendix 8.1 of the EIAR.

2.2 Surrounding Land Uses and Sensitive Receptors

In relation to the spatial assessment of emissions from the facility, modelling has been carried out to cover locations at the boundary and within a radius of 10 km of the facility, regardless of whether any sensitive receptors are located in the area. Ambient air quality legislation designed to protect human health (i.e. by setting ambient limit values for a range of pollutants) is generally based on assessing ambient air quality at locations where the exposure of the population is significant relevant to the averaging time of the pollutant. However, in the current assessment, ambient air quality legislation has been applied to all locations regardless of whether any sensitive receptors (such as residential locations) are present for significant periods of time. This represents a worst-case approach and an examination of the corresponding concentrations at the nearest sensitive receptors relative to the actual quoted maximum concentration indicates that these receptors generally experience ambient concentrations significantly lower than that reported for the maximum value.

The closest sensitive receptors to the facility are the residential properties at the eastern edge of Ringaskiddy village which are located 200 m west of the facility boundary. The Lough Beg proposed NHA is approximately 500 m south of the facility boundary.

This is also outlined in Section 8.2 of Appendix 8.1 of the EIAR.

3.0 STORMWATER EMISSIONS AND SURFACE WATER ENVIRONMENT

The storm water runoff will be discharged to the Local Authority sewer located in the L2545 road to the north of the site. The outfall is into Cork Harbour at Gobby Beach. For the purposes of this assessment the receiving environment is considered to be the Cork Harbour.

Further detail on the wider surface water environment can be found in Section 13.3.7 of Chapter 13 of the EIAR.

Further details on coastal recession at Gobby Beach are included in Section 13.3.8 of Chapter 13 of the EIAR.

3.1 Surface Water Quality

As per the EPA's *Envision* Database the coastal water body risk score for Cork Harbour IE SW 060_0000 is "under review". The water quality status is determined as "Good".

Further information on the surface water environment can be found in Section 6.2 of Attachment 4.8.3 *Soil and Groundwater Baseline Report* and Section 13.3.7 of Chapter 13 of the EIAR.

3.2 Flooding

The potential risk of flooding on the site has been assessed as part of the EIAR prepared for planning and the results are presented in Appendix 13.4 of the EIAR - Flood Risk Assessment (FRA).

The site is located adjacent to Gobby Beach; however, the FRA did not indicate it as being within the design 1000-year tidal floodplain. Based on a review of all available information, the 1 in 200-year design tidal level at the site has been estimated as 2.73m OD. Sections of the road close to Gobby beach car park and small areas of the site along the northern boundary are below this level and are therefore at risk of tidal flooding during a 1 in 200-year tidal event. However, the proposed development includes raising site levels and road levels to avoid this risk in the future.

There is a risk of pluvial flooding to the L2545 and the low-lying areas of the site during periods of heavy rainfall due to an insufficient drainage network and tide locking of the existing drainage outfall.

3.3 Existing and Proposed Uses

Cork harbour is a working port heavily influenced by the existing industrial, commercial, energy production/transmission, and port related uses in the Ringaskiddy and Lough Beg area, as well as being part of a much larger and mixed use harbour.

Cork harbour is also designated as an area of 'National Tourism Significance' by Fáilte Ireland in their publication *Determination of Waters of National Tourism Significance and Associated Water Quality Status* (2009). It is an important recreational resource for the region with water based activities such as sailing, fishing etc. It is also an important entry point into the region via the ferries that use Ringaskiddy port.

Further details on the use and significance of Cork Harbour can be found in Chapter 11 *Landscape and Visual Assessment* of the EIAR.

4.0 SEWER EMISSIONS AND RECEIVING ENVIRONMENT

Foul effluent from the facility will be pumped to the Shanbally Wastewater Treatment Plant (WWTP). For the purposes of this assessment, the receiving environment is considered to be the Cork Harbour. An assessment of this environment is covered under Section 3.0 above.

5.0 NOISE EMISSIONS

5.1 Baseline Noise

A baseline noise survey was undertaken to determine the prevailing noise environment during day, evening and night-time periods in the vicinity of the nearest noise sensitive locations (NSLs) to determine the baseline noise environment and to determine the relevant operational criteria for the proposed facility. The details of this assessment are included in Section 10.3.2 of Chapter 10 of the EIAR.

5.2 Surrounding Land Uses and Sensitive Receptors

Detail on the surrounding land uses and noise sensitive receptors are presented in Section 10.3 of Chapter 10 of the EIAR.

6.0 SOIL AND GROUNDWATER

6.1 Soil Type and Quality

Detail regarding the soil type and quality in the vicinity of the site can be found in Section 6.3 of Attachment 4.8.3 *Soil & Groundwater Baseline* as well as Section 13.3.2 of Chapter 13 of the EIAR.

Further details of site investigations and testing conducted to date can be found in Section 8.0 of Attachment 4.8.3.

6.2 Soil Uses

The site has not previously been developed. Previous uses of the site are understood to be for agricultural purposes only.

Further detail on the history of the site is provided in Section 5.0 of Attachment 4.8.3 *Soil & Groundwater Baseline*.

6.3 Groundwater Characteristics

The groundwater body of Ringaskiddy is 16.7 km² in area and occupies an east west trending valley on the west side of Cork Harbour. Much of the Ringaskiddy groundwater body comprises urban and/or industrial areas.

Further information and drawings showing the soil groundwater characteristics of the site can be found in Section 6.3 of Attachment 4.8.3 *Soil & Groundwater Baseline* as well as Section 13.3.3 of Chapter 13 of the EIAR.

6.4 Groundwater Uses

The aquifer is moderately productive but is not used extensively locally for water supply. There are no source protection areas noted within 2 km of the site (source GSI, 2018). Further information on groundwater resources and groundwater wells in the area can be found in Section 13.3.3 of Chapter 13 of the EIAR.

The National Parks and Wildlife Service online database was consulted to establish whether any groundwater-dependent terrestrial ecosystems are located within 2km of the site of the proposed development. No groundwater-dependent ecosystems within 2kms of the proposed development were identified from the database (see Section

13.3.3.5 of Chapter 13 of the EIAR). A full assessment of the ecological features in the vicinity of the site is outlined in Chapter 12 (Biodiversity) of the EIAR.

7.0 BIODIVERSITY

The potential impacts of the proposed development including the proposed emissions are presented in Chapter 12 (Biodiversity) of the EIAR.

A number of field surveys were completed as part of the assessment of impacts. The results of these surveys can be found in the EIAR. The EIAR concluded that the habitats within the site itself are considered to be of low to moderate value.

Consideration was given to the surround terrestrial and marine habitats and the potential for the proposed development to impact upon specific species.

The potential impacts on designated Natura 2000 or European sites were specifically addressed in a Natura Impact Statement (NIS), which has been submitted as part of this IED Licence application.

7.1 Ecologically Designated Sites

The Geological Society of Ireland (GSI) and National Parks and Wildlife Service (NPWS) on-line databases presently list no ecological designated areas within or the proposed development site.

As outlined in Chapter 12 of the EIAR there are a number of designated sites within the 20km zone of influence including the Cork Harbour Special Protection Area (Site code 004030) approximately 0.5km to the south of the site, the Great Island Channel candidate Special Area of Conservation and proposed Natural Heritage Area (Site code 001058) 5.6km north of the site, the Lough Beg proposed Natural Heritage Area (Site code 001066) approximately 0.3 km south of the site, and the Monkstown Creek proposed Natural Heritage Area (Site Code 001979) 1.5km northwest of the site. The EIAR identifies these as being important sites for bird species in the Cork Harbour and are therefore relevant to the proposed development.

Other designated sites within the zone of influence were also identified, however the EIAR concluded that these were a considerable distance from the proposed development and would not be potentially impacted by the proposed development.

8.0 REFERENCES

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

Environmental Protection Agency (EPA) Catchments data: available at <https://www.catchments.ie/>. Accessed 2018.

EPA *Envision* water quality monitoring data for watercourses in the area: On-line data resources available at <http://gis.epa.ie/Envision/>. Accessed 2018.

EPA (2004) IPC Guidance Note on Storage and Transfer of Materials for Scheduled Activities.

EPA (2018) <http://www.epa.ie/air/quality/data/>

EPA (2017) *Air Quality Monitoring Report 2016* (and previous reports)

Geological Survey of Ireland (GSI): On-line mapping resources, available at www.gsi.ie. Accessed 2018.

National Parks & Wildlife Service (NPWS): On-line data resources available at <http://webgis.npws.ie/npwsviewer/>. Accessed 2018.

Office of Public Works (OPW) National Flood Hazard Mapping - Flood points & Historical floods information: available at www.floodmaps.ie. Accessed 2018.

Office of Public Works (OPW) Provisional Flood Risk Assessment (PFRA) maps, available at: <http://www.cfram.ie/pfra/interactive-mapping/>. Accessed 2018.